



## ***Engineering Report***

Bittersweet Broadcasting, Inc.  
KWJK (FM)

This consultant has been retained by Bittersweet Broadcasting, Inc., licensee of KWJK (FM) in Boonville, MO for the purpose of providing technical support to Form 301 in application for a minor change in its licensed facilities. It is proposed that KWJK upgrade from a Class A operation to a Class C3 operation at its presently licensed tower site.

### **Allocation Considerations**

KWJK was ordered from Channel 226 A to Channel 226 C3 in the report and order associated with RM-11254, Docket 06-88. This application satisfies that order.

### **Proposed KWJK Operation**

It is proposed that KWJK upgrade from a Class A FM radio station to a Class C3 FM radio station by increasing the size of its transmitter and increasing the station ERP from 3.8 kW to 7.2 kW. No change to the existing ERI 3 bay antenna nor the center of radiation is proposed. The KWJK Tower is registered and carries the registration number 1214995. Exhibit 1 of this report is a digitally generated map which shows the predicted service contours of the proposed KWJK operation as well as the corporate boundaries of Boonville, MO. As shown in Exhibit 1, the entire community of Boonville will receive a signal in excess 70 dBu as required in 47 CFR 73.315(a). Exhibit 2 of this report is a full search of the Commission's November 5, 2006 FM database which demonstrates that the proposed KWJK operation is fully spaced to all other FM radio stations, as changed by the Report and Order in RM-11254<sup>1</sup>, with the exception of the licensed operation of KGRC in Hannibal, MO. Due to the short spacing with KGRC this application seeks processing under the provisions of 47 CFR 73.215.

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<sup>1</sup> The FM database search shows a 22.17 km short spacing to the Channel 226 A application (BNPH-20060309 ABD) at Wheatland, MO. The applicant at Wheatland has been ordered to amend that application to specify an operation on Channel 272.



The proposed operation is fully compliant with the super-minimum spacing requirements 47 CFR 73.215(e) and additional exhibits have been prepared so as to demonstrate the lack of prohibited overlap between the proposed KWJK operation and KGRC. As specified in 47 CFR 73.215(b) the contours for KGRC (FM) were predicted based on a 100 kW facility at 299 m HAAT, the maximum for a Class C1 operation. Exhibit 3 of this report is a digitally generated map which shows the 60 dBu protected and 54 dBu interfering contours of both the proposed KWJK operation and the KGRC maximum Class C1 operation. As shown in Exhibit 3 there is tremendous separation between the proposed KWJK 54 dBu interfering contour and the KGRC 60 dBu protected contour. The KGRC 54 dBu interfering contour does, however, come quite close to the proposed KWJK protected 60 dBu contour. Exhibit 4 of this report is a digitally generated detail map which graphically highlights the lack of prohibited overlap between the KGRC 54 dBu contour and the proposed KWJK 60 dBu contour. Exhibit 5 of this report is a Fmover study which predicts the interfering signal level from KGRC at points along the proposed KWJK 60 dBu contour. As shown in Exhibit 5, the interfering signal level from KGRC never exceeds 53.9 dBu.

### **Environmental Considerations**

The construction associated with this application is limited to replacing the existing FM broadcast transmitter and increasing the transmitter output power and the ERP. No other physical construction is proposed. Exhibit 6 of this report is an analysis of non-ionizing RF radiation and Exhibit 7 is power density plot generated from the Commission's FM Model software. Even under the worst case conditions the power density falls well below the 0.2 mW/cm<sup>2</sup> maximum for an uncontrolled environment.

### **Certification**

All information in this report and its associated exhibits is true and accurate to the best of my belief. Having had numerous matters before the Commission, my qualifications are a matter of record.

November 22, 2006

Date

**R. Lee Wheeler**

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