December 2017
KVVA-FM Channel 296C3
Sun Lakes, AZ
Principal Community Coverage Study

The 70 dBu contour from the proposed facility, as calculated using the standard contour prediction methodology described in §73.313 of the Commission's Rules, does not encompass the entire community of Sun Lakes. The far side of Sun Lakes is located 25.3 kilometers from the proposed transmitter site. The standard 70 dBu contour extends approximately 22.6 kilometers towards Sun Lakes. However, it is believed that a supplemental showing using alternative contour prediction methodology is justified in this instance in accordance with §73.313(e).

The entire community of Sun Lakes is encompassed by the 60 dBu contour. The attached map exhibits depict the community boundary of Sun Lakes as taken from the 2010 Census. All calculations were made using the 3-arc second database in conjunction with the height and ERP specified herein.

Longley-Rice

Study has been made of the predicted 70 dBu field strength over Sun Lakes, using the Longley-Rice v1.2.2 methodology as described in the FCC's Office of Engineering and Technology Bulletin 69, dated February 6, 2004. This study has been conducted using the software program SIGNAL™ from EDX Wireless.

A sample calculation has been made to a location within the community boundary of Sun Lakes to verify the presence of 70 dBu service, using the formula:

Field Strength = Free Space - Diffraction Loss - Clutter
Where Free Space = 106.9 + power in dBk - 20log(distance in km to point of interest)

For the path studied (-0.60 dBk over a 21.6 km path), the result of this calculation is:

Radial	Free Space Field	Minus Diffraction Loss	Yields
126 deg	79.6 dBu	0.0 dB	79.6 dBu

Attached is a plot of the terrain path from the transmitter site to the sample location in Sun Lakes. The attached terrain path plot includes a list of the Longley-Rice study parameters.

The location of the Longley-Rice contour in the direction of Sun Lakes has been determined for 1-degree increment radials passing through Sun Lakes (starting at 120 degrees and ending at 132 degrees), as well as the "bracketing" radials (119 and 133 degrees) on either side.

Radial	**F(50,50) 70 dBu**	**L-R 75 dBu**	**L-R exceeds F(50,50) by**
119	22.5 km	36.7 km	63%
120	22.5 km	36.7 km	63%
121	22.5 km	36.7 km	63%
122	22.6 km	35.4 km	57%
123	22.6 km	36.7 km	62%
124	22.6 km	36.7 km	62%
125	22.6 km	36.7 km	62%
126	22.7 km	36.7 km	62%
127	22.7 km	36.7 km	62%
128	22.7 km	36.7 km	62%
129	22.7 km	36.7 km	62%
130	22.7 km	36.7 km	62%
131	22.7 km	36.7 km	62%
132	22.7 km	36.7 km	62%
133	22.7 km	36.7 km	62%

The attached map exhibit depicts the results of this analysis as a 75 dBu (chosen to allow for 5 dB of local clutter loss at the receive locations) contour over the span of 119 to 133 degrees.