

**September 2008**  
**KEZQ(FM) Channel 226C1**  
**Iona, ID**  
**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 Iona. The far side of Iona is located approximately 60.4 kilometers from the proposed transmitter site. The standard 70 dBu contour extends approximately 47 kilometers towards Iona. 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 Iona is encompassed by the 60 dBu contour. The attached map exhibits depict the city boundaries of Iona as taken from 2000 Census.

**Threshold Test for Application of Alternative Contour Prediction Methodology**

The instant case satisfies the §73.313(e) requirements for the application of alternative contour prediction methodology in that the terrain in the direction of Iona departs widely from the average 50 meter delta-h value assumed in the development of the field strength charts in §73.333. The Commission has established guidelines to assist applicants in determining when the terrain "departs widely." See the August 8, 2002, letter to Mark Lipp, Esq., from the Associate Chief, Audio Division, regarding application BPH-20000316ACF for modification of KMAJ-FM at Topeka, Kansas (the "KMAJ-FM Letter"). In the KMAJ-FM Letter, the Commission established that terrain is considered to "depart widely" where the delta-h along the radial has a value of 20 meters or less, or 100 meters or more.

The delta-h value has been calculated in the direction of Iona, following the instructions presented in §73.313(f) and §73.313(g). Since the community lies in excess of 50 km from the transmitter site, calculation has been made over the radial segment between 10 km and 50 km as instructed by §73.313(f), using terrain data extracted every 0.1 km from the 3-arc second terrain database. The result of the calculation is summarized in the following table:

<b>Radial</b>	<b>Radial Segment</b>	<b>10% value</b>	<b>90% value</b>	<b>delta-h</b>
87 deg	10 to 50 km	1585 meters	1447 meters	138 meters

The delta-h value in the direction of Iona is 138 meters, satisfying the Commission's threshold test guidelines for the application of alternative contour prediction methodology.

An alternative prediction methodology has been employed to verify that Iona will receive 70 dBu service from the proposed facility. 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 Iona, using the Longley-Rice v1.2.2 methodology as described in the FCC's Office of Engineering and Technology Bulletin 69, dated July 2, 1997. 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 Iona to verify the presence of 70 dBu service, using the formula:

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

For the path studied (15.68 dBk over a 59.22 km path), the result of this calculation is:

Radial	Free Space Field	Minus Diffraction Loss	Yields
87 deg	87.1 dBu	3.3 dB	83.8 dBu

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

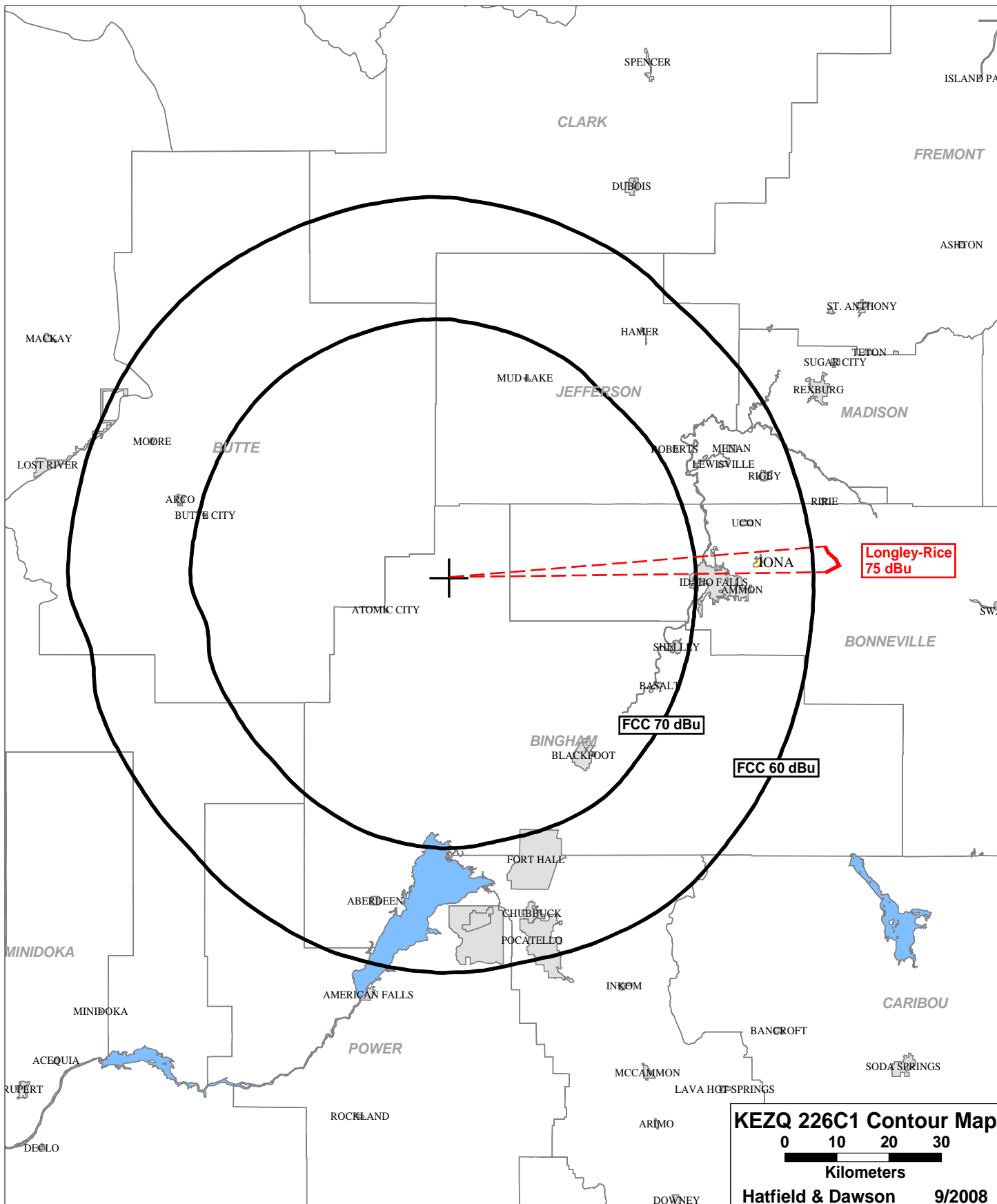
The location of the Longley-Rice contour in the direction of Iona has been determined for 1-degree increment radials passing through Iona (starting at 86 degrees and ending at 88 degrees), as well as the "bracketing" radials (85 and 89 degrees) on either side.

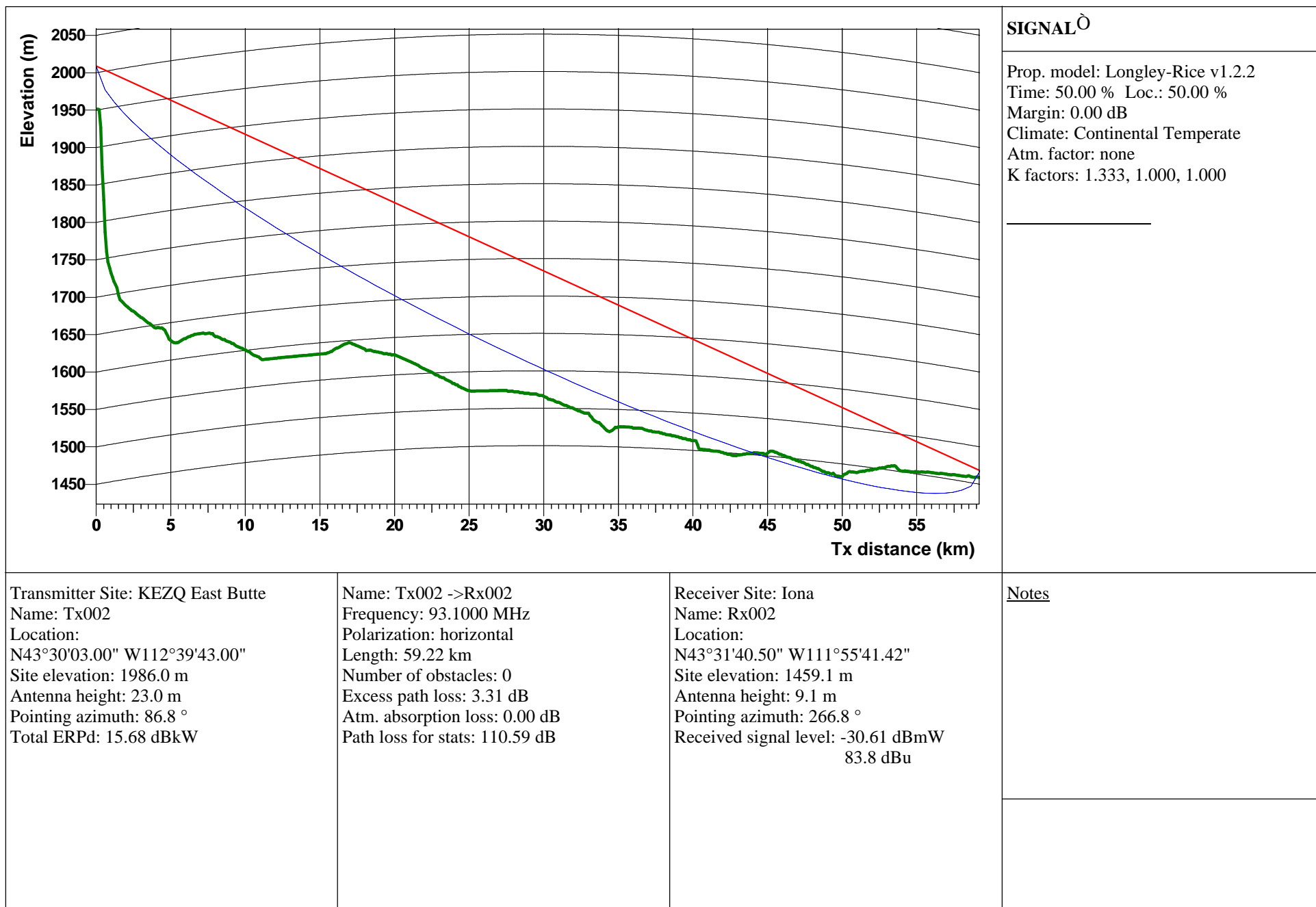
Radial	F(50,50) 70 dBu	L-R 75 dBu	L-R exceeds F(50,50) by
85	46.8 km	71.9 km	(bracketing radial)
86	46.9 km	72.4 km	54.4%
87	46.9 km	73.8 km	57.4%

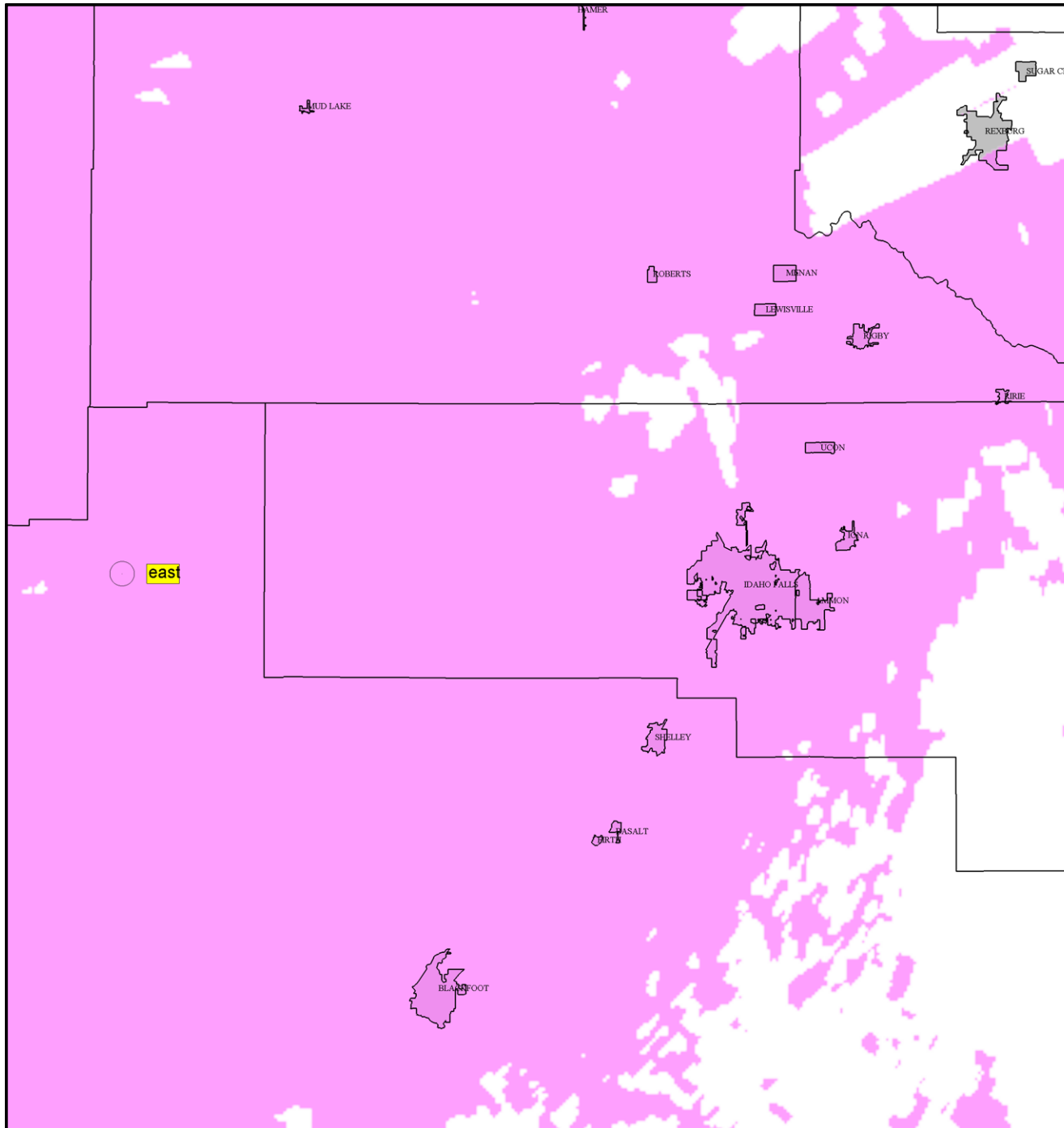
88	46.9 km	74.4 km	58.6%
89	47.0 km	71.8 km	(bracketing radial)

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 85 to 89 degrees.

Also included is a Longley-Rice area study map, further demonstrating that the proposed facility will provide at least 75 dBu to the entirety of Iona.







SIGNAL™: KEZQ-FM IONA

Prop. model 1: Longley-Rice v1.2.2  
Time: 50.0% Loc.: 50.0%  
Prediction Confidence Margin: 0.0dB  
Climate: Continental Temperate  
Land use (clutter): none  
Atmospheric Abs.: none  
K Factor: 1.333

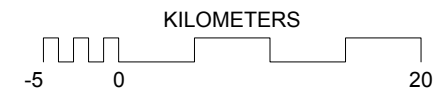
#### Sites

Site: east  
N43°30'03.00" W112°39'43.00" 1986.0 m  
east Tx.Ht.AGL: 23.0 m Total ERPd: 15.68 dBkW  
Model: 1 omni-horizontal/0.0° 93.1000 MHz

#### Field strength at remote

> 75.0 dBuV/m  
< 75.0 dBuV/m

Display threshold level: -120.0 dBmW  
RX Antenna - Type: OMNI  
Height: 9.1 m AGL Gain: 0.00 dBd



**KEZQ Longley-Rice 75 dBu**  
Hatfield & Dawson

Exhibit

Sep 2008