HATFIELD & DAWSON
CONSULTING ELECTRICAL ENGINEERS
9500 GREENWOOD AVE. N.
SEATTLE, WASHINGTON 98103

JAMES B. HATFIELD, PE
BENJAMIN F. DAWSON III, PE
THOMAS M. ECKELS, PE
STEPHEN S. LOCKWOOD, PE
DAVID J. PINION, PE

PAUL W. LEONARD, PE
ERIK C. SWANSON, EIT
THOMAS S. GORTON, PE

TELEPHONE
(206) 783-9151
FACSIMILE
(206) 789-9834
E-MAIL
hatdaw@hatdaw.com

MAURY L. HATFIELD, PE
CONSULTANT
BOX 1326
ALICE SPRINGS, NT 5950
AUSTRALIA

Engineering Statement
Digital Companion Channel Application for KXMN-LP
For Operation on Channel 9
October 2006

This Engineering Statement has been prepared on behalf of Spokane Television, Inc., licensee of LPTV station KXMN-LP at Spokane, Washington. This material has been prepared in connection with a digital companion channel application for operation on Channel 9.

I. Allocation Study

Study has been made of all cochannel and adjacent-channel facilities in the vicinity of the proposed operation, including a detailed Longley-Rice interference study to demonstrate that the proposed operation will not cause interference to any facilities with which contour overlap exists. This study was performed using the SunDTV program from V-Soft Communications and a 1 km grid spacing. The SunDTV program identically duplicates the FCC's OET-69 processing program.

The results of this study indicate that the proposed facility is predicted to cause zero additional interference to any stations other than KWSU-TV, operating on analog Channel 10 at Pullman, Washington. The KXMN-LP licensee is pursuing acquiring a letter from the KWSU-TV licensee, consenting to grant of the instant application.

With regard to Canadian cochannel operations, the attached map exhibit demonstrates that the proposed 22 dBu F(50,10) contour does not cross the US-Canada border. According to the "Letter of Understanding" between the FCC and Industry Canada related to digital television broadcasting service along the border, a 33.8 dB D/U ratio is utilized for cochannel digital-into-

analog protection. For protection of the Canadian station's Grade B 56 dBu contour, this equates to a 22 dBu interfering contour from the proposed facility.

Based on the foregoing allocation and interference study, it is believed that the proposed facility can operate without risk of unacceptable interference to other stations.

II. NIER Study

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(mW/cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

D is the distance in meters from the center of radiation to the calculation point.

Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 1000 meters. Values past this point are increasingly negligible.

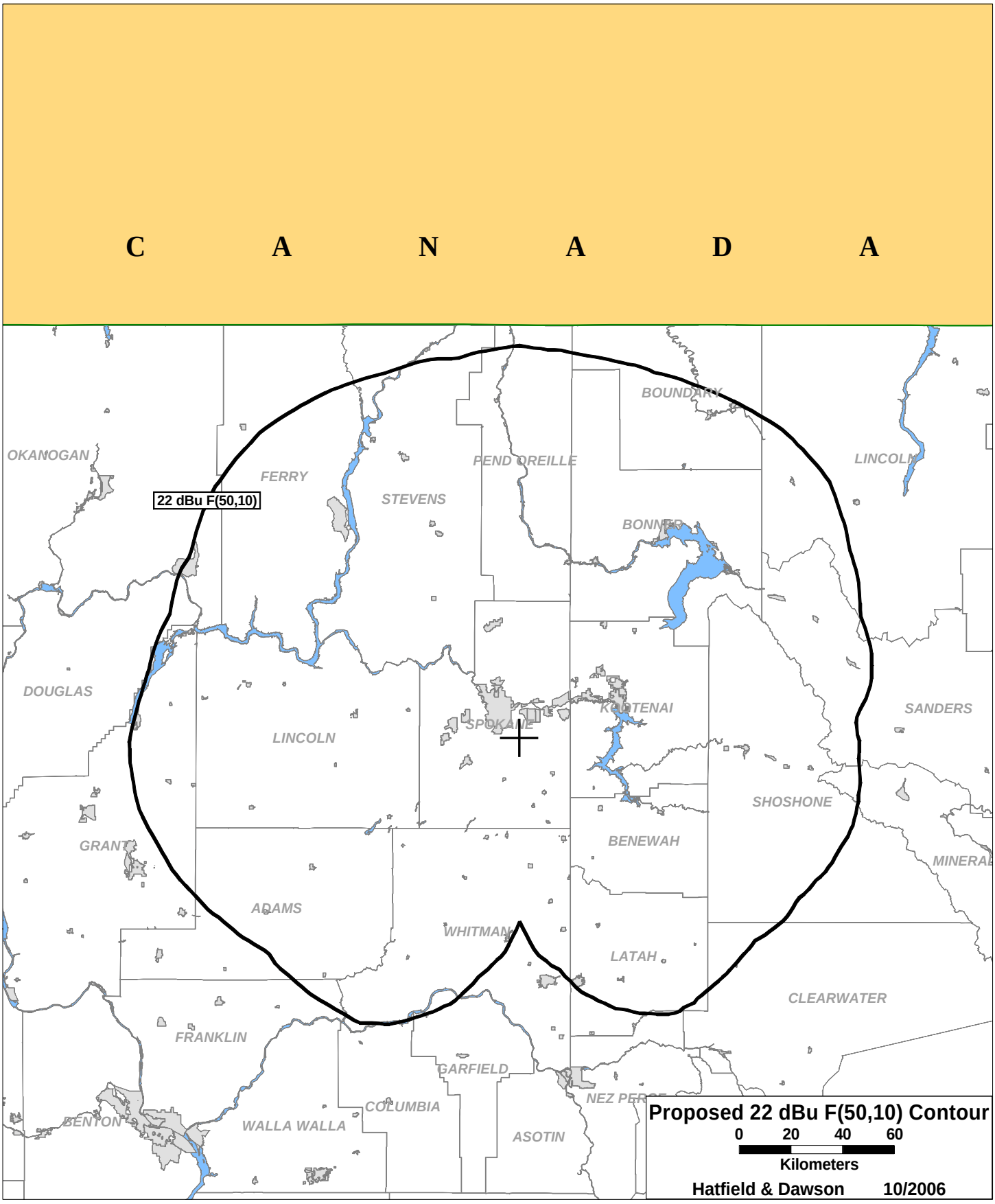
Power density levels produced by the proposed facility were calculated for an elevation of 2 meters above ground level (143 meters below the antenna radiation center). The worst case power density levels occur at depression angles between 45° and 90° below the horizontal. The calculations in this report assume a worst case relative field value of 0.1 at these angles, based on review of the manufacturer's vertical plane pattern for the Kathrein DRV-8/3HC panel antenna array proposed in this application. This relative field value yields a worst case average adjusted effective radiated power of 2 Watts at depression angles between 45° and 90° below the horizontal. Assuming this worst-case effective radiated power and the shortest distance between the antenna radiation center and 2 meters above ground level (i.e. straight down), the highest calculated power density from the proposed antenna alone occurs at the base of the antenna support structure. At this point the power density is calculated to be 0.3 μW/cm², which is 0.002% of 200 μW/cm² (the FCC standard for uncontrolled environments at the Channel 9 frequency).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 1000 meters from the base of the antenna support structure. Section 1.1307(b)(3) of the Commission's Rules excludes applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicants proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in compliance with Section 1.1301 et seq and no further analysis of non-ionizing radiation at this site is required in this application.

Public access to the transmitter site is restricted. Pursuant to OET Bulletin No. 65, all station personnel and contractors are required to follow appropriate safety procedures before any work is commenced on the antenna tower, including reduction in power or discontinuance of operation before any maintenance work is undertaken. The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency radiation in excess of FCC guidelines.

October 16, 2006

Erik C. Swanson


C A N A D A
22 dBu F(50,10)
OKANOGAN
FERRY
STEVENS
PEND OREILLE
BOUNDARY
LINCOLN
BONNER
DOUGLAS
LINCOLN
SPOKANE
KOOTENAI
SANDERS
SHOSHONE
BENEWAH
GRANT
ADAMS
WHITMAN
LATAH
CLEARWATER
FRANKLIN
GARFIELD
COLUMBIA
WALLA WALLA
BENTON
ASOTIN
NEZ PERCE
Proposed 22 dBu F(50,10) Contour
0 20 40 60
Kilometers
Hatfield & Dawson 10/2006