

# QUINCY NEWSPAPERS, INC.

April 7, 2010

In Re: BDSTA-20090922AAJ  
KWWL-DT  
Waterloo, IA  
FAC ID: 593

As requested in the experimental STA signal strength readings have been completed for KWWL Waterloo Iowa. They were taken at three different power levels on March 31, 2010. At each measuring point the transmitter's power was modified to achieve the different ERP's.

49 KW as permitted in file number BDSTA-20090922AAJ  
30 KW as permitted in file number BMPCDT=20080619ADP  
4.1 KW as permitted in file number BDSTA-20081107ABG

Reading points were chosen for population density and the ability to find and have access to these points in the future. Exact latitude and longitude were recorded to enable reasonable assurance that the exact points can be used for future repeatable readings. All information was gathered on the same day with similar weather throughout the day. The same equipment was used at each point. Points # 2 and #13 represent indoor conditions. All other points were outdoors in areas away from obstructions. (EXHIBIT A)

The following equipment was used for measurement:

A Winegard HD-1080 2-Bay Bowtie UHF and High Band VHF TV antenna (EXHIBIT B) was mounted on a pole with its center 9 feet above ground level. Twelve feet of RG6 coax was used to connect the antenna to a Sadelco DisplayMax Jr., Ser# 58951, signal strength meter. The DisplayMax Jr. would not measure signal strengths below 35dBmV. An Eviat Monitor Model T7-01 with manufacture's dipole antenna using a 5<sup>th</sup> generation chip, according to manufacture information, was also used to determine the recoverability of the DTV signal. The Eviat Monitor was also connected to the Winegard antenna in cases where the set would not lock on the signal using the dipole.

Reading taken by:

Jeff J. Wilson

Assistant Director of Engineering

Quincy Newspapers, Inc.

Nineteen years experience in the area of field strength measurements of AM FM and TV signals.

## KWWL Statement

Jarrett Liddicoat, KWWL Chief Engineer, reports that the number of calls received from viewers was significantly reduced once the station increased ERP to the 49 kW level. He also reports that all calls received after increasing power were determined to be unrelated to signal strength issues.

**KWWL Field Strength Readings**

EXHIBIT A

Allocated power level comparison

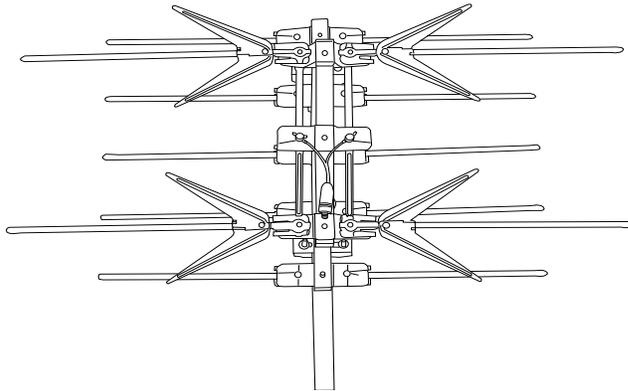
	ERP	CH 7 KWWL		Readings take 3-		
		DT dBmV	N Latitude	W Longitude	31-10	
<b>Point #1</b>			42 30 1.70	92 20 2.47	1:45 AM	
Waterloo City Park	4.1 kW	<u>50.0</u>	TV reception locked	Dipole		
City Park Adjacent to Studio	30 kW	<u>57.8</u>	TV reception locked	Dipole		
Near center	49 kW	<u>60.1</u>	TV reception locked	Dipole		
<b>Point #2</b>			42 30 1.91	92 19 56.69	1:30 PM	
Waterloo Studio	4.1 kW	<u>Under 35</u>	No Reception	Dipole		
Near east entrance in Studio	30 kW	<u>40.1</u>	TV reception, pixelating	Dipole		
indoors	49 kW	<u>45.2</u>	TV reception locked	Dipole		
<b>Point #3</b>			42 32 55.18	92 23 46.76	2:05 PM	
Waterloo Airport	4.1 kW	<u>42.1</u>	TV reception locked	Dipole		
Corner of main intersection	30 kW	<u>48.5</u>	TV reception locked	Dipole		
	49 kW	<u>57.2</u>	TV reception locked	Dipole		
<b>Point #4</b>			42 30 42.58	92 28 4.22	2:25 PM	
Cedar Falls	4.1 kW	<u>51.1</u>	TV reception locked	Dipole		
UNI Parking Lot south of Dome	30 kW	<u>57.4</u>	TV reception locked	Dipole		
	49 kW	<u>62.0</u>	TV reception locked	Dipole		
<b>Point #5</b>			42 42 9.48	92 28 37.82	3:50 PM	
Waverly	4.1 kW	<u>46.5</u>	TV reception locked	Winegard		
Wal-Mart Lot, landscaping near entrance	30 kW	<u>50.4</u>	TV reception locked	Winegard		
	49 kW	<u>55.6</u>	TV reception locked	Winegard		
<b>Point #6</b>			42 28 22.32	91 6 48.48	4:30 PM	
Dyersville	4.1 kW	<u>41.1</u>	TV reception locked	Winegard		
Beckman High School	30 kW	<u>48.3</u>	TV reception locked	Winegard		
West edge of lot	49 kW	<u>51.2</u>	TV reception locked	Winegard		
<b>Point #7</b>			42 29 46.90	90 41 44.66	6:05 PM	
UD Parking lot	4.1 kW	<u>Under 35</u>	TV reception locked	Winegard		
Northeast of Stadium	30 kW	<u>41.8</u>	TV reception locked	Winegard		
	49 kW	<u>43.9</u>	TV reception locked	Winegard		
<b>Point #8</b>			42 2 2.23	91 40 39.55	11:45 AM	
Hiawatha	4.1 kW	<u>44.3</u>	No checked			
Parkinglot west of 380	30 kW	<u>49.4</u>	TV reception locked	Winegard		
	49 kW	<u>52.9</u>	TV reception locked	Winegard		
<b>Point #9</b>			41 53 34.29	91 41 44.74	11:05 AM	
Cedar Rapids Airport	4.1 kW	<u>46.2</u>	TV reception, pixelating	Dipole		
Near sculpture, north side of highway	30 kW	<u>49.4</u>	TV reception, pixelating	Dipole		
	49 kW	<u>57.3</u>	TV reception locked	Dipole		
<b>Point #10</b>			41 45 8.14	91 36 13.77	10:35AM	
North Liberty	4.1 kW	<u>Under 35</u>	No Reception	Winegard		
Ball Field lot, East of Exit	30 kW	<u>38.1</u>	TV reception, pixelating	Winegard		
	49 kW	<u>40.1</u>	TV reception, pixelating	Winegard		
<b>Point #11</b>			41 41 34.24	91 36 20.94	10:15AM	
Coralville Mall	4.1 kW	<u>Under 35</u>	No Reception	Winegard		
Southeast of I80 and 380	30 kW	<u>Under 35</u>	No Reception	Winegard		
Mall lot	49 kW	<u>Under 35</u>	No Reception	Winegard		
<b>Point #12</b>			41 39 35.58	91 33 4.40	9:10 AM	
U of Iowa	4.1 kW	<u>Under 35</u>	No Reception	Dipole		
North of Kinnick Stadium	30 kW	<u>41.2</u>	TV reception, pixelating	Dipole		
	49 kW	<u>47.8</u>	TV reception locked	Dipole		
<b>Point #13</b>			41 39 46.97	91 33 22.61	9:25 AM	
U of Iowa	4.1 kW	<u>Under 35</u>	No Reception	Winegard		
On a porch of the Ronald McDonald House	30 kW	<u>Under 35</u>	No Reception	Winegard		
Indoors	49 kW	<u>Under 35</u>	No Reception	Winegard		



**HIGH DEFINITION  
VHF/UHF  
ANTENNA**

engineering specifications

Model HD-1080



- Output Impedance: 75 ohm
- Recommended Preamp: AP Series
- Active Elements 4
- UHF Elements 2
- VHF Elements 2
- Boom Length 18.25"
- Turning Radius 18"
- Maximum Width 34.5"
- Vertical Height 18.25"
- Element Diameter 3/8"
- Shpg. Weight 4.4 lbs.
- Carton Dimensions 42.75"x6.50"x6.50"

Made in U.S.A.



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**POLAR PATTERNS**

CHANNEL FREQUENCY	Ch 7 175 MHz	Ch 9 187 MHz	Ch 11 199 MHz	Ch 13 211 MHz	Ch 14 471 MHz
Antenna Gain Pattern					
HPBW (deg)	0	0	0	0	79
F/B Ratio (dB)	0.0	0.0	0.0	0.0	4.5
*Gain dBi	-4.7	-4.5	-4.0	-4.6	+3.2

CHANNEL FREQUENCY	Ch 22 519 MHz	Ch 30 567 MHz	Ch 38 615 MHz	Ch 46 663 MHz	Ch 51 692 MHz
Antenna Gain Pattern					
HPBW (deg)	72	55	56	60	70
F/B Ratio (dB)	8.0	9.0	10.0	8.4	6.8
*Gain dBi	+3.7	+6.4	+11.8	+8.1	+5.6

Data on this sheet are from tests performed on outdoor range following IEEE Standard 149-1979

\* For dB dipole gain figures, add -2.2dB to the dBi, gain figures.

