**August 2021**
**New FM   Channel 214A**
**Stanley, Idaho**
**Allocation Study**

The attached spacing study shows the co-channel and adjacent channel spacing between stations and demonstrates that the proposed operation meets the IF channel spacing requirements as prescribed in §73.207 of the Commission's Rules.

Individual stations were examined to confirm the lack of prohibited contour overlap as prescribed in §73.509 of the Commission's Rules.  The attached allocation study exhibits demonstrate requisite contour protection for the following domestic stations:

|  |  |  |  |
|---|---|---|---|
| Cochannel: | KBSQ | 214C3 | McCall |
|  | KCIR | 214C | Twin Falls |

**TV Channel 6**

Section 73.525 of the Commission's Rules specifies a threshold distance of 187 kilometers for FM stations operating on Channel 214.  There is no TV Channel 6 station located within this threshold distance.  (The nearest is KTVM-TV Ch6 Butte, at a distance of 280 kilometers.)  Therefore, the proposed facility satisfies interference protection requirements of Section 73.525.

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FMSTUDY.EXE    Copyright 2021, Hatfield & Dawson, LLC        Version 5.10
===============================================================================
SEARCH PARAMETERS                              FM Database Date: 20210815
      Channel: 214A    90.7 MHz                              Page    1
     Latitude:  44 12 46.6  (NAD83)
    Longitude: 114 56 20.6
   Safety Zone:  50 km
    Job Title: STANLEY 214A


Call    City            Channel ERP(kW)    Latitude Bearing    Dist   Req
Status  St  FCC File No.  Freq. HAAT(m)    Longitude deg-True   (km)   (km)
===============================================================================
KBSU-FM BOISE           212C0  17.500    43 45 20.6  241.7  106.04    86
 LIC    ID  BLED-20010917AAP 90.3  827.0   116  5 57.4        20.04 CLEAR

K213EN  HAILEY          213D    0.005    43 38 35.6  145.4   76.79     0
 LIC    ID  BLFT-20070910ADJ 90.5    0.0   114 23 52.1         0.00 TRANS

KBSQ    MCCALL          214C3   0.220    45  0 29.6  313.5  129.66   142
 LIC    ID  BLED-20190102ABX 90.7  602.0   116  8  3.4       -12.34 SHORT

KCIR    TWIN FALLS      214C   45.000 DA 42 20  9.4  152.2  234.94   226
 LIC    ID  BLED-20130215AAV 90.7  762.0   113 36 21.5         8.94 CLOSE

K215BN  CASCADE         215D    0.010    44 30 55.6  291.3   94.36     0
 LIC    ID  BLFT-19911120TB  90.9    0.0   116  2 42.4         0.00 TRANS

KBSS    SUN VALLEY      216C2   0.700 DA 43 38 35.6  145.4   76.79    55
 LIC    ID  BLED-20040901ABR 91.1  570.0   114 23 52.1        21.79 CLEAR

K216CD  LOWER STANLEY   216D    0.184 DA 44 12 58.6   29.0    0.42     0
 LIC    ID  BLFT-19911113TA  91.1    0.0   114 56 11.3         0.00 TRANS

KBSS    SUN VALLEY      216C2   0.750    43 38 36.2  145.4   76.76    55
 CP     ID  0000124911       91.1  570.0   114 23 52.9        21.76 CLEAR

K216CD  STANLEY         216D    0.250    44 12 46.6    0.0    0.00     0
 CP     ID  0000112330       91.1    0.0   114 56 20.6         0.00 TRANS

        ====  END OF FM SPACING STUDY FOR CHANNEL 214  ====
```

**Hatfield & Dawson Consulting Engineers**

KBSQ 214C3 McCall
60 dBu F(50,50)
40 dBu F(50,10)

New 214D Stanley
60 dBu F(50,50)
40 dBu F(50,10)

KCIR 214C Twin Falls
60 dBu F(50,50)
40 dBu F(50,10)

IDAHO

ADAMS

VALLEY

LEMHI

CUSTER

BOISE

GEM

BLAINE

ELMORE

ADA

CAMAS

OWYHEE

©2013 CALIPER IN

**Stanley 214A Cochannel Study Map**

| 0 | 25 | 50 | 75 |

**Kilometers**

**Hatfield & Dawson      2021**
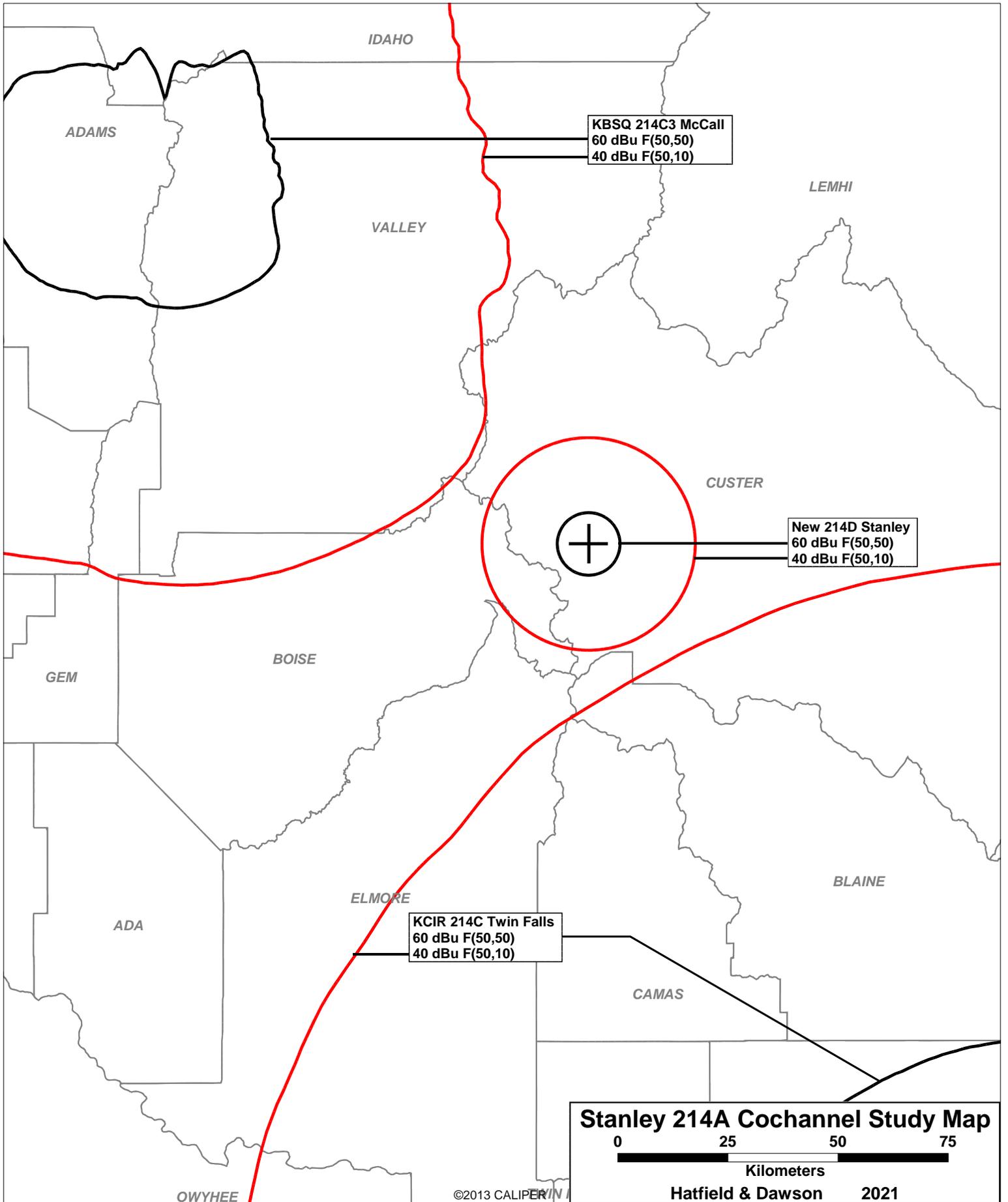
## Facilities Proposed

The proposed operation will be on Channel 214A (90.7 MHz) with an effective radiated power of 250 watts.  Operation is proposed with an antenna to be mounted on an existing tower in Stanley.

The proposed antenna support structure will 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 | | | | | | | |
|---|---|---|---|---|---|---|---|
| PASS SLOPE(100:1)NO FAA REQ - 453.0 Meters (1486.2 Feet)away & below slope by 1.0 Meters (3.27999 Feet) | | | | | | | |
| Type | C/R | Latitude | Longitude | Name | Address | Lowest Elevation (m) | Runway Length (m) |
| AIRP | R | 44-12-52.00N | 114-55-58.00W | STANLEY | CUSTER STANLEY, ID | 1949.2 | 1310.5999999999999 |

| Your Specifications | |
|---|---|
| **NAD83 Coordinates** | |
| Latitude | 44-12-46.6 north |
| Longitude | 114-56-20.6 west |
| **Measurements (Meters)** | |
| Overall Structure Height (AGL) | 12 |
| Support Structure Height (AGL) | 12 |
| Site Elevation (AMSL) | 1940 |
| **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 Stanley 214A antenna system assume a Type 2 element pattern, which is the element pattern for the Nicom BKG77-2 antenna proposed for use. 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 39.8 µW/cm².

This antenna system will be shared with a second station, either another full-power FM as proposed in a separate application, or one of the two FM translators authorized at this site (the licensees of which are the same as this applicant). While there will be slight differences in the calculated ground-level exposure levels from different frequencies on this antenna system, these calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation of two 250 watt stations is approximately 80 µW/cm², which is 40% of 200 µW/cm² (the FCC standard for uncontrolled environments).

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.

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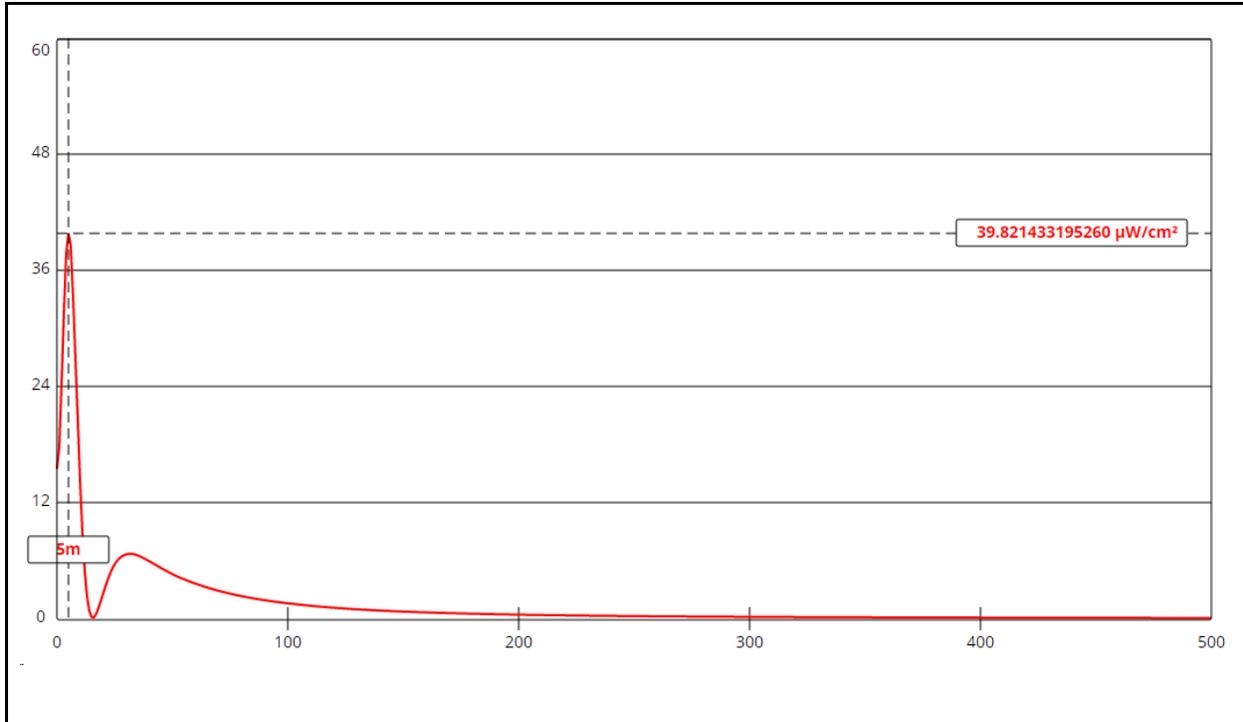
**Ground-Level RF Exposure**                                    **OET FMModel**

**Stanley 214A**

Antenna Type:       Nicom BKG77-2 (Type 2)
No. of Elements:    2
Element Spacing:    1.0 wavelength

Distance:           500 meters
Horizontal ERP:     250 watts
Vertical ERP:       250 watts

Antenna Height:     11 meters AGL

Maximum Calculated Power Density is 39.8 µW/cm² at 5 meters from the antenna structure.

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**August 2021**
**New FM   Channel 214A**
**Stanley, Idaho**
**Area and Population Calculation Methodology**


Calculation of the area within the 60 dBu contour was performed by the mapping program Maptitude, which includes a function which automatically calculates the area within irregular polygons.  In cases where the 60 dBu contour included any large water areas, those were excluded by using a related tool in the program which allows the user to outline an irregular polygon.  The software returns the area of that polygon, and that area was then subtracted from the total area within the contour.

| | |
|---|---|
| Total area inside 60 dBu contour: | 159 sq km |
| Water area excluded: | 0 sq km |
| Total land area inside 60 dBu contour: | 159 sq km |


Population was calculated by summing the individual populations of each of the census blocks from the 2010 Census whose centroids are encompassed by the proposed 60 dBu contour.

| | |
|---|---|
| Population inside 60 dBu contour: | 101 |


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**60 dBu**

*CUSTER*

21

*BOISE*

STANLEY

75

*ELMORE*

*BLAINE*

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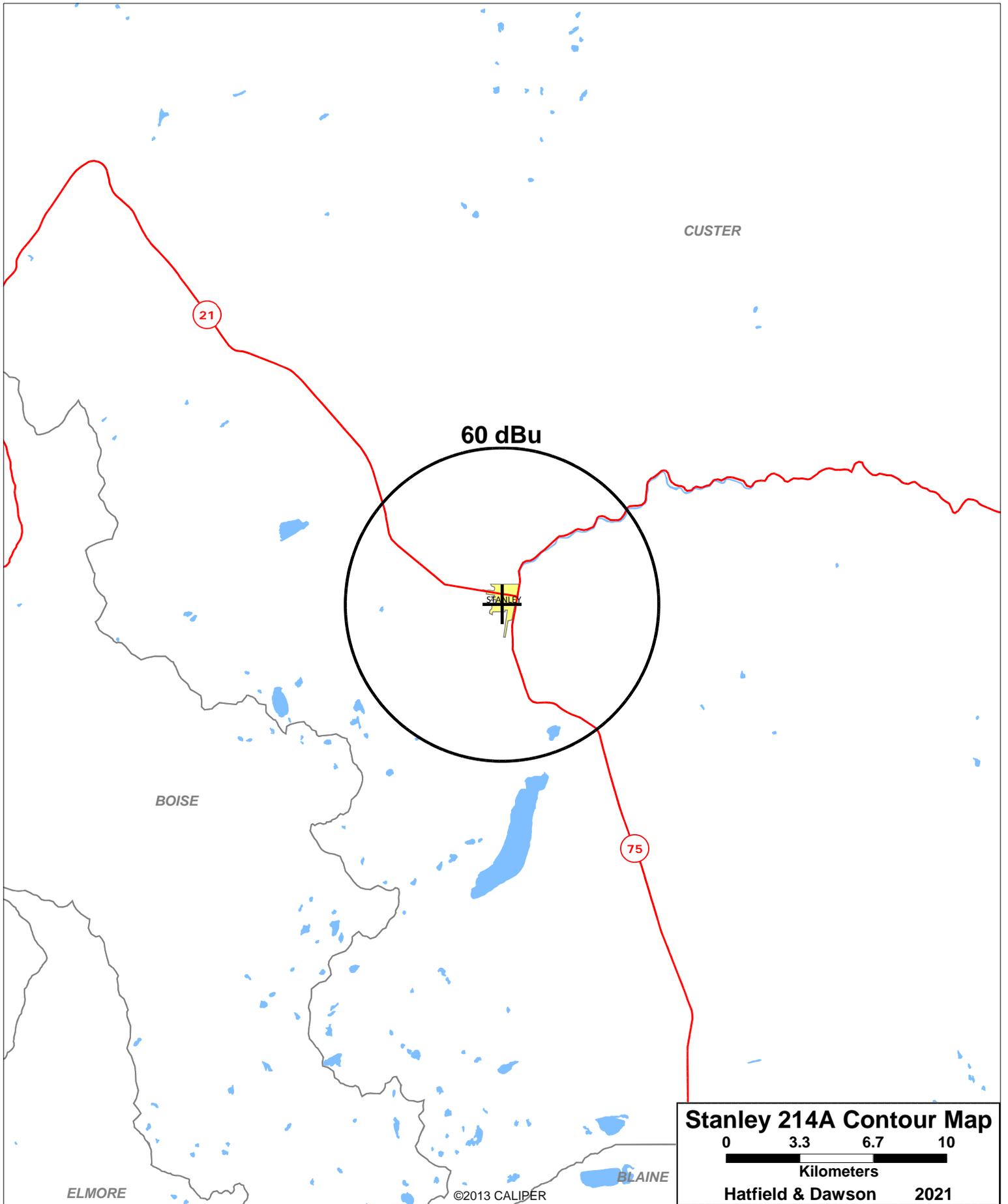
**Stanley 214A Contour Map**

| 0 | 3.3 | 6.7 | 10 |

**Kilometers**

**Hatfield & Dawson**     **2021**