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**Engineering Statement  
Displacement of K47MB-D  
Channel 36 at Mountain View, WY  
April 2018**

This Engineering Statement has been prepared on behalf of Central Wyoming College (“CWC”), licensee of digital TV translator station K47MB-D at Mountain View, Wyoming. This material has been prepared in connection with a displacement application.

**I. Background**

The translator currently operates on a channel above Channel 36, which will be the highest channel remaining for terrestrial television broadcasting per the results of the 2017 spectrum auction. Accordingly, CWC is filing this displacement application during the Commission’s Special Displacement Window, which is scheduled for April 10 to May 15, 2018.

**II. Interference 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 authorized or pending proposed facilities. This study was performed using the Commission’s TVStudy software.

The results of this study indicate that the proposed facility is predicted to cause zero additional interference to any of the listed stations. Based on the foregoing interference study, it is believed that the proposed facility can operate without risk of interference to other stations.

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Study created: 2018.04.18 14:49:06

Study build station data: LMS TV 2018-04-17 (115)

Proposal: K47MB-D D36 LD APP MOUNTAIN VIEW, WY  
File number: MTNVIEW36  
Facility ID: 27129  
Station data: User record  
Record ID: 590  
Country: U.S.

Build options:  
Protect pre-transition records not on baseline channel

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	K28IP	N28	TX	LIC	COALVILLE AND ADJ.AR, UT	BLTT20050318ABT	101.6 km
No	K28GW	N28	TX	LIC	PEOA, ETC., UT	BLTT20030618ABC	105.8
No	K29EZ	N29	TX	LIC	FRUITLAND, ETC., UT	BLTT20040319AGM	115.5
No	K29EP	N29	TX	LIC	MORGAN, ETC., UT	BLTT20030905ABO	121.1
No	K32DS	N32	TX	LIC	EVANSTON, WY	BLTT19940201JG	64.3
No	K33HP	N33	TX	LIC	SAMAK, UT	BLTT20060117AAZ	102.6
No	K33HQ	N33	TX	LIC	WANSHIP, UT	BLTT20060117AAZ	104.8
No	K35IK-D	D35	LD	LIC	DUCHESNE, UT	BLDIT20100111AFV	106.7
No	K35FZ	N35	TX	LIC	ECHO, ETC., UT	BLTT20030612ADC	103.7
No	K35IJ-D	D35	LD	LIC	HANNA & TABIONA, UT	BLDIT20100111AFW	92.4
No	K35EW-D	D35	LD	LIC	HEBER/MIDWAY, UT	BLDIT20110202ABV	122.3
No	K35LC-D	D35	LD	LIC	HELPER, UT	BLDIT20120614AAU	166.7
No	K35GG-D	D35	LD	LIC	HUNTSVILLE, ETC., UT	BLDIT20110406ABQ	136.7
No	K45MZ-D	D35	LD	APP	LAKETOWN, ETC., UT	BLANK0000029436	123.4
Yes	K35KL-D	D35	LD	LIC	MANILA, ETC, UT	BLDIT20110406ABR	68.5
Yes	KUCW	D35	DT	CP	OGDEN, UT	BLANK0000029841	174.6
No	K35OP-D	D35	LD	LIC	PARK CITY, UT	BLDIT20100322ACD	119.9
No	K35IS-D	D35	LD	LIC	PEOA,OAKLEY, UT	BLDIT20090624ADY	105.8
No	K26GH-D	D35	LD	APP	RANDOLPH & WOODRUFF, UT	BLANK0000052888	95.6
No	K35JJ-D	D35	LD	LIC	SCOFIELD, UT	BLDIT20100222AAU	165.6
No	K35IQ-D	D35	LD	LIC	VERNAL, ETC., UT	BLDIT20150205ABO	121.7
No	K36DB-CD	D36	DC	LIC	AVON, VAIL, CO	BLDTA20120615ABO	351.5
No	K36GX-D	D36	LD	LIC	BASALT, CO	BLDIT20091221ABI	328.5
No	KDVR	D36	DT	CP	DENVER, CO	BLANK0000025684	447.7
No	KDVR	D36	DT	APP	DENVER, CO	BLANK0000034058	447.7
No	K36LM-D	D36	LD	LIC	GRAND JUNCTION, CO	BLDIT20150130AAQ	262.4
No	KXHD-LP	N36z	TX	LIC	MONTROSE, CO	BLTTL20091006ADG	354.7
No	K36AF-D	D36	LD	LIC	NEW CASTLE, CO	BLDIT20150129AAL	284.2
No	K36LV-D	D36	LD	CP	SNOWMASS VILLAGE, CO	BNPDTT20100920AAN	350.1
No	KIDK	D36	DT	LIC	IDAHO FALLS, ID	BLANK0000001151	333.7
No	K36IG-D	D36	LD	LIC	ANTIMONY, UT	BLDIT20090519ADD	360.6
No	K36FM-D	D36	LD	LIC	BEAVER ETC., UT	BLDIT20100604AFT	361.1
No	K36AK-D	D36	LD	LIC	BLANDING/MONTICELLO, UT	BLDIT20120410ACI	368.6
No	K17MC-D	D36	LD	APP	CAINEVILLE, UT	BLANK0000052894	310.6
No	K36JT-D	D36	LD	LIC	CLEAR CREEK, UT	BLDIT20121019AAS	180.8
No	K36IK-D	D36	LD	LIC	DELTA, OAK CITY, ETC, UT	BLDIT20071217ACF	266.4
No	K36IM-D	D36	LD	LIC	DUCHESNE, ETC., UT	BLDIT20100111AFS	106.7
No	K36JV-D	D36	LD	LIC	EAST PRICE, UT	BLDIT20100222AAS	173.8
No	K36KI-D	D36	LD	LIC	FILEMORE, ETC., UT	BLDIT20100614AAC	292.0
No	K36MI-D	D36	LD	LIC	FOUNTAIN GREEN, UT	BLDIT20150217ACK	210.0
No	K17FQ-D	D36	LD	APP	FREMONT, UT	BLANK0000052803	320.9
No	K36IN-D	D36	LD	LIC	FRUITLAND, ETC., UT	BLDIT20100111AFR	115.6
No	K26GD-D	D36	LD	APP	GARFIELD COUNTY, UT	BLANK0000052650	326.3
No	K36FX	N36	TX	LIC	GREEN RIVER, UT	BLTT20030806ABY	216.3
No	K27KQ-D	D36	LD	APP	HANKSVILLE, UT	BLANK0000052905	306.6
No	K36IL-D	D36	LD	LIC	HANNA & TABIONA, UT	BLDIT20100111AFU	92.4
No	K36JU-D	D36	LD	LIC	HELPER, UT	BLDIT20100216ACY	166.7
No	K36KX-D	D36	LD	LIC	LEAMINGTON, UT	BLDIT20101206ACW	249.7
Yes	K36LE-D	D36	LD	LIC	MANILA, ETC, UT	BLDIT20131125BZT	68.5
Yes	KUEN	D36	DT	LIC	OGDEN, UT	BLEDT20030528ACQ	174.6
No	K36IF-D	D36	LD	LIC	ORANGEVILLE, UT	BLDIT20080125ABL	225.0
Yes	K36FS-D	D36	LD	LIC	RANDOLPH, UT	BLDIT20140416AAQ	95.6
No	K36CB-D	D36	LD	LIC	RICHFIELD, ETC., UT	BLDIT20090727AAD	316.7
No	K36IP-D	D36	LD	LIC	SCIPIO, UT	BLDIT20100812ADE	267.8
No	K36JW-D	D36	LD	LIC	SPRING GLEN, UT	BLDIT20100222AAV	189.0
No	K36KV-D	D36	LD	LIC	TEASDALE, ETC., UT	BLDIT20101206AAT	332.8
No	K36IQ-D	D36	LD	LIC	VERNAL, ETC., UT	BLDIT20150205ABR	121.7
No	K36IS-D	D36	LD	LIC	WOODLAND & KAMAS, UT	BLDIT20090624AED	105.4
No	KSBF-LD	D36	LD	APP	CASPER, WY	BLANK0000041921	366.6
No	K36JD-D	D36	LD	LIC	JACKSON, WY	BLDIL20090828AAE	265.7
No	K38GO	N38	TX	LIC	ROOSEVELT, UT	BLTT20040409AAJ	87.0
No	K38HV	N38	TX	LIC	SAMAK, UT	BLTT20040409AAO	102.6
No	K40FY	N40	TX	LIC	RANDOLPH & WOODRUFF, UT	BLTT20030813AAI	95.6
No	K43AE	N43	TX	LIC	MYTON, ETC., UT	BLTTL19830131IC	96.0

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No K43JV N43- TX LIC PROVO, UT BLTTL20061030AQA 171.5

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D36  
Mask: Simple  
Latitude: 41 6 19.20 N (NAD83)  
Longitude: 110 12 38.50 W  
Height AMSL: 2664.6 m  
HAAT: 0.0 m  
Peak ERP: 0.300 kW  
Antenna: Omnidirectional  
Elev Pattnr: Generic

50.9 dBu contour:  
Azimuth ERP HAAT Distance  
0.0 deg 0.300 kW 513.3 m 41.2 km  
45.0 0.300 418.4 38.2  
90.0 0.300 246.4 32.1  
135.0 0.300 327.2 35.2  
180.0 0.300 202.9 29.9  
225.0 0.300 -78.7 12.5  
270.0 0.300 207.5 30.1  
315.0 0.300 425.7 38.5

Database HAAT does not agree with computed HAAT  
Database HAAT: 0 m Computed HAAT: 283 m

Distance to Canadian border: 877.4 km

Distance to Mexican border: 1014.3 km

Conditions at FCC monitoring station: Grand Island NE  
Bearing: 87.3 degrees Distance: 987.6 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 102.6 degrees Distance: 431.3 km

Study cell size: 1.00 km  
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%  
Maximum new IX to LPTV: 2.00%

No IX check failures found.

### III. RF Exposure 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.

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

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.

Power density levels produced by the proposed facility were calculated for an elevation of 2 meters above ground (9.6 meters below the antenna radiation center). The worst case power density levels occur at depression angles between 45 and 90 degrees below the horizontal. The calculations in this report assume a worst-case relative field value of 0.200 at these angles, based on the manufacturer's vertical plane pattern for the horizontally-polarized Sira UTV-11/4/LP antenna proposed in this application. This relative field value yields a worst-case adjusted average effective radiated power of 12 Watts at depression angles between 45 and 90 degrees below the horizontal. Assuming this 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 from the proposed facility is calculated to be 4.4  $\mu W/cm^2$ , which is 1.1% of 401.3  $\mu W/cm^2$  (the FCC maximum for uncontrolled environments at the Channel 36 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 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.

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 exposure in excess of FCC guidelines.

April 18, 2018

Erik C. Swanson, P.E.