

**DELAWDER COMMUNICATIONS, INC.**

2121 Eisenhower Avenue, Suite 200

Alexandria, Virginia 22314

(703) 299-9222

**ENGINEERING REPORT**

---

Alma Vision Hispanic Network, Inc.  
Altadena, CA (KTAV-LP, Channel 69+)

**EXHIBIT 6**

**LPTV – INTERFERENCE STUDIES**

**I. Introduction**

1. Alma Vision Hispanic Network, Inc. (“AlmaVision”) is the proposed assignee of KTAV-LP, Lancaster, CA, channel 24(+). By this application, AlmaVision seeks “DTV displacement relief” by proposing to migrate the Station’s operation from Channel 24 (+) to Channel 69(+) and to specify various technical changes necessary to facilitate the use of Channel 69(+).

2. The changes include a move of the transmitter site by 38 kilometers to Mt. Wilson, with service to the community of Altadena, CA. As demonstrated in Section IV, no other channel is available within 20 kilometers of the licensed KTAV-LP transmitter site for use as a displacement channel (satisfying one criterion for allowing the site move). Also, as demonstrated by Figure 1A, contour overlap exists between the herein proposed and licensed 74 dBu (F50,50) service contours for KTAV-LP (thus satisfying a second criterion for allowing the site move and facility change). (Figure 1B, attached, includes the 74 dBu service contour distances for the licensed facility. The proposed 74 dBu service contour distances are included in Table 2A, attached).

3. The maximum ERP in any horizontal or vertical plane is 9.98 kW. Because the maximum ERP in the horizontal plane will be maintained below 10 kW, Mexican Notification of this proposal is not required.

4. Interference studies are provided below to demonstrate adequate protection to all known LPTV (TV translator and TV booster) stations, analog TV stations and digital TV stations. Pursuant to 47 C.F.R. Section 73.3572(a)(4)(ii), because the authorized KTAV-LP transmitter site is located within 265 kilometers of co-channel KBEH-DT (Oxnard, CA) and KGET-DT (Bakersfield, CA), the changes herein proposed qualify as minor changes and this is not considered a major change modification.

**DELAWDER COMMUNICATIONS, INC.**

2121 Eisenhower Avenue, Suite 200

Alexandria, Virginia 22314

(703) 299-9222

**ENGINEERING REPORT**

---

Alma Vision Hispanic Network, Inc.  
Altadena, CA (KTAV-LP, Channel 69+)

5. All terrain studies use USGS/DMA three arc-second data. All population information in this application is taken from year 1990 US Census Data.

6. Attached as Table 1 is a Dataworld TV Spacing Study for Channel 69(+). The Dataworld Study was conducted from a reference site at the new transmitter location. A discussion and/or a detailed interference study are included for certain stations listed in Table 1 that require protection from the proposed facility. All other stations listed on Table 1 are either too far away to require a detailed study (and are obviously protected), or do not require protection pursuant to the FCC Rules. Tables 2A and 2B, attached, include the proposed service and interference contour distances for the proposed facility.

7. The use of frequency offset is required, and is made in order to add protection to any nearby analog co-channel station. The applicant will maintain the requested offset per 47 C.F.R. Section 74.761 by use of a precision oscillator supplied by the transmitter manufacturer.

**II. Interference Studies**

Regarding KAZA-TV (54+), KRCA-DT (68d) and KNLA-LP (as licensed on 68-)

8. In accordance with 47 C.F.R. Section 74.706(d)(2), an adjacent-channel UHF DTV station is protected to a C/I ratio that is no less than -48 dB. In accordance with 47 C.F.R. Section 74.707(d)(4), an adjacent-channel UHF LPTV station is protected to a C/I ratio that is no less than -15 dB. In accordance with 47 C.F.R. Section 74.705(d)(6), a UHF TV station located 15 channels below the proposed is protected to a C/I ratio that is no less than -6 dB. The proposed facility is nearly collocated with these three TV stations. As a low-power facility, the AlmaVision station will transmit with much less ERP than the KAZA-TV and KRCA-DT; therefore, these two high-powered stations will be adequately protected by this proposal.

**DELAWDER COMMUNICATIONS, INC.**

2121 Eisenhower Avenue, Suite 200

Alexandria, Virginia 22314

(703) 299-9222

**ENGINEERING REPORT**

---

Alma Vision Hispanic Network, Inc.  
Altadena, CA (KTAV-LP, Channel 69+)

9. Since KNLA-LP (as licensed)<sup>1</sup> is also an LPTV station, a detailed propagation study to this facility is provided. The FCC allows for the use of the Longley-Rice point-to-point radio propagation model, version 1.2.2 (hereafter "Longley-Rice") in order to demonstrate that interference will not be caused to a LPTV station. (A description of the allowed use of Longley-Rice {as stated by the FCC}, and a description of the Longley-Rice studies included with this application, are made in Section III, below.) By using Longley-Rice, as demonstrated by Figure 2A, adjacent-channel interference to KNLA-LP (as licensed) is predicted to result only to points on Mt. Wilson near the transmitter site. The area of predicted interference has no known population. Therefore, by using Longley-Rice, the predicted amount of interference caused to KNLA-LP (as licensed) is below the *de minimus* interference standard allowed to LPTV stations.

Regarding K69CO, Running Springs, CA, LPTV Channel 69n

10. In accordance with 47 C.F.R. Section 74.707(d)(1), a co-channel UHF LPTV station is protected to a C/I ratio that is no less than 45 dB for non-offset carrier frequency operation. As demonstrated by Figure 3A, attached, the 29 dBu (F50,10) interference contour for the proposed facility will not overlap with the 74 dBu (F50,50) service contour of K69CO; therefore, adequate protection to K69CO will exist. (Figure 3B, attached, is a tabulation of the K69CO service contour.)

Regarding Proposed Banning, CA, LPTV Channel 69-

11. In accordance with 47 C.F.R. Section 74.707(d)(1), a co-channel UHF LPTV station is protected to a C/I ratio that is no less than 28 dB for offset carrier frequency operation. As demonstrated by Figure 4A, attached, the 46 dBu (F50,10) interference contour for the proposed facility will not overlap with the 74 dBu (F50,50) service contour of the proposed Banning facility; therefore, since frequency offset is

---

<sup>1</sup> KNLA-LP is authorized to migrate to channel 27.

# DELAWDER COMMUNICATIONS, INC.

2121 Eisenhower Avenue, Suite 200

Alexandria, Virginia 22314

(703) 299-9222

## ENGINEERING REPORT

---

Alma Vision Hispanic Network, Inc.  
Altadena, CA (KTAV-LP, Channel 69+)

proposed, adequate protection to the Banning facility will exist. (Figure 4B, attached, is a tabulation of the Banning service contour.)

### Regarding KSWB-TV, San Diego, CA, TV Channel 69z

12. In accordance with 47 C.F.R. Section 74.705(d)(1), a co-channel UHF TV station is protected to a C/I ratio that is no less than 28 dB for offset carrier frequency operation. As demonstrated by Figure 5A, attached, the 36 dBu (F50,10) interference contour for the proposed facility will not overlap (over land area) with the 64 dBu (F50,50) service contour of KSWB-TV; therefore, since frequency offset is proposed, adequate protection to KSWB-TV will exist. (Figure 5B, attached, is a tabulation of the KSWB-TV service contour.)

### III. DESCRIPTION OF LONGLEY-RICE STUDIES

13. 47 C.F.R. Sections 74.705(e), and 74.707(e) allow for the use of Longley-Rice in order to demonstrate protection to TV broadcast analog stations and LPTV stations, respectively. Furthermore, Paragraph 105 of the FCC's *In the Matter of Amendment of Parts 73 and 74 of the Commission's Rules for Digital Low Power Television, Television Translator, and Television Booster Stations and to Amend Rules for Digital Class A Television Stations - Report and Order (FCC 04-220, released September 30, 2004)* states that the use of Longley-Rice is permitted as an optional showing for processing analog LPTV (and TV translator and TV booster) stations to all protected TV stations (primary, secondary, digital or analog) without requiring a waiver. (Previously, a waiver request was necessary in order to demonstrate protection using the Longley-Rice Methodology.)

14. EDX Engineering, Inc.'s computer software program MSITE™ includes the Longley-Rice version 1.2.2 model; and the MSITE™ program is used to conduct the Longley-Rice studies which are included with this application. With the exception of

## DELAWDER COMMUNICATIONS, INC.

2121 Eisenhower Avenue, Suite 200

Alexandria, Virginia 22314

(703) 299-9222

---

### ENGINEERING REPORT

---

Alma Vision Hispanic Network, Inc.  
Altadena, CA (KTAV-LP, Channel 69+)

not being able to identify and use population centroids, the procedures and parameters specified by the FCC's OET Bulletin No. 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference* (dated July 2, 1997) are used by the MSITE™ program. (This will have no significant effect on the study results.) The grid size for each study is two kilometer spacing (the spacing used by the FCC) or less. (For protection to LPTV, TV translator and TV booster stations, the grid size used is one kilometer or less.)

15. The software is limited to a study distance of 399 kilometers; therefore, in some instances, the study is truncated at 399 kilometers from the proposed transmitter site. Interference is not predicted to result beyond 399 kilometers from the proposed LPTV transmitter site. Furthermore, any contour overlap area is located completely within 399 kilometers; and, therefore, the contour overlap area is completely studied.

16. For each Longley-Rice study, the dipole factor adjustment specified by OET Bulletin No. 69 is applied to both the point-to-point evaluation and the contour distances. Also, USGS three arc-second terrain data is used. The product of each study is a map which identifies those examined points of the study-grid (within the protected station's applicable service, Grade B or noise-limited contour) which are above or below the C/I protection requirement. (For the included studies, all C/I results are above the required protection standards.)

17. As allowed by OET Bulletin No. 69, only those grid points which are predicted to receive a field strength from the desired station that is above the threshold for reception are considered. The MSITE™ output exhibits of this application show the threshold of reception as the corresponding minimum allowed receive power.

18. As with most complicated computer propagation models, much of the underlying data of each study cannot be easily generated or reported in text form. To the extent possible, if requested by the FCC, additional data regarding the Longley-Rice studies will be provided.

**DELAWDER COMMUNICATIONS, INC.**

2121 Eisenhower Avenue, Suite 200

Alexandria, Virginia 22314

(703) 299-9222

---

**ENGINEERING REPORT**

Alma Vision Hispanic Network, Inc.  
Altadena, CA (KTAV-LP, Channel 69+)

**IV. CHANNEL PRECLUSION STUDY FOR LANCASTER AREA**

19. The ability to displace to another TV channel in the Lancaster area has also been examined; and it's been determined that no TV channel (2 through 69) is available to any transmitter site located within 16 kilometers of the licensed KTAV-LP transmitter site. For each TV channel, Table 3, attached, lists one or more co-channel or first-adjacent-channel station (TV, DTV or LPTV) that precludes the use of the channel in Lancaster. As shown by Table 3, no channels are available. (Note: other existing stations than those listed in Table 3 may also preclude the use of a channel; Table 3 only lists those stations that are deemed most objectionable to any particular channel's use.)

20. Most TV channels have main co-channel TV or DTV stations located within 85 kilometers of the licensed KTAV-LP site. Any such channel is automatically deemed unacceptable. Because of the numerous main TV and DTV stations located at the Mt. Wilson site (located approximately 38 kilometers south-southeast of the licensed KTAV-LP site), an LPTV operating in the Lancaster area will likely cause interference, or, just as importantly, *receive* interference from a high-powered operation that transits from Mt. Wilson. The only preventative means available to operate near these high-powered services without causing interference (above the 0.5% *de minimus* interference standard) or receiving interference is to collocate at Mt. Wilson on an available channel. This is the solution taken by AlmaVision in making this application for channel 69+ at the Mt. Wilson site.

**Delawder Communications, Inc.  
Alexandria, VA**

TABLE 1, Page 1  
Thursday, May 26, 2005

Dataworld LPTV/TV Translator Interference Study

**Title: Mt Wilson, CA**

Channel: 69 Offset: Unspecified (800-806 MHz) Analog  
Database: FCC 5/25/2005 12:00:00 AM

ERP: 10 kW  
HAAT: 960.0 m

Latitude: N 34° 13' 36.0"  
Longitude: W 118° 03' 57.0"  
Safety Zone: 32.0 km

Call	Auth	Licensee name	Chan	HAAT(m)	ERP	Latitude	Br-to	Dist	Req
City of License		St	FCC File Number	Zone	HAMSL(m)	Longitude	-from	(km)	(km)
KAZA-TV	LIC	PAPPAS SOUTHERN CALIFORNIA LICEN	54 o	997.0	2290	N 34° 13' 35.0"	219.6	0.040	
AVALON		CA	BLCT-20010712AGN	II	1853.0	W 118° 03' 58.0"	39.6		

DA: AND ATW30H8-HTC2-54H @ 0.0°

**DeLawder Note: Nearly collocated; Attached study shows adequate protection; See Engineering Statement**

KRCA	CP	KRCA LICENSE CORP.	68	907.0	1000	N 34° 12' 50.0"	163.0	1.483	
RIVERSIDE		CA	BMPCDT-20000501AFR	II	1708.0	W 118° 03' 40.0"	343.0		

Digital channel DA: DIE TFU-24DSC-R 3C170P @ 0.0°

**DeLawder Note: Nearly collocated; Attached study shows adequate protection; See Engineering Statement**

KNLA-LP	LIC	VENTURE TECHNOLOGIES GROUP, LLC	68 -		9.8	N 34° 12' 48.0"	164.6	1.535	
LOS ANGELES		CA	BLTTL-19991213ABE		1680.0	W 118° 03' 41.0"	344.6		

DA: ANT ACS16AR @ 200.0°; **Calculated HAAT: 878 m**

**DeLawder Note: Nearly collocated; Attached study shows adequate protection; See Engineering Statement**

K69CO	LIC	COMMUNITY TV OF SOUTHERN CALIFOR	69		5.13	N 34° 11' 46.0"	91.8	95.21	
RUNNING SPRINGS		CA	BLTT-19780901IG		2412.0	W 117° 02' 00.0"	272.3		

DA: SCA ODDK69CO @ 0.0°; **Calculated HAAT: 756 m**

**DeLawder Note: Attached study shows adequate protection; See Engineering Statement**

NEW	APP	VENTURE TECHNOLOGIES GROUP, LLC	69 -		9.97	N 34° 03' 46.0"	99.3	109.7	
BANNING		CA	BNPTTL-20000831AMZ		2813.0	W 116° 53' 34.0"	279.9		

DA: SCA CL-1469 @ 271.0°; **Calculated HAAT: 1106 m**

**DeLawder Note: Attached study shows adequate protection; See Engineering Statement**

KSWB-TV	LIC	KSWB INC.	69 o	594.0	4470	N 32° 41' 47.0"	148.0	199.6	
SAN DIEGO		CA	BLCT-19970929KI	II	822.0	W 116° 56' 07.0"	328.7		

DA: DIE ODD960701KH @ 0.0°

**DeLawder Note: Attached study shows adequate protection; See Engineering Statement**

>> End of channel 69 study <<

TABLE 2A - KTAV-LP, ALTEDENA, CA AMENDED (69+) F50,50 CONTOURS

DATE: June 4, 2005

DISTANCES TO CONTOURS (Kilometers):

Antenna COR elevation (AMSL): 1780 mtrs      Average HAAT: 915 mtrs

Frequency: 803.0000 MHz

Coordinates: N 34 13 36.00      W 118 3 57.00

F(50,50) Curves      Number of Contours: 5      2

AZ (degs)	HAAT (m)	ERPd (kW)	CONTOUR LEVELS (dBu):				
			89.0	80.0	79.0	74.0	70.0
0.1	366	4.0357	8.6	15.6	16.7	22.6	27.6
15.0	357	1.7349	6.6	12.0	12.8	18.0	22.7
30.0	272	0.5604	4.1	7.9	8.4	11.3	14.5
45.0	353	0.0517	1.7	3.9	4.3	6.5	8.5
60.0	637	<0.0001	<0.1	<0.1	<0.1	<0.1	<0.1
75.0	876	<0.0001	<0.1	<0.1	<0.1	<0.1	<0.1
90.0	617	<0.0001	<0.1	<0.1	<0.1	<0.1	<0.1
105.0	851	<0.0001	<0.1	<0.1	<0.1	<0.1	<0.1
120.0	1071	<0.0001	<0.1	<0.1	<0.1	<0.1	<0.1
135.0	1352	<0.0001	<0.1	<0.1	<0.1	<0.1	<0.1
150.0	1444	0.0057	<0.1	1.6	1.9	3.3	5.1
165.0	1472	0.1343	2.8	7.5	8.4	13.7	19.5
180.0	1475	0.5604	5.7	13.9	15.3	22.9	29.4
195.0	1480	3.1288	12.1	25.2	26.9	35.8	43.2
210.0	1455	6.4333	16.1	30.4	32.2	41.3	48.8
225.0	1431	9.3487	18.5	33.2	35.0	44.1	51.5
240.0	1290	9.5233	18.2	32.3	34.1	42.9	50.2
255.0	1202	6.6107	15.6	29.1	30.7	39.3	46.3
270.0	960	7.9918	15.9	28.4	29.9	38.0	44.6
285.0	709	8.9475	14.4	25.9	27.2	34.8	41.2
300.0	646	6.2109	12.3	22.9	24.2	31.2	37.5
315.0	562	8.2257	12.9	23.3	24.6	31.5	37.8
330.0	548	9.9770	13.6	24.1	25.4	32.5	38.8
345.0	544	7.5690	12.4	22.6	23.8	30.6	36.8

TABLE 2B - KTAV-LP, ALTEDENA, CA AMENDED (69+) F50,10 CONTOURS

DATE: June 4, 2005

DISTANCES TO CONTOURS (Kilometers):

Antenna COR elevation (AMSL): 1780 mtrs      Average HAAT: 915 mtrs  
 Frequency: 803.0000 MHz  
 Coordinates: N 34 13 36.00      W 118 3 57.00  
 F(50,10) Curves      Number of Contours: 5      2

AZ (degs)	HAAT (m)	ERPd (kW)	CONTOUR LEVELS (dBu):				
			46.0	36.0	29.0	20.0	19.0
0.0	366	4.0357	76.3	113.0	148.6	199.2	205.0
15.0	357	1.7349	66.0	97.0	128.1	176.6	182.4
30.0	272	0.5604	50.5	71.1	94.8	140.7	146.1
45.0	353	0.0517	36.6	54.5	70.0	99.5	103.4
60.0	637	<0.0001	8.3	18.3	28.1	44.3	46.3
75.0	876	<0.0001	9.1	20.9	32.2	49.5	51.6
90.0	617	<0.0001	8.2	18.0	27.8	43.7	45.7
105.0	851	<0.0001	9.0	20.7	31.8	49.1	51.1
120.0	1071	<0.0001	9.6	22.6	34.7	52.7	54.9
135.0	1352	<0.0001	10.0	24.7	37.6	56.8	59.3
150.0	1444	0.0057	39.6	62.1	81.9	118.9	123.5
165.0	1472	0.1343	72.4	109.3	141.3	182.6	187.4
180.0	1475	0.5604	93.3	137.7	169.6	213.1	218.1
195.0	1480	3.1288	126.1	172.0	205.7	253.9	259.8
210.0	1455	6.4333	139.9	185.7	220.4	271.4	277.3
225.0	1431	9.3487	146.5	192.5	227.9	280.0	285.8
240.0	1290	9.5233	142.0	187.1	222.6	275.0	280.9
255.0	1202	6.6107	132.0	176.3	210.5	262.6	268.3
270.0	960	7.9918	125.6	169.3	204.7	257.4	263.3
285.0	709	8.9475	112.8	158.3	193.3	245.1	252.1
300.0	646	6.2109	102.3	146.2	180.5	231.8	237.5
315.0	562	8.2257	102.4	145.9	181.3	233.2	239.0
330.0	548	9.9770	105.0	148.9	184.8	237.1	243.0
345.0	544	7.5690	99.9	142.8	178.2	229.9	235.7