

1.	<p>Certification. Applicant certifies that it has answered each question in this application based on its review of the application instructions and worksheets. Applicant further certifies that where it has made an affirmative certification below, this certification constitutes its representation that the application satisfies each of the pertinent standards and criteria set forth in the application instructions and worksheets.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p>
2.	<p>Eligibility. Each application must answer "Yes" to one and "No" to two of the three following certifications. An applicant should not submit an explanatory exhibit in connection with these Question 2 "No" responses.</p> <p>The applicant certifies that it is:</p> <p>a. a nonprofit educational institution; or</p> <p>b. a governmental entity other than a school; or</p> <p>c. a nonprofit educational organization, other than described in a. or b.</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p><input type="radio"/> Yes <input type="radio"/> No</p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p>
3.	<p>For applicants checking "Yes" to question 2(c) and applying for a new noncommercial educational television station only, the applicant certifies that the applicant's officers, directors and members of its governing board are broadly representative of the educational, cultural, and civic segments of the principal community to be served.</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p><input type="radio"/> N/A</p>
4.	<p>a. The applicant certifies that the Commission has previously granted a broadcast application identified here by file number that found this applicant qualified as a noncommercial educational entity with a qualifying educational program, and that the applicant will use the proposed station to advance a program similar to that the Commission has found qualifying in applicant's previous application.</p> <p>b. Applicants who answered "No" to Question 4(a), must include an exhibit that describes the applicant's educational objective and how the proposed station will be used to advance an educational program that will further that objective according to 47 C.F.R. Section 73.503 (for radio applicants) and 47 C.F.R. Section 73.621 (for television applicants).</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p>FCC FileNumber -</p> <p>[Exhibit 2]</p>
5.	<p>The applicant certifies that its governing documents (e.g., articles of incorporation, by-laws, charter, enabling statute, and/or other pertinent organizational document) permit the applicant to advance an educational program and that there is no provision in any of those documents that would restrict the applicant from advancing an educational program or complying with any Commission rule, policy, or provision of the Communications Act of 1934, as amended.</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p>
6.	<p>a. Parties to the Application. List separately each party to the application including, as applicable, the applicant, its officers, directors, five percent or greater stockholders, non-insulated partners, members, and all other persons and entities with attributable interests. If another entity hold an attributable interest in the applicant, list separately, as applicable, its officers, directors, five percent or greater stockholders, non-insulated partners, and board members. Create a separate row for each individual or entity. Attach additional pages if necessary.</p> <p>[Enter Parties/Owners Information]</p> <hr/> <hr/> <p>b. Applicant certifies that equity and financial interests not set forth above are non-attributable pursuant to 47 C.F.R. Section 73.3555 and that there are no agreements or understandings with any non-party that would give influence over the applicant's programming, personnel, or finances to that non-party.</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p>[Exhibit 3]</p>
7.	<p>Other Authorizations. List call signs, locations, and facility identifiers of all other broadcast stations in which applicant or any party to the application has an attributable interest pursuant to the notes to 47 C.F.R. Section 73.3555.</p>	<p><input type="checkbox"/> N/A</p> <p>[Exhibit 4]</p>
8.	<p>Character Issues. Applicant certifies that neither applicant nor any party to the application has or has had any interest in or connection with:</p> <p>a. any broadcast application in any proceeding where character issues were left unresolved or were resolved adversely against the applicant or party to the application; or</p> <p>b. any pending broadcast application in which character issues have been raised.</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 5]</p>
9.	<p>Adverse Findings. Applicant certifies that, with respect to the applicant, any party to the application, and any non-party equity owner in the applicant, no adverse finding has been made, nor has an adverse final action been taken by any court or administrative body in a civil or criminal proceeding brought under the provisions of any law related to any of the following: any felony; mass media-related antitrust or unfair competition; fraudulent statements to another government unit; or discrimination.</p> <p>If the answer is "No," attach as an Exhibit a full disclosure concerning the persons and matters involved, including an identification of the the court or administrative body and the proceeding (by dates and file numbers), and a description of the disposition of the matter. Where the requisite information has been earlier disclosed in connection with another application or as required by 47 C.F.R. Section 1.65, the applicant need only provide: (i) an identification of that previous submission by reference to the file number in the case of an application, the call letters of the station regarding which the application or Section 1.65 information was filed, and the date of filing; and (ii) the disposition of the previously reported matter.</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 6]</p>

10.	Alien Ownership and Control. Applicant certifies that it complies with the provisions of Section 310 of the Communications Act of 1934, as amended, relating to interests of aliens and foreign governments.	<input type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 7]
11.	Program Service Certification. Applicant certifies that it is cognizant of and will comply with its obligations as a commission licensee to present a program service responsive to the issues of public concern facing the station's community of license and service area.	<input type="radio"/> Yes <input type="radio"/> No
12.	Local Public Notice. Applicant certifies compliance with the public notice requirements of 47 C.F.R. Section 73.3580.	<input type="radio"/> Yes <input type="radio"/> No
13.	Anti-Drug Abuse Act Certification. Applicant certifies that neither applicant nor any party to the application is subject to denial of federal benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862.	<input checked="" type="radio"/> Yes <input type="radio"/> No
14.	Equal Employment Opportunity (EEO). If the applicant proposes to employ five or more full-time employees, applicant certifies that it is filing simultaneously with this application a Model EEO Program Report on FCC Form 396-A.	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A

QUESTIONS 15, 16 AND 17 APPLY ONLY TO APPLICANTS FOR NEW STATIONS. OTHER APPLICANTS CAN PROCEED TO QUESTION 18.

15.	Financial. The applicant certifies that sufficient net liquid assets are on hand or that sufficient funds are available from committed sources to construct and operate the requested facilities for three months without revenue. If "No" to 15., answer question 16. and 17.	<input type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 8]
16.	Is this application contingent upon receipt of a grant from the National Telecommunications and Information Administration?	<input type="radio"/> Yes <input type="radio"/> No
17.	Is this application contingent upon receipt of a grant from a charitable organization, the approval of the budget of a school or university, or an appropriation from a state, county, municipality or other political subdivision?	<input type="radio"/> Yes <input type="radio"/> No

NOTE: If Yes to 16. **or** 17., the application cannot be granted unconditionally until all of the necessary funds are committed or appropriated. In the case of grants from the National Telecommunications and Information Administration, no further action on the applicant's part is required. If the applicant relies on funds from a source specified in Question 17., **the applicant must advise the Commission when the funds are committed or appropriated.** This should be accomplished by letter amendment to the application. Applicants should take note that the Commission's construction period is not considered "tolled" by funding difficulties and that any permit granted conditionally on funding will expire if the station is not constructed for any reason, including lack of funding.

QUESTIONS 18 AND 19 DO NOT APPLY TO APPLICATIONS FOR NEW STATIONS. APPLICANTS FOR NEW FM STATIONS CAN PROCEED TO SECTION III. APPLICANTS FOR NEW TV STATIONS CAN PROCEED TO SECTION IV.

Holding Period.

18.	Applicant certifies that this application does not propose a modification to an authorization that was awarded on the basis of a preference for fair distribution of service pursuant to 47 U.S.C. Section 307(b). If "No," answer a. and b. below. If applicant answers "No" to 18. above and cannot answer "Yes" to either a. or b. below, the application is unacceptable. a. Applicant certifies that the proposed modification will not downgrade service to the area on which the Section 307(b) preference was based. b. Applicant certifies that although it proposes to downgrade service to the area on which the Section 307(b) preference was based, applicant has provided full service to that area for a period of four years of on-air operations.	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No
19.	Applicant certifies that this application does not propose a modification to an authorized station that received a credit for superior technical parameters under the point system selection method in 47 C.F.R. Section 73.7003. If "No," applicant must be able to answer "Yes" to a. below or provide an exhibit that makes a compelling showing that the downgrade would be in the public interest. a. Applicant certifies that the population and area within the proposed service contour (60 dBu (FM) or grade B (TV)) are greater than or equivalent to those authorized.	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No [Exhibit 9]

Section III
Fair Distribution of Service Pursuant to 47 U.S.C. Section 307(b) (New and Major Changes to FM Radio Only) (Other applicants can proceed to Section IV).

1.	Applicant certifies that the proposed station will provide a first noncommercial educational aural service to (a) at least 10 percent of the people residing within the station's 60 dBu (1mV/m) service contour and (b) to a minimum of 2,000 people. Applicants answering "Yes" must provide an Exhibit.	<input type="radio"/> Yes <input type="radio"/> No [Exhibit 10]
2.	Applicant certifies that the proposed station will provide a second noncommercial educational aural service to (a) at least 10 percent of the people residing within the station's 60 dBu (1mV/m) service contour and (b) to a minimum of 2,000 people. Applicants answering "Yes" must provide an Exhibit.	<input type="radio"/> Yes <input type="radio"/> No [Exhibit 11]

Section IV Point System Factors - New and Major Change Applications Only (used to select among mutually exclusive radio and television applications for new stations and major modifications) **NOTE:** Applicants will not receive any additional points for amendments made after the close of the application filing window.

1.	Established Local Applicant: Applicant certifies that for at least the 24 months immediately prior to application, and continuing through the present, it qualifies as a local applicant pursuant to 47 C.F.R. Section 73.7000, that its governing documents require that such localism be maintained, and that it has placed documentation of its qualifications as an established local applicant in a local public inspection file and has submitted to the Commission copies of the documentation.	<input type="radio"/> Yes <input type="radio"/> No
2.	Diversity of Ownership: (a) Applicant certifies that the principal community (city grade) contour of the proposed station does not overlap the principal community contour of any other authorized station (comparing radio and television to television, including non-fill-in translator stations other than those identified in 2(b) below) in which any party to the application has an attributable interest as defined in 47 C.F.R. Section 73.3555, that its governing documents require that such diversity be maintained, and that it has placed documentation of its diversity qualification in a local public inspection file and has submitted to the Commission copies of the documentation.	<input type="radio"/> Yes <input type="radio"/> No
	(b) Is the application's certification to 2(a) based on its exclusion of translator station(s) that will be replaced with a full service station pursuant to the authorization requested here? If Yes, applicant must include an exhibit identifying the translator station authorization for which it will request cancellation upon commencement of operation of the proposed full service station (i.e., upon its filing of a license application and receipt of program test authority).	<input type="radio"/> Yes <input type="radio"/> No [Exhibit 12]
3.	State-wide Network: Applicant certifies that (a) it has NOT claimed a credit for diversity of ownership above; (b) it is one of the three specific types of organizations described in 47 C.F.R. Section 73.7003(b)(3); and (c) it has placed documentation of its qualifications in a local public inspection file and has submitted to the Commission copies of the documentation.	<input type="radio"/> Yes <input type="radio"/> No
4.	Technical Parameters: Applicant certifies that the numbers in the boxes below accurately reflect the new area and population that its proposal would serve with a 60 dBu (FM) or Grade B (TV) signal measured in accordance with the standard predicted contours in 47 C.F.R. Section 73.713(c) (FM) and 73.683(TV) and that it has documented the basis for its calculations in the local public inspection file and has submitted copies to the Commission. Major modification applicants should include the area of proposed increase only (exclude any area already within the station's existing service area). (Points, if any, will be determined by FCC)	<input type="radio"/> Yes <input type="radio"/> No
	New area served in square kilometers (excluding areas of water):	
	Population served based on the most recent census block data from the United States Bureau of Census using the centroid method:	

SECTION V - Tie Breakers - New and Major Change Applications Only (used to choose among competing radio and television applications receiving the same number of points in Section IV)

1.	Existing Authorizations. By placing a number in the box, the applicant certifies that it and other parties to the application have, as of the date of filing and pursuant to 47 C.F.R. Section 73.3555, attributable interests in the stated number of relevant broadcast station authorizations. Radio applicants should count all attributable full service radio stations, AM and FM, commercial and noncommercial, and FM translator stations other than fill-in stations or those identified in IV (2)(b) above. TV applicants should count all attributable full service TV stations, commercial and noncommercial and TV translator stations other than fill-in stations or those identified in IV(2)(b) above. (number of commercial and non-commercial licenses and construction permits)
2.	Pending Applications. By placing a number in the box, the applicant certifies that it and other parties to the application have, as of the date of filing and pursuant to 47 C.F.R. Section 73.3555, attributable interests in the stated number of pending applications for new or major changes to relevant broadcast stations. Radio applicants should count all attributable full service radio stations, AM and FM, commercial and noncommercial, and FM translator stations other than fill-in stations or those identified in IV(2)(b) above. TV applicants should count all attributable full service TV stations, commercial and noncommercial, and TV translator stations other than fill-in stations or those identified in IV(2)(b) above. (number of pending commercial and non-commercial applications)

Section VI -- Certification

I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith. I acknowledge that all certifications and attached Exhibits are considered material representations. I hereby waive any claim to the use of any particular frequency as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and request an

authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended.)

Typed or Printed Name of Person Signing THOMAS J KIGIN	Typed or Printed Title of Person Signing EXECUTIVE VICE PRESIDENT
Signature	Date 08/05/2009

Section VII Preparer's Certification

I certify that I have prepared Section VII (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name KATE MICHLER	Relationship to Applicant (e.g., Consulting Engineer) TECHNICAL CONSULTANT	
Signature	Date 08/05/2009	
Mailing Address DOUG VERNIER TELECOMMUNICATIONS CONSULTANTS 401 MAIN STREET, SUITE 213		
City CEDAR FALLS	State or Country (if foreign address) IA	Zip Code 50613-
Telephone Number (include area code) 3192668402	E-Mail Address (if available) KMICHLER@V-SOFT.COM	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

Section VII - FM Engineering

TECHNICAL SPECIFICATIONS

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1.	Channel Number: 207
2.	Class (select one): <input type="radio"/> D <input type="radio"/> A <input type="radio"/> B1 <input type="radio"/> B <input checked="" type="radio"/> C3 <input type="radio"/> C2 <input type="radio"/> C1 <input type="radio"/> C0 <input type="radio"/> C
3.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 47 Minutes 53 Seconds 1 <input checked="" type="radio"/> North <input type="radio"/> South Longitude: Degrees 91 Minutes 50 Seconds 32 <input checked="" type="radio"/> West <input type="radio"/> East
4.	Proposed Assignment Coordinates: (NAD 27) - RESERVED CHANNELS ABOVE 220 ONLY <input checked="" type="checkbox"/> Not Applicable Latitude: Degrees Minutes Seconds <input type="radio"/> North <input type="radio"/> South Longitude: Degrees Minutes Seconds <input type="radio"/> West <input type="radio"/> East
5.	Antenna Structure Registration Number: 1023187 <input type="checkbox"/> Not Applicable <input type="checkbox"/> Notification filed with FAA
6.	Overall Tower Height Above Ground Level: 152.1 meters
7.	Height of Radiation Center Above Mean Sea Level: 553.2 meters(H) 553.2 meters(V)
8.	Height of Radiation Center Above Ground Level: 96 meters(H) 96 meters(V)
9.	Height of Radiation Center Above Average Terrain: 116.2 meters(H) 116.2 meters(V)
10.	Effective Radiated Power: 18.5 kW(H) 18.5 kW(V)
11.	Maximum Effective Radiated Power: (Beam-Tilt Antenna ONLY) <input checked="" type="checkbox"/> Not Applicable kW(H) kW(V)
12.	Directional Antenna Relative Field Values: <input checked="" type="checkbox"/> Not applicable (Nondirectional) Rotation (Degrees): <input type="checkbox"/> No Rotation

Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
0		10		20		30		40		50	
60		70		80		90		100		110	
120		130		140		150		160		170	
180		190		200		210		220		230	
240		250		260		270		280		290	
300		310		320		330		340		350	
Additional Azimuths											

[Relative Field Polar Plot](#)

NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.

CERTIFICATION

AUXILIARY ANTENNA APPLICANTS ARE NOT REQUIRED TO RESPOND TO ITEMS 13-17. PROCEED TO ITEM 18.

13. **Main Studio Location.** The proposed main studio location complies with 47 C.F.R. Section 73.1125. Yes No
See Explanation in [Exhibit 13]

14. **Community Coverage.** The proposed facility complies with 47 C.F.R. Section 73.315. (Channels 221 and above) or 47 C.F.R. Section 73.515 (Channels 220 and below). Yes No
See Explanation in [Exhibit 14]

15. **Interference.** The proposed facility complies with all of the following applicable rule sections. Check all that apply: Yes No
See Explanation in [Exhibit 15]

Contour Overlap Requirements.

a. 47 C.F.R. Section 73.509
Exhibit Required. [Exhibit 16]

Spacing Requirements.

b. 47 C.F.R. Section 73.207 with respect to station(s)

Grandfathered Short-Spaced.

c. 47 C.F.R. Section 73.213(a) with respect to station(s)
Exhibit Required. [Exhibit 17]

Contour Protection.

d. 47 C.F.R. Section 73.215(a) with respect to station(s)
Exhibit Required. [Exhibit 18]

Television Channel 6 Protection.

e. 47 C.F.R. Section 73.525 with respect to station(s)
Exhibit Required. [Exhibit 19]

16. **Reserved Channels Above 220.**

a. **Availability of Channels.** The proposed facility complies with the assignment requirements of 47 C.F.R. Section 73.203. Yes No
See Explanation in [Exhibit 20]

17. **International Borders.** The proposed antenna location is not within 320 kilometers of the common border between the United States and Canada or Mexico. Yes No
 Canada
 Mexico
If "No," specify the country and provide an exhibit of compliance with all provisions of the relevant International Agreement. [Exhibit 21]

18. **Environmental Protection Act.** The proposed facility is excluded from environmental processing under 47 C.F.R. Section 1.1306 (i.e., The facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine compliance through the use of the RF worksheets in Worksheet #7, an **Exhibit is required.** Yes No
See Explanation in [Exhibit 22]

By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

<p>19. Community of License Change - Section 307(b). If the application is being submitted to change the facility's community of license, then the applicant certifies that it has attached an exhibit containing information demonstrating that the proposed community of license change comports with the fair distribution of service policies underlying Section 307(b) of the Communications Act of 1934, as amended (47 U.S.C. Section 307(b)).</p> <p>An exhibit is required unless this question is not applicable.</p>	<p style="text-align: right;"> <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A </p> <p style="text-align: right;">[Exhibit 23]</p>
<p>PREPARER'S CERTIFICATION ON PAGE 8 MUST BE COMPLETED AND SIGNED.</p>	

Exhibits

Exhibit 13

Description: MAIN STUDIO LOCATION

WIRC HAS BEEN GRANTED A WAIVER OF SECTION 73.1125 (MAIN STUDIO LOCATION) IN CONSTRUCTION PERMIT BNPED-20071016AHI. MINNESOTA PUBLIC RADIO RESPECTFULLY REQUESTS A CONTINUATION OF THAT WAIVER.

Attachment 13

Exhibit 14

Description: COMMUNITY COVERAGE

THE PROPOSED FACILITY COMPLIES WITH 47 C.F.R. SECTION 73.515. PLEASE SEE ATTACHED EXHIBIT.

Attachment 14

Description
Exhibit #14, Community Coverage

Exhibit 16

Description: CONTOUR OVERLAP REQUIREMENTS

THE PROPOSED FACILITY MEETS ALL CONTOUR OVERLAP REQUIREMENTS OF 47 C.F.R. SECTION 73.509. PLEASE SEE ATTACHED EXHIBIT.

Attachment 16

Description
Exhibit #16, Contour Overlap Requirements

Exhibit 19

Description: TELEVISION CHANNEL 6 PROTECTION

FCC PUBLIC NOTICE DA 09-744, RELEASED ON APRIL 1, 2009 STATES THAT 'AN NCE FM STATION APPLICATION MUST TAKE INTO ACCOUNT ALL STATIONS LICENSED TO OPERATE ON CHANNEL 6 AS OF SEPTEMBER 7, 2008.' AS OF THAT DATE, THERE WAS ONLY ONE TELEVISION CHANNEL SIX STATION WITHIN THE 196 KILOMETER CUT-OFF DISTANCE FOR NCE STATIONS ON CHANNEL 207. THE INFORMATION FOR STATION KBJR-TV IS ATTACHED, AS WELL AS THE TELEVISION CHANNEL 6 PROTECTION EXHIBIT.

THE STUDY POWER OF 18.9625 KW WAS USED FOR WIRC. STUDY POWER IS DETERMINED BY $H + V/40$. $18.5 \text{ KW} + 18.5 \text{ KW}/40 = 18.9625$.

THE 6 DB RECEIVER DIRECTIVITY CREDIT WAS APPLIED SINCE THE ENTIRE INTERFERENCE AREA LIES WITHIN THE APPROPRIATE ANGLE.

Attachment 19

Description
Exhibit # 19, Television Channel 6 Protection

Exhibit 21

Description: INTERNATIONAL BORDERS

THE PROPOSED LOCATION IS 26.4 KM FROM THE US BORDER WITH CANADA. ALL TREATY REQUIREMENTS HAVE BEEN MET.
PLEASE SEE ATTACHED EXHIBIT.

Attachment 21

Description
Exhibit #21, International Borders

Exhibit 22

Description: ENVIRONMENTAL PROTECTION ACT

PLEASE SEE ATTACHED EXHIBIT.

Attachment 22

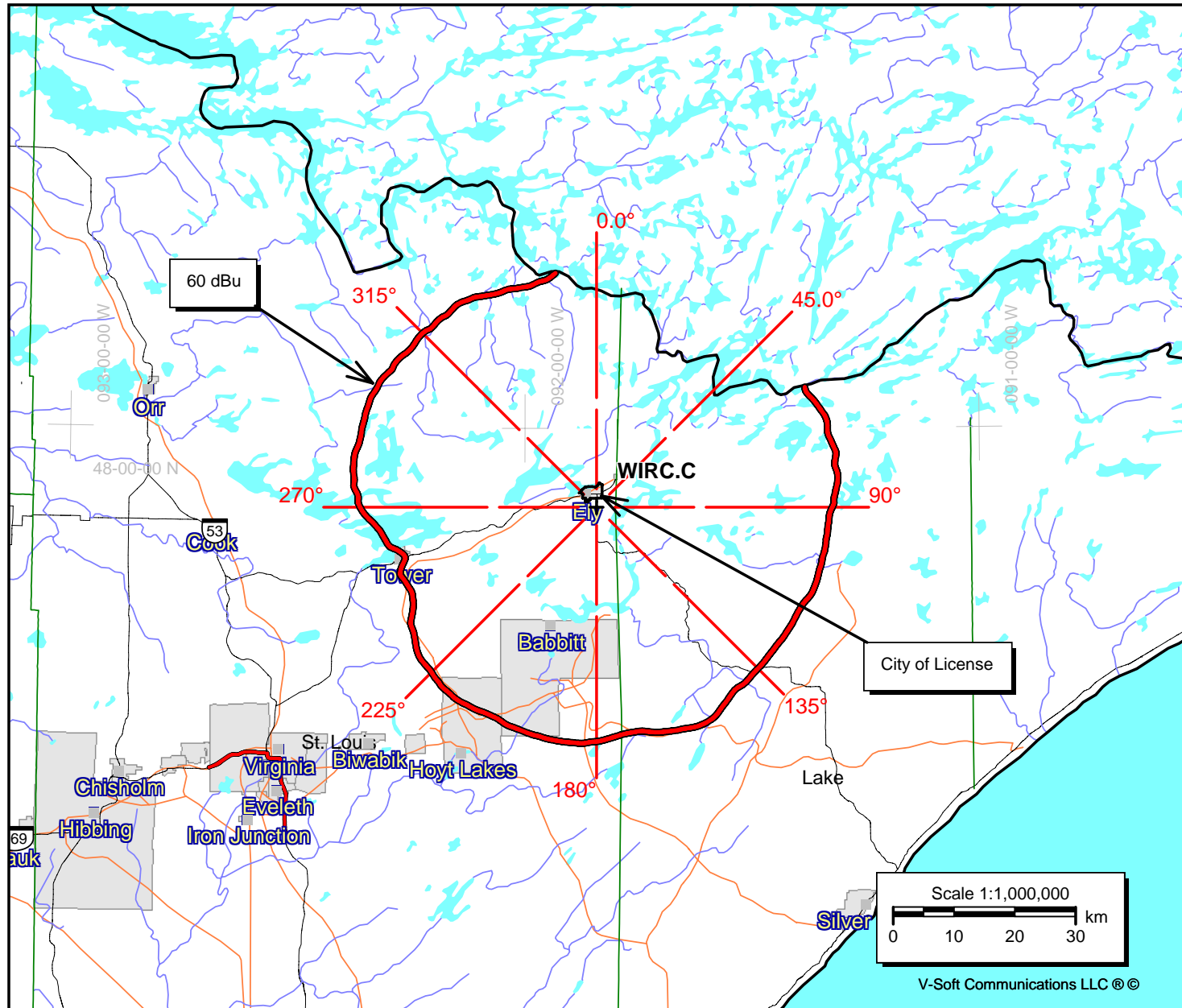
Description
Exhibit #22, Environmental Protection Act

Proposed Community Coverage - WIRC New

WIRC.C
Ely, MN C3
Latitude: 47-53-01 N
Longitude: 091-50-32 W
ERP: 18.50 kW
Channel: 207
Frequency: 89.3 MHz
AMSL Height: 553.2 m
HAAT: 116.2 m
Horiz. Pattern: Omni
Vert. Pattern: No

8/5/2009

Doug Vernier
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Cedar Falls, Iowa 50613
Telecommunication Consultants
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N. Lat. = 475301.0 W. Lng. = 915032.0

HAAT and Distance to Contour,

V-Soft 3-16 km, 131 pts Method - USGS 03 SEC

WIRC (New) - Distance to 60 dBu Contour

Azi. AV EL HAAT ERP kW dBk Field 60-F5

Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	435.5	117.7	18.5000	12.67	1.000	39.29
010	429.0	124.2	18.5000	12.67	1.000	40.10
020	424.6	128.6	18.5000	12.67	1.000	40.65
030	421.0	132.2	18.5000	12.67	1.000	41.10
040	413.6	139.6	18.5000	12.67	1.000	42.05
050	416.6	136.6	18.5000	12.67	1.000	41.67
060	433.6	119.6	18.5000	12.67	1.000	39.53
070	426.9	126.3	18.5000	12.67	1.000	40.36
080	431.7	121.5	18.5000	12.67	1.000	39.77
090	439.4	113.8	18.5000	12.67	1.000	38.76
100	443.6	109.6	18.5000	12.67	1.000	38.18
110	443.4	109.8	18.5000	12.67	1.000	38.21
120	448.2	105.0	18.5000	12.67	1.000	37.48
130	448.3	104.9	18.5000	12.67	1.000	37.47
140	445.5	107.7	18.5000	12.67	1.000	37.90
150	434.3	118.9	18.5000	12.67	1.000	39.44
160	437.5	115.7	18.5000	12.67	1.000	39.03
170	448.4	104.8	18.5000	12.67	1.000	37.45
180	441.3	111.9	18.5000	12.67	1.000	38.51
190	438.2	115.0	18.5000	12.67	1.000	38.93
200	439.8	113.4	18.5000	12.67	1.000	38.71
210	440.1	113.1	18.5000	12.67	1.000	38.67
220	437.7	115.5	18.5000	12.67	1.000	39.00
230	444.1	109.1	18.5000	12.67	1.000	38.11
240	463.3	89.9	18.5000	12.67	1.000	34.94
250	468.0	85.2	18.5000	12.67	1.000	34.04
260	463.2	90.0	18.5000	12.67	1.000	34.96
270	438.7	114.5	18.5000	12.67	1.000	38.87
280	425.6	127.6	18.5000	12.67	1.000	40.52
290	423.7	129.5	18.5000	12.67	1.000	40.76
300	420.4	132.8	18.5000	12.67	1.000	41.18
310	428.0	125.2	18.5000	12.67	1.000	40.23
320	427.0	126.2	18.5000	12.67	1.000	40.35
330	430.6	122.6	18.5000	12.67	1.000	39.91
340	442.8	110.4	18.5000	12.67	1.000	38.29
350	437.0	116.2	18.5000	12.67	1.000	39.09

Ave El= 436.96 M HAAT= 116.24 M AMSL= 553.2

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
 47 53 01.0 N.
 91 50 32.0 W.

DISPLAY DATES
 DATA 07-31-09
 SEARCH 07-31-09

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* (Overlap in km)
207C3 Ely	WIRC	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 Ati kokan	LRRP-228«	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 Thunder Bay	CBON-FM-2^	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 Gunflint Lake	NEW	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 Ironwood	1282129	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 Cook	WORN	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 Fort Frances	CKSB-9-FM«	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 Virginia	1203043	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 Cloquet	WGZS	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 Duluth	WJRF	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 Nett Lake	NEW	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 Hi bbing	1251932	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 Thi s Hope Christi a	58.8	74.7
210VL Seine Ri ver (i . r .)	CHI X-FM«	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 Grand Marais	WLSN	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 Grand Marais	WMLS	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 Sebeka	KOPJ	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.

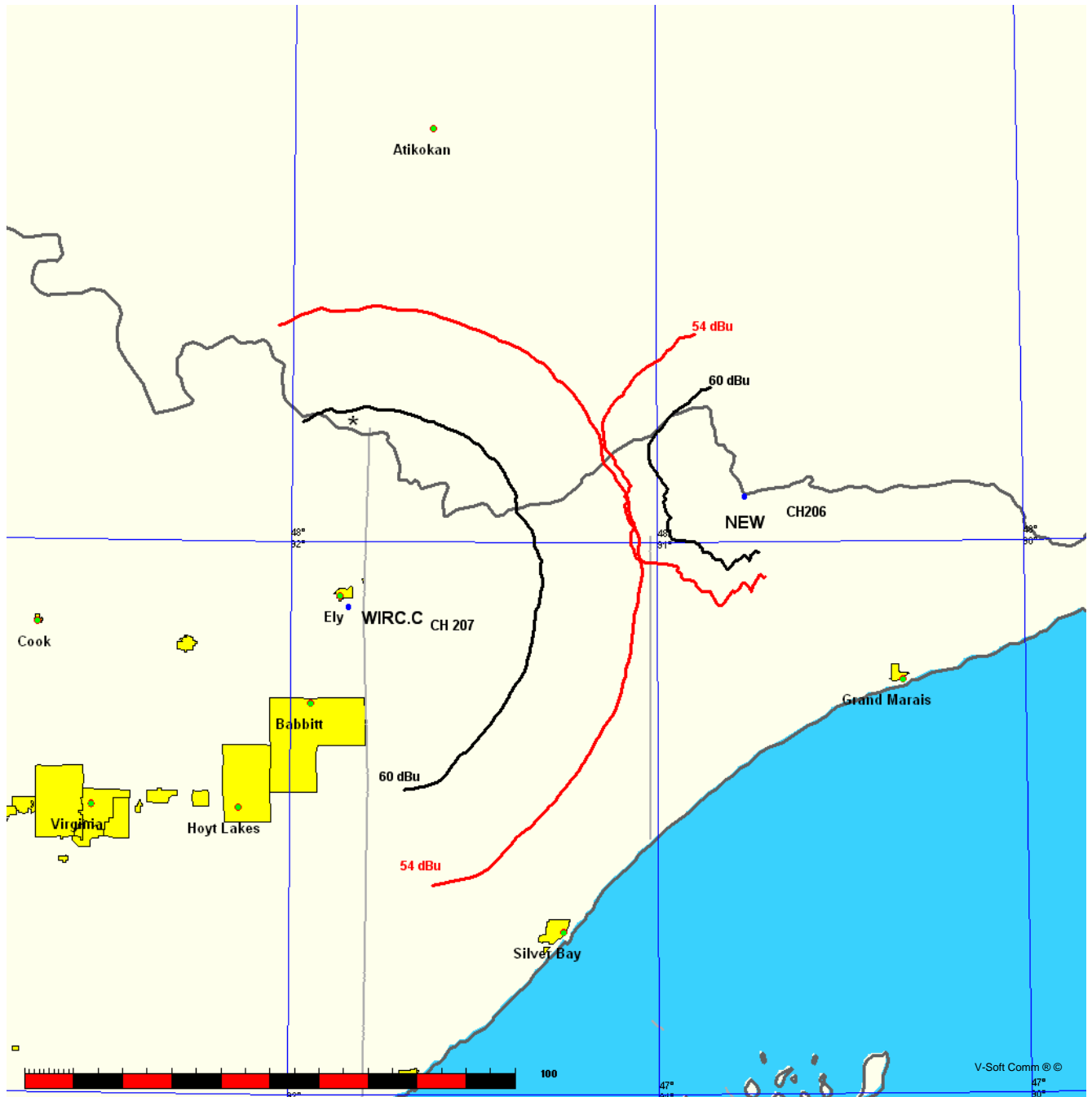
The first three letters of the "TYPE" column identify the current FCC status of the stations. The fourth letter will be a "D" if the facility is directional. "Z" indicates a 73.215 directional. An "N" indicates it is a 73.215 station that operates with an omni-directional antenna. The fifth letter will 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

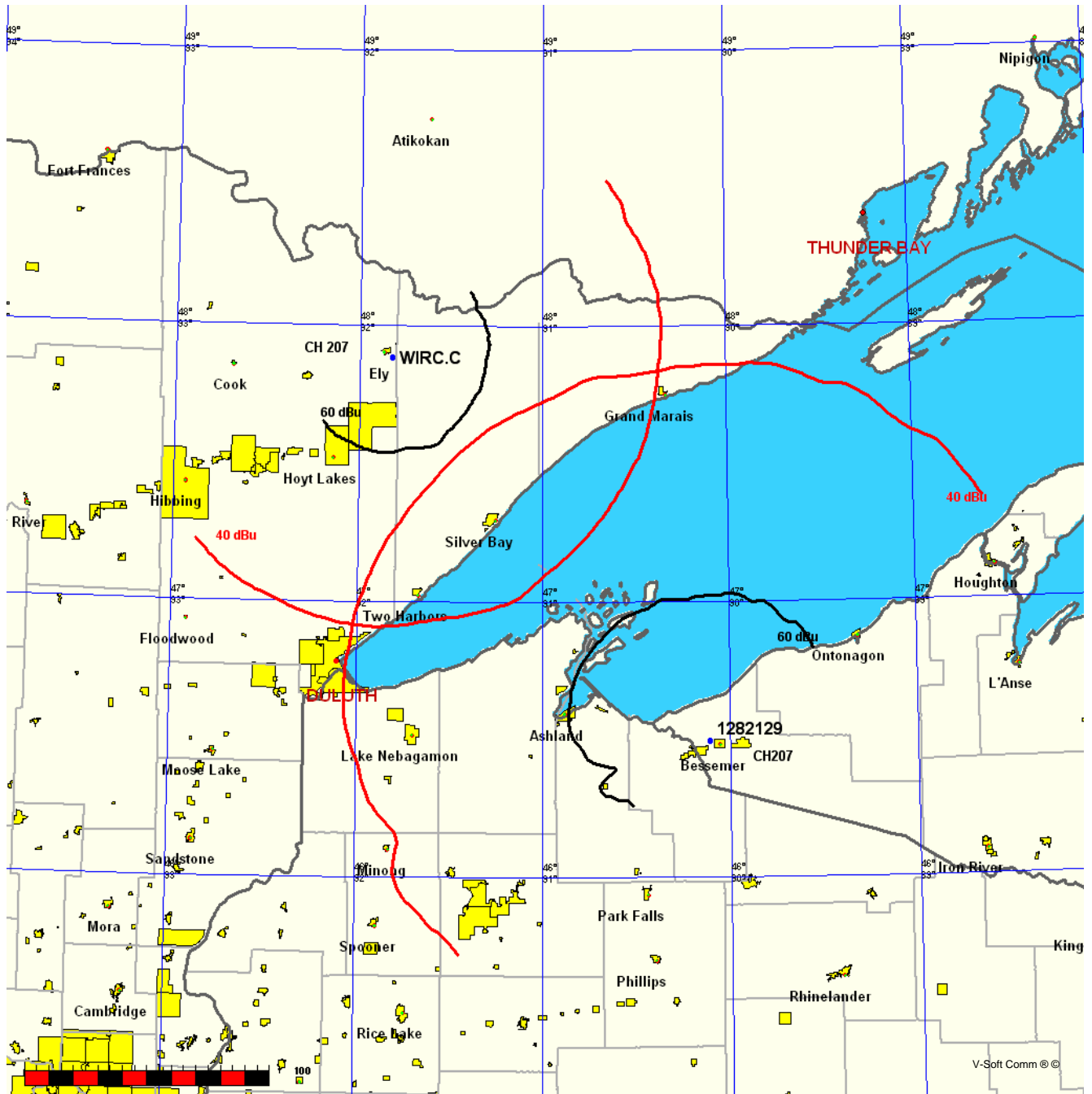
Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
280.0	001.0000	0085.2	017.0	068.7	018.5000	0126.9	068.6	51.48
281.0	001.0000	0086.1	017.1	068.4	018.5000	0126.8	068.7	51.46
282.0	001.0000	0088.9	017.4	068.1	018.5000	0126.7	068.6	51.49
283.0	001.0000	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

Channel-Six TV Protection Study

KBJR-TV LI 06+ 2C Dom 100.000 kW 302 M HAAT VHY
Superior WI 603.8 M COR AMSL
Lat= 46 47 21.0, Lng= 92 06 51.0
Kbjr License, Inc. BLCT20000517AEX
Fac ID# 33658
Dist.=123.4 km, Azi=189.7°, Rev Azi=9.5°

Direct line HAAT Grade B, 47 dBu= 93.16 km & Grade A= 46.27 km

Distance from reference to Grade B = 30.24 km

Cutoff Dist from Full Service or Class CA= 196

Maximum Co-located power= 12 kW

KBJR-TV Signal Contour at Reference location = 36.8 dBu

CH. 207, U/D ratio = 26.3 dB, Maximum FM signal = 73.3 dBu , 6 dB credit added

TV/FM D to U values

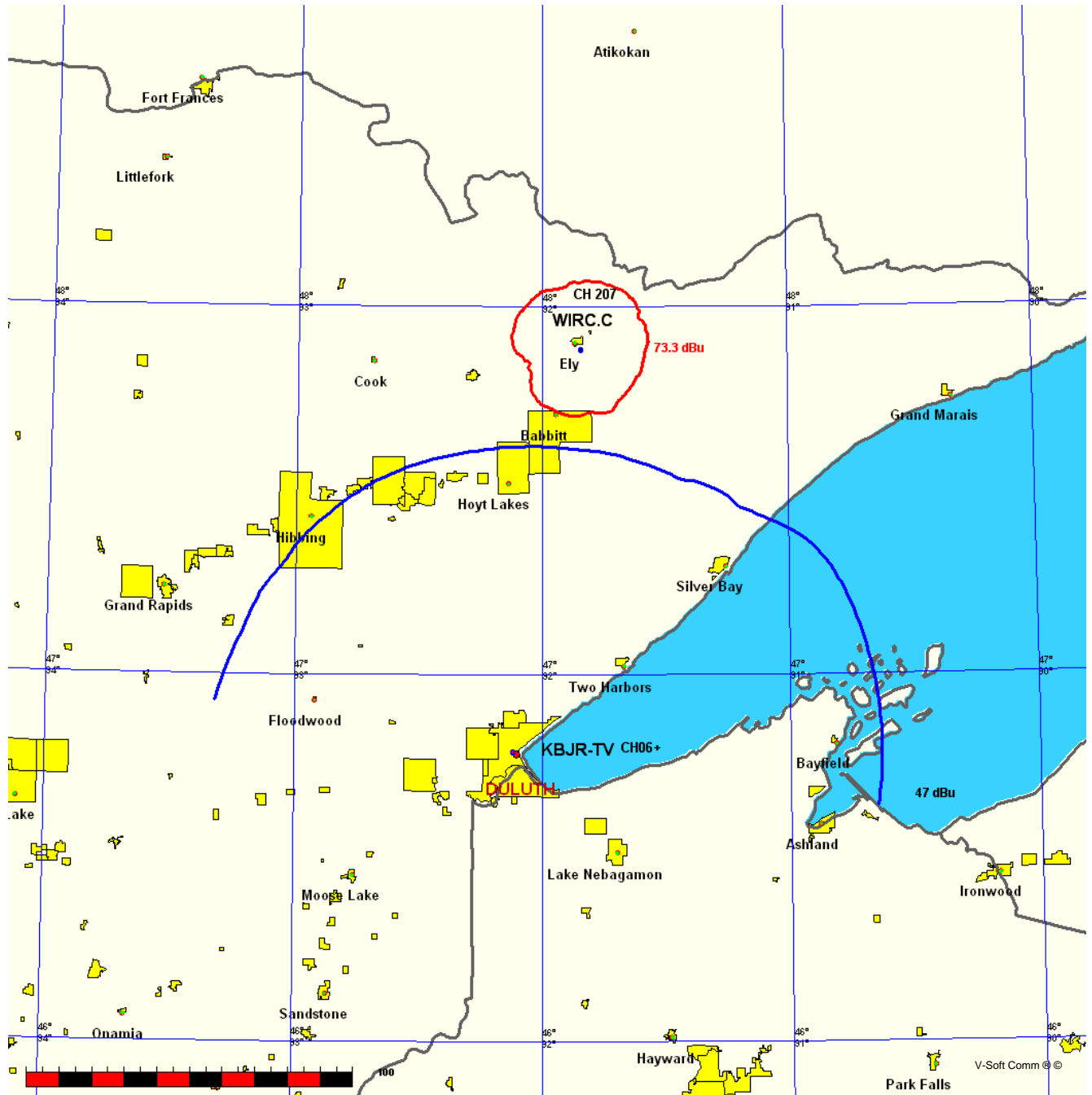
47.0	73.3	55.0	72.3	63.0	73.9	71.0	78.7	79.0	85.0	87.0	91.6
48.0	73.0	56.0	72.4	64.0	74.4	72.0	79.5	80.0	85.8	88.0	92.4
49.0	72.6	57.0	72.5	65.0	74.8	73.0	80.2	81.0	86.6	89.0	93.3
50.0	72.3	58.0	72.6	66.0	75.4	74.0	81.0	82.0	87.4	90.0	94.2
51.0	72.2	59.0	72.8	67.0	76.0	75.0	81.8	83.0	88.2	91.0	94.2
52.0	72.2	60.0	73.0	68.0	76.6	76.0	82.6	84.0	89.0	92.0	94.2
53.0	72.1	61.0	73.3	69.0	77.3	77.0	83.4	85.0	89.9	93.0	94.2
54.0	72.2	62.0	73.5	70.0	78.0	78.0	84.2	86.0	90.7	94.0	94.2

Minnesota Public Radio - WIRC Ely, MN
WIRC (New) v. KBJR-TV

FMCommander Single Allocation Study - 08-04-2009 - USGS 03 SEC
WIRC.C's Overlaps (In= 2.61 km, Out= 0.31 km)

WIRC.C CH 207 C3
Lat= 47 53 01.0, Lng= 91 50 32.0
18.963 kW 116.2 M HAAT, 553.2 M COR
Intef. = 73.3 dBu Prot. = 47 dBu

KBJR-TV CH 06+ 2C BLCT20000517AEX
Lat= 46 47 21.0, Lng= 92 06 51.0
100.0 kW 301.8 M HAAT, 603.8 M COR



08-04-2009 USGS 03 SEC Terrain Data

KBJR-TV BLCT20000517AEX
 Channel = 06+2C
 Max ERP = 100 kW
 RCAMSL = 603.8 M
 N. Lat. 46 47 21.0
 W. Lng. 92 06 51.0
 Protected
 47 dBu

WIRC.C
 Channel = 207C3
 Study ERP = 18.9625 kW
 RCAMSL = 553.2 M
 N. Lat. 47 53 01.0
 W. Lng. 91 50 32.0
 Interfering
 73.3 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
309.0	100.0000	0167.2	090.7	234.9	018.9625	0099.9	111.3	39.23	
310.0	100.0000	0167.5	090.7	235.2	018.9625	0099.2	110.0	39.45	
311.0	100.0000	0169.0	090.9	235.5	018.9625	0098.7	108.5	39.72	
312.0	100.0000	0170.6	091.0	235.8	018.9625	0098.3	107.0	40.01	
313.0	100.0000	0173.4	091.4	236.1	018.9625	0097.9	105.5	40.30	
314.0	100.0000	0174.3	091.4	236.3	018.9625	0097.8	104.0	40.61	
315.0	100.0000	0174.6	091.5	236.5	018.9625	0097.6	102.4	40.94	
316.0	100.0000	0174.9	091.5	236.7	018.9625	0097.6	100.9	41.29	
317.0	100.0000	0175.1	091.5	236.9	018.9625	0097.5	099.3	41.64	
318.0	100.0000	0175.3	091.6	237.0	018.9625	0097.4	097.7	42.01	
319.0	100.0000	0175.4	091.6	237.2	018.9625	0097.4	096.1	42.39	
320.0	100.0000	0175.5	091.6	237.3	018.9625	0097.3	094.6	42.78	
321.0	100.0000	0175.7	091.6	237.4	018.9625	0097.2	093.0	43.18	
322.0	100.0000	0175.9	091.6	237.5	018.9625	0097.1	091.4	43.59	
323.0	100.0000	0176.1	091.6	237.6	018.9625	0097.0	089.8	44.01	
324.0	100.0000	0176.6	091.7	237.7	018.9625	0096.8	088.2	44.43	
325.0	100.0000	0177.3	091.8	237.8	018.9625	0096.7	086.6	44.86	
326.0	100.0000	0178.3	091.9	237.9	018.9625	0096.6	085.0	45.29	
327.0	100.0000	0178.5	091.9	237.9	018.9625	0096.5	083.4	45.74	
328.0	100.0000	0178.7	091.9	237.9	018.9625	0096.5	081.8	46.18	
329.0	100.0000	0179.2	092.0	238.0	018.9625	0096.5	080.2	46.63	
330.0	100.0000	0179.8	092.0	237.9	018.9625	0096.5	078.6	47.07	
331.0	100.0000	0180.1	092.1	237.9	018.9625	0096.6	077.0	47.53	
332.0	100.0000	0180.5	092.1	237.9	018.9625	0096.6	075.4	47.98	
333.0	100.0000	0180.9	092.1	237.8	018.9625	0096.7	073.8	48.45	
334.0	100.0000	0181.0	092.2	237.6	018.9625	0096.9	072.2	48.92	
335.0	100.0000	0181.0	092.2	237.5	018.9625	0097.1	070.6	49.39	
336.0	100.0000	0180.8	092.1	237.3	018.9625	0097.3	069.0	49.87	
337.0	100.0000	0180.4	092.1	237.0	018.9625	0097.5	067.4	50.35	
338.0	100.0000	0179.9	092.0	236.7	018.9625	0097.6	065.8	50.82	
339.0	100.0000	0179.8	092.0	236.4	018.9625	0097.7	064.3	51.31	
340.0	100.0000	0179.7	092.0	236.0	018.9625	0098.0	062.7	51.82	
341.0	100.0000	0179.6	092.0	235.6	018.9625	0098.5	061.1	52.36	
342.0	100.0000	0179.4	092.0	235.1	018.9625	0099.2	059.6	52.95	
343.0	100.0000	0179.1	092.0	234.6	018.9625	0100.4	058.1	53.57	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
344.0	100.0000	0178.7	091.9	234.1	018.9625	0101.4	056.6	54.20
345.0	100.0000	0178.0	091.8	233.4	018.9625	0102.7	055.1	54.84
346.0	100.0000	0177.9	091.8	232.7	018.9625	0104.3	053.6	55.51
347.0	100.0000	0177.9	091.8	232.0	018.9625	0105.9	052.2	56.18
348.0	100.0000	0177.4	091.8	231.2	018.9625	0107.5	050.8	56.83
349.0	100.0000	0176.5	091.7	230.2	018.9625	0108.9	049.4	57.46
350.0	100.0000	0176.2	091.6	229.2	018.9625	0109.9	048.0	58.05
351.0	100.0000	0176.6	091.7	228.2	018.9625	0110.2	046.6	58.61
352.0	100.0000	0177.1	091.7	227.2	018.9625	0110.3	045.3	59.15
353.0	100.0000	0177.4	091.8	226.0	018.9625	0110.2	044.0	59.68
354.0	100.0000	0177.6	091.8	224.7	018.9625	0111.0	042.7	60.25
355.0	100.0000	0177.9	091.8	223.3	018.9625	0112.9	041.5	60.91
356.0	100.0000	0179.2	092.0	221.9	018.9625	0113.6	040.2	61.50
357.0	100.0000	0180.9	092.1	220.4	018.9625	0115.5	038.9	62.18
358.0	100.0000	0182.0	092.3	218.7	018.9625	0115.2	037.8	62.68
359.0	100.0000	0182.4	092.3	216.8	018.9625	0116.2	036.7	63.23
000.0	100.0000	0182.4	092.3	214.8	018.9625	0115.7	035.8	63.64
001.0	100.0000	0182.6	092.3	212.6	018.9625	0114.4	034.9	63.97
002.0	100.0000	0183.5	092.4	210.3	018.9625	0113.5	034.0	64.32
003.0	100.0000	0184.7	092.5	208.0	018.9625	0111.5	033.1	64.58
004.0	100.0000	0186.2	092.7	205.5	018.9625	0111.0	032.4	64.92
005.0	100.0000	0187.3	092.8	202.8	018.9625	0113.4	031.7	65.42
006.0	100.0000	0188.0	092.9	200.0	018.9625	0113.4	031.2	65.68
007.0	100.0000	0188.7	093.0	197.1	018.9625	0114.2	030.8	65.97
008.0	100.0000	0189.5	093.0	194.1	018.9625	0114.1	030.5	66.13
009.0	100.0000	0190.3	093.1	191.1	018.9625	0115.0	030.3	66.30
010.0	100.0000	0191.1	093.2	188.0	018.9625	0115.0	030.2	66.35
011.0	100.0000	0192.5	093.3	184.9	018.9625	0114.7	030.2	66.34
012.0	100.0000	0194.8	093.6	181.8	018.9625	0112.7	030.2	66.20
013.0	100.0000	0197.1	093.8	178.7	018.9625	0111.2	030.3	66.00
014.0	100.0000	0199.2	094.0	175.6	018.9625	0107.8	030.6	65.59
015.0	100.0000	0201.6	094.3	172.6	018.9625	0105.1	030.9	65.17
016.0	100.0000	0204.2	094.5	169.6	018.9625	0104.7	031.4	64.91
017.0	100.0000	0206.5	094.7	166.8	018.9625	0107.8	031.9	64.88
018.0	100.0000	0208.5	094.9	164.1	018.9625	0111.6	032.6	64.83
019.0	100.0000	0211.5	095.2	161.5	018.9625	0114.0	033.4	64.65
020.0	100.0000	0213.0	095.4	159.1	018.9625	0116.4	034.3	64.37
021.0	100.0000	0214.1	095.5	157.0	018.9625	0119.1	035.4	64.06
022.0	100.0000	0214.6	095.5	155.1	018.9625	0121.3	036.5	63.66
023.0	100.0000	0215.6	095.6	153.2	018.9625	0121.9	037.7	63.15
024.0	100.0000	0217.6	095.8	151.4	018.9625	0120.9	038.9	62.56
025.0	100.0000	0221.4	096.2	149.6	018.9625	0118.1	040.0	61.87
026.0	100.0000	0224.2	096.5	147.9	018.9625	0114.3	041.3	61.08
027.0	100.0000	0225.2	096.6	146.6	018.9625	0112.3	042.7	60.35
028.0	100.0000	0226.3	096.7	145.5	018.9625	0110.4	044.1	59.64
029.0	100.0000	0227.9	096.8	144.3	018.9625	0108.3	045.5	58.91
030.0	100.0000	0228.6	096.9	143.4	018.9625	0106.9	047.0	58.22
031.0	100.0000	0229.4	097.0	142.5	018.9625	0106.4	048.6	57.60
032.0	100.0000	0233.5	097.4	141.4	018.9625	0106.9	050.0	57.08
033.0	100.0000	0241.7	098.2	139.9	018.9625	0107.7	051.4	56.61
034.0	100.0000	0250.6	099.0	138.5	018.9625	0106.9	052.8	56.00

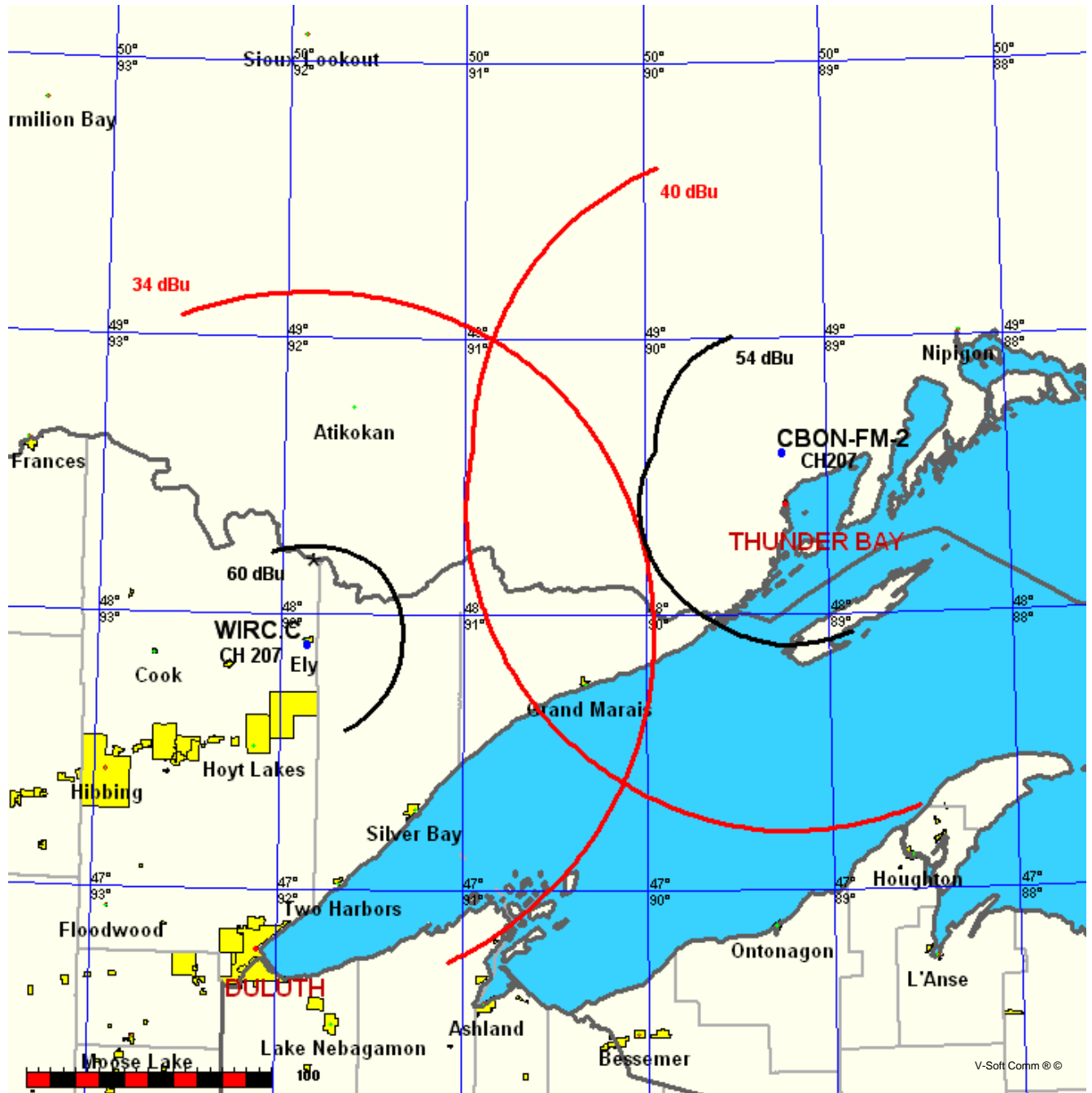
Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
035.0	100.0000	0257.2	099.7	137.4	018.9625	0106.4	054.4	55.37
036.0	100.0000	0262.5	100.2	136.5	018.9625	0105.9	056.0	54.73
037.0	100.0000	0266.8	100.6	135.8	018.9625	0105.8	057.6	54.10
038.0	100.0000	0271.5	101.0	135.1	018.9625	0105.8	059.3	53.48
039.0	100.0000	0275.3	101.4	134.6	018.9625	0105.8	061.0	52.88
040.0	100.0000	0278.6	101.7	134.1	018.9625	0105.8	062.8	52.28
041.0	100.0000	0279.8	101.8	133.9	018.9625	0105.8	064.5	51.72
042.0	100.0000	0280.0	101.8	133.8	018.9625	0105.8	066.3	51.17
043.0	100.0000	0280.0	101.8	133.8	018.9625	0105.8	068.1	50.63
044.0	100.0000	0285.8	102.3	133.3	018.9625	0105.9	069.8	50.09
045.0	100.0000	0294.9	103.1	132.7	018.9625	0105.6	071.7	49.54
046.0	100.0000	0304.1	103.9	132.2	018.9625	0105.4	073.5	48.99
047.0	100.0000	0313.3	104.6	131.7	018.9625	0105.2	075.4	48.44
048.0	100.0000	0324.6	105.5	131.2	018.9625	0105.0	077.3	47.88
049.0	100.0000	0337.7	106.4	130.7	018.9625	0104.9	079.2	47.32
050.0	100.0000	0350.9	107.4	130.2	018.9625	0104.9	081.2	46.75
051.0	100.0000	0363.1	108.3	129.8	018.9625	0104.9	083.2	46.19
052.0	100.0000	0373.7	109.1	129.5	018.9625	0104.9	085.3	45.62
053.0	100.0000	0382.2	109.8	129.3	018.9625	0104.9	087.3	45.05
054.0	100.0000	0389.2	110.4	129.2	018.9625	0104.9	089.3	44.50
055.0	100.0000	0396.7	111.1	129.1	018.9625	0104.9	091.3	43.95
056.0	100.0000	0402.3	111.6	129.2	018.9625	0104.9	093.3	43.42
057.0	100.0000	0405.7	111.9	129.3	018.9625	0104.9	095.3	42.92
058.0	100.0000	0409.0	112.2	129.5	018.9625	0104.9	097.2	42.43
059.0	100.0000	0412.3	112.5	129.7	018.9625	0104.9	099.2	41.96
060.0	100.0000	0414.6	112.7	130.0	018.9625	0104.9	101.1	41.51
061.0	100.0000	0416.1	112.8	130.3	018.9625	0104.9	103.0	41.09
062.0	100.0000	0417.4	112.9	130.6	018.9625	0104.9	104.9	40.68
063.0	100.0000	0418.3	113.0	131.0	018.9625	0105.0	106.7	40.29
064.0	100.0000	0419.0	113.1	131.3	018.9625	0105.1	108.6	39.92
065.0	100.0000	0419.4	113.1	131.7	018.9625	0105.2	110.4	39.57
066.0	100.0000	0419.8	113.1	132.1	018.9625	0105.4	112.2	39.23
067.0	100.0000	0420.0	113.2	132.5	018.9625	0105.5	114.0	38.90
068.0	100.0000	0420.2	113.2	132.9	018.9625	0105.7	115.8	38.59
069.0	100.0000	0177.4	091.8	143.5	018.9625	0106.9	110.2	39.67

Minnesota Public Radio - WIRC Ely, MN
WIRC (New) v. CBON-FM2

FMCommander Single Allocation Study - 07-31-2009 - USGS 03 SEC
WIRC.C's Overlaps (In= 33.6 km, Out= 0.14 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.= 34 dBu

CBON-FM-2^ CH 207 B 2351
Lat= 48 33 02.0, Lng= 89 13 25.0
Max CIs: 50.0 kW 150 M HAAT, 531.5 M COR
Prot.= 54 dBu, Intef.= 40 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
 Protected
 60 dBu

CBON-FM-2 2351
 Channel = 207B
 Max ERP = 50 kW
 RCAMSL = 531.5 M
 N. Lat. 48 33 02.0
 W. Lng. 89 13 25.0
 Interfering
 40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
338.0	018.5000	0122.6	039.9	260.9	050.0000	0097.0	212.1	25.59	
339.0	018.5000	0122.3	039.9	261.0	050.0000	0096.9	211.5	25.70	
340.0	018.5000	0122.1	039.8	261.0	050.0000	0096.8	210.8	25.82	
341.0	018.5000	0121.9	039.8	261.0	050.0000	0096.8	210.1	25.94	
342.0	018.5000	0121.7	039.8	261.0	050.0000	0096.7	209.4	26.06	
343.0	018.5000	0121.5	039.8	261.0	050.0000	0096.7	208.7	26.18	
344.0	018.5000	0121.2	039.7	261.1	050.0000	0096.7	208.0	26.30	
345.0	018.5000	0121.0	039.7	261.1	050.0000	0096.7	207.3	26.41	
346.0	018.5000	0120.8	039.7	261.1	050.0000	0096.6	206.6	26.52	
347.0	018.5000	0120.6	039.7	261.1	050.0000	0096.6	205.9	26.62	
348.0	018.5000	0120.4	039.6	261.1	050.0000	0096.6	205.3	26.73	
349.0	018.5000	0120.1	039.6	261.1	050.0000	0096.7	204.6	26.83	
350.0	018.5000	0119.9	039.6	261.0	050.0000	0096.7	203.9	26.93	
351.0	018.5000	0119.7	039.5	261.0	050.0000	0096.7	203.2	27.03	
352.0	018.5000	0119.5	039.5	261.0	050.0000	0096.8	202.5	27.13	
353.0	018.5000	0119.3	039.5	261.0	050.0000	0096.8	201.8	27.23	
354.0	018.5000	0119.0	039.5	261.0	050.0000	0096.9	201.1	27.33	
355.0	018.5000	0118.8	039.4	260.9	050.0000	0096.9	200.4	27.43	
356.0	018.5000	0118.6	039.4	260.9	050.0000	0097.0	199.7	27.53	
357.0	018.5000	0118.4	039.4	260.9	050.0000	0097.1	199.1	27.63	
358.0	018.5000	0118.2	039.3	260.8	050.0000	0097.2	198.4	27.73	
359.0	018.5000	0117.9	039.3	260.8	050.0000	0097.3	197.7	27.84	
000.0	018.5000	0117.7	039.3	260.8	050.0000	0097.4	197.0	27.94	
001.0	018.5000	0118.2	039.4	260.7	050.0000	0097.5	196.4	28.05	
002.0	018.5000	0118.7	039.4	260.7	050.0000	0097.6	195.7	28.16	
003.0	018.5000	0119.1	039.5	260.7	050.0000	0097.6	195.0	28.28	
004.0	018.5000	0119.6	039.5	260.6	050.0000	0097.7	194.3	28.40	
005.0	018.5000	0120.1	039.6	260.6	050.0000	0097.8	193.6	28.52	
006.0	018.5000	0120.6	039.7	260.6	050.0000	0098.0	192.9	28.65	
007.0	018.5000	0121.0	039.7	260.5	050.0000	0098.1	192.3	28.77	
008.0	018.5000	0121.5	039.8	260.5	050.0000	0098.2	191.6	28.90	
009.0	018.5000	0122.0	039.8	260.4	050.0000	0098.3	190.9	29.03	
010.0	018.5000	0122.4	039.9	260.3	050.0000	0098.5	190.2	29.16	
011.0	018.5000	0122.9	039.9	260.3	050.0000	0098.7	189.6	29.28	
012.0	018.5000	0123.4	040.0	260.2	050.0000	0098.8	188.9	29.41	
013.0	018.5000	0123.9	040.1	260.1	050.0000	0099.0	188.2	29.54	
014.0	018.5000	0124.3	040.1	260.1	050.0000	0099.2	187.6	29.66	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
015.0	018.5000	0124.8	040.2	260.0	050.0000	0099.4	186.9	29.79
016.0	018.5000	0125.3	040.2	259.9	050.0000	0099.6	186.3	29.91
017.0	018.5000	0125.8	040.3	259.8	050.0000	0099.9	185.6	30.04
018.0	018.5000	0126.2	040.4	259.7	050.0000	0100.1	185.0	30.16
019.0	018.5000	0126.7	040.4	259.6	050.0000	0100.4	184.3	30.29
020.0	018.5000	0127.2	040.5	259.5	050.0000	0100.6	183.7	30.41
021.0	018.5000	0127.6	040.5	259.4	050.0000	0100.9	183.1	30.53
022.0	018.5000	0128.1	040.6	259.3	050.0000	0101.2	182.4	30.66
023.0	018.5000	0128.6	040.6	259.2	050.0000	0101.5	181.8	30.78
024.0	018.5000	0129.1	040.7	259.1	050.0000	0101.8	181.2	30.90
025.0	018.5000	0129.5	040.8	259.0	050.0000	0102.1	180.6	31.02
026.0	018.5000	0130.0	040.8	258.8	050.0000	0102.4	180.0	31.14
027.0	018.5000	0130.5	040.9	258.7	050.0000	0102.7	179.4	31.26
028.0	018.5000	0131.0	040.9	258.6	050.0000	0103.1	178.8	31.37
029.0	018.5000	0131.4	041.0	258.4	050.0000	0103.5	178.3	31.49
030.0	018.5000	0131.9	041.1	258.3	050.0000	0103.8	177.7	31.61
031.0	018.5000	0132.4	041.1	258.1	050.0000	0104.2	177.1	31.72
032.0	018.5000	0132.9	041.2	258.0	050.0000	0104.6	176.6	31.83
033.0	018.5000	0133.3	041.2	257.8	050.0000	0105.0	176.0	31.94
034.0	018.5000	0133.8	041.3	257.7	050.0000	0105.4	175.5	32.05
035.0	018.5000	0134.3	041.4	257.5	050.0000	0105.9	175.0	32.16
036.0	018.5000	0134.7	041.4	257.3	050.0000	0106.3	174.5	32.27
037.0	018.5000	0135.2	041.5	257.2	050.0000	0106.7	174.0	32.38
038.0	018.5000	0135.7	041.6	257.0	050.0000	0107.2	173.5	32.48
039.0	018.5000	0136.2	041.6	256.8	050.0000	0107.7	173.0	32.58
040.0	018.5000	0136.6	041.7	256.6	050.0000	0108.1	172.5	32.68
041.0	018.5000	0137.1	041.7	256.4	050.0000	0108.6	172.1	32.78
042.0	018.5000	0137.6	041.8	256.3	050.0000	0109.1	171.6	32.88
043.0	018.5000	0138.1	041.9	256.1	050.0000	0109.6	171.2	32.98
044.0	018.5000	0138.5	041.9	255.9	050.0000	0110.2	170.7	33.07
045.0	018.5000	0139.0	042.0	255.6	050.0000	0110.7	170.3	33.16
046.0	018.5000	0138.4	041.9	255.4	050.0000	0111.3	170.0	33.23
047.0	018.5000	0137.9	041.8	255.2	050.0000	0111.9	169.8	33.30
048.0	018.5000	0137.3	041.8	255.0	050.0000	0112.5	169.5	33.36
049.0	018.5000	0136.8	041.7	254.7	050.0000	0113.1	169.3	33.43
050.0	018.5000	0136.2	041.6	254.5	050.0000	0113.7	169.0	33.49
051.0	018.5000	0135.6	041.5	254.2	050.0000	0114.3	168.8	33.54
052.0	018.5000	0135.1	041.5	254.0	050.0000	0115.0	168.6	33.60
053.0	018.5000	0134.5	041.4	253.8	050.0000	0115.6	168.5	33.65
054.0	018.5000	0134.0	041.3	253.5	050.0000	0116.2	168.3	33.69
055.0	018.5000	0133.4	041.3	253.3	050.0000	0116.8	168.2	33.74
056.0	018.5000	0132.8	041.2	253.0	050.0000	0117.5	168.0	33.78
057.0	018.5000	0132.3	041.1	252.8	050.0000	0118.1	167.9	33.82
058.0	018.5000	0131.7	041.0	252.6	050.0000	0118.7	167.8	33.86
059.0	018.5000	0131.2	041.0	252.3	050.0000	0119.4	167.7	33.89
060.0	018.5000	0130.6	040.9	252.1	050.0000	0120.0	167.7	33.92
061.0	018.5000	0130.0	040.8	251.8	050.0000	0120.6	167.6	33.95
062.0	018.5000	0129.5	040.8	251.6	050.0000	0121.3	167.6	33.97
063.0	018.5000	0128.9	040.7	251.3	050.0000	0121.9	167.6	34.00
064.0	018.5000	0128.3	040.6	251.1	050.0000	0122.5	167.6	34.02
065.0	018.5000	0127.8	040.5	250.8	050.0000	0123.2	167.6	34.03

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
066.0	018.5000	0127.2	040.5	250.6	050.0000	0123.8	167.6	34.04
067.0	018.5000	0126.7	040.4	250.4	050.0000	0124.4	167.6	34.06
068.0	018.5000	0126.1	040.3	250.1	050.0000	0125.1	167.7	34.06
069.0	018.5000	0125.5	040.3	249.9	050.0000	0125.7	167.8	34.07
070.0	018.5000	0125.0	040.2	249.6	050.0000	0126.3	167.8	34.07
071.0	018.5000	0124.4	040.1	249.4	050.0000	0126.9	167.9	34.07
072.0	018.5000	0123.9	040.1	249.2	050.0000	0127.6	168.1	34.07
073.0	018.5000	0123.3	040.0	248.9	050.0000	0128.2	168.2	34.06
074.0	018.5000	0122.7	039.9	248.7	050.0000	0128.8	168.3	34.05
075.0	018.5000	0122.2	039.9	248.5	050.0000	0129.4	168.5	34.04
076.0	018.5000	0121.6	039.8	248.2	050.0000	0130.0	168.7	34.03
077.0	018.5000	0121.1	039.7	248.0	050.0000	0130.6	168.9	34.01
078.0	018.5000	0120.5	039.6	247.8	050.0000	0131.2	169.1	33.99
079.0	018.5000	0119.9	039.6	247.5	050.0000	0131.7	169.3	33.97
080.0	018.5000	0119.4	039.5	247.3	050.0000	0132.3	169.5	33.94
081.0	018.5000	0118.8	039.4	247.1	050.0000	0132.9	169.8	33.91
082.0	018.5000	0118.3	039.4	246.9	050.0000	0133.4	170.0	33.88
083.0	018.5000	0117.7	039.3	246.7	050.0000	0134.0	170.3	33.85
084.0	018.5000	0117.1	039.2	246.5	050.0000	0134.5	170.6	33.81
085.0	018.5000	0116.6	039.1	246.3	050.0000	0135.1	170.9	33.77
086.0	018.5000	0116.0	039.1	246.1	050.0000	0135.6	171.2	33.73
087.0	018.5000	0115.4	039.0	245.9	050.0000	0136.1	171.5	33.68
088.0	018.5000	0114.9	038.9	245.7	050.0000	0136.7	171.9	33.64
089.0	018.5000	0114.3	038.8	245.5	050.0000	0137.2	172.2	33.59
090.0	018.5000	0113.8	038.8	245.3	050.0000	0137.7	172.6	33.54
091.0	018.5000	0113.6	038.7	245.1	050.0000	0138.2	172.9	33.49
092.0	018.5000	0113.4	038.7	244.9	050.0000	0138.7	173.3	33.44
093.0	018.5000	0113.2	038.7	244.7	050.0000	0139.2	173.6	33.39
094.0	018.5000	0113.1	038.7	244.5	050.0000	0139.7	174.0	33.34
095.0	018.5000	0112.9	038.6	244.3	050.0000	0140.1	174.3	33.29
096.0	018.5000	0112.7	038.6	244.1	050.0000	0140.6	174.7	33.23
097.0	018.5000	0112.5	038.6	244.0	050.0000	0141.1	175.1	33.17
098.0	018.5000	0112.3	038.6	243.8	050.0000	0141.5	175.5	33.11
099.0	018.5000	0112.2	038.5	243.6	050.0000	0142.0	176.0	33.04
100.0	018.5000	0112.0	038.5	243.4	050.0000	0142.4	176.4	32.98
101.0	018.5000	0111.8	038.5	243.3	050.0000	0142.8	176.8	32.91
102.0	018.5000	0111.6	038.5	243.1	050.0000	0143.3	177.3	32.84
103.0	018.5000	0111.5	038.4	243.0	050.0000	0143.7	177.8	32.77
104.0	018.5000	0111.3	038.4	242.8	050.0000	0144.1	178.2	32.69
105.0	018.5000	0111.1	038.4	242.6	050.0000	0144.5	178.7	32.61
106.0	018.5000	0110.9	038.4	242.5	050.0000	0144.8	179.2	32.54
107.0	018.5000	0110.7	038.3	242.4	050.0000	0145.2	179.7	32.45
108.0	018.5000	0110.6	038.3	242.2	050.0000	0145.6	180.2	32.37
109.0	018.5000	0110.4	038.3	242.1	050.0000	0145.9	180.7	32.29
110.0	018.5000	0110.2	038.3	241.9	050.0000	0146.3	181.2	32.20
111.0	018.5000	0110.0	038.2	241.8	050.0000	0146.6	181.8	32.11
112.0	018.5000	0109.9	038.2	241.7	050.0000	0146.9	182.3	32.02
113.0	018.5000	0109.7	038.2	241.6	050.0000	0147.2	182.9	31.93
114.0	018.5000	0109.5	038.2	241.5	050.0000	0147.5	183.4	31.84
115.0	018.5000	0109.3	038.1	241.3	050.0000	0147.8	184.0	31.75
116.0	018.5000	0109.1	038.1	241.2	050.0000	0148.1	184.5	31.65

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
117.0	018.5000	0109.0	038.1	241.1	050.0000	0148.4	185.1	31.55
118.0	018.5000	0108.8	038.1	241.0	050.0000	0148.7	185.7	31.45
119.0	018.5000	0108.6	038.0	240.9	050.0000	0148.9	186.3	31.35
120.0	018.5000	0108.4	038.0	240.8	050.0000	0149.2	186.9	31.25
121.0	018.5000	0108.3	038.0	240.7	050.0000	0149.4	187.5	31.15
122.0	018.5000	0108.1	038.0	240.7	050.0000	0149.6	188.1	31.04
123.0	018.5000	0107.9	037.9	240.6	050.0000	0149.8	188.7	30.94
124.0	018.5000	0107.7	037.9	240.5	050.0000	0150.0	189.3	30.83
125.0	018.5000	0107.5	037.9	240.4	050.0000	0150.2	189.9	30.73
126.0	018.5000	0107.4	037.8	240.4	050.0000	0150.4	190.5	30.62
127.0	018.5000	0107.2	037.8	240.3	050.0000	0150.6	191.2	30.51
128.0	018.5000	0107.0	037.8	240.2	050.0000	0150.8	191.8	30.40
129.0	018.5000	0106.8	037.8	240.2	050.0000	0150.9	192.4	30.29
130.0	018.5000	0106.7	037.7	240.1	050.0000	0151.1	193.1	30.17
131.0	018.5000	0106.5	037.7	240.1	050.0000	0151.2	193.7	30.06
132.0	018.5000	0106.3	037.7	240.0	050.0000	0151.3	194.3	29.95
133.0	018.5000	0106.1	037.7	240.0	050.0000	0151.4	195.0	29.84
134.0	018.5000	0105.9	037.6	239.9	050.0000	0151.5	195.6	29.72
135.0	018.5000	0105.8	037.6	239.9	050.0000	0151.6	196.3	29.61
136.0	018.5000	0105.9	037.6	239.8	050.0000	0151.8	196.9	29.50
137.0	018.5000	0106.0	037.6	239.8	050.0000	0151.9	197.6	29.39
138.0	018.5000	0106.2	037.7	239.8	050.0000	0152.0	198.2	29.28
139.0	018.5000	0106.3	037.7	239.7	050.0000	0152.1	198.9	29.17
140.0	018.5000	0106.5	037.7	239.7	050.0000	0152.2	199.5	29.06
141.0	018.5000	0106.6	037.7	239.7	050.0000	0152.2	200.2	28.95
142.0	018.5000	0106.7	037.8	239.6	050.0000	0152.3	200.8	28.84
143.0	018.5000	0106.9	037.8	239.6	050.0000	0152.4	201.5	28.73
144.0	018.5000	0107.0	037.8	239.6	050.0000	0152.4	202.2	28.61
145.0	018.5000	0107.1	037.8	239.6	050.0000	0152.5	202.8	28.50
146.0	018.5000	0107.3	037.8	239.6	050.0000	0152.5	203.5	28.39
147.0	018.5000	0107.4	037.9	239.5	050.0000	0152.5	204.1	28.27
148.0	018.5000	0107.6	037.9	239.5	050.0000	0152.5	204.8	28.16
149.0	018.5000	0107.7	037.9	239.5	050.0000	0152.5	205.5	28.04
150.0	018.5000	0107.8	037.9	239.5	050.0000	0152.5	206.1	27.93
151.0	018.5000	0108.0	037.9	239.5	050.0000	0152.5	206.8	27.81
152.0	018.5000	0108.1	038.0	239.5	050.0000	0152.5	207.5	27.70
153.0	018.5000	0108.2	038.0	239.6	050.0000	0152.5	208.1	27.58
154.0	018.5000	0108.4	038.0	239.6	050.0000	0152.4	208.8	27.46
155.0	018.5000	0108.5	038.0	239.6	050.0000	0152.4	209.5	27.34
156.0	018.5000	0108.6	038.0	239.6	050.0000	0152.4	210.1	27.22
157.0	018.5000	0108.8	038.1	239.6	050.0000	0152.3	210.8	27.10
158.0	018.5000	0108.9	038.1	239.7	050.0000	0152.2	211.5	26.98

07-31-2009 USGS 03 SEC Terrain Data

CBON-FM-2 2351
 Channel = 207B
 Max ERP = 50 kW
 RCAMSL = 531.5 M
 N. Lat. 48 33 02.0
 W. Lng. 89 13 25.0
 Protected
 54 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
 34 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
160.0	050.0000	0283.6	065.0	085.5	018.5000	0116.3	218.4	20.69	
161.0	050.0000	0283.6	065.0	085.6	018.5000	0116.3	217.2	20.91	
162.0	050.0000	0283.6	065.0	085.6	018.5000	0116.2	216.1	21.11	
163.0	050.0000	0283.6	065.0	085.7	018.5000	0116.2	215.0	21.31	
164.0	050.0000	0283.6	065.0	085.8	018.5000	0116.1	213.9	21.51	
165.0	050.0000	0283.6	065.0	085.9	018.5000	0116.1	212.8	21.70	
166.0	050.0000	0283.6	065.0	085.9	018.5000	0116.0	211.7	21.90	
167.0	050.0000	0283.6	065.0	086.0	018.5000	0116.0	210.6	22.10	
168.0	050.0000	0283.6	065.0	086.1	018.5000	0116.0	209.5	22.30	
169.0	050.0000	0283.6	065.0	086.1	018.5000	0115.9	208.3	22.49	
170.0	050.0000	0283.5	065.0	086.2	018.5000	0115.9	207.2	22.67	
171.0	050.0000	0283.5	065.0	086.2	018.5000	0115.9	206.1	22.85	
172.0	050.0000	0283.5	065.0	086.2	018.5000	0115.9	205.0	23.03	
173.0	050.0000	0283.5	065.0	086.3	018.5000	0115.9	203.8	23.20	
174.0	050.0000	0283.5	065.0	086.3	018.5000	0115.8	202.7	23.37	
175.0	050.0000	0283.5	065.0	086.3	018.5000	0115.8	201.6	23.54	
176.0	050.0000	0283.5	065.0	086.3	018.5000	0115.8	200.5	23.71	
177.0	050.0000	0283.5	065.0	086.3	018.5000	0115.8	199.3	23.88	
178.0	050.0000	0283.5	065.0	086.3	018.5000	0115.8	198.2	24.06	
179.0	050.0000	0283.5	065.0	086.3	018.5000	0115.8	197.1	24.23	
180.0	050.0000	0283.5	065.0	086.3	018.5000	0115.8	195.9	24.42	
181.0	050.0000	0281.4	065.0	086.3	018.5000	0115.8	194.8	24.60	
182.0	050.0000	0279.3	065.0	086.3	018.5000	0115.8	193.7	24.80	
183.0	050.0000	0277.3	065.0	086.3	018.5000	0115.8	192.5	25.00	
184.0	050.0000	0275.2	065.0	086.3	018.5000	0115.9	191.4	25.21	
185.0	050.0000	0273.1	065.0	086.2	018.5000	0115.9	190.3	25.41	
186.0	050.0000	0271.1	065.0	086.2	018.5000	0115.9	189.1	25.61	
187.0	050.0000	0269.0	065.0	086.1	018.5000	0115.9	188.0	25.82	
188.0	050.0000	0266.9	065.0	086.1	018.5000	0116.0	186.9	26.02	
189.0	050.0000	0264.8	065.0	086.0	018.5000	0116.0	185.8	26.22	
190.0	050.0000	0262.8	065.0	085.9	018.5000	0116.0	184.7	26.42	
191.0	050.0000	0260.7	065.0	085.8	018.5000	0116.1	183.6	26.62	
192.0	050.0000	0258.6	065.0	085.8	018.5000	0116.1	182.5	26.82	
193.0	050.0000	0256.6	065.0	085.7	018.5000	0116.2	181.4	27.02	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
194.0	050.0000	0254.5	065.0	085.6	018.5000	0116.2	180.3	27.22
195.0	050.0000	0252.4	065.0	085.5	018.5000	0116.3	179.2	27.41
196.0	050.0000	0250.3	065.0	085.3	018.5000	0116.4	178.1	27.61
197.0	050.0000	0248.3	065.0	085.2	018.5000	0116.4	177.1	27.81
198.0	050.0000	0246.2	065.0	085.1	018.5000	0116.5	176.0	28.00
199.0	050.0000	0244.1	065.0	085.0	018.5000	0116.6	174.9	28.19
200.0	050.0000	0242.1	065.0	084.8	018.5000	0116.7	173.9	28.38
201.0	050.0000	0240.0	065.0	084.7	018.5000	0116.8	172.9	28.57
202.0	050.0000	0237.9	065.0	084.5	018.5000	0116.8	171.8	28.76
203.0	050.0000	0235.8	065.0	084.3	018.5000	0116.9	170.8	28.94
204.0	050.0000	0233.8	065.0	084.2	018.5000	0117.0	169.8	29.13
205.0	050.0000	0231.7	065.0	084.0	018.5000	0117.1	168.8	29.31
206.0	050.0000	0229.6	065.0	083.8	018.5000	0117.3	167.8	29.49
207.0	050.0000	0227.6	065.0	083.6	018.5000	0117.4	166.9	29.67
208.0	050.0000	0225.5	065.0	083.4	018.5000	0117.5	165.9	29.85
209.0	050.0000	0223.4	065.0	083.1	018.5000	0117.6	165.0	30.02
210.0	050.0000	0221.3	065.0	082.9	018.5000	0117.7	164.0	30.19
211.0	050.0000	0219.3	065.0	082.7	018.5000	0117.9	163.1	30.36
212.0	050.0000	0217.2	065.0	082.4	018.5000	0118.0	162.2	30.53
213.0	050.0000	0215.1	065.0	082.2	018.5000	0118.1	161.3	30.69
214.0	050.0000	0213.1	065.0	081.9	018.5000	0118.3	160.5	30.85
215.0	050.0000	0211.0	065.0	081.7	018.5000	0118.4	159.6	31.01
216.0	050.0000	0208.9	065.0	081.4	018.5000	0118.6	158.8	31.16
217.0	050.0000	0206.9	065.0	081.1	018.5000	0118.8	157.9	31.30
218.0	050.0000	0204.8	065.0	080.8	018.5000	0118.9	157.1	31.44
219.0	050.0000	0202.7	065.0	080.5	018.5000	0119.1	156.4	31.58
220.0	050.0000	0200.6	065.0	080.2	018.5000	0119.3	155.6	31.71
221.0	050.0000	0198.6	065.0	079.9	018.5000	0119.4	154.8	31.84
222.0	050.0000	0196.5	065.0	079.6	018.5000	0119.6	154.1	31.96
223.0	050.0000	0194.4	065.0	079.2	018.5000	0119.8	153.4	32.08
224.0	050.0000	0192.4	065.0	078.9	018.5000	0120.0	152.7	32.19
225.0	050.0000	0190.3	065.0	078.5	018.5000	0120.2	152.1	32.31
226.0	050.0000	0187.7	065.0	078.2	018.5000	0120.4	151.4	32.42
227.0	050.0000	0185.1	065.0	077.8	018.5000	0120.6	150.8	32.52
228.0	050.0000	0182.5	065.0	077.5	018.5000	0120.8	150.2	32.63
229.0	050.0000	0179.9	065.0	077.1	018.5000	0121.0	149.6	32.73
230.0	050.0000	0177.3	065.0	076.7	018.5000	0121.2	149.1	32.82
231.0	050.0000	0174.7	065.0	076.3	018.5000	0121.4	148.6	32.92
232.0	050.0000	0172.1	065.0	075.9	018.5000	0121.7	148.1	33.01
233.0	050.0000	0169.5	065.0	075.5	018.5000	0121.9	147.6	33.09
234.0	050.0000	0166.9	065.0	075.1	018.5000	0122.1	147.1	33.18
235.0	050.0000	0164.3	065.0	074.7	018.5000	0122.3	146.7	33.25
236.0	050.0000	0161.7	065.0	074.3	018.5000	0122.6	146.3	33.33
237.0	050.0000	0159.1	065.0	073.9	018.5000	0122.8	145.9	33.40
238.0	050.0000	0156.5	065.0	073.4	018.5000	0123.1	145.6	33.47
239.0	050.0000	0153.9	065.0	073.0	018.5000	0123.3	145.3	33.53
240.0	050.0000	0151.3	065.0	072.6	018.5000	0123.5	145.0	33.59
241.0	050.0000	0148.7	065.0	072.1	018.5000	0123.8	144.7	33.64
242.0	050.0000	0146.1	065.0	071.7	018.5000	0124.0	144.5	33.69
243.0	050.0000	0143.5	065.0	071.2	018.5000	0124.3	144.3	33.74
244.0	050.0000	0140.9	065.0	070.8	018.5000	0124.5	144.1	33.78

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
245.0	050.0000	0138.4	065.0	070.3	018.5000	0124.8	143.9	33.81
246.0	050.0000	0135.8	065.0	069.9	018.5000	0125.0	143.8	33.84
247.0	050.0000	0133.2	065.0	069.4	018.5000	0125.3	143.7	33.87
248.0	050.0000	0130.6	065.0	069.0	018.5000	0125.6	143.7	33.88
249.0	050.0000	0128.0	065.0	068.5	018.5000	0125.8	143.6	33.90
250.0	050.0000	0125.4	065.0	068.1	018.5000	0126.1	143.6	33.91
251.0	050.0000	0122.8	065.0	067.6	018.5000	0126.3	143.6	33.91
252.0	050.0000	0120.2	065.0	067.2	018.5000	0126.6	143.7	33.91
253.0	050.0000	0117.6	065.0	066.7	018.5000	0126.8	143.8	33.90
254.0	050.0000	0115.0	065.0	066.3	018.5000	0127.1	143.9	33.89
255.0	050.0000	0112.4	065.0	065.8	018.5000	0127.3	144.0	33.87
256.0	050.0000	0109.8	065.0	065.4	018.5000	0127.6	144.2	33.84
257.0	050.0000	0107.2	065.0	064.9	018.5000	0127.8	144.4	33.82
258.0	050.0000	0104.6	065.0	064.5	018.5000	0128.1	144.6	33.78
259.0	050.0000	0102.0	065.0	064.0	018.5000	0128.3	144.8	33.74
260.0	050.0000	0099.4	065.0	063.6	018.5000	0128.6	145.1	33.70
261.0	050.0000	0096.8	065.0	063.2	018.5000	0128.8	145.4	33.65
262.0	050.0000	0094.2	065.0	062.7	018.5000	0129.1	145.7	33.60
263.0	050.0000	0091.6	065.0	062.3	018.5000	0129.3	146.1	33.55
264.0	050.0000	0089.0	065.0	061.9	018.5000	0129.5	146.5	33.49
265.0	050.0000	0086.4	065.0	061.5	018.5000	0129.8	146.9	33.42
266.0	050.0000	0083.8	065.0	061.1	018.5000	0130.0	147.3	33.35
267.0	050.0000	0081.2	065.0	060.7	018.5000	0130.2	147.8	33.28
268.0	050.0000	0078.6	065.0	060.3	018.5000	0130.4	148.3	33.21
269.0	050.0000	0076.0	065.0	059.9	018.5000	0130.7	148.8	33.13
270.0	050.0000	0073.4	065.0	059.5	018.5000	0130.9	149.3	33.04
271.0	050.0000	0073.5	065.0	059.1	018.5000	0131.1	149.9	32.96
272.0	050.0000	0073.5	065.0	058.7	018.5000	0131.3	150.5	32.87
273.0	050.0000	0073.6	065.0	058.4	018.5000	0131.5	151.1	32.78
274.0	050.0000	0073.6	065.0	058.0	018.5000	0131.7	151.7	32.68
275.0	050.0000	0073.6	065.0	057.7	018.5000	0131.9	152.3	32.58
276.0	050.0000	0073.7	065.0	057.3	018.5000	0132.1	153.0	32.48
277.0	050.0000	0073.7	065.0	057.0	018.5000	0132.3	153.7	32.38
278.0	050.0000	0073.8	065.0	056.7	018.5000	0132.5	154.4	32.27
279.0	050.0000	0073.8	065.0	056.3	018.5000	0132.6	155.2	32.15
280.0	050.0000	0073.8	065.0	056.0	018.5000	0132.8	155.9	32.04
281.0	050.0000	0073.9	065.0	055.7	018.5000	0133.0	156.7	31.92
282.0	050.0000	0073.9	065.0	055.4	018.5000	0133.2	157.5	31.79
283.0	050.0000	0074.0	065.0	055.1	018.5000	0133.3	158.3	31.66
284.0	050.0000	0074.0	065.0	054.9	018.5000	0133.5	159.1	31.52
285.0	050.0000	0074.0	065.0	054.6	018.5000	0133.6	159.9	31.38
286.0	050.0000	0074.1	065.0	054.3	018.5000	0133.8	160.8	31.23
287.0	050.0000	0074.1	065.0	054.1	018.5000	0133.9	161.7	31.08
288.0	050.0000	0074.2	065.0	053.8	018.5000	0134.1	162.6	30.92
289.0	050.0000	0074.2	065.0	053.6	018.5000	0134.2	163.5	30.77
290.0	050.0000	0074.2	065.0	053.3	018.5000	0134.3	164.4	30.60
291.0	050.0000	0074.3	065.0	053.1	018.5000	0134.4	165.3	30.44
292.0	050.0000	0074.3	065.0	052.9	018.5000	0134.6	166.3	30.27
293.0	050.0000	0074.4	065.0	052.7	018.5000	0134.7	167.2	30.10
294.0	050.0000	0074.4	065.0	052.5	018.5000	0134.8	168.2	29.93
295.0	050.0000	0074.4	065.0	052.3	018.5000	0134.9	169.2	29.76

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
296.0	050.0000	0074.5	065.0	052.1	018.5000	0135.0	170.2	29.58
297.0	050.0000	0074.5	065.0	052.0	018.5000	0135.1	171.2	29.40
298.0	050.0000	0074.6	065.0	051.8	018.5000	0135.2	172.2	29.22
299.0	050.0000	0074.6	065.0	051.6	018.5000	0135.3	173.2	29.04
300.0	050.0000	0074.6	065.0	051.5	018.5000	0135.4	174.2	28.86
301.0	050.0000	0074.7	065.0	051.3	018.5000	0135.5	175.3	28.67
302.0	050.0000	0074.7	065.0	051.2	018.5000	0135.5	176.3	28.48
303.0	050.0000	0074.8	065.0	051.1	018.5000	0135.6	177.4	28.30
304.0	050.0000	0074.8	065.0	050.9	018.5000	0135.7	178.4	28.10
305.0	050.0000	0074.9	065.0	050.8	018.5000	0135.7	179.5	27.91
306.0	050.0000	0074.9	065.0	050.7	018.5000	0135.8	180.6	27.72
307.0	050.0000	0074.9	065.0	050.6	018.5000	0135.8	181.7	27.52
308.0	050.0000	0075.0	065.0	050.5	018.5000	0135.9	182.8	27.33
309.0	050.0000	0075.0	065.0	050.4	018.5000	0135.9	183.9	27.13
310.0	050.0000	0075.1	065.0	050.4	018.5000	0136.0	185.0	26.93
311.0	050.0000	0075.1	065.0	050.3	018.5000	0136.0	186.1	26.74
312.0	050.0000	0075.1	065.0	050.2	018.5000	0136.1	187.2	26.54
313.0	050.0000	0075.2	065.0	050.2	018.5000	0136.1	188.3	26.34
314.0	050.0000	0075.2	065.0	050.1	018.5000	0136.1	189.4	26.14
315.0	050.0000	0075.3	065.0	050.1	018.5000	0136.2	190.5	25.93
316.0	050.0000	0075.0	065.0	050.0	018.5000	0136.2	191.6	25.73
317.0	050.0000	0074.7	065.0	050.0	018.5000	0136.2	192.7	25.53
318.0	050.0000	0074.5	065.0	050.0	018.5000	0136.2	193.9	25.33
319.0	050.0000	0074.2	065.0	050.0	018.5000	0136.2	195.0	25.13
320.0	050.0000	0074.0	065.0	049.9	018.5000	0136.2	196.1	24.94
321.0	050.0000	0073.7	065.0	049.9	018.5000	0136.2	197.2	24.75
322.0	050.0000	0073.5	065.0	049.9	018.5000	0136.2	198.4	24.56
323.0	050.0000	0073.2	065.0	049.9	018.5000	0136.2	199.5	24.37
324.0	050.0000	0073.0	065.0	049.9	018.5000	0136.2	200.6	24.19
325.0	050.0000	0072.7	065.0	050.0	018.5000	0136.2	201.7	24.01
326.0	050.0000	0072.5	065.0	050.0	018.5000	0136.2	202.9	23.82
327.0	050.0000	0072.2	065.0	050.0	018.5000	0136.2	204.0	23.64
328.0	050.0000	0071.9	065.0	050.0	018.5000	0136.2	205.1	23.46
329.0	050.0000	0071.7	065.0	050.1	018.5000	0136.2	206.2	23.27
330.0	050.0000	0071.4	065.0	050.1	018.5000	0136.1	207.3	23.08
331.0	050.0000	0071.2	065.0	050.2	018.5000	0136.1	208.4	22.89
332.0	050.0000	0070.9	065.0	050.2	018.5000	0136.1	209.5	22.70
333.0	050.0000	0070.7	065.0	050.3	018.5000	0136.1	210.7	22.50
334.0	050.0000	0070.4	065.0	050.3	018.5000	0136.0	211.8	22.30
335.0	050.0000	0070.2	065.0	050.4	018.5000	0136.0	212.9	22.11
336.0	050.0000	0069.9	065.0	050.5	018.5000	0135.9	213.9	21.91
337.0	050.0000	0069.7	065.0	050.5	018.5000	0135.9	215.0	21.71
338.0	050.0000	0069.4	065.0	050.6	018.5000	0135.9	216.1	21.52
339.0	050.0000	0069.1	065.0	050.7	018.5000	0135.8	217.2	21.32
340.0	050.0000	0068.9	065.0	050.8	018.5000	0135.8	218.3	21.12

Exhibit #22

ENVIRONMENTAL PROTECTION ACT

Minnesota Public Radio

WIRC

Ely, MN

August 2009

CH 207C3

18.5 kW H & V

The applicant proposes the use of an existing registered tower ASR #1023187, constructed in 1994. Since the tower was built before March 2001, no further environmental processing was deemed necessary.

The proposed antenna will be energized so that it radiates 18.5 kW in both the horizontal and vertical planes, from a height above ground of 96 meters. Based on the formulas expressed in the OET Bulletin, No. 65, August 1997, "Evaluating Compliance with F.C.C. Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", published by the Federal Communication Commission's Office of Science and Engineering, the existing facility produces a worst-case maximum R.F. non-ionization radiation level at a position six feet above the tower base (head level - based on the C.O.R. of 96 meters above ground minus 2 meters) of 139.9 microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). This figure is without regard for the antenna's vertical elevation field value toward the nadir, which will cause a reduction in the predicted "worst case" calculations. 139.9 $\mu\text{W}/\text{cm}^2$ is 13.99 percent of the maximum for a controlled area and 69.95 percent of the maximum for an uncontrolled area.

Since "worst case" calculations were used, and since it is well known that the actual RF power density level is considerably reduced at vertical angles toward the nadir the applicant is confident that actual RF contribution of this antenna will be less than is predicted here.

After researching the Mass Media and ULS databases, it was determined that there are no other licensed facilities on the tower.

The proposed FM station will not contribute RF emissions over that which is permissible by Section 1.1307 of the FCC's Rules.

The applicant will protect workers on the tower by either reducing ERP or terminating transmission.

Consequently, it appears that the proposed FM station will be in full compliance with the Commission's human exposure to radiofrequency electromagnetic field rules and regulations.