

**MULLANEY ENGINEERING, INC.**

9049 SHADY GROVE COURT  
GAITHERSBURG, MD 20877

**ENGINEERING EXHIBIT EE-1:**

**KM COMMUNICATIONS, INC.  
NEW LOW POWER TELEVISION STATION**

**APPLICATION FOR AUTHORITY  
TO CONSTRUCT OR MAKE CHANGES IN A  
LOW POWER TV, TV TRANSLATOR OR TV BOOSTER STATION**

**CHANNEL 30(-) TWIN FALLS, IDAHO**

**SEPTEMBER 2007**

**FCC FACILITY NUMBER  
129811**

**ENGINEERING EXHIBIT  
IN SUPPORT OF  
APPLICATION FOR AUTHORITY  
TO CONSTRUCT OR MAKE CHANGES IN A  
LOW POWER TV, TV TRANSLATOR OR TV BOOSTER STATION**

**LOW POWER TELEVISION STATION**

**NEW**

**ANALOG CHANNEL 30(-)**

**TWIN FALLS, IDAHO**

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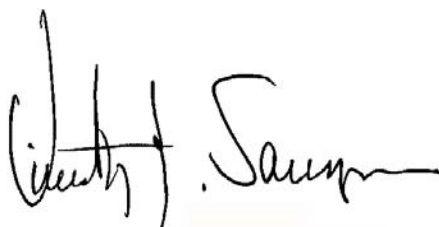
1. F.C.C. Form 346, Section III (Analog)
2. F.C.C. Form 346, Section III (certification)
3. Declaration of Engineer
4. Narrative Statement
5. Figure 1, Predicted 74 dBu Coverage Contour
6. Figure 2, Directional Antenna Details (Pattern Data)
7. Figure 3, Allocation Study

## **DECLARATION**

I, Timothy Z. Sawyer, declare and that I have provided engineering services in the area of telecommunications since 1969. My qualifications are a matter of record with the Federal Communications Commission. I am a senior engineer with the firm of Mullaney Engineering, Inc., consulting radio telecommunications engineers with offices in Gaithersburg, Maryland.

The firm of Mullaney Engineering, Inc., has been retained by KM COMMUNICATIONS, INC., to prepare the instant engineering exhibit in support of **an application for authority to construct or make changes in a Low Power Television Broadcast Station - NEW, Twin Falls, Idaho.** (FCC FACILITY ID NUMBER: 129811).

All facts contained herein are true of my own knowledge except those stated to be on information and belief, and as to those facts, I believe them to be true. I declare under the penalty of perjury that the foregoing is true and correct.

A handwritten signature in black ink, appearing to read "Timothy Z. Sawyer". The signature is fluid and cursive, with the first name "Timothy" and last name "Sawyer" clearly distinguishable.

Digitized Signature - Original ON FILE - Timothy Z. Sawyer

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Timothy Z. Sawyer

Executed on the 14<sup>th</sup> day of September 2007

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**SEPTEMBER 2007**

**NARRATIVE STATEMENT:**

**I. GENERAL:**

This engineering statement and the instant engineering exhibit of which it is part has been prepared on behalf of KM COMMUNICATIONS, INC., (hereinafter "KM").

By means of the instant application, KM request authority to construct a new low-power television station to serve the community of TWIN FALLS, IDAHO.

KM has been directed by the Commission to file this application as the result of a settlement agreement reached amongst FCC MX Group MX099 applicants.

The facilities will be built to comply with the *FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields* and the instant proposal is categorically excluded from environmental processing pursuant to the provisions of Section 1.1306 of the Commission's Rules. A more detailed discussion of environmental factors is included under the heading Environmental Considerations below.

Information requested by exhibits in response to questions on Section III of FCC Form 346 is incorporated in the following paragraphs, figures, and tables.

Processing of this application is requested under the rules currently in effect at the time of filing.

## **II. ENGINEERING DISCUSSION:**

### **A. Transmitter/Antenna Location:**

The supporting structure/tower has been registration with the FCC and issued Antenna Structure Registration Number: 1040174.

The antenna will be side-mounted on a 94.5 meter tall tower, with an antenna center of radiation at 76.2 meters above ground level (AGL), 1239.0 meters above mean sea level (AMSL). The ground elevation of the antenna site is 1162.8 meters above sea level.

### **B. Coverage & Service Contours:**

Figure 1, is a map showing the location of the proposed 74 dBu f(50,50) contour.

### **C. Proposed Antenna:**

The antenna consists of a custom antenna array of four stacked Scala C-1469 yagi antennas, orientated with the main lobe (beam) at 310 degrees as referenced to true north in azimuth.

The details of the antenna radiation pattern (the pattern horizontal polar plot and associated antenna relative field values) are contained within Figure 2.

**D. Allocation Study:**

The Commission's LP-1 computer program and the Longley Rice propagation method described in OET Bulletin No. 69 were used in this determination.

Based upon the results of the Longley-Rice propagation method described in OET Bulletin No. 69 - no prohibitive overlap between this proposal and any other station or valid pending application will occur.

Each station or valid pending application has been analyzed using the methods described in OET Bulletin No. 69, and the results indicate that no interference (unmasked) or interference above 0.5% of the service population of the station studied will occur.

**Amanda Orrick Application (BNPTTL20000807ABX)**

The application of Amanda Orrick for Channel 30 at Twin Falls, Idaho (BNPTTL20000807ABX ) is the result of a non permissive major change amendment to a pending application, and has been deleted and ignored for the purposes of this application. The legality of Orrick's application is in question and has not appeared on any MX list issued by the Commission.

**Interference to K30HK**

K30HK, Channel 30, Hollister, Idaho, a formerly mutual exclusive (mx) application with KM's Channel 30, Twin Falls, Idaho proposal, has via a series of minor amendments and site moves extracted itself from its mx relationship with Channel 30 at Twin Falls.

Interference levels to K30HK from KM's proposal do not exceed the level of interference as agreed to by K30HK.

An agreement to accept interference at the current levels is implied in the K30HK amendments to extract itself from the mx relationship. Baseline interference levels to K30HK from KM's originally filed application (50-KW ND) were established as follows<sup>1</sup>:

Call	Ix Area	HUnits	Contour	Masked Ix	Unmasked Ix	%
	(sq.km)		(pop)	(pop)	(pop)	
K30HK	54.0	866	5,145	0	2,115	41.1

Interference levels to K30HK from KM's proposed operation (15-KW DA) as proposed in this application are as follows:

Call	Ix Area	HUnits	Contour	Masked Ix	Unmasked Ix	%
	(sq.km)		(pop)	(pop)	(pop)	
K30HK	50.4	707	5,145	0	1,682	32.7

As shown in the table above, the interference levels from this proposal to K30HK are slightly reduced over that of the accepted baseline interference levels.

Figure 3, is a tabulation of the results of the OET Bulletin No. 69 styled interference study for all stations of concern.

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1

Baseline calculations were made using the methods described in OET Bulletin No. 69j and using V-Soft's "Probe3" Computer Software (Version 3.57). 1990 Census data was used and cell and profile values were set to 1-kilometer in size. Full parameters can be obtained from Figure 3.

**E. Environmental Considerations:**

The applicant believes its proposal will not significantly affect the environment for the following reasons.

The proposal does not meet any of the criteria specified in Section 1.1307 of the FCC Rules. More specifically, the proposed facilities are not known to fall within any of the categories enumerated in Sections 1.1307(a)(1)-(7) and will not involve the use of high intensity white lights.

Furthermore, operation of the proposed facility will not involve the exposure of workers or the general public to levels of radio frequency electromagnetic fields exceeding guidelines adopted by the Federal Communications Commission. (The current FCC guidelines are based upon criteria contained in the National Council of Radiation Protection and Measurements (NCRP) Report No.86 (1986) and ANSI/IEEE C95.1-1992.)

Based upon a worst case downward field value of 0.20 for all angles 10 degrees and greater below the horizon, and a peak horizontal power of 15-kilowatts, and an antenna height of 76.2 meters above ground. The power density level 2-meters above ground is predicted to be 0.0015 mW/cm<sup>2</sup> or less. The computed power density is 0.08 % of the Commission's guidelines for a controlled area and 0.4 % for an uncontrolled area — no further study is required.

The applicant will fully-cooperate and coordinate with all site users as required by the Commission's rules.



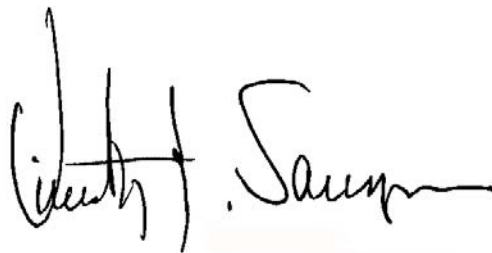
**III. SUMMARY:**

KM proposes to construct facilities for a NEW Low-Power Television Station utilizing a directional antenna system at an existing communication site. The proposed station will operate on Analog Television Channel 30(-) serving the area of Twin Falls, Idaho.

Operation as proposed herein would not cause **or increase** any normally prohibited contour overlap (interference) using a terrain dependant - OET Bulletin No. 69 review, and would not have any significant impact on the environment. The proposed operation will not create any new prohibited interference.

The proposed operation is fully in compliance with all other areas of the Commission's rules and applicable international agreements.

14 September 2007

A handwritten signature in black ink, appearing to read "Timothy Z. Sawyer". The signature is fluid and cursive, with the first name "Timothy" and last name "Sawyer" clearly distinguishable.

Digitized Signature - Original ON FILE - Timothy Z. Sawyer

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Timothy Z. Sawyer

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### NEW - KM CH30 FULL FORM

Latitude: 42-32-13 N  
Longitude: 114-24-53 W  
Channel: 30-  
Frequency: 568.5 MHz  
ERP: 15.00 kW  
Antenna HAAT: 48.16 m  
Antenna AMSL Height: 1239.0 m  
Antenna AGL Height: 76.2 m  
Site Elevation AMSL: 1162.8 m  
Horiz. Pattern: Directional

### PREDICTED SERVICE CONTOUR

74 DBU FCC PROTECTED CONTOUR  
LONGLEY-RICE (LR) PREDICTED SIGNAL LEVELS

CHANNEL 30, TWIN FALLS, IDAHO

FIGURE 1

74 DBU PROTECTED SERVICE CONTOUR  
FCC F(50,50)

> 80.0 dBu  
74.0 - 80.0  
64.0 - 74.0

LONGLEY-RICE PROPAGATION ANALYSIS  
PREDICTED SIGNAL LEVELS

Population data for field strength above 80.00 (dBuV/m):  
Total Population: 53,455 Total Housing Units: 21,137

Population data for field strength above 74.00 (dBuV/m):  
Total Population: 60,565 Total Housing Units: 23,839

Population data for field strength above 64.00 (dBuV/m):  
Total Population: 78,222 Total Housing Units: 30,678



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Scale 1:500,000

0 20 40 60 km

FIGURE 2  
Antenna Pattern: KM Twin Falls ID Ch. 30  
SCA CL-1469BCH30

Azimuth (deg)	Effective Field
0.0	0.086
10.0	0.010
20.0	0.010
30.0	0.010
40.0	0.010
50.0	0.010
60.0	0.010
70.0	0.010
80.0	0.010
90.0	0.010
100.0	0.010
110.0	0.010
120.0	0.010
130.0	0.010
140.0	0.010
150.0	0.010
160.0	0.010
170.0	0.010
180.0	0.010
190.0	0.010
200.0	0.010
210.0	0.010
220.0	0.010
230.0	0.010
240.0	0.010
250.0	0.010
260.0	0.086
270.0	0.361
280.0	0.622
290.0	0.812
300.0	0.947
310.0	1.000
320.0	0.947
330.0	0.812
340.0	0.622
350.0	0.361

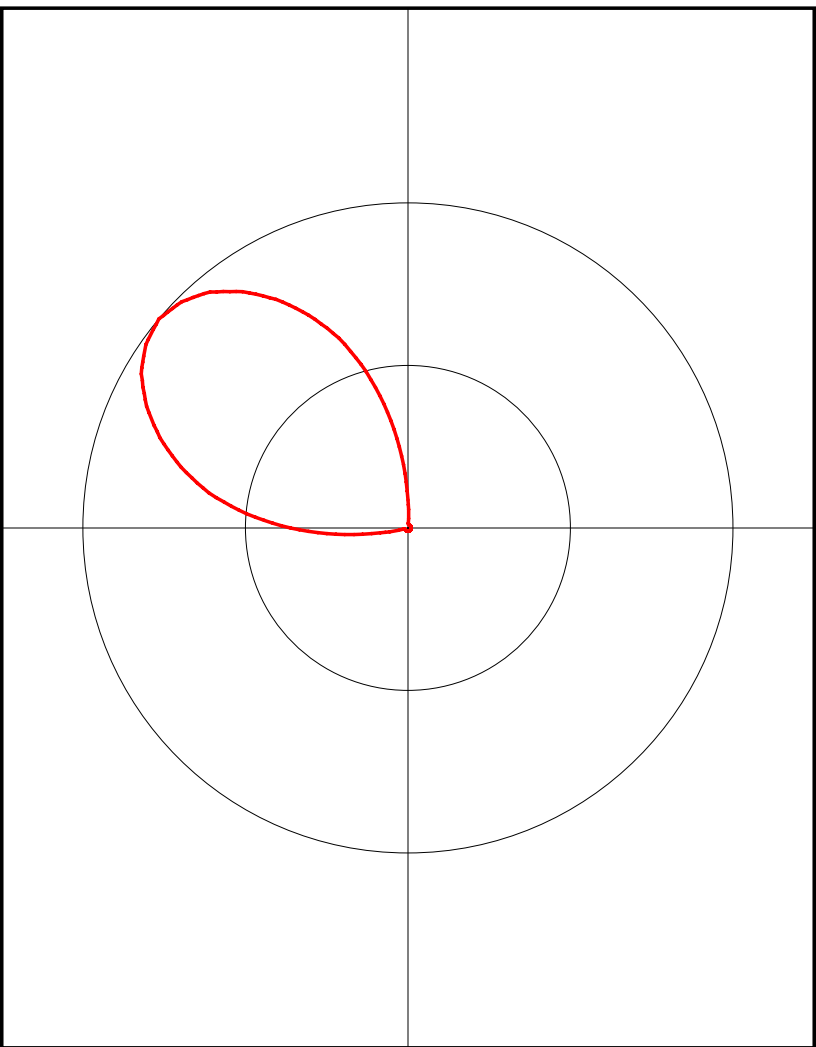


FIGURE 3 - OET BULLETIN NO. 69 INTERFERENCE STUDY RESULTS

Outgoing Interference Population Report - SUMMARY REPORT

NEW - KM MOD (30-) TwinFalls, ID FULL FORM APPLICATION  
 Broadcast Type: NTSC Service: X  
 Lat: 42-32-13 N Lng: 114-24-53 W ERP: 15.0 kW AMSL: 1239.0 m  
 TV Outgoing Interference Study  
 Signal Resolution: 1.0 km  
 Consider NTSC Taboo: Yes  
 KWX error points are considered to  
     be interference free coverage.  
 # of radials computed for contours: 72  
 Contours calculated using 8 radial HAAT.  
 LR Profile Spacing Increment: 1.0 km  
 Masked interference points are being counted  
     as interference free.  
 Using LPTV/translator D/U rules.  
 Pop Centroid DB: 1990 US Census  
 TV Database Date: 9/13/2007

Primary Terrain: NED 3 Second US Terrain  
 Secondary Terrain: V-Soft 30 Second World Terrain

Population Database: 1990 US Census

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 Stations Considered:

Call Letters	City	State	Dist	Bear	
NEW.A (30Z)	Twin Falls	ID	0.1	270.0	A.Orrick
NEW.A (31+)	Twin Falls	ID	0.2	90.0	
NEW.A (31Z)	Twin Falls	ID	4.6	279.4	
KBAX-L (27N)	Twin Falls	ID	21.3	359.8	
KTFT-L (38+)	Twin Falls	ID	21.4	359.2	
K30HK (30+)	Hollister	ID	25.4	276.5	M.Turner
K61EA.C (31+)	Hagerman	ID	53.5	310.5	
K63AM.C (29N)	Hagerman	ID	53.5	310.5	
NEW-D.A (29)	Burley, Etc.	ID	66.1	99.7	
K23DO (23-)	Malta, Etc.	ID	81.3	103.5	
NEW.A (30+)	Hailey	ID	107.7	4.0	
NEW.A (30+)	Hailey	ID	108.5	4.7	
NEW.A (30+)	Hailey	ID	108.5	4.7	
NEW.A (30Z)	Sun Valley	ID	127.4	2.4	
KPIF (15Z)	Pocatello	ID	159.5	76.2	
KFXP (31-)	Pocatello	ID	174.7	75.2	
K30JW.C (30-)	Soda Springs	ID	223.8	86.3	
K30CD (30N)	Carlin	NV	246.7	215.5	
K30BU (30N)	Salmon	ID	257.1	19.7	
KUCW (30Z)	Ogden	UT	278.4	137.8	
K30JB--D.C (30)	Morgan, Etc.	UT	281.1	124.5	
K30HF (30N)	Beowawe	NV	285.0	222.5	
K30IA.C (30Z)	Cokeville	WY	285.5	99.4	
K30JG--D.C (30)	Randolph & Woodruff	UT	290.5	109.3	
NEW-D.A (30)	Echo, Etc.	UT	302.2	123.9	
K30JU.C (30-)	Jackson	WY	315.7	69.8	

Call	Area	HUnits	Contour	Masked Ix	Unmasked Ix	%	
NEW.A (30Z)	204.4	12,801	38,202	0	32,296	84.5	* Orrick
NEW.A (31+)	0.0	0	41,392	0	0	0.0	
NEW.A (31Z)	0.0	0	28,034	0	0	0.0	
KBAX-L (27N)	0.0	0	46,838	0	0	0.0	
KTFT-L (38+)	0.0	0	78,504	0	0	0.0	
K30HK (30+)	50.4	707	5,145	0	1,682	32.7	* Turner
K61EA.C (31+)	0.0	0	129	0	0	0.0	
K63AM.C (29N)	0.0	0	129	0	0	0.0	
NEW-D.A (29)	0.0	0	35,443	0	0	0.0	
K23DO (23-)	0.0	0	0	0	0	0.0	
NEW.A (30+)	0.0	0	9,789	0	0	0.0	
NEW.A (30+)	0.0	0	5,663	0	0	0.0	
NEW.A (30+)	0.0	0	5,663	0	0	0.0	
NEW.A (30Z)	0.0	0	8,865	0	0	0.0	
KPIF (15Z)	0.0	0	194,417	0	0	0.0	
KFXP (31-)	0.0	0	185,949	0	0	0.0	
K30JW.C (30-)	0.0	0	13,969	0	0	0.0	
K30CD (30N)	0.0	0	195	0	0	0.0	
K30BU (30N)	0.0	0	0	0	0	0.0	
KUCW (30Z)	0.0	0	1,432,249	0	0	0.0	
K30JB--D.C (30)	0.0	0	3,432	0	0	0.0	
K30HF (30N)	0.0	0	0	0	0	0.0	
K30IA.C (30Z)	0.0	0	673	0	0	0.0	
K30JG--D.C (30)	0.0	0	958	0	0	0.0	
NEW-D.A (30)	0.0	0	652	0	0	0.0	
K30JU.C (30-)	0.0	0	9,756	0	0	0.0	

\* SEE ENGINEERING STATEMENT CONCERNING THE ORRICK CH 30 APPLICATION  
AND K30HK (TURNER) FACILITY