

July 2021
FM Translator K281BH
Driggs, Idaho Channel 281D
Allocation Study

Background and Allocation Study

The instant application, filed as an amendment to 0000152155, proposes a minor modification of FM translator K281BH, including a site change, antenna change, and power increase.

The attached spacing study shows the spacing between the proposed translator site and the location of cochannel and adjacent channel stations and proposals. This study was made with the Commission's Class A spacing requirements, and individual situations were examined to determine the lack of prohibited contour overlap per the requirements of §74.1204 of the Rules. The attached allocation study maps demonstrate compliance with the Commission's Rules for protection of FM broadcast stations and FM translators as outlined in §74.1204.

KDAD 279C3 Victor

KZKY 283C2 Ucon

The proposed translator transmitter site is located just outside the 60 dBu protected contours of second-adjacent channel stations KDAD 279C3 Victor and KZKY 283C2 Ucon. The attached map of the proposed transmitter site depicts the worst-case 100 dBu interfering contour from the proposed facility as a circle with a radius of 1108 meters (corresponding to a Free Space calculation). There is no population within this contour, which falls entirely over Forest Service lands.. Therefore, even if the 100 dBu contour were to overlap either the KDAD or KZKY 60 dBu contour, the proposed facility would satisfy the requirements of §74.1204(d) with respect to those stations.

The attached spacing study demonstrates compliance with §73.207 of the Commission's Rules regarding spacing restrictions to stations which are 53 or 54 channels removed from the proposed operation.

SEARCH PARAMETERS

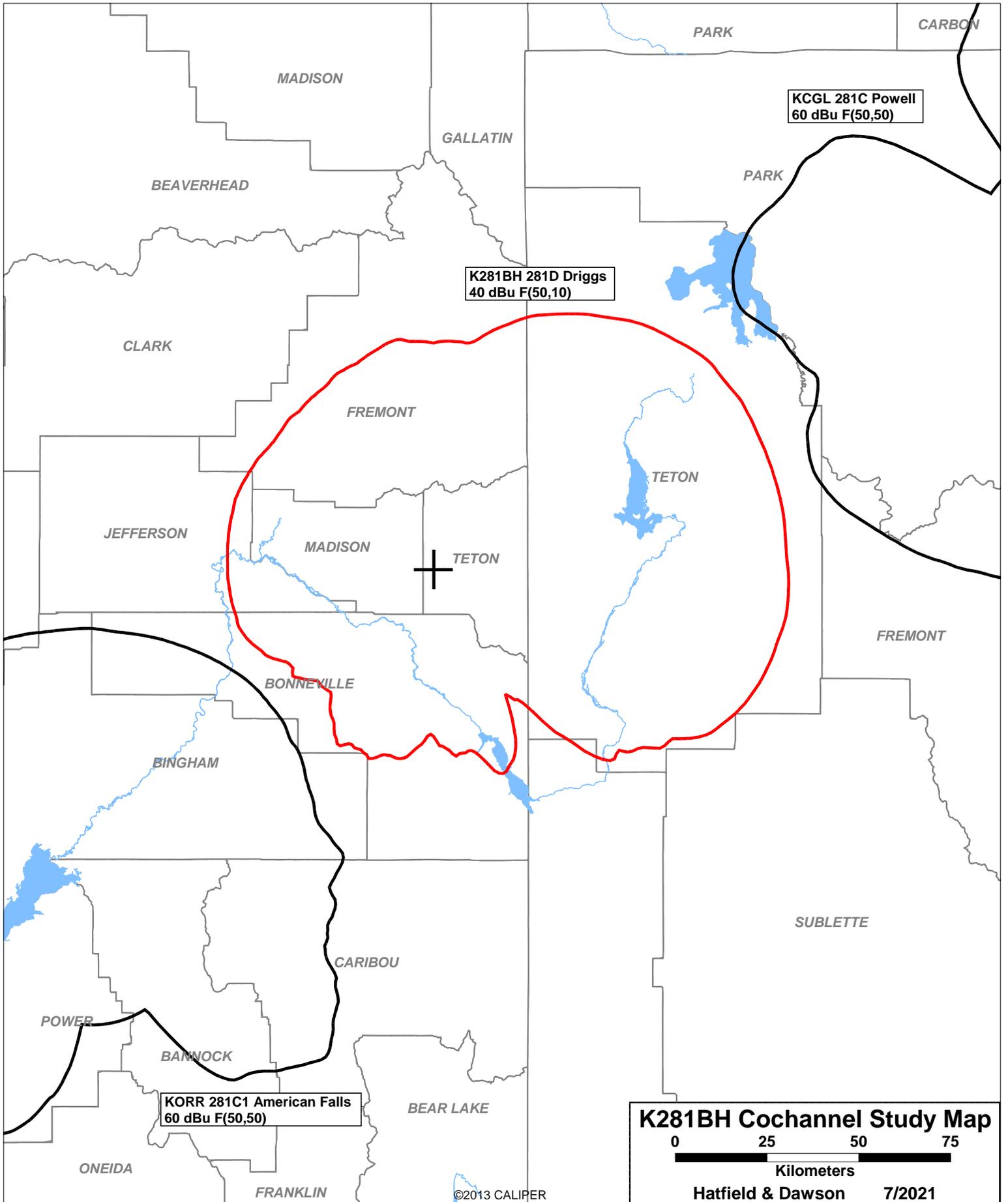
FM Database Date: 20210719

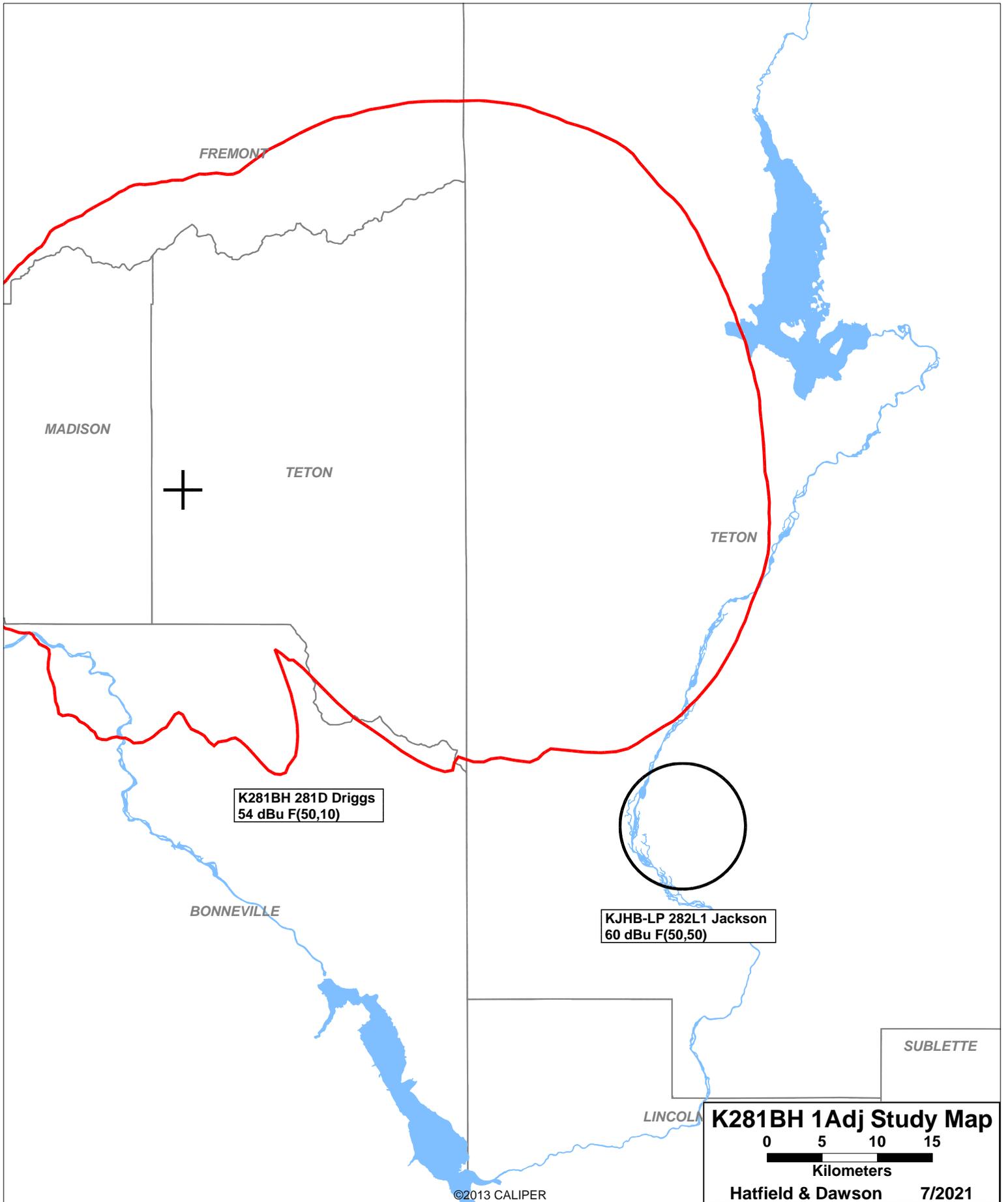
Channel: 281A 104.1 MHz
 Latitude: 43 43 53.3 (NAD83)
 Longitude: 111 21 54.7
 Safety Zone: 50 km
 Job Title: K281BH DRIGGS

Page 1

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KJAX LIC	JACKSON WY	BLH-20121219AAP	228C1 93.5	90.000 315.0	43 27 39.7 110 45 11.7	121.2 SS	57.83 35.83	22 CLEAR
KDAD LIC	VICTOR ID	BLH-20060811AWF	279C3 103.7	0.821 331.0	43 29 26.7 110 57 18.7	128.9	42.55 0.55	42 CLOSE
K279AU LIC	IDAHO FALLS ID	BLFT-20100322ADJ	279D 103.7	0.250 0.0	DA 43 32 32.6 111 53 6.8	243.5	46.93 0.00	0 TRANS
K280EG LIC	FREEDOM WY	BLFT-19941024TB	280D 103.9	0.010 0.0	43 1 22.7 111 4 23.7	163.2	82.19 0.00	0 TRANS
KCGL LIC	POWELL WY	BLH-20011205AAM	281C 104.1	100.000 547.0	44 29 41.8 109 9 12.5	63.6	196.33 -29.67	226 SHORT
KORR LIC	AMERICAN FALLS ID	BLH-19941220KB	281C1 104.1	56.000 338.0	42 51 45.6 112 31 5.9	224.4 SS	134.43 -65.57	200 SHORT
K281BH LIC	DRIGGS ID	BLFT-20110929AKC	281D 104.1	0.100 0.0	DA 43 42 41.6 111 20 59.8	151.0	2.53 0.00	0 TRANS
K281BH APP	DRIGGS ID	0000152155	281D 104.1	0.250 0.0	DA 43 42 41.6 111 20 59.8	151.0	2.53 0.00	0 TRANS
KJHB-LP LIC	JACKSON WY	BLL-20151204ACN	282L1 104.3	0.100 0.0	43 27 24.7 110 48 6.7	123.7	54.77 -1.23	56 SHORT
KZKY LIC	UCON ID	BLH-20120314ADN	283C2 104.5	37.000 173.0	DA 43 32 33.6 111 53 9.8	243.6 SS	46.98 -8.02	55 SHORT
K284BI LIC	ALPINE WY	BLFT-20100423ABW	284D 104.7	0.010 0.0	43 6 16.7 111 7 19.7	164.2	72.37 0.00	0 TRANS

===== END OF FM SPACING STUDY FOR CHANNEL 281 =====





July 2021
FM Translator K281BH
Driggs, Idaho Channel 281D
RF Exposure Study

Facilities Proposed

The proposed operation will be on Channel 281D (104.1 MHz) with a maximum lobe effective radiated power of 250 watts. Operation is proposed with an antenna which will be mounted on an existing tower on Relay Ridge. The antenna is shared by K239AU and K281BH.

The proposed antenna support structure does not exceed 60.96 meters (200 feet) above ground and does not require notification to the Federal Aviation Administration. Therefore, this structure does not require an Antenna Structure Registration Number.

DETERMINATION Results	
Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.	
Your Specifications	
NAD83 Coordinates	
Latitude	43-43-53.3 north
Longitude	111-21-54.7 west
Measurements (Meters)	
Overall Structure Height (AGL)	47.2
Support Structure Height (AGL)	47.2
Site Elevation (AMSL)	2591
Structure Type	
LTOWER - Lattice Tower	

RF Exposure Calculations

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.

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

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

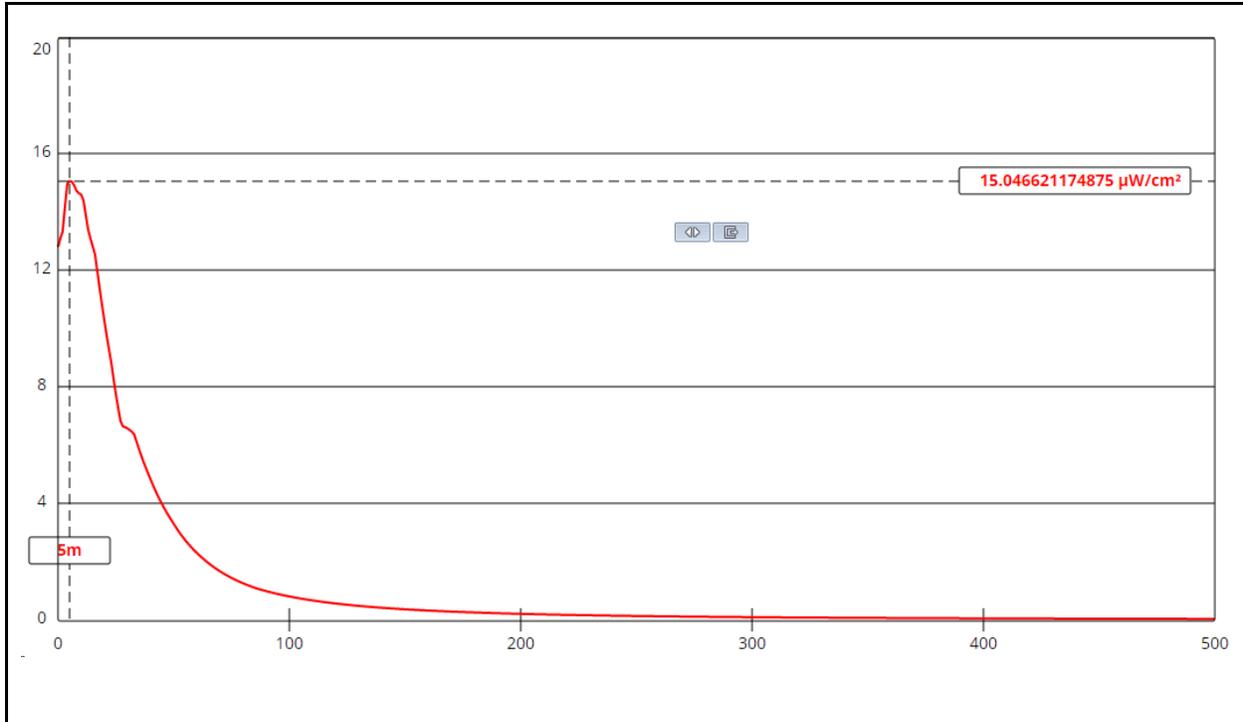
D is the distance in meters from the center of radiation to the calculation point.

Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 500 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed antenna system assume a Type 1 element pattern, which is the “worst case” element pattern used in the FMModel software. The highest calculated ground level power density occurs at a distance of 5 meters from the base of the antenna support structure. At this point the power density is calculated to be 15.0 $\mu W/cm^2$, which is 7.5% of the FCC standard for uncontrolled areas.

Three full-power FM stations are also located on this tower (KWFO-FM 271C1, KUPY 260C3, and KYSK 204C). Summation of the FMModel-calculated ground-level power densities from each of these stations at incremental distances of the tower would produce a maximum result which exceeds the FCC standard for uncontrolled areas. The licensee will perform post-construction ground-level power density measurements should the Commission so require.

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 exposure in excess of FCC guidelines.



Ground-Level RF Exposure

OET FMModel

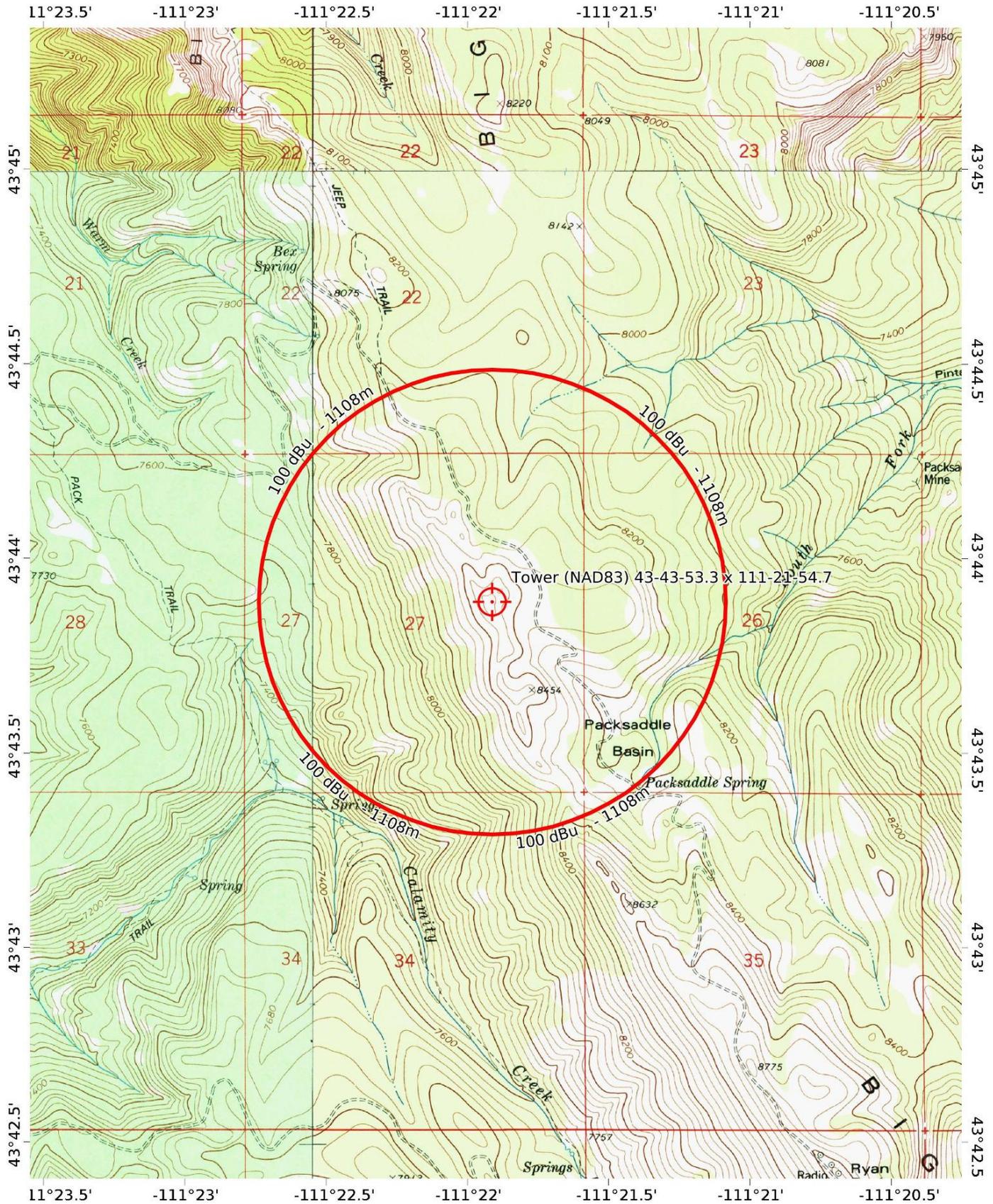
K281BH Driggs

Antenna Type: Nicom BKY3P (Type 1)
 No. of Elements: 1
 Element Spacing: 1 wavelength

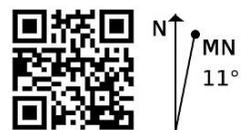
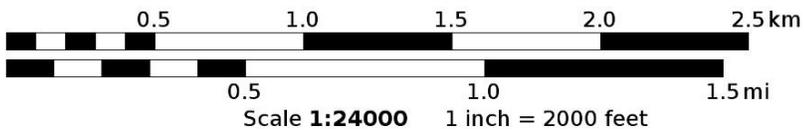
Distance: 500 meters
 Horizontal ERP: zero W
 Vertical ERP: 250 W

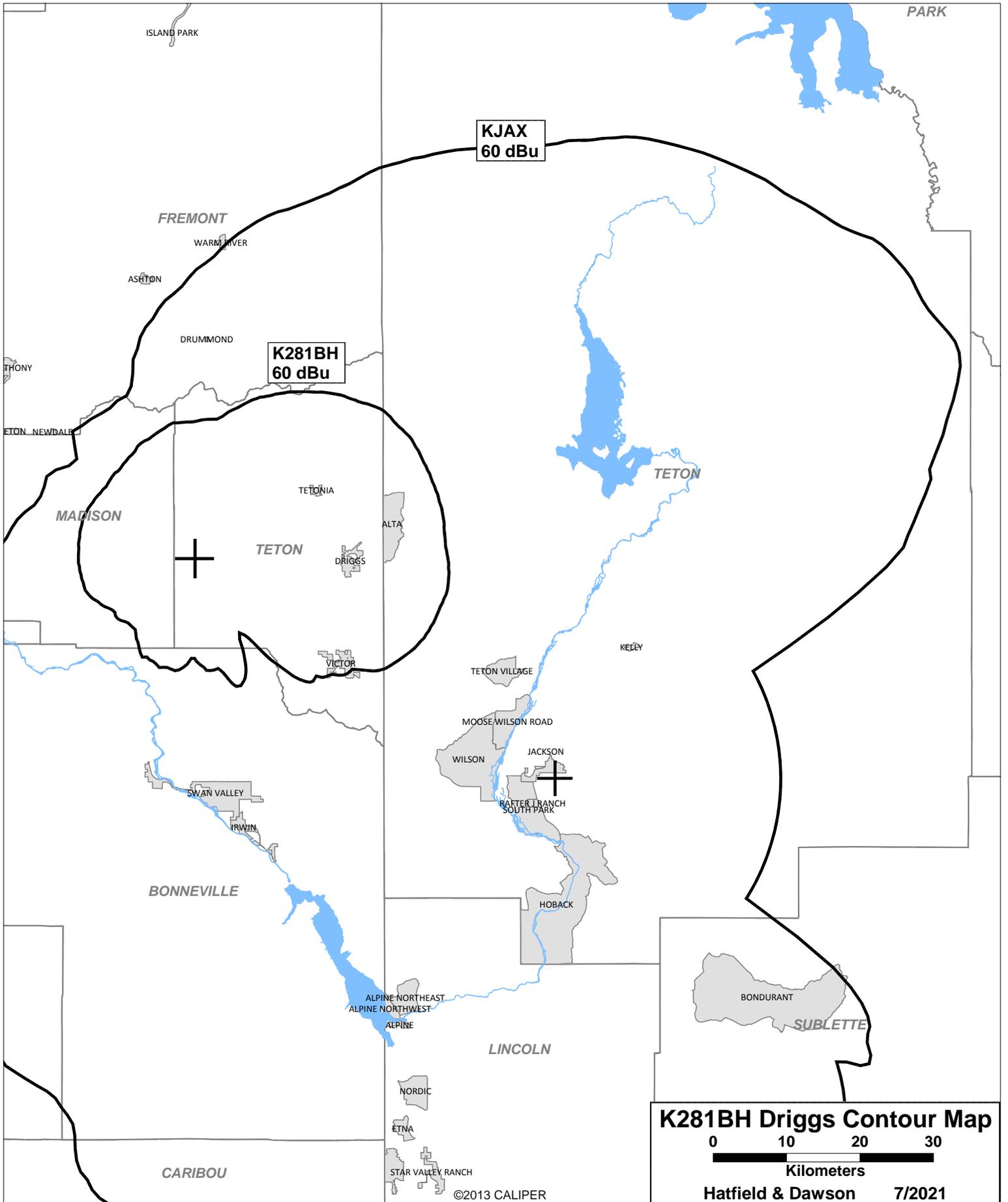
Antenna Height: 25 meters AGL

Maximum Calculated Power Density is 15.0 μW/cm² at 5 meters from the antenna structure.



Mercator Projection
 WGS84
 USNG Zone 12TVP
 CALTOPO





K281BH Driggs Contour Map
 0 10 20 30
 Kilometers
 Hatfield & Dawson 7/2021