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**Proposed Translator
Channel 278D at Spokane, WA
To Rebroadcast KGA(AM) 1510 kHz Spokane, WA
March 2018**

Allocation Study

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 map demonstrates compliance with the Commission's Rules for protection of FM broadcast stations and FM translators as outlined in §74.1204.

The proposed facility will operate with a main lobe ERP of less than 100 watts. Therefore there are no spacing restrictions to stations which are 53 or 54 channels removed from the proposed operation.

Second-Adjacent Channel Stations

The proposed translator transmitter site is located within the 60 dBu protected contour of the second-adjacent channel stations listed below. The following calculation, performed using the *Living Way* methodology, demonstrates interference protection to those stations.

Protected Station	Distance & Bearing to Proposal	Station ERP and HAAT on that azimuth	Station Field Strength at Proposal	Corresponding Translator Interfering Contour	Distance to Translator Interfering Contour
KCDA 276C1	2.05 km 354 deg True	18.5 kW 565 meters	113.0 dBu F(50,50)	153.0 dBu	1.6 meters Free Space
KBBB 280C1	0.01 km 0 deg True	34 kW 499 meters	162.2 dBu Free Space	202.2 dBu	<0.1 meters Free Space

(The translator will be co-located with KBBD. A distance of 0.01 km is assumed in order to perform the calculation without encountering a divide-by-zero error.)

The worst-case interfering contour extends at most 1.6 meters from the antenna and does not reach ground level, which is 90 meters below the antenna. There is no population within this contour. Therefore, the proposed facility is believed to satisfy the requirements of §74.1204(d) with respect to KCDA and KBBD.

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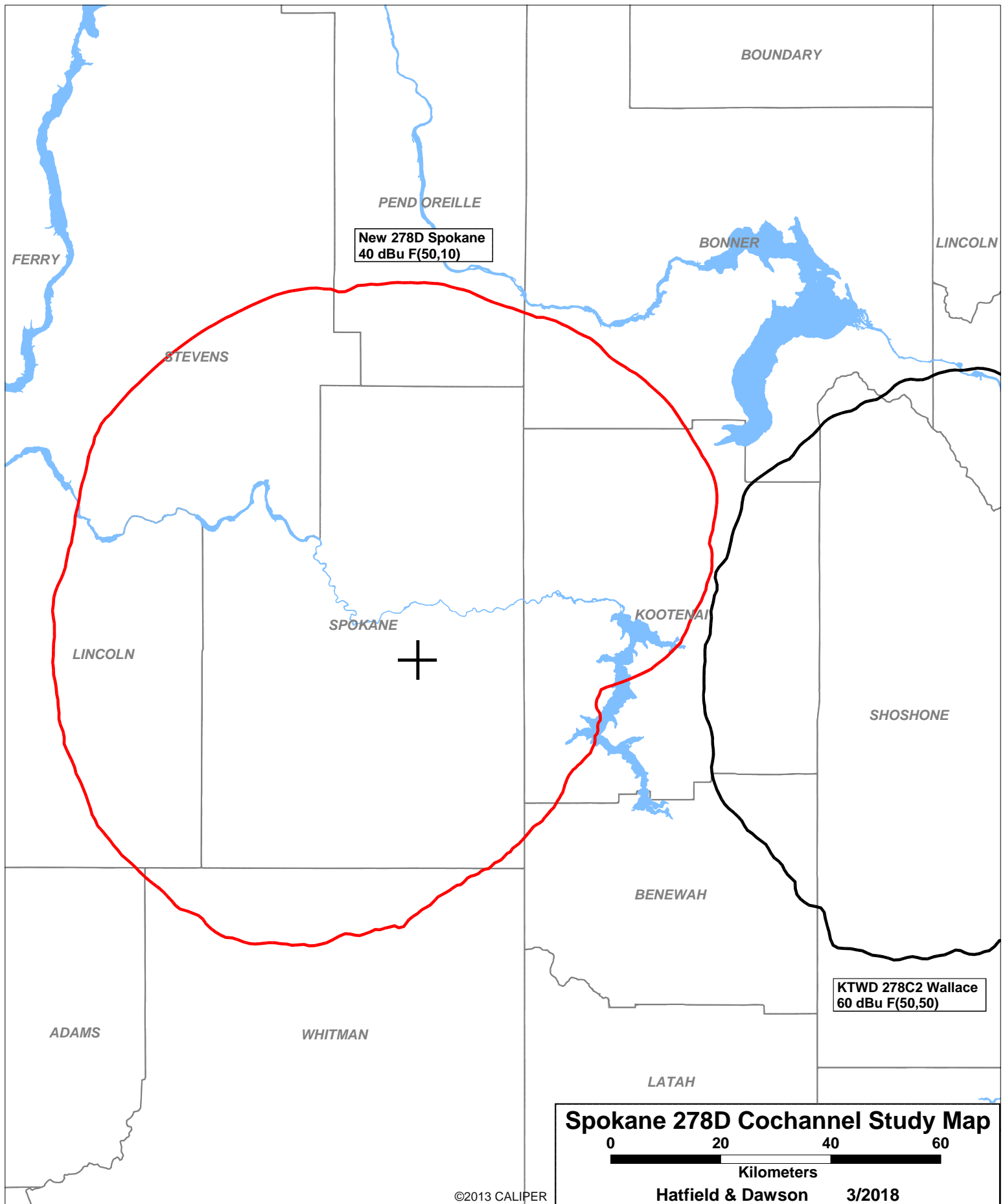
SEARCH PARAMETERS

Channel: 278A 103.5 MHz
 Latitude: 47 35 58
 Longitude: 117 17 57
 Safety Zone: 50 km
 Job Title: SPOKANE 278

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Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KZZU-FM LIC	SPOKANE WA	BLH-781017AE	225C 92.9	85.000 634.0	47-35-42 117-17-53	170.4	0.50 -28.50	29 SHORT
KCDA LIC	POST FALLS ID	BLH-30908ACL	276C1 103.1	18.500 531.0	47-34-52 117-17-47	174.2 SS	2.05 -72.95	75 SHORT
K277CQ LIC	SANDPOINT ID	BLFT-50713ACI	277D 103.3	0.014 1085.0	48-22-40 116-37-05	30.1	100.37 0.00	0 TRANS
KWLN LIC	WILSON CREEK WA	BLH-50112ADA	277C3 103.3	25.000 74.0	47-16-40 119-00-00	255.0	133.19 44.19	89 CLEAR
	NELSON BC	-	278B 103.5	0.000 0.0	49-31-50 117-18-02	360.0	214.74 4.74	210 CLOSE
K278AR LIC	MOSCOW ID	BLFT-20813ABP	278D 103.5	0.005 598.0	46-48-41 116-54-49	161.5	92.35 0.00	0 TRANS
KTWD LIC	WALLACE ID	BLED-50706ACP	278C2 103.5	1.600 675.0	47-33-49 115-50-01	91.5	110.32 -55.68	166 SHORT
KWHT LIC	PENDLETON OR	BLH-50112ADB	278C1 103.5	100.000 219.0	45-48-02 118-22-36	202.7	216.29 16.29	200 CLEAR
NEW-T APP	SPOKANE WA	BNPFT-80129ABA	278D 103.5	0.099 487.0	47-35-58 117-17-57	0.0	0.00 0.00	0 TRANS
K283BU CP	SPOKANE WA	BPFT-60728ADJ	278D 103.5	0.099 183.0	47-41-52 117-31-07	303.7	19.78 0.00	0 TRANS
NOTE: DISMISSED PER PERMITTEE'S REQUEST								
KBBB LIC	SPOKANE WA	BLH-60408AAK	280C1 103.9	34.000 455.0	47-35-58 117-17-57	0.0 SS	0.00 -75.00	75 SHORT

===== END OF FM SPACING STUDY FOR CHANNEL 278 =====



Facilities Proposed

The proposed operation will be on Channel 278D (103.5 MHz) with a maximum lobe effective radiated power of 99 watts. Operation is proposed with a 1-element circularly-polarized directional antenna. The antenna will be side-mounted on an existing tower with FCC Antenna Structure Registration Number 1033014.

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.

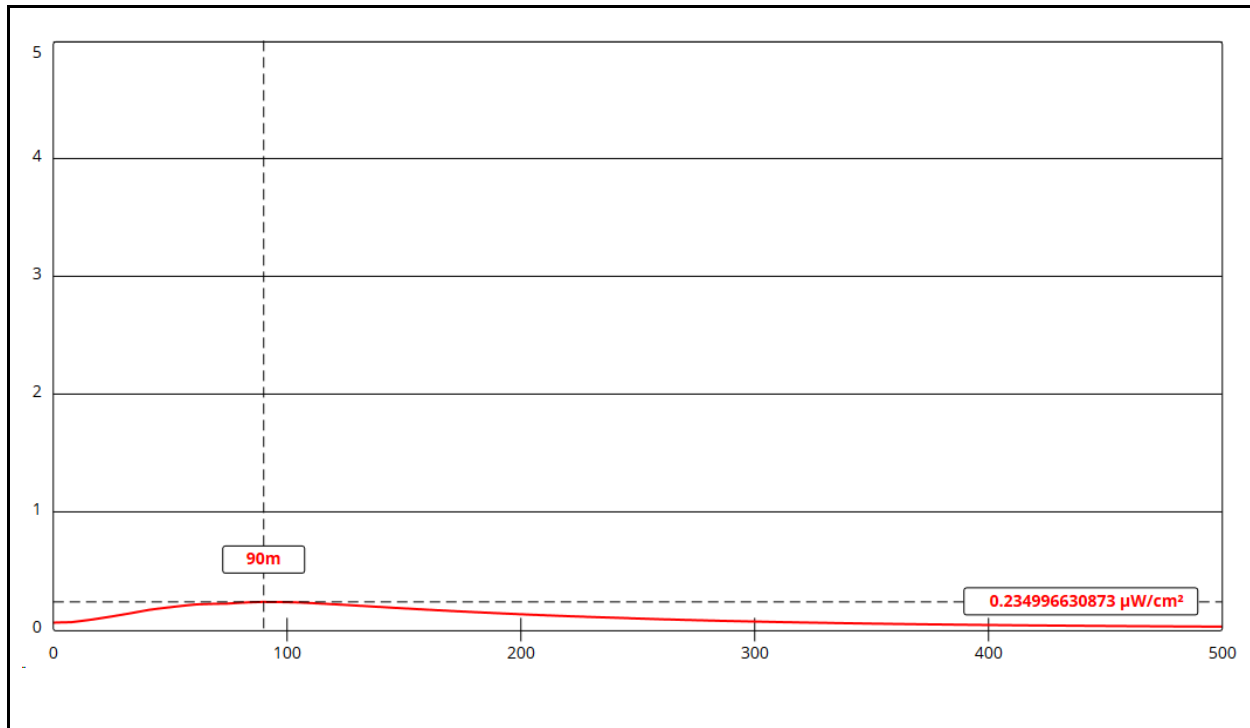
Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 500 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed antenna system assume a Type 2 element pattern, which is the element pattern for the PSIFMT-6DB-1 antenna proposed for use. The highest calculated ground level power density occurs at a distance of 90 meters from the base of the antenna support structure. At this point the power density is calculated to be 0.2 $\mu W/cm^2$, which is 0.1% of 200 $\mu W/cm^2$ (the FCC standard for uncontrolled environments).

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 500 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 applicant's 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 RF exposure at this site is required in this application.

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

Spokane 278D

Antenna Type: PSI PSIFMT-6DB-1 (Type 2)

No. of Elements: 1

Element Spacing: 1.0 wavelength

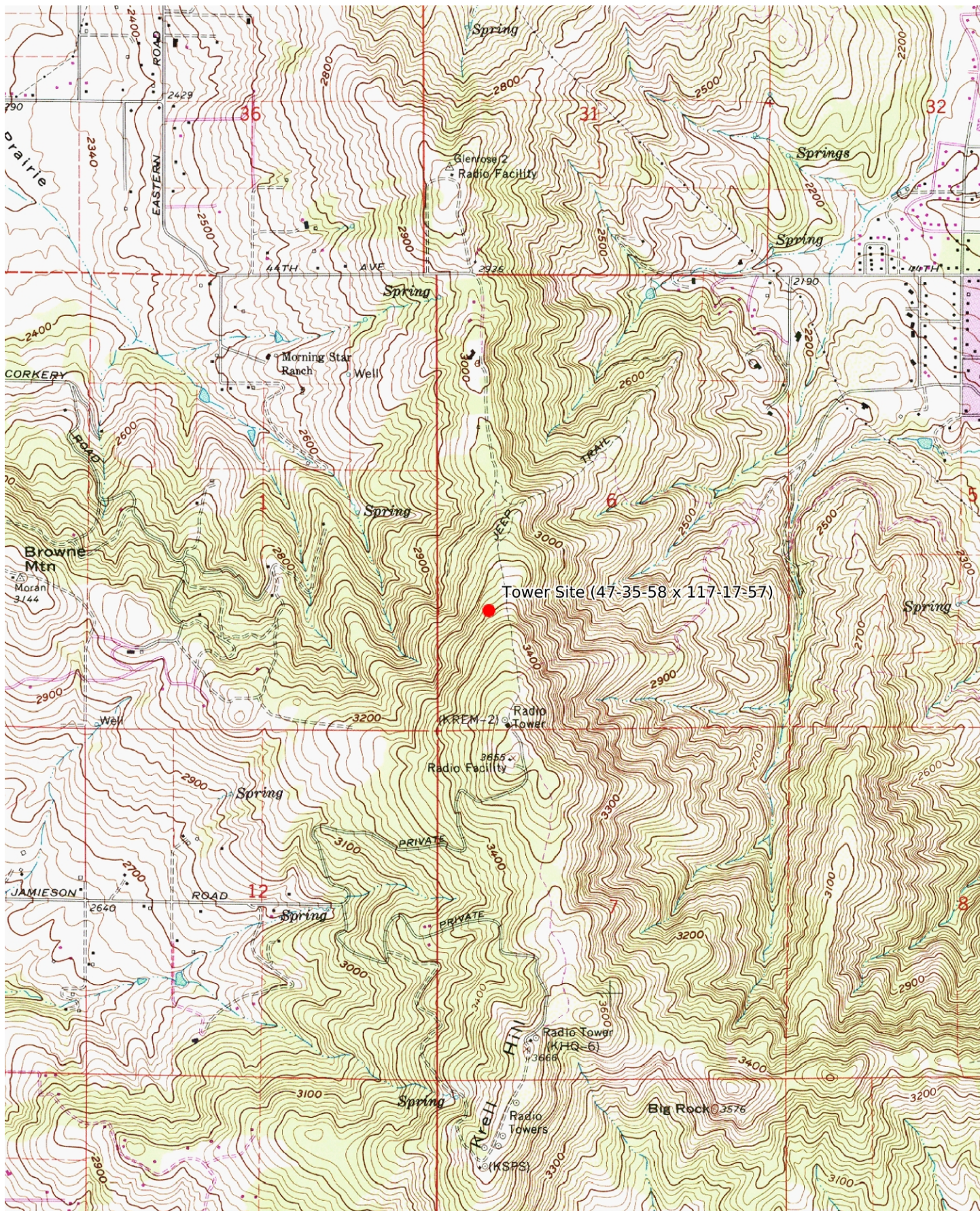
Distance: 500 meters

Horizontal ERP: 99 W

Vertical ERP: 99 W

Antenna Height: 90 meters AGL

Maximum Calculated Power Density is 0.2 $\mu\text{W}/\text{cm}^2$ at 90 meters from the antenna structure.



Mercator Projection
 NAD27 Conus
 USNG Zone 11TMN
 CalTopo.com

