

**Broadcast Engineering Services  
Bonny Doon, CA**

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Tuesday, February 10, 2004

Dataworld FM/TV Channel 6 Study

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**Job Title: WNRN Minor Change**

Channel: 220

FM site coordinates: N 37° 58' 55.0" W 78° 29' 03.0"

FM c/r Height = 493.0 m AMSL

FM ERP = 5.0000 kW

\* = 6 dB TV Receiving Antenna Directivity Applied.

Channel 6 Stations within 154.0 km will be examined

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Dataworld Educational FM/TV Channel 6 Interference Study

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Channel: 220

Coordinates: N 37° 58' 55.0" W 78° 29' 03.0"

c/r Height = 493.0 m AMSL  
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-----Ix Area -----				-----TV Station-----				-----Proposed FM Station -----				
Br (deg)	Dx (km)	Bear (br)	Dx (km)	HAAT (m)	ERP (kW)	F.S. (dBu)	U/D (dB)	Bear (deg)	Dx (km)	HAAT (m)	ERP (kW)	F.S. (dBu)
TV Station: WTVR-TV Richmond, VA												
Distance from TV6 transmitter to FM transmitter: 100.0185 km												
TV HAAT toward FM: 250.0 m; TV ERP toward FM: 100.000 kW; Distance to Grade B (47 dBuV/m) Contour: 99.0												
FM Station on Channel 220; HAAT toward TV: 369.8 m; ERP toward TV: 0.357 kW; Distance to 86.0 dBuV/m [50,10] Contour = 3.0 km												
*** Interference Study will be performed ***												
Interference Site Selected: N 37° 58' 25.6" W 78° 27' 50.5"												
0.0	1.9	298.8	98.9	249.6	100.000	47.0	45.0*	59.8	2.0	348.0	2.746	104.4
1.0	2.0	298.9	98.9	249.6	100.000	47.0	45.0*	58.6	2.1	343.3	2.883	104.3
2.0	2.1	298.9	98.9	249.6	100.000	47.0	45.0*	57.6	2.2	337.6	3.009	104.1
3.0	2.2	299.0	98.9	249.6	100.000	47.0	45.0*	56.6	2.3	329.9	3.140	104.0
4.0	2.2	299.0	98.9	249.6	100.000	47.0	45.0*	55.4	2.3	307.0	3.289	103.7
5.0	2.3	299.1	98.9	249.6	100.000	47.0	45.0*	54.4	2.4	292.6	3.424	103.4
6.0	2.4	299.2	98.9	249.6	100.000	47.0	45.0*	53.3	2.5	275.2	3.573	103.1
7.0	2.5	299.2	98.9	249.6	100.000	47.0	45.0*	52.3	2.6	259.2	3.717	102.8
8.0	2.7	299.3	98.9	249.6	100.000	47.0	45.0*	51.2	2.7	243.9	3.870	102.4
9.0	2.8	299.4	98.9	249.6	100.000	47.0	45.0*	50.1	2.9	236.5	4.026	102.0
10.0	2.9	299.5	98.9	249.6	100.000	47.0	45.0*	49.0	3.0	238.3	4.128	101.5
11.0	3.0	299.5	98.9	249.4	100.000	47.0	45.0*	48.8	3.1	238.3	4.152	101.1
12.0	3.2	299.6	98.9	249.4	100.000	47.0	45.0*	47.7	3.3	245.2	4.248	100.7
13.0	3.4	299.7	98.9	249.4	100.000	47.0	45.0*	46.7	3.5	251.2	4.349	100.1
14.0	3.6	299.9	98.9	249.4	100.000	47.0	45.0*	45.6	3.7	255.9	4.455	99.5
15.0	3.8	300.0	98.9	249.4	100.000	47.0	45.0*	44.5	3.9	261.3	4.553	98.9
16.0	4.1	300.2	98.9	249.4	100.000	47.0	45.0*	43.5	4.2	277.3	4.656	98.3
17.0	4.5	300.4	98.9	249.4	100.000	47.0	45.0*	42.4	4.5	278.6	4.756	97.5
18.0	4.7	300.6	98.9	249.2	100.000	47.0	45.0*	41.9	4.8	278.6	4.810	96.8
19.0	5.2	300.8	98.9	249.2	100.000	47.0	45.0*	40.9	5.3	281.5	4.910	95.9
20.0	5.7	301.1	98.9	249.2	100.000	47.0	45.0*	39.9	5.8	285.5	5.000	94.9
21.0	6.3	301.5	98.9	249.2	100.000	47.0	45.0*	39.1	6.4	291.4	5.000	93.7
22.0	6.9	301.8	98.9	249.1	100.000	47.0	45.0*	38.4	7.0	298.7	5.000	92.6
23.0	7.1	302.0	98.8	249.1	100.000	47.0	44.9*	38.9	7.2	291.4	5.000	92.0
24.0	7.0	301.9	98.6	249.1	100.000	47.1	44.9*	40.1	7.1	285.5	4.992	92.0
25.0	6.9	301.8	98.5	249.1	100.000	47.1	44.8*	41.3	7.1	281.5	4.870	91.9
26.0	6.7	301.8	98.4	249.1	100.000	47.2	44.7*	42.5	7.0	277.3	4.746	91.9
27.0	6.5	301.7	98.3	249.1	100.000	47.2	44.7*	43.9	6.8	270.1	4.615	91.9
28.0	6.3	301.6	98.1	249.1	100.000	47.3	44.6*	45.3	6.7	261.3	4.479	91.9
29.0	6.1	301.4	98.0	249.2	100.000	47.3	44.5*	46.8	6.5	251.2	4.339	91.8
30.0	6.0	301.3	97.9	249.2	100.000	47.4	44.4*	48.1	6.4	245.2	4.214	91.8
31.0	5.8	301.2	97.8	249.2	100.000	47.4	44.4*	49.6	6.2	236.5	4.082	91.8
32.0	5.7	301.2	97.7	249.2	100.000	47.5	44.3*	50.5	6.2	236.5	3.969	91.7
33.0	5.7	301.2	97.6	249.2	100.000	47.5	44.3*	51.5	6.2	243.9	3.826	91.7
34.0	5.8	301.2	97.5	249.2	100.000	47.5	44.2*	52.1	6.3	259.2	3.741	91.7
35.0	5.9	301.3	97.4	249.2	100.000	47.6	44.2*	52.6	6.5	275.2	3.668	91.7
36.0	5.9	301.3	97.3	249.2	100.000	47.6	44.1*	53.5	6.5	275.2	3.548	91.5
37.0	5.9	301.3	97.2	249.2	100.000	47.7	44.0*	54.4	6.6	292.6	3.432	91.7
38.0	6.0	301.3	97.1	249.2	100.000	47.7	44.0*	55.1	6.6	307.0	3.330	91.7
39.0	5.9	301.3	97.0	249.2	100.000	47.7	43.9*	56.0	6.7	319.9	3.215	91.7
40.0	5.9	301.3	96.9	249.2	100.000	47.8	43.9*	56.9	6.7	329.9	3.095	91.6

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Channel: 220

Coordinates: N 37° 58' 55.0" W 78° 29' 03.0"

c/r Height = 493.0 m AMSL  
 ERP = 5.0000 kW

-----Lx Area -----				-----TV Station-----				-----Proposed FM Station -----					
Br (deg)	Dx (km)	Bear (br)	Dx (km)	HAAT (m)	ERP (kW)	F.S. (dBu)	U/D (dB)	Bear (deg)	Dx (km)	HAAT (m)	ERP (kW)	F.S. (dBu)	
41.0	5.8	301.2	96.8	249.2	100.000	47.8	43.8*	57.9	6.6	337.6	2.966	91.6	
42.0	5.8	301.2	96.7	249.2	100.000	47.8	43.8*	59.0	6.6	343.3	2.833	91.6	
43.0	5.6	301.1	96.6	249.2	100.000	47.9	43.7*	60.1	6.5	348.0	2.701	91.6	
44.0	5.5	301.0	96.6	249.2	100.000	47.9	43.7*	61.3	6.4	351.3	2.585	91.6	
45.0	5.4	300.9	96.5	249.2	100.000	47.9	43.6*	62.4	6.3	353.9	2.468	91.6	
46.0	5.3	300.8	96.4	249.2	100.000	48.0	43.6*	63.5	6.3	356.2	2.359	91.5	
47.0	5.2	300.8	96.4	249.2	100.000	48.0	43.6*	64.6	6.2	362.1	2.247	91.6	
48.0	5.1	300.7	96.3	249.2	100.000	48.0	43.6*	65.8	6.1	363.9	2.135	91.5	
49.0	4.9	300.6	96.3	249.2	100.000	48.0	43.5*	67.0	6.0	365.1	2.025	91.5	
50.0	4.8	300.5	96.3	249.4	100.000	48.0	43.5*	68.2	5.9	366.6	1.916	91.5	
51.0	4.7	300.4	96.2	249.4	100.000	48.0	43.5*	69.4	5.8	368.1	1.811	91.5	
52.0	4.5	300.3	96.2	249.4	100.000	48.0	43.5*	70.6	5.7	368.6	1.720	91.5	
53.0	4.4	300.2	96.2	249.4	100.000	48.1	43.5*	71.7	5.6	368.5	1.644	91.5	
54.0	4.3	300.1	96.2	249.4	100.000	48.1	43.4*	72.9	5.5	368.3	1.569	91.5	
55.0	4.2	300.1	96.1	249.4	100.000	48.1	43.4*	74.0	5.4	368.7	1.495	91.5	
56.0	4.1	300.0	96.1	249.4	100.000	48.1	43.4*	75.1	5.3	369.9	1.425	91.5	
57.0	3.9	299.9	96.1	249.4	100.000	48.1	43.4*	76.3	5.2	371.1	1.356	91.5	
58.0	3.8	299.8	96.1	249.4	100.000	48.1	43.4*	77.5	5.1	371.5	1.286	91.5	
59.0	3.7	299.7	96.1	249.4	100.000	48.1	43.4*	78.7	5.0	371.5	1.217	91.5	
60.0	3.5	299.6	96.1	249.4	100.000	48.1	43.4*	79.9	4.9	372.6	1.150	91.5	
61.0	3.4	299.6	96.2	249.4	100.000	48.1	43.4*	81.0	4.8	373.6	1.097	91.5	
62.0	3.3	299.5	96.2	249.6	100.000	48.1	43.4*	82.1	4.8	373.5	1.047	91.5	
63.0	3.2	299.4	96.2	249.6	100.000	48.1	43.5*	83.3	4.7	372.8	0.995	91.5	
64.0	3.1	299.3	96.2	249.6	100.000	48.1	43.5*	84.4	4.6	372.9	0.947	91.5	
65.0	3.0	299.2	96.2	249.6	100.000	48.0	43.5*	85.5	4.5	374.3	0.900	91.5	
66.0	2.9	299.2	96.3	249.6	100.000	48.0	43.5*	86.7	4.4	375.4	0.854	91.5	
67.0	2.7	299.1	96.3	249.6	100.000	48.0	43.5*	87.8	4.3	375.9	0.808	91.5	
68.0	2.6	299.0	96.3	249.6	100.000	48.0	43.5*	89.0	4.2	376.0	0.763	91.5	
69.0	2.5	299.0	96.4	249.6	100.000	48.0	43.6*	90.2	4.1	375.4	0.721	91.5	
70.0	2.4	298.9	96.4	249.6	100.000	48.0	43.6*	91.2	4.0	374.4	0.694	91.5	
71.0	2.3	298.9	96.4	249.6	100.000	48.0	43.6*	92.1	4.0	374.0	0.669	91.5	
72.0	2.3	298.8	96.4	249.6	100.000	48.0	43.6*	93.1	3.9	374.9	0.645	91.6	
73.0	2.2	298.8	96.5	249.6	100.000	48.0	43.6*	94.0	3.9	376.7	0.621	91.6	
74.0	2.1	298.7	96.5	249.6	100.000	47.9	43.6*	94.9	3.8	378.3	0.599	91.6	
75.0	2.0	298.7	96.5	249.6	100.000	47.9	43.6*	95.9	3.8	377.9	0.576	91.6	
76.0	1.9	298.6	96.6	249.6	100.000	47.9	43.7*	96.8	3.7	376.5	0.553	91.6	
77.0	1.9	298.6	96.6	249.6	100.000	47.9	43.7*	97.7	3.6	376.6	0.531	91.6	
78.0	1.8	298.5	96.6	249.6	100.000	47.9	43.7*	98.6	3.6	377.6	0.511	91.6	
79.0	1.7	298.5	96.7	249.9	100.000	47.9	43.7*	99.5	3.5	377.8	0.492	91.6	
80.0	1.7	298.4	96.7	249.9	100.000	47.9	43.7*	100.3	3.5	377.8	0.476	91.6	
81.0	1.6	298.4	96.7	249.9	100.000	47.9	43.7*	101.1	3.4	377.9	0.464	91.6	
82.0	1.6	298.4	96.8	249.9	100.000	47.9	43.8*	101.8	3.4	376.8	0.453	91.6	
83.0	1.5	298.4	96.8	249.9	100.000	47.8	43.8*	102.5	3.4	376.8	0.443	91.6	
84.0	1.5	298.3	96.8	249.9	100.000	47.8	43.8*	103.1	3.3	378.2	0.433	91.6	
85.0	1.4	298.3	96.8	249.9	100.000	47.8	43.8*	103.8	3.3	379.5	0.424	91.6	
86.0	1.4	298.3	96.8	249.9	100.000	47.8	43.8*	104.4	3.3	379.5	0.415	91.6	
87.0	1.4	298.3	96.9	249.9	100.000	47.8	43.8*	105.0	3.2	381.1	0.406	91.6	

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-----Lx Area -----				-----TV Station-----				-----Proposed FM Station -----				
Br (deg)	Dx (km)	Bear (br)	Dx (km)	HAAT (m)	ERP (kW)	F.S. (dBu)	U/D (dB)	Bear (deg)	Dx (km)	HAAT (m)	ERP (kW)	F.S. (dBu)
88.0	1.3	298.2	96.9	249.9	100.000	47.8	43.8*	105.6	3.2	383.5	0.398	91.6
89.0	1.3	298.2	96.9	249.9	100.000	47.8	43.8*	106.2	3.2	383.5	0.389	91.6
90.0	1.3	298.2	96.9	249.9	100.000	47.8	43.8*	106.7	3.2	385.5	0.382	91.6
91.0	1.2	298.2	96.9	249.9	100.000	47.8	43.9*	107.3	3.1	385.5	0.374	91.6
92.0	1.2	298.1	97.0	249.9	100.000	47.8	43.9*	107.8	3.1	386.8	0.367	91.6
93.0	1.2	298.1	97.0	249.9	100.000	47.8	43.9*	108.4	3.1	386.8	0.360	91.6
94.0	1.1	298.1	97.0	249.9	100.000	47.8	43.9*	108.9	3.1	387.2	0.353	91.6
95.0	1.1	298.1	97.0	249.9	100.000	47.7	43.9*	109.4	3.0	387.2	0.346	91.7
96.0	1.1	298.1	97.0	249.9	100.000	47.7	43.9*	109.9	3.0	385.9	0.339	91.7
97.0	1.1	298.1	97.0	249.9	100.000	47.7	43.9*	110.3	3.0	385.9	0.339	91.6
98.0	1.0	298.1	97.0	249.9	100.000	47.7	43.9*	110.6	3.0	383.5	0.340	91.7
99.0	1.0	298.0	97.0	249.9	100.000	47.7	43.9*	111.0	3.0	383.5	0.341	91.7
100.0	1.0	298.0	97.0	249.9	100.000	47.7	43.9*	111.3	3.0	383.5	0.341	91.7
101.0	1.0	298.0	97.0	249.9	100.000	47.7	43.9*	111.7	3.0	380.1	0.342	91.7
102.0	1.0	298.0	97.0	249.9	100.000	47.7	43.9*	112.0	3.0	380.1	0.343	91.7
103.0	1.0	298.0	97.0	249.9	100.000	47.7	43.9*	112.3	3.0	380.1	0.344	91.6
104.0	1.0	298.0	97.0	249.9	100.000	47.7	43.9*	112.7	3.0	376.8	0.345	91.6
105.0	1.0	298.0	97.0	249.9	100.000	47.7	43.9*	113.0	3.0	376.8	0.346	91.6
106.0	1.0	298.0	97.0	249.9	100.000	47.8	43.9*	113.4	3.0	376.8	0.347	91.6
107.0	1.0	298.0	97.0	249.9	100.000	47.7	43.9*	113.7	3.0	374.0	0.348	91.6
108.0	1.0	297.9	97.0	249.9	100.000	47.8	43.9*	114.1	3.0	374.0	0.349	91.6
109.0	1.0	297.9	97.0	249.9	100.000	47.8	43.9*	114.4	3.0	374.0	0.350	91.6
110.0	1.0	297.9	97.0	249.9	100.000	47.8	43.9*	114.7	3.0	372.3	0.350	91.6
111.0	1.0	297.9	97.0	249.9	100.000	47.8	43.9*	115.1	3.0	372.3	0.351	91.6
112.0	1.0	297.9	97.0	249.9	100.000	47.8	43.9*	115.4	3.0	372.3	0.352	91.6
113.0	1.0	297.9	97.0	249.9	100.000	47.8	43.9*	115.8	3.0	371.1	0.353	91.6
114.0	1.0	297.9	97.0	249.9	100.000	47.8	43.9*	116.1	3.0	371.1	0.354	91.6
115.0	1.0	297.9	97.0	249.9	100.000	47.8	43.9*	116.5	3.0	371.1	0.355	91.6
116.0	1.0	297.9	97.0	249.9	100.000	47.8	43.9*	116.8	3.0	370.2	0.356	91.6
117.0	1.1	297.9	97.0	249.9	100.000	47.8	43.9*	117.1	3.0	370.2	0.357	91.6
118.0	1.1	297.8	97.0	249.9	100.000	47.8	43.9*	117.5	3.0	370.2	0.358	91.6
119.0	1.1	297.8	97.0	249.9	100.000	47.8	43.9*	117.8	3.0	368.4	0.359	91.6
120.0	1.1	297.8	97.0	249.9	100.000	47.8	43.9*	118.2	3.0	368.4	0.360	91.6
121.0	1.1	297.8	97.0	249.9	100.000	47.8	43.9*	118.5	3.0	365.6	0.361	91.6
122.0	1.1	297.8	97.0	249.9	100.000	47.8	43.9*	118.9	3.1	365.6	0.362	91.6
123.0	1.1	297.8	97.0	249.9	100.000	47.8	43.9*	119.2	3.0	365.6	0.362	91.6
124.0	1.1	297.8	97.0	249.9	100.000	47.8	43.9*	119.6	3.0	363.1	0.363	91.6
125.0	1.1	297.8	97.0	249.9	100.000	47.8	43.9*	119.9	3.1	363.1	0.364	91.6
126.0	1.1	297.7	96.9	249.9	100.000	47.8	43.9*	120.3	3.1	363.1	0.370	91.6
127.0	1.1	297.7	96.9	249.9	100.000	47.8	43.9*	120.7	3.1	362.6	0.377	91.6
128.0	1.1	297.7	96.9	249.9	100.000	47.8	43.8*	121.2	3.1	362.6	0.384	91.6
129.0	1.2	297.7	96.9	249.9	100.000	47.8	43.8*	121.6	3.1	362.6	0.391	91.6
130.0	1.2	297.7	96.9	249.9	100.000	47.8	43.8*	122.0	3.2	362.6	0.398	91.6
131.0	1.2	297.7	96.8	249.9	100.000	47.8	43.8*	122.5	3.2	362.6	0.406	91.6
132.0	1.3	297.7	96.8	249.9	100.000	47.8	43.8*	123.0	3.2	362.4	0.414	91.6
133.0	1.3	297.6	96.8	249.9	100.000	47.8	43.8*	123.5	3.3	362.4	0.423	91.6
134.0	1.3	297.6	96.8	249.9	100.000	47.9	43.8*	123.9	3.3	361.5	0.431	91.6

**Broadcast Engineering Services  
Bonny Doon, CA**

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Tuesday, February 10, 2004

Dataworld Educational FM/TV Channel 6 Interference Study

**Title: WNRN Minor Change**

Channel: 220

Coordinates: N 37° 58' 55.0" W 78° 29' 03.0"

c/r Height = 493.0 m AMSL  
ERP = 5.0000 kW

-----Lx Area -----				-----TV Station-----				-----Proposed FM Station -----					
Br (deg)	Dx (km)	Bear (br)	Dx (km)	HAAT (m)	ERP (kW)	F.S. (dBu)	U/D (dB)	Bear (deg)	Dx (km)	HAAT (m)	ERP (kW)	F.S. (dBu)	
135.0	1.4	297.6	96.7	249.9	100.000	47.9	43.7*	124.4	3.3	361.5	0.440	91.6	
136.0	1.4	297.6	96.7	249.9	100.000	47.9	43.7*	125.0	3.3	360.2	0.449	91.6	
137.0	1.4	297.6	96.7	249.9	100.000	47.9	43.7*	125.5	3.4	360.2	0.459	91.6	
138.0	1.5	297.5	96.7	249.9	100.000	47.9	43.7*	126.0	3.4	359.5	0.469	91.6	
139.0	1.5	297.5	96.6	249.9	100.000	47.9	43.7*	126.6	3.4	357.5	0.479	91.6	
140.0	1.5	297.5	96.6	250.4	100.000	47.9	43.6*	127.2	3.5	357.5	0.490	91.6	
141.0	1.6	297.5	96.6	250.4	100.000	47.9	43.6*	127.7	3.5	355.1	0.500	91.6	
142.0	1.6	297.4	96.6	250.4	100.000	47.9	43.6*	128.3	3.5	355.1	0.512	91.6	
143.0	1.7	297.4	96.5	250.4	100.000	47.9	43.6*	128.9	3.5	353.2	0.523	91.6	
144.0	1.7	297.4	96.5	250.4	100.000	48.0	43.6*	129.5	3.6	351.9	0.535	91.6	
145.0	1.7	297.4	96.5	250.4	100.000	48.0	43.6*	130.1	3.6	351.9	0.547	91.6	
146.0	1.8	297.3	96.5	250.4	100.000	48.0	43.6*	130.8	3.6	351.2	0.561	91.5	
147.0	1.8	297.3	96.5	250.4	100.000	48.0	43.6*	131.5	3.7	351.2	0.575	91.5	
148.0	1.9	297.3	96.4	250.4	100.000	48.0	43.5*	132.2	3.7	351.2	0.590	91.5	
149.0	1.9	297.2	96.4	250.4	100.000	48.0	43.5*	132.9	3.8	351.3	0.605	91.5	
150.0	2.0	297.2	96.4	250.4	100.000	48.0	43.5*	133.5	3.8	350.6	0.619	91.5	
151.0	2.0	297.2	96.4	250.4	100.000	48.0	43.5*	134.3	3.8	350.6	0.635	91.5	
152.0	2.1	297.1	96.3	250.4	100.000	48.0	43.5*	135.0	3.9	349.9	0.651	91.5	
153.0	2.1	297.1	96.3	250.4	100.000	48.0	43.5*	135.7	3.9	349.4	0.668	91.5	
154.0	2.2	297.1	96.3	250.4	100.000	48.0	43.5*	136.5	3.9	349.4	0.685	91.5	
155.0	2.2	297.0	96.3	250.4	100.000	48.1	43.5*	137.2	4.0	347.8	0.702	91.5	
156.0	2.3	297.0	96.3	250.4	100.000	48.1	43.5*	138.0	4.0	345.3	0.719	91.5	
157.0	2.3	297.0	96.3	250.4	100.000	48.1	43.5*	138.7	4.0	344.6	0.737	91.5	
158.0	2.4	296.9	96.2	250.4	100.000	48.1	43.4*	139.5	4.1	344.0	0.757	91.5	
159.0	2.4	296.9	96.2	250.4	100.000	48.1	43.4*	140.4	4.1	344.0	0.781	91.5	
160.0	2.5	296.8	96.2	250.4	100.000	48.1	43.4*	141.3	4.2	342.9	0.814	91.5	
161.0	2.6	296.8	96.2	250.4	100.000	48.1	43.4*	142.2	4.3	342.0	0.847	91.5	
162.0	2.7	296.7	96.1	250.4	100.000	48.1	43.4*	143.2	4.3	341.8	0.882	91.5	
163.0	2.8	296.7	96.1	250.4	100.000	48.1	43.4*	144.2	4.4	342.4	0.919	91.5	
164.0	2.9	296.6	96.1	250.4	100.000	48.1	43.4*	145.2	4.5	342.9	0.957	91.5	
165.0	3.0	296.5	96.1	250.4	100.000	48.1	43.3*	146.2	4.6	343.3	0.995	91.5	
166.0	3.1	296.5	96.0	250.9	100.000	48.2	43.3*	147.2	4.6	343.0	1.035	91.5	
167.0	3.2	296.4	96.0	250.9	100.000	48.2	43.3*	148.1	4.7	342.8	1.075	91.5	
168.0	3.2	296.3	96.0	250.9	100.000	48.2	43.3*	149.1	4.8	343.1	1.116	91.5	
169.0	3.3	296.3	96.0	250.9	100.000	48.2	43.3*	150.1	4.8	342.4	1.152	91.5	
170.0	3.3	296.3	96.1	250.9	100.000	48.2	43.3*	150.8	4.8	340.3	1.150	91.5	
171.0	3.3	296.2	96.1	250.9	100.000	48.1	43.3*	151.5	4.8	340.3	1.148	91.5	
172.0	3.3	296.2	96.1	250.9	100.000	48.1	43.4*	152.2	4.8	337.9	1.147	91.5	
173.0	3.4	296.2	96.2	250.9	100.000	48.1	43.4*	152.9	4.8	336.3	1.145	91.5	
174.0	3.4	296.2	96.2	250.9	100.000	48.1	43.4*	153.6	4.8	335.5	1.143	91.5	
175.0	3.4	296.1	96.3	250.9	100.000	48.1	43.4*	154.3	4.7	335.5	1.142	91.5	
176.0	3.4	296.1	96.3	250.9	100.000	48.1	43.5*	155.1	4.7	335.4	1.140	91.5	
177.0	3.4	296.1	96.4	250.9	100.000	48.0	43.5*	155.8	4.7	335.5	1.138	91.5	
178.0	3.4	296.1	96.4	250.9	100.000	48.0	43.5*	156.6	4.7	336.6	1.136	91.5	
179.0	3.5	296.0	96.4	250.9	100.000	48.0	43.5*	157.3	4.7	336.6	1.134	91.5	
180.0	3.5	296.0	96.5	250.9	100.000	48.0	43.6*	158.1	4.7	338.9	1.133	91.5	
181.0	3.5	296.0	96.5	250.9	100.000	48.0	43.6*	158.9	4.7	339.6	1.131	91.5	

**Broadcast Engineering Services  
Bonny Doon, CA**

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Tuesday, February 10, 2004

Dataworld Educational FM/TV Channel 6 Interference Study

**Title: WNRN Minor Change**

Channel: 220

Coordinates: N 37° 58' 55.0" W 78° 29' 03.0"

c/r Height = 493.0 m AMSL  
ERP = 5.0000 kW

-----Lx Area -----				-----TV Station-----				-----Proposed FM Station -----					
Br (deg)	Dx (km)	Bear (br)	Dx (km)	HAAT (m)	ERP (kW)	F.S. (dBu)	U/D (dB)	Bear (deg)	Dx (km)	HAAT (m)	ERP (kW)	F.S. (dBu)	
182.0	3.5	295.9	96.6	250.9	100.000	48.0	43.6*	159.7	4.7	339.6	1.129	91.6	
183.0	3.5	295.9	96.6	250.9	100.000	47.9	43.6*	160.3	4.7	339.6	1.114	91.6	
184.0	3.5	295.9	96.7	250.9	100.000	47.9	43.7*	161.0	4.7	339.9	1.090	91.6	
185.0	3.5	295.9	96.8	250.9	100.000	47.9	43.7*	161.6	4.6	340.5	1.066	91.6	
186.0	3.5	295.9	96.8	250.9	100.000	47.9	43.7*	162.2	4.6	340.5	1.042	91.6	
187.0	3.4	295.9	96.9	250.9	100.000	47.8	43.8*	162.7	4.5	341.6	1.019	91.6	
188.0	3.4	295.9	97.0	250.9	100.000	47.8	43.8*	163.3	4.5	341.6	0.996	91.6	
189.0	3.4	295.9	97.0	250.9	100.000	47.8	43.9*	164.0	4.5	342.9	0.972	91.6	
190.0	3.4	295.9	97.1	250.9	100.000	47.8	43.9*	164.6	4.4	343.6	0.949	91.6	
191.0	3.4	295.9	97.1	250.9	100.000	47.7	43.9*	165.2	4.4	343.6	0.927	91.6	
192.0	3.4	295.9	97.2	250.9	100.000	47.7	44.0*	165.7	4.3	343.8	0.906	91.7	
193.0	3.3	295.9	97.3	250.9	100.000	47.7	44.0*	166.3	4.3	343.8	0.884	91.7	
194.0	3.3	295.9	97.3	250.9	100.000	47.7	44.0*	166.9	4.2	343.8	0.864	91.7	
195.0	3.3	295.9	97.4	250.9	100.000	47.6	44.1*	167.5	4.2	343.8	0.843	91.7	
196.0	3.3	296.0	97.5	250.9	100.000	47.6	44.1*	168.0	4.1	343.2	0.824	91.7	
197.0	3.3	296.0	97.5	250.9	100.000	47.6	44.1*	168.6	4.1	342.6	0.804	91.7	
198.0	3.2	296.0	97.6	250.9	100.000	47.6	44.2*	169.2	4.1	342.6	0.784	91.7	
199.0	3.2	296.0	97.6	250.9	100.000	47.5	44.2*	169.7	4.0	342.4	0.765	91.7	
200.0	3.2	296.0	97.7	250.9	100.000	47.5	44.2*	170.4	4.0	342.4	0.746	91.7	
201.0	3.2	296.0	97.7	250.9	100.000	47.5	44.3*	171.0	3.9	342.4	0.727	91.7	
202.0	3.2	296.0	97.8	250.9	100.000	47.5	44.3*	171.5	3.9	343.0	0.711	91.8	
203.0	3.2	296.0	97.9	250.9	100.000	47.5	44.3*	172.1	3.9	343.0	0.693	91.8	
204.0	3.2	296.0	97.9	250.9	100.000	47.4	44.4*	172.8	3.8	343.9	0.675	91.8	
205.0	3.1	296.0	98.0	250.9	100.000	47.4	44.4*	173.4	3.8	343.9	0.658	91.8	
206.0	3.1	296.0	98.0	250.9	100.000	47.4	44.4*	174.0	3.7	345.0	0.641	91.8	
207.0	3.1	296.0	98.1	250.9	100.000	47.4	44.5*	174.6	3.7	345.8	0.624	91.8	
208.0	3.1	296.0	98.1	250.9	100.000	47.4	44.5*	175.2	3.7	345.8	0.607	91.8	
209.0	3.1	296.0	98.2	250.9	100.000	47.3	44.5*	175.7	3.6	345.9	0.592	91.8	
210.0	3.1	296.1	98.2	250.9	100.000	47.3	44.5*	176.3	3.6	345.9	0.576	91.8	
211.0	3.1	296.1	98.3	250.9	100.000	47.3	44.6*	176.9	3.5	346.1	0.560	91.8	
212.0	3.0	296.1	98.3	250.9	100.000	47.3	44.6*	177.5	3.5	346.1	0.546	91.9	
213.0	3.0	296.1	98.4	250.9	100.000	47.3	44.6*	178.1	3.4	346.6	0.531	91.9	
214.0	3.0	296.1	98.4	250.9	100.000	47.2	44.7*	178.7	3.4	347.1	0.516	91.9	
215.0	3.0	296.1	98.5	250.9	100.000	47.2	44.7*	179.3	3.4	347.1	0.501	91.9	
216.0	3.0	296.1	98.5	250.9	100.000	47.2	44.7*	180.0	3.3	348.6	0.484	91.9	
217.0	3.0	296.1	98.6	250.9	100.000	47.2	44.7*	180.6	3.3	349.4	0.474	91.9	
218.0	3.0	296.1	98.6	250.9	100.000	47.2	44.8*	181.2	3.3	349.4	0.464	91.9	
219.0	3.0	296.2	98.7	250.9	100.000	47.1	44.8*	181.9	3.2	349.0	0.453	91.9	
220.0	3.0	296.2	98.7	250.9	100.000	47.1	44.8*	182.6	3.2	348.2	0.442	91.9	
221.0	3.0	296.2	98.8	250.9	100.000	47.1	44.9*	183.2	3.1	348.2	0.432	91.9	
222.0	3.0	296.2	98.8	250.9	100.000	47.1	44.9*	183.9	3.1	347.4	0.421	92.0	
223.0	2.9	296.2	98.9	250.9	100.000	47.1	44.9*	184.6	3.1	346.4	0.411	92.0	
224.0	2.9	296.2	98.9	250.9	100.000	47.0	44.9*	185.3	3.0	346.4	0.399	92.0	
225.0	2.9	296.2	99.0	250.9	100.000	47.0	45.0*	186.0	3.0	345.5	0.389	92.0	
226.0	2.9	296.2	99.0	250.9	100.000	47.0	45.0*	186.7	3.0	344.8	0.379	92.0	
227.0	2.9	296.3	99.1	250.9	100.000	47.0	45.0*	186.9	2.9	344.8	0.377	92.2	
228.0	2.8	296.3	99.1	250.9	100.000	47.0	45.0*	186.0	2.8	345.5	0.389	92.8	

**Broadcast Engineering Services  
Bonny Doon, CA**

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Tuesday, February 10, 2004

Dataworld Educational FM/TV Channel 6 Interference Study

**Title: WNRN Minor Change**

Channel: 220

Coordinates: N 37° 58' 55.0" W 78° 29' 03.0"

c/r Height = 493.0 m AMSL  
ERP = 5.0000 kW

-----Lx Area -----				-----TV Station-----				-----Proposed FM Station -----				
Br (deg)	Dx (km)	Bear (br)	Dx (km)	HAAT (m)	ERP (kW)	F.S. (dBu)	U/D (dB)	Bear (deg)	Dx (km)	HAAT (m)	ERP (kW)	F.S. (dBu)
229.0	2.7	296.4	99.1	250.9	100.000	47.0	45.0*	185.2	2.7	346.4	0.402	93.4
230.0	2.4	296.6	99.0	250.4	100.000	47.0	45.0*	182.1	2.5	349.0	0.449	94.7
231.0	2.3	296.6	99.0	250.4	100.000	47.0	45.0*	181.2	2.4	349.4	0.464	95.2
232.0	2.3	296.7	99.0	250.4	100.000	47.0	45.0*	180.0	2.3	348.6	0.484	95.8
233.0	2.2	296.7	99.0	250.4	100.000	47.0	45.0*	179.3	2.2	347.1	0.502	96.2
234.0	2.1	296.8	99.0	250.4	100.000	47.0	45.0*	178.4	2.1	346.6	0.524	96.7
235.0	2.0	296.8	99.0	250.4	100.000	47.0	45.0*	177.3	2.1	346.1	0.550	97.3
236.0	2.0	296.8	99.0	250.4	100.000	47.0	45.0*	176.4	2.0	345.9	0.576	97.7
237.0	1.9	296.9	99.0	250.4	100.000	47.0	45.0*	175.4	2.0	345.8	0.601	98.2
238.0	1.9	296.9	99.0	250.4	100.000	47.0	45.0*	174.4	1.9	345.0	0.629	98.6
239.0	1.8	297.0	99.0	250.4	100.000	47.0	45.0*	173.4	1.9	343.9	0.656	99.1
240.0	1.8	297.0	99.0	250.4	100.000	47.0	45.0*	172.6	1.8	343.9	0.680	99.4
241.0	1.7	297.0	99.0	250.4	100.000	47.0	45.0*	171.4	1.8	342.4	0.713	99.9
242.0	1.7	297.0	99.0	250.4	100.000	47.0	45.0*	170.6	1.7	342.4	0.738	100.2
243.0	1.6	297.1	99.0	250.4	100.000	47.0	45.0*	169.5	1.7	342.6	0.773	100.6
244.0	1.6	297.1	99.0	250.4	100.000	47.0	45.0*	168.5	1.6	342.6	0.807	101.0
245.0	1.6	297.1	99.0	250.4	100.000	47.0	45.0*	167.7	1.6	343.2	0.836	101.3
246.0	1.5	297.2	99.0	250.4	100.000	47.0	45.0*	166.8	1.6	343.8	0.869	101.8
247.0	1.5	297.2	99.0	250.4	100.000	47.0	45.0*	165.8	1.5	343.8	0.903	102.4
248.0	1.5	297.2	99.0	250.4	100.000	47.0	45.0*	164.8	1.5	343.6	0.941	102.9
249.0	1.4	297.2	99.0	250.4	100.000	47.0	45.0*	163.7	1.5	342.9	0.983	103.4
250.0	1.4	297.2	99.0	250.4	100.000	47.0	45.0*	162.8	1.5	341.6	1.017	103.7
251.0	1.4	297.3	99.0	250.4	100.000	47.0	45.0*	161.8	1.4	340.5	1.055	104.0
252.0	1.4	297.3	99.0	250.4	100.000	47.0	45.0*	160.8	1.4	339.9	1.095	104.4
253.0	1.3	297.3	99.0	250.4	100.000	47.0	45.0*	159.7	1.4	339.6	1.129	104.6
254.0	1.3	297.3	99.0	250.4	100.000	47.0	45.0*	158.9	1.4	339.6	1.131	104.8
255.0	1.3	297.3	99.0	250.4	100.000	47.0	45.0*	158.0	1.3	338.9	1.133	104.9
256.0	1.3	297.4	99.0	250.4	100.000	47.0	45.0*	157.1	1.3	336.6	1.135	105.0
257.0	1.3	297.4	99.0	250.4	100.000	47.0	45.0*	156.1	1.3	335.5	1.137	105.2
258.0	1.3	297.4	99.0	250.4	100.000	47.0	45.0*	155.1	1.3	335.4	1.140	105.3
259.0	1.2	297.4	99.0	250.4	100.000	47.0	45.0*	154.0	1.3	335.5	1.142	105.4
260.0	1.2	297.4	99.0	250.4	100.000	47.0	45.0*	153.0	1.3	336.3	1.145	105.5
261.0	1.2	297.4	99.0	250.4	100.000	47.0	45.0*	152.1	1.2	337.9	1.147	105.7
262.0	1.2	297.5	99.0	250.4	100.000	47.0	45.0*	151.2	1.2	340.3	1.149	105.8
263.0	1.2	297.5	99.0	250.4	100.000	47.0	45.0*	150.1	1.2	342.4	1.152	105.9
264.0	1.2	297.5	99.0	250.4	100.000	47.0	45.0*	149.1	1.2	343.1	1.116	105.8
265.0	1.1	297.5	99.0	249.9	100.000	47.0	45.0*	146.1	1.2	343.3	0.992	105.2
266.0	1.1	297.5	99.0	249.9	100.000	47.0	45.0*	145.1	1.2	342.9	0.954	105.1
267.0	1.1	297.5	99.0	249.9	100.000	47.0	45.0*	144.4	1.2	342.4	0.926	105.1
268.0	1.1	297.5	99.0	249.9	100.000	47.0	45.0*	143.4	1.2	341.8	0.889	105.0
269.0	1.1	297.6	99.0	249.9	100.000	47.0	45.0*	142.3	1.2	342.0	0.851	104.9
270.0	1.0	297.6	99.0	249.9	100.000	47.0	45.0*	141.6	1.2	342.0	0.823	104.8
271.0	1.0	297.6	99.0	249.9	100.000	47.0	45.0*	140.5	1.2	342.9	0.786	104.6
272.0	1.0	297.6	99.0	249.9	100.000	47.0	45.0*	139.7	1.1	344.0	0.761	104.6
273.0	1.0	297.6	99.0	249.9	100.000	47.0	45.0*	138.8	1.1	344.6	0.740	104.5
274.0	1.0	297.6	99.0	249.9	100.000	47.0	45.0*	138.0	1.1	345.3	0.720	104.5
275.0	1.0	297.6	99.0	249.9	100.000	47.0	45.0*	136.9	1.1	347.8	0.695	104.3

**Broadcast Engineering Services**  
**Bonny Doon, CA**

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Dataworld Educational FM/TV Channel 6 Interference Study

**Title: WNRN Minor Change**

Channel: 220

Coordinates: N 37° 58' 55.0" W 78° 29' 03.0"

c/r Height = 493.0 m AMSL  
 ERP = 5.0000 kW

---Lx Area ---		-----TV Station-----						-----Proposed FM Station -----				
Br (deg)	Dx (km)	Bear (br)	Dx (km)	HAAT (m)	ERP (kW)	F.S. (dBu)	U/D (dB)	Bear (deg)	Dx (km)	HAAT (m)	ERP (kW)	F.S. (dBu)
276.0	1.0	297.6	99.0	249.9	100.000	47.0	45.0*	136.0	1.1	349.4	0.674	104.2
277.0	1.0	297.6	99.0	249.9	100.000	47.0	45.0*	135.1	1.1	349.9	0.654	104.2
278.0	1.0	297.7	99.0	249.9	100.000	47.0	45.0*	134.2	1.1	350.6	0.634	104.1
279.0	1.0	297.7	99.0	249.9	100.000	47.0	45.0*	133.3	1.1	351.3	0.614	104.0
280.0	1.0	297.7	99.0	249.9	100.000	47.0	45.0*	132.6	1.1	351.3	0.598	103.9
281.0	1.0	297.7	99.0	249.9	100.000	47.0	45.0*	131.6	1.1	351.2	0.578	103.8
282.0	1.0	297.7	99.0	249.9	100.000	47.0	45.0*	130.7	1.1	351.2	0.559	103.7
283.0	1.0	297.7	99.0	249.9	100.000	47.0	45.0*	129.8	1.1	351.9	0.540	103.5
284.0	1.0	297.7	99.0	249.9	100.000	47.0	45.0*	129.0	1.1	353.2	0.524	103.5
285.0	1.0	297.7	99.0	249.9	100.000	47.0	45.0*	128.0	1.1	355.1	0.506	103.3
286.0	1.0	297.7	99.0	249.9	100.000	47.0	45.0*	127.2	1.1	357.5	0.491	103.2
287.0	0.9	297.8	99.0	249.9	100.000	47.0	45.0*	126.3	1.1	359.5	0.473	103.1
288.0	0.9	297.8	99.0	249.9	100.000	47.0	45.0*	125.4	1.1	360.2	0.458	103.0
289.0	0.9	297.8	99.0	249.9	100.000	47.0	45.0*	124.5	1.1	361.5	0.441	102.8
290.0	0.9	297.8	99.0	249.9	100.000	47.0	45.0*	123.6	1.1	361.5	0.426	102.7
291.0	0.9	297.8	99.0	249.9	100.000	47.0	45.0*	122.8	1.1	362.4	0.411	102.6
292.0	0.9	297.8	99.0	249.9	100.000	47.0	45.0*	121.8	1.1	362.6	0.395	102.4
293.0	0.9	297.8	99.0	249.9	100.000	47.0	45.0*	121.0	1.1	362.6	0.380	102.2
294.0	0.9	297.8	99.0	249.9	100.000	47.0	45.0*	120.1	1.1	363.1	0.366	102.1
295.0	0.9	297.8	99.0	249.9	100.000	47.0	45.0*	119.2	1.1	365.6	0.362	102.0
296.0	0.9	297.8	99.0	249.9	100.000	47.0	45.0*	118.3	1.1	368.4	0.360	102.0
297.0	0.9	297.8	99.0	249.9	100.000	47.0	45.0*	117.4	1.1	370.2	0.358	102.0
298.0	0.9	297.9	99.0	249.9	100.000	47.0	45.0*	116.6	1.1	370.2	0.355	102.0
299.0	0.9	297.9	99.0	249.9	100.000	47.0	45.0*	115.7	1.1	371.1	0.353	101.9
300.0	0.9	297.9	99.0	249.9	100.000	47.0	45.0*	114.8	1.1	372.3	0.351	101.9
301.0	0.9	297.9	99.0	249.9	100.000	47.0	45.0*	113.9	1.1	374.0	0.348	101.8
302.0	0.9	297.9	99.0	249.9	100.000	47.0	45.0*	113.1	1.1	376.8	0.346	101.8
303.0	0.9	297.9	99.0	249.9	100.000	47.0	45.0*	112.1	1.1	380.1	0.344	101.8
304.0	0.9	297.9	99.0	249.9	100.000	47.0	45.0*	111.3	1.1	383.5	0.341	101.7
305.0	0.9	297.9	99.0	249.9	100.000	47.0	45.0*	110.4	1.1	385.9	0.339	101.7
306.0	0.9	297.9	99.0	249.9	100.000	47.0	45.0*	109.5	1.1	387.2	0.345	101.8
307.0	0.9	297.9	99.0	249.9	100.000	47.0	45.0*	108.6	1.1	387.2	0.356	101.9
308.0	1.0	298.0	99.0	249.9	100.000	47.0	45.0*	107.7	1.1	386.8	0.369	102.0
309.0	1.0	298.0	99.0	249.9	100.000	47.0	45.0*	106.8	1.1	385.5	0.380	102.1
310.0	1.0	298.0	99.0	249.9	100.000	47.0	45.0*	105.9	1.1	383.5	0.394	102.2
311.0	1.0	298.0	99.0	249.9	100.000	47.0	45.0*	105.1	1.1	381.1	0.405	102.3
312.0	1.0	298.0	99.0	249.9	100.000	47.0	45.0*	104.1	1.1	379.5	0.418	102.4
313.0	1.0	298.0	99.0	249.9	100.000	47.0	45.0*	103.2	1.1	378.2	0.432	102.6
314.0	1.0	298.0	99.0	249.9	100.000	47.0	45.0*	102.4	1.1	376.8	0.443	102.6
315.0	1.0	298.0	99.0	249.9	100.000	47.0	45.0*	101.5	1.1	376.8	0.457	102.7
316.0	1.0	298.0	99.0	249.9	100.000	47.0	45.0*	100.6	1.1	377.9	0.471	102.8
317.0	1.0	298.0	99.0	249.9	100.000	47.0	45.0*	99.7	1.1	377.8	0.487	102.9
318.0	1.0	298.1	99.0	249.9	100.000	47.0	45.0*	98.8	1.1	377.6	0.508	103.0
319.0	1.0	298.1	99.0	249.9	100.000	47.0	45.0*	97.9	1.1	376.6	0.528	103.2
320.0	1.0	298.1	99.0	249.9	100.000	47.0	45.0*	97.0	1.1	376.5	0.548	103.3
321.0	1.0	298.1	99.0	249.9	100.000	47.0	45.0*	95.9	1.1	377.9	0.574	103.4
322.0	1.0	298.1	99.0	249.9	100.000	47.0	45.0*	95.1	1.1	378.3	0.595	103.5



**Broadcast Engineering Services  
Bonny Doon, CA**

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Dataworld Educational FM/TV Channel 6 Interference Study

**Title: WNRN Minor Change**

Channel: 220

Coordinates: N 37° 58' 55.0" W 78° 29' 03.0"

c/r Height = 493.0 m AMSL  
ERP = 5.0000 kW

-----Ix Area -----				-----TV Station-----				-----Proposed FM Station -----				
Br (deg)	Dx (km)	Bear (br)	Dx (km)	HAAT (m)	ERP (kW)	F.S. (dBu)	U/D (dB)	Bear (deg)	Dx (km)	HAAT (m)	ERP (kW)	F.S. (dBu)
323.0	1.0	298.1	99.0	249.9	100.000	47.0	45.0*	94.2	1.2	376.7	0.616	103.6
324.0	1.0	298.1	99.0	249.9	100.000	47.0	45.0*	93.2	1.2	374.9	0.642	103.7
325.0	1.1	298.1	99.0	249.9	100.000	47.0	45.0*	92.4	1.2	374.0	0.663	103.8
326.0	1.1	298.1	99.0	249.9	100.000	47.0	45.0*	91.4	1.2	374.4	0.690	103.9
327.0	1.1	298.2	99.0	249.9	100.000	47.0	45.0*	90.6	1.2	374.4	0.710	104.0
328.0	1.1	298.2	99.0	249.9	100.000	47.0	45.0*	89.6	1.2	375.4	0.741	104.1
329.0	1.1	298.2	99.0	249.9	100.000	47.0	45.0*	88.6	1.2	376.0	0.778	104.2
330.0	1.1	298.2	99.0	249.9	100.000	47.0	45.0*	87.7	1.2	375.9	0.815	104.3
331.0	1.1	298.2	99.0	249.9	100.000	47.0	45.0*	86.7	1.2	375.4	0.852	104.5
332.0	1.1	298.2	99.0	249.9	100.000	47.0	45.0*	85.8	1.2	374.3	0.889	104.6
333.0	1.1	298.2	99.0	249.9	100.000	47.0	45.0*	84.9	1.3	373.3	0.925	104.6
334.0	1.2	298.3	99.0	249.9	100.000	47.0	45.0*	83.8	1.3	372.9	0.973	104.8
335.0	1.2	298.3	99.0	249.9	100.000	47.0	45.0*	83.0	1.3	372.8	1.009	104.8
336.0	1.2	298.3	99.0	249.9	100.000	47.0	45.0*	81.9	1.3	373.5	1.056	104.9
337.0	1.2	298.3	99.0	249.9	100.000	47.0	45.0*	81.1	1.3	373.6	1.091	104.9
338.0	1.2	298.3	99.0	249.9	100.000	47.0	45.0*	80.1	1.3	372.6	1.137	105.0
339.0	1.2	298.3	99.0	249.9	100.000	47.0	45.0*	79.2	1.3	371.5	1.189	105.1
340.0	1.3	298.3	99.0	249.9	100.000	47.0	45.0*	78.2	1.4	371.3	1.242	105.2
341.0	1.3	298.4	99.0	249.9	100.000	47.0	45.0*	77.1	1.4	371.5	1.309	105.3
342.0	1.3	298.4	99.0	249.9	100.000	47.0	45.0*	76.2	1.4	371.1	1.360	105.3
343.0	1.3	298.4	99.0	249.9	100.000	47.0	45.0*	75.2	1.4	369.9	1.424	105.4
344.0	1.4	298.4	99.0	249.9	100.000	47.0	45.0*	74.1	1.4	368.7	1.487	105.4
345.0	1.4	298.4	99.0	249.9	100.000	47.0	45.0*	73.2	1.5	368.3	1.549	105.5
346.0	1.4	298.5	99.0	249.9	100.000	47.0	45.0*	72.2	1.5	368.5	1.608	105.4
347.0	1.4	298.5	99.0	249.9	100.000	47.0	45.0*	71.4	1.5	368.6	1.665	105.2
348.0	1.5	298.5	99.0	249.6	100.000	47.0	45.0*	70.6	1.6	368.6	1.720	105.1
349.0	1.4	298.5	98.9	249.6	100.000	47.0	45.0*	71.1	1.6	368.6	1.681	104.7
350.0	1.5	298.5	98.9	249.6	100.000	47.0	45.0*	70.2	1.6	368.7	1.747	104.5
351.0	1.5	298.6	98.9	249.6	100.000	47.0	45.0*	69.0	1.6	368.1	1.841	104.6
352.0	1.6	298.6	98.9	249.6	100.000	47.0	45.0*	68.0	1.7	366.6	1.935	104.6
353.0	1.6	298.6	98.9	249.6	100.000	47.0	45.0*	67.0	1.7	365.1	2.025	104.7
354.0	1.6	298.6	98.9	249.6	100.000	47.0	45.0*	66.1	1.7	363.9	2.110	104.7
355.0	1.7	298.7	98.9	249.6	100.000	47.0	45.0*	65.0	1.8	362.1	2.208	104.7
356.0	1.7	298.7	98.9	249.6	100.000	47.0	45.0*	63.9	1.8	359.2	2.319	104.7
357.0	1.8	298.7	98.9	249.6	100.000	47.0	45.0*	62.8	1.9	356.2	2.423	104.6
358.0	1.8	298.8	98.9	249.6	100.000	47.0	45.0*	61.9	1.9	353.9	2.520	104.6
359.0	1.9	298.8	98.9	249.6	100.000	47.0	45.0*	60.8	2.0	351.3	2.627	104.5

23.4 square km in interference area

**Broadcast Engineering Services**  
**Bonny Doon, CA**

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Tuesday, February 10, 2004

Dataworld Educational FM/TV Channel 6 Interference Study

**Title: WNRN Minor Change**

Channel: 220

Coordinates: N 37° 58' 55.0" W 78° 29' 03.0"

c/r Height = 493.0 m AMSL  
ERP = 5.0000 kW

Place name	1990 Population	1990 Housing Units
Jack Jouett district	507	170
Rivanna district	58	21
Albemarle County	565	191
State of Virginia	565	191
Total	565	191

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**Broadcast Engineering Services**  
**Bonny Doon, CA**

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Tuesday, February 10, 2004

Dataworld Educational FM/TV Channel 6 Interference Study

**Title: WNRN Minor Change**

Channel: 220

Coordinates: N 37° 58' 55.0" W 78° 29' 03.0"

c/r Height = 493.0 m AMSL  
ERP = 5.0000 kW

Place name	2000 Population	2000 Housing Units
census undesignated area	335	163
Albemarle County	335	163
State of Virginia	335	163
Total	335	163

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Population counts are derived from U.S. Census Block centroids

NOTE: The category "Asian" also includes persons who listed their race as Pacific Islander  
The category "Other" also includes persons who listed multiple races

NOTE: The year 2000 data is not assigned to Places using the same method as 1990 data.  
As a result, Place data is not directly comparable.