

RF HAZARD STATEMENT
APPLICATION FOR LICENSE
FM BROADCAST STATION KWEI-FM
FRUITLAND, IDAHO
CH 258C0 22 KW (H & V) 803 M

This RF Hazard Statement was prepared on behalf of Treasure Valley Broadcasting Co. concerning an evaluation of compliance with Section 1.1307(b) of the FCC Rules^{*} regarding human exposure to radio frequency (RF) energy[†] for the authorized KWEI-FM facility at Fruitland, Idaho. See Construction Permit in FCC File No. BPH-20070503ACA.

KWEI-FM is licensed for operation on Channel 258C1 (99.5 MHz) with a nominal non-directional effective radiated power (ERP) of 8 kW and an antenna height above average terrain of 803 m. See FCC File No. BLH-19940629KB. The Construction Permit for KWEI-FM authorizes an increase in ERP from 8 kW to 22 kW. There are no other changes proposed to the licensed facility other than an increase in transmitter power output to achieve the increase in ERP.

The KWEI-FM transmitting antenna is an SWR model FM3/4 full-wave spaced 4-bay antenna. The antenna is mounted on the tower with an antenna radiation center height above ground of 40 m. The elevation pattern for the FM3/4 antenna is included herein at Appendix 1. The following table summarizes the facilities considered and the technical details and assumptions made in this analysis:

^{*} See Rules of the United States Federal Communications Commission (FCC), generally at Title 47 of the Code of Federal Regulations (Telecommunication).

[†] See FCC Office of Engineering and Technology Bulletin No. 56 for background information on non-ionizing RF energy of the type discussed here. Internet web reference:
http://www.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet56/oet56e4.pdf

Call Sign	Channel / Frequency	Total ERP (kW)	Antenna Radiation Center Height Above Ground (m)	Type of Transmitting antenna	Comment
KWEI-FM	258 / 99.5 MHz	44	40	SWR, FM3/4	4-Bay, full-wave spaced, circularly polarized

The KWEI-FM transmitter site is located on a very remote mountaintop site called Squaw Butte, which has no residential population anywhere nearby. In addition, there are no other broadcast facilities located anywhere within 10 km of the KWEI-FM transmitter site.

Based on Section 73.1310 of the FCC Rules, the pertinent maximum permissible exposure (MPE) limits for the subject station are as follows:

Call Sign	Frequency (MHz)	MPE for Occupation/Controlled Environments (O/C) Exposure ($\mu\text{W}/\text{cm}^2$)	MPE for General Population/Uncontrolled (GP/U) Exposure ($\mu\text{W}/\text{cm}^2$)
KWEI-FM	99.5	1000.0	200.0

A calculation of the maximum RF exposure level from the proposed facility was conducted at 2-m above ground level based on FCC OET Bulletin No. 65 using the elevation pattern for the FM3/4 transmitting antenna. Figure 1 is a graph showing the results of the RF exposure analysis at distances from 0 to 1000 meters from the base of the KWEI-FM tower. Figure 2 is a tabulation of the RF energy calculations for the KWEI-FM antenna. The following table summarizes the results of the RF exposure analysis:

Call Sign	Channel	Total ERP[†] (kW)	Antenna Radiation Center Height Above Ground (m)	Maximum RF Power Density at Ground Level (uW/cm²)	FCC Limit[§] (uW/cm²)	Percentage of Limit
KWEI-FM	258	44	40	128.5	200	64.3%

As indicated, the RF exposure at 2-m above ground level will not exceed 64.3% of the FCC limit for uncontrolled environments. Therefore, the proposal complies with the FCC limits for human exposure to RF radiation at all locations on the ground in the vicinity of the proposed facility.**

The transmitter site shall be restricted from access. In the event that personnel are required to climb the structure, the KWEI-FM transmissions shall be reduced or terminated as necessary to prevent RF exposure above the FCC recommended limits.



Louis R. du Treil, Jr.

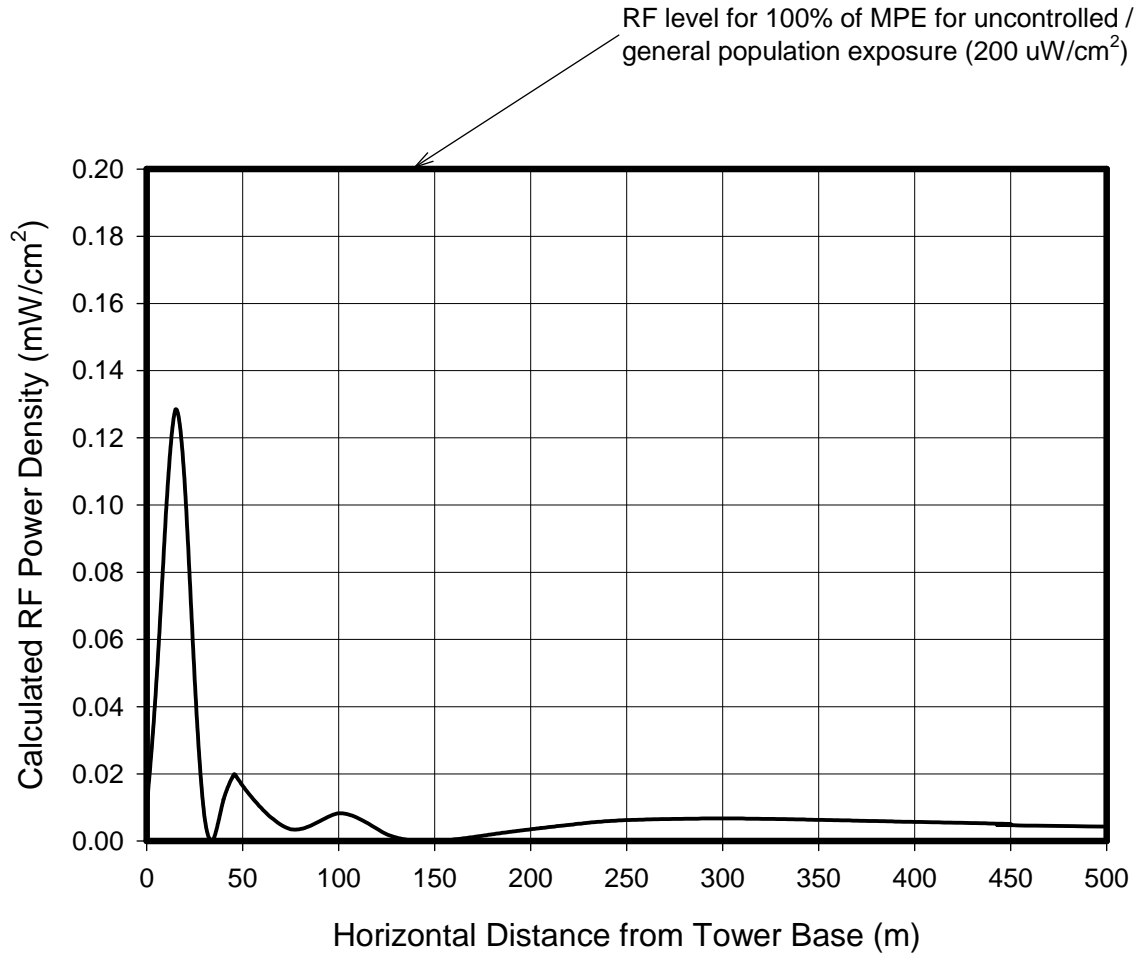
du Treil, Lundin & Rackley, Inc.
201 Fletcher Ave.
Sarasota, Florida 34237

August 9, 2010

[†] In the case of FM stations, the total horizontally and vertically polarized ERP.

[§] for uncontrolled/general population environments.

** See Sections 1.1307 and 1.1310 of the FCC Rules.



Based on circularly polarized average ERP of 22 kW (H & V), (44 kW total ERP).

CALCULATED RF POWER DENSITY AT GROUND LEVEL

FM BROADCAST STATION KWEI-FM
FRUITLAND, IDAHO
CHANNEL 258C0 22 KW (H & V) 803 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 2

RF HAZARD STATEMENT
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FRUITLAND, IDAHO
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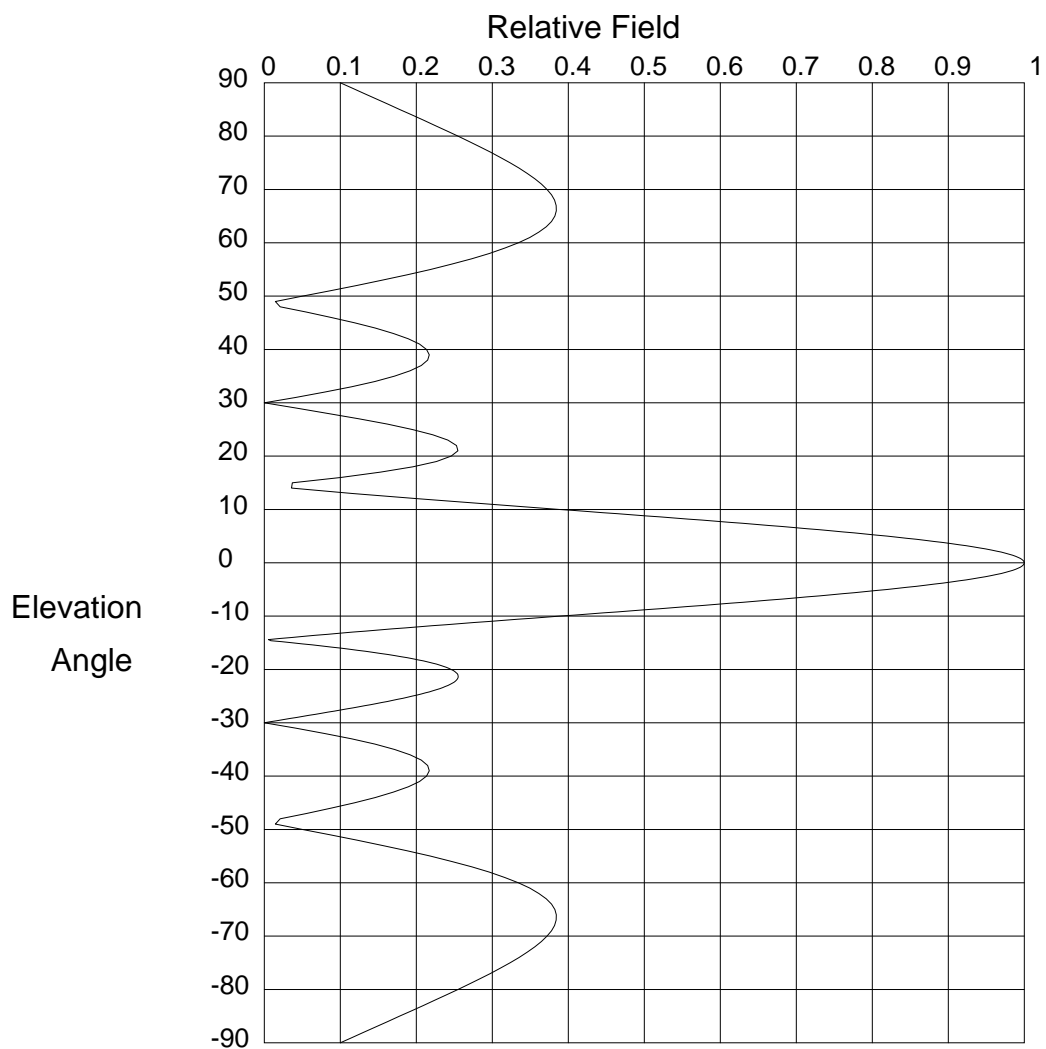
Tabulation of RF Energy Calculations for KWEI-FM Antenna

Radial Distance from Base of Tower Structure (m)	Angle from Horizontal (deg)	Antenna Downward Relative Field Factor	Distance From Transmitting Antenna (m)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of GP/U MPE (%)
0	90.00	0.100	38.00	10.18	5.1
5	82.50	0.217	38.33	47.11	23.6
10	75.26	0.320	39.29	97.47	48.7
15	68.46	0.382	40.85	128.49	64.2
20	62.24	0.362	42.94	104.44	52.2
25	56.66	0.260	45.49	48.02	24.0
30	51.71	0.110	48.41	7.59	3.8
35	47.35	0.040	51.66	0.88	0.4
40	43.53	0.160	55.17	12.36	6.2
45	40.18	0.214	58.90	19.40	9.7
50	37.23	0.210	62.80	16.43	8.2
75	26.87	0.130	84.08	3.51	1.8
100	20.81	0.254	106.98	8.28	4.1
125	16.91	0.153	130.65	2.02	1.0
150	14.22	0.021	154.74	0.03	0.0
175	12.25	0.186	179.08	1.59	0.8
200	10.76	0.314	203.58	3.50	1.7
225	9.59	0.427	228.19	5.15	2.6
250	8.64	0.521	252.87	6.24	3.1
300	7.22	0.647	302.40	6.73	3.4
350	6.20	0.730	352.06	6.32	3.2
400	5.43	0.791	401.80	5.70	2.8
450	4.83	0.833	451.60	5.00	2.5
500	4.35	0.858	501.44	4.30	2.2
1000	2.18	0.963	1000.72	1.36	0.7

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FRUITLAND, IDAHO
CH 258C0 22 KW (H & V) 803 M

Manufacturer's Relative Field Elevation Pattern

Four sheets follow.



Elevation Pattern

Scale: Linear

Units: Field, Relative

Systems With Reliability

CLIENT: *KWEI-FM*

Date: 8/9/2010

ANTENNA TYPE: FM3/4

FREQUENCY: 99.5 MHz

PATTERN POL.: Circular

DIRECTIVITY(Peak): 4.088/6.115 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz): 4.088/6.115 dBd

Null Fill(s)(%) : 0, 0, 0

Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
90.0	.10 (-20)	52.0	.122 (-18.296)	14.0	.036 (-28.925)
89.0	.116 (-18.733)	51.0	.087 (-21.259)	13.0	.116 (-18.677)
88.0	.131 (-17.628)	50.0	.051 (-25.907)	12.0	.203 (-13.829)
87.0	.147 (-16.648)	49.0	.015 (-36.679)	11.0	.295 (-10.601)
86.0	.163 (-15.769)	48.0	.021 (-33.591)	10.0	.389 (-8.198)
85.0	.178 (-14.973)	47.0	.055 (-25.123)	9.8	.408 (-7.785)
84.0	.194 (-14.247)	46.0	.088 (-21.083)	9.6	.427 (-7.391)
83.0	.209 (-13.581)	45.0	.119 (-18.507)	9.4	.446 (-7.015)
82.0	.225 (-12.967)	44.0	.146 (-16.7)	9.2	.465 (-6.656)
81.0	.24 (-12.4)	43.0	.17 (-15.39)	9.0	.484 (-6.311)
80.0	.255 (-11.875)	42.0	.19 (-14.446)	8.8	.502 (-5.981)
79.0	.269 (-11.39)	41.0	.204 (-13.798)	8.6	.521 (-5.665)
78.0	.284 (-10.941)	40.0	.214 (-13.409)	8.4	.539 (-5.362)
77.0	.298 (-10.528)	39.0	.217 (-13.261)	8.2	.558 (-5.071)
76.0	.311 (-10.149)	38.0	.215 (-13.353)	8.0	.576 (-4.792)
75.0	.323 (-9.803)	37.0	.207 (-13.7)	7.8	.594 (-4.524)
74.0	.335 (-9.491)	36.0	.192 (-14.331)	7.6	.612 (-4.266)
73.0	.346 (-9.212)	35.0	.172 (-15.306)	7.4	.63 (-4.019)
72.0	.356 (-8.968)	34.0	.146 (-16.728)	7.2	.647 (-3.782)
71.0	.365 (-8.759)	33.0	.115 (-18.8)	7.0	.664 (-3.554)
70.0	.372 (-8.587)	32.0	.08 (-21.983)	6.8	.681 (-3.335)
69.0	.378 (-8.453)	31.0	.041 (-27.75)	6.6	.698 (-3.125)
68.0	.382 (-8.359)	30.0	.00 (-50)	6.4	.714 (-2.924)
67.0	.384 (-8.309)	29.0	.042 (-27.509)	6.2	.73 (-2.731)
66.0	.384 (-8.305)	28.0	.084 (-21.504)	6.0	.746 (-2.546)
65.0	.382 (-8.352)	27.0	.125 (-18.095)	5.8	.761 (-2.368)
64.0	.378 (-8.452)	26.0	.162 (-15.813)	5.6	.776 (-2.199)
63.0	.371 (-8.611)	25.0	.195 (-14.205)	5.4	.791 (-2.036)
62.0	.362 (-8.836)	24.0	.222 (-13.076)	5.2	.805 (-1.881)
61.0	.349 (-9.134)	23.0	.242 (-12.335)	5.0	.819 (-1.733)
60.0	.334 (-9.515)	22.0	.253 (-11.938)	4.8	.833 (-1.591)
59.0	.317 (-9.989)	21.0	.255 (-11.878)	4.6	.846 (-1.457)
58.0	.296 (-10.571)	20.0	.246 (-12.177)	4.4	.858 (-1.329)
57.0	.273 (-11.282)	19.0	.226 (-12.899)	4.2	.87 (-1.207)
56.0	.247 (-12.148)	18.0	.196 (-14.173)	4.0	.882 (-1.092)
55.0	.219 (-13.205)	17.0	.153 (-16.282)	3.8	.893 (-0.983)
54.0	.188 (-14.511)	16.0	.10 (-19.974)	3.6	.904 (-0.88)
53.0	.156 (-16.155)	15.0	.037 (-28.661)	3.4	.914 (-0.783)

Systems With Reliability

Page 1 of 3

CLIENT: *KWEI-FM*

Date: 8/9/2010

ANTENNA TYPE: FM3/4

FREQUENCY: 99.5 MHz

PATTERN POL.: Circular

DIRECTIVITY(Peak): 4.088/6.115 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz): 4.088/6.115 dBd

Null Fill(s)(%) : 0, 0, 0

Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
3.2	.923 (-0.692)	-4.4	.858 (-1.329)	-12.0	.203 (-13.829)
3.0	.933 (-0.607)	-4.6	.846 (-1.457)	-12.2	.186 (-14.626)
2.8	.941 (-0.528)	-4.8	.833 (-1.591)	-12.4	.168 (-15.493)
2.6	.949 (-0.454)	-5.0	.819 (-1.733)	-12.6	.151 (-16.444)
2.4	.956 (-0.386)	-5.2	.805 (-1.881)	-12.8	.133 (-17.497)
2.2	.963 (-0.324)	-5.4	.791 (-2.036)	-13.0	.116 (-18.677)
2.0	.97 (-0.268)	-5.6	.776 (-2.199)	-13.2	.10 (-20.021)
1.8	.975 (-0.216)	-5.8	.761 (-2.368)	-13.4	.083 (-21.584)
1.6	.981 (-0.171)	-6.0	.746 (-2.546)	-13.6	.067 (-23.455)
1.4	.985 (-0.131)	-6.2	.73 (-2.731)	-13.8	.051 (-25.792)
1.2	.989 (-0.096)	-6.4	.714 (-2.924)	-14.0	.036 (-28.925)
1.0	.992 (-0.067)	-6.6	.698 (-3.125)	-14.2	.021 (-33.736)
.8	.995 (-0.043)	-6.8	.681 (-3.335)	-14.4	.006 (-44.914)
.6	.997 (-0.024)	-7.0	.664 (-3.554)	-14.6	.009 (-41.043)
.4	.999 (-0.011)	-7.2	.647 (-3.782)	-14.8	.023 (-32.742)
.2	1.00 (-0.003)	-7.4	.63 (-4.019)	-15.0	.037 (-28.661)
.0	1.00 (0)	-7.6	.612 (-4.266)	-15.2	.05 (-25.959)
-.2	1.00 (-0.003)	-7.8	.594 (-4.524)	-15.4	.063 (-23.954)
-.4	.999 (-0.011)	-8.0	.576 (-4.792)	-15.6	.076 (-22.37)
-.6	.997 (-0.024)	-8.2	.558 (-5.071)	-15.8	.088 (-21.07)
-.8	.995 (-0.043)	-8.4	.539 (-5.362)	-16.0	.10 (-19.974)
-1.0	.992 (-0.067)	-8.6	.521 (-5.665)	-16.2	.112 (-19.034)
-1.2	.989 (-0.096)	-8.8	.502 (-5.981)	-16.4	.123 (-18.214)
-1.4	.985 (-0.131)	-9.0	.484 (-6.311)	-16.6	.133 (-17.493)
-1.6	.981 (-0.171)	-9.2	.465 (-6.656)	-16.8	.144 (-16.854)
-1.8	.975 (-0.216)	-9.4	.446 (-7.015)	-17.0	.153 (-16.282)
-2.0	.97 (-0.268)	-9.6	.427 (-7.391)	-17.2	.163 (-15.77)
-2.2	.963 (-0.324)	-9.8	.408 (-7.785)	-17.4	.172 (-15.308)
-2.4	.956 (-0.386)	-10.0	.389 (-8.198)	-17.6	.18 (-14.891)
-2.6	.949 (-0.454)	-10.2	.37 (-8.63)	-17.8	.188 (-14.514)
-2.8	.941 (-0.528)	-10.4	.351 (-9.085)	-18.0	.196 (-14.173)
-3.0	.933 (-0.607)	-10.6	.333 (-9.563)	-18.2	.203 (-13.864)
-3.2	.923 (-0.692)	-10.8	.314 (-10.068)	-18.4	.209 (-13.584)
-3.4	.914 (-0.783)	-11.0	.295 (-10.601)	-18.6	.215 (-13.331)
-3.6	.904 (-0.88)	-11.2	.276 (-11.166)	-18.8	.221 (-13.103)
-3.8	.893 (-0.983)	-11.4	.258 (-11.767)	-19.0	.226 (-12.899)
-4.0	.882 (-1.092)	-11.6	.24 (-12.407)	-19.2	.231 (-12.716)
-4.2	.87 (-1.207)	-11.8	.222 (-13.092)	-19.4	.236 (-12.553)

Systems With Reliability

Page 2 of 3

CLIENT: *KWEI-FM*

Date: 8/9/2010

ANTENNA TYPE: FM3/4

FREQUENCY: 99.5 MHz

PATTERN POL.: Circular

DIRECTIVITY(Peak): 4.088/6.115 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz): 4.088/6.115 dBd

Null Fill(s)(%) : 0, 0, 0

Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
-19.6	.24 (-12.41)	-27.2	.117 (-18.664)	-54.0	.188 (-14.511)
-19.8	.243 (-12.285)	-27.4	.109 (-19.281)	-55.0	.219 (-13.205)
-20.0	.246 (-12.177)	-27.6	.101 (-19.954)	-56.0	.247 (-12.148)
-20.2	.249 (-12.086)	-27.8	.092 (-20.691)	-57.0	.273 (-11.282)
-20.4	.251 (-12.012)	-28.0	.084 (-21.504)	-58.0	.296 (-10.571)
-20.6	.253 (-11.952)	-28.2	.076 (-22.408)	-59.0	.317 (-9.989)
-20.8	.254 (-11.908)	-28.4	.067 (-23.424)	-60.0	.334 (-9.515)
-21.0	.255 (-11.878)	-28.6	.059 (-24.581)	-61.0	.349 (-9.134)
-21.2	.255 (-11.862)	-28.8	.051 (-25.921)	-62.0	.362 (-8.836)
-21.4	.255 (-11.861)	-29.0	.042 (-27.509)	-63.0	.371 (-8.611)
-21.6	.255 (-11.873)	-29.2	.034 (-29.455)	-64.0	.378 (-8.452)
-21.8	.254 (-11.899)	-29.4	.025 (-31.965)	-65.0	.382 (-8.352)
-22.0	.253 (-11.938)	-29.6	.017 (-35.502)	-66.0	.384 (-8.305)
-22.2	.251 (-11.99)	-29.8	.008 (-41.542)	-67.0	.384 (-8.309)
-22.4	.25 (-12.056)	-30.0	.00 (-50)	-68.0	.382 (-8.359)
-22.6	.247 (-12.136)	-31.0	.041 (-27.75)	-69.0	.378 (-8.453)
-22.8	.245 (-12.228)	-32.0	.08 (-21.983)	-70.0	.372 (-8.587)
-23.0	.242 (-12.335)	-33.0	.115 (-18.8)	-71.0	.365 (-8.759)
-23.2	.238 (-12.455)	-34.0	.146 (-16.728)	-72.0	.356 (-8.968)
-23.4	.235 (-12.588)	-35.0	.172 (-15.306)	-73.0	.346 (-9.212)
-23.6	.231 (-12.736)	-36.0	.192 (-14.331)	-74.0	.335 (-9.491)
-23.8	.226 (-12.899)	-37.0	.207 (-13.7)	-75.0	.323 (-9.803)
-24.0	.222 (-13.076)	-38.0	.215 (-13.353)	-76.0	.311 (-10.149)
-24.2	.217 (-13.269)	-39.0	.217 (-13.261)	-77.0	.298 (-10.528)
-24.4	.212 (-13.478)	-40.0	.214 (-13.409)	-78.0	.284 (-10.941)
-24.6	.206 (-13.703)	-41.0	.204 (-13.798)	-79.0	.269 (-11.39)
-24.8	.201 (-13.945)	-42.0	.19 (-14.446)	-80.0	.255 (-11.875)
-25.0	.195 (-14.205)	-43.0	.17 (-15.39)	-81.0	.24 (-12.4)
-25.2	.189 (-14.484)	-44.0	.146 (-16.7)	-82.0	.225 (-12.967)
-25.4	.182 (-14.783)	-45.0	.119 (-18.507)	-83.0	.209 (-13.581)
-25.6	.176 (-15.103)	-46.0	.088 (-21.083)	-84.0	.194 (-14.247)
-25.8	.169 (-15.446)	-47.0	.055 (-25.123)	-85.0	.178 (-14.973)
-26.0	.162 (-15.813)	-48.0	.021 (-33.591)	-86.0	.163 (-15.769)
-26.2	.155 (-16.207)	-49.0	.015 (-36.679)	-87.0	.147 (-16.648)
-26.4	.147 (-16.629)	-50.0	.051 (-25.907)	-88.0	.131 (-17.628)
-26.6	.14 (-17.082)	-51.0	.087 (-21.259)	-89.0	.116 (-18.733)
-26.8	.132 (-17.569)	-52.0	.122 (-18.296)	-90.0	.10 (-20)
-27.0	.125 (-18.095)	-53.0	.156 (-16.155)	90.0	.00 (-50)

Systems With Reliability

Page 3 of 3

CLIENT: *KWEI-FM*

Date: 8/9/2010

ANTENNA TYPE: FM3/4

FREQUENCY: 99.5 MHz

PATTERN POL.: Circular

DIRECTIVITY(Peak): 4.088/6.115 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz): 4.088/6.115 dBd

Null Fill(s)(%) : 0, 0, 0