

TECHNICAL EXHIBIT
APPLICATION FOR MODIFICATION OF
LICENSED FACILITY
(FCC FILE NO. BLTTL-19990804AAC)
LPTV STATION KBFK-LP
FACILITY ID 23275
BAKERSFIELD, CALIFORNIA
CH 36 150 KW (MAX-DA)

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of an application to make a minor modification to the licensed operation of LPTV station KBFK-LP at Bakersfield, California (Facility ID: 23275; File No. BLTTL-19990804AAC). Specifically, this application proposes to increase the effective radiated power (ERP) from 29 kW to 150 kW and to change the directional antenna system orientation from 270 degrees true to 250 degrees true. No other changes are proposed including no change in site, antenna radiation center height above mean sea level (RCAMSL), or community of license (Bakersfield). This application is considered a "minor change" in facilities pursuant to Section 73.3572(a)(2), as there will be no change in frequency (output channel) and the proposed 74 dBu contour will overlap a portion of the licensed 74 dBu contour.

It is proposed to operate on channel 36 (602-608 MHz) with a "plus" carrier frequency offset and employing a Antenna Concepts ACB16DR directional antenna system orientated at 250 degrees true. The maximum ERP will be 150 kW. The antenna radiation center will be 1046 meters above mean sea level. According to the FCC's TOWAIR program, the existing 30.2 meter antenna supporting structure does not require registration.

Minor Change Application

Figure 1 depicts the licensed and herein proposed 74 dBu contours for KBFK-LP. As indicated, the proposed 74 dBu contour encompasses a portion of the licensed 74 dBu contour. Therefore, the proposed modification is considered a "minor" change in facilities pursuant to Section 73.3572.

Analog TV Broadcast Station Protection

A study has been conducted using the provisions of Section 74.705 which indicates that the proposed KBFK-LP operation will not create prohibited interference to other existing, authorized or proposed NTSC full-power stations.

DTV Station and DTV Table of Allotments Protection

Calculations based on OET Bulletin No. 69 indicate that the proposed KBFK-LP operation on channel 36 complies with the FCC's 0.5% interference threshold criteria to all allotted, proposed or actual DTV operating facilities on channels 35 and 36 (channel 37 reserved for radio astronomy). The results are tabulated in Figure 2.¹

LPTV/TV Translator/Class A Protection

A study has been conducted using the provisions of Section 74.707 which indicates that the KBFK-LP proposal will not create prohibited interference to other existing, authorized or proposed LPTV/Class A stations except with respect to the licensed (BLTT-20021009AAE) and authorized (BPTT-20000726AAY) operations of K21FP on channel 21 at Bakersfield, California, the pending application (BMJPTTL-20000829ASI) for K50CL on channel 21 at Belridge, California, and the licensed operation of KJNC-CA on channel 36 at Paso Robles, California (BLTTL-19870602IA). However, based on the provisions of the OET-69 Bulletin as permitted by FCC rules [Section 74.707(e)] it is believed that KBFK-LP's proposed operation complies with the FCC's interference criteria towards these operations. Specifically, calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin and a 1 square kilometer grid. The results of the OET Bulletin No. 69 are tabulated on Figure 3 and, as indicated, the KBFK-LP proposal complies with the FCC's 0.5% interference threshold criteria towards K21FP, K50CL and KJNC-CA.

¹ The du Treil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. A nominal grid size resolution of 1 km was employed. An Alpha based processor computer system was employed. The results have been found to be in very close agreement with the results of the FCC implementation of OET Bulletin No. 69.

Environmental Protection Act

The proposed KBFK-LP facilities were evaluated in terms of potential radiofrequency radiation exposure at ground level in accordance with OST Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation." The calculated power density at the base of the tower was calculated using the appropriate equation on Page 13 of the Bulletin. As shown on Figure 4, the vertical plane field values at depression angles toward the tower base (-60 to -90 elevation) are less than 0.2. Therefore, using a greater than expected vertical relative field value of 0.2, a visual effective radiated power of 150 kilowatts and 10 percent aural power, the calculated power density at 2 meters above ground at the tower base will be 1.5661 mW/cm^2 . This is 388% of the recommended limit of 0.40 mW/cm^2 for channel 36 applicable to general population/uncontrolled exposure areas and 78% of recommended limit of 2.02 mW/cm^2 for channel 36 applicable to general population/uncontrolled exposure areas. Therefore, as this is a multi-user site, measurements will be made to substantiate compliance with the RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with warning signs. Furthermore, as this is a multi-user site, an agreement will be in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down.

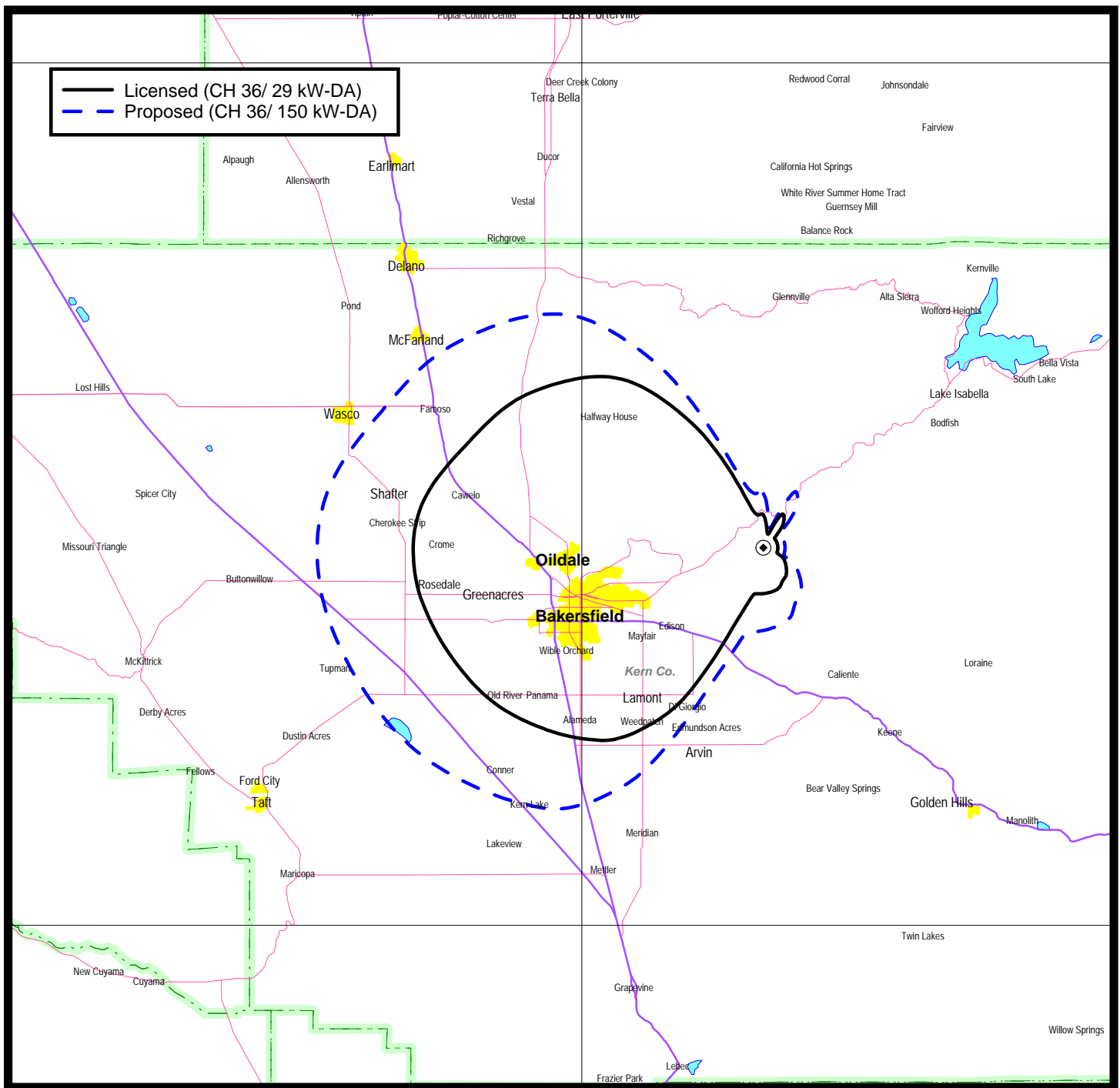
In addition, it appears that the existing tower is otherwise excluded from environmental processing as it complies with all the criteria for such an exclusion in Section 1.1306.

W. Jeffrey Reynolds

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September 3, 2003

Figure 1



PREDICTED COVERAGE CONTOURS

LPTV STATION KBFK-LP
BAKERSFIELD, CALIFORNIA
CH 36 150 kW (MAX-DA)

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

OET-69 DTV INTERFERENCE CAUSED STUDY

CELL SIZE : 1.00

Using offset in determining thresholds

KMEX-T 34-13-36 118-03-59 35(N) 400.000 kw 1839 m DA 90.0 % 40.7 dBu
LOS ANGELES CA 21708 12379 DTVSERVICE:12379000 NTSCSERVICE:12427000
LIC BLCDT20021118ACF

0.31	0.43	0.52	0.48	0.34	0.33	0.51	0.71	0.84	0.91	0.94	0.97
1.00	0.98	0.87	0.73	0.60	0.51	0.47	0.46	0.46	0.46	0.47	0.50
0.56	0.66	0.77	0.86	0.87	0.88	0.88	0.87	0.85	0.76	0.58	0.36

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	42363.605469	14420479
not affected by terrain losses	32112.455078	13520040

KBFK-LP 35-26-16 118-44-28 36(+) 150.000 kw 1046.1 m DA 10.0 % 73.8
BAKERSFIELD CA

PROPOSED

1.00	0.97	0.88	0.76	0.60	0.46	0.25	0.06	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.06	0.25	0.46	0.60	0.76	0.88	0.97

Ref Az: 250.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -49.00

	Area	Pop
Interference	0	0

DKMEXT 34-13-35 118-03-56 35(0) 73.500 kw 1791 m DA 90.0 % 40.7 dBu
LOS ANGELES CA 21708 12379 DTVSERVICE:12379000 NTSCSERVICE:12427000
DTVALT DTV ALLOTMENT

0.53	0.61	0.71	0.76	0.70	0.61	0.54	0.59	0.70	0.85	0.99	1.00
0.89	0.70	0.67	0.68	0.69	0.69	0.68	0.67	0.62	0.61	0.62	0.66
0.68	0.68	0.67	0.65	0.59	0.62	0.75	0.86	0.94	0.85	0.68	0.57

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	31424.359375	13783593
not affected by terrain losses	22623.093750	12712250

KBFK-LP 35-26-16 118-44-28 36(+) 150.000 kw 1046.1 m DA 10.0 % 73.8
BAKERSFIELD CA

PROPOSED

1.00	0.97	0.88	0.76	0.60	0.46	0.25	0.06	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.06	0.25	0.46	0.60	0.76	0.88	0.97

Ref Az: 250.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -49.00

Interference	Area	Pop
	0	0

DKNBC 34-13-32 118-03-52 36(0) 711.400 kw 1884 m DA 90.0 % 40.8 dBu		
LOS ANGELES CA 41111 13829 DTVSERVICE:13829000 NTSCSERVICE:14262000		
DTVALT DTV ALLOTMENT		
0.92 0.92 0.91 0.91 0.91 0.92 0.96 0.99 1.00 1.00 0.98 0.89		
0.80 0.75 0.74 0.73 0.73 0.73 0.74 0.74 0.74 0.73 0.73 0.74		
0.75 0.77 0.81 0.87 0.93 0.98 1.00 1.00 0.99 0.99 0.98 0.95		
(93.0 1.00)(94.0 1.00)(305.0 1.00)(306.0 1.00)(308.0 1.00)		
Ref Az: 0.0		
Using DEFAULT vertical antenna pattern		
	Area	Pop
within Noise Limited Contour	52575.765625	14561729
not affected by terrain losses	41314.878906	13797474

KBFB-LP 35-26-16 118-44-28 36(+) 150.000 kw 1046.1 m DA 10.0 % 73.8		
BAKERSFIELD CA		
PROPOSED		
1.00 0.97 0.88 0.76 0.60 0.46 0.25 0.06 0.03 0.03 0.03 0.03		
0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03		
0.03 0.03 0.03 0.03 0.03 0.06 0.25 0.46 0.60 0.76 0.88 0.97		
Ref Az: 250.0		
Using DEFAULT vertical antenna pattern		

D/U Baseline: 2.00

Interference	Area	Pop
	29.56	0(0.0 FCC - 0.0)

KNBC 34-13-32 118-03-52 36(N) 380.000 kw 1891 m 90.0 % 40.8 dBu		
LOS ANGELES CA 41111 13829 DTVSERVICE:13829000 NTSCSERVICE:14262000		
LIC BLCDT19981123KG		
Using DEFAULT vertical antenna pattern		
	Area	Pop
within Noise Limited Contour	50051.675781	14557824
not affected by terrain losses	39198.472656	13705630

KBFB-LP 35-26-16 118-44-28 36(+) 150.000 kw 1046.1 m DA 10.0 % 73.8		
BAKERSFIELD CA		
PROPOSED		
1.00 0.97 0.88 0.76 0.60 0.46 0.25 0.06 0.03 0.03 0.03 0.03		
0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03		
0.03 0.03 0.03 0.03 0.03 0.06 0.25 0.46 0.60 0.76 0.88 0.97		
Ref Az: 250.0		
Using DEFAULT vertical antenna pattern		

D/U Baseline: 2.00

Interference	Area	Pop
	20.70	0(0.0 FCC - 0.0)

DKMSGT 37-04-26 119-25-52 36(0) 50.000 kw 1414 m DA 90.0 % 40.8 dBu
SANGER CA 14995 761 DTVSERVICE: 761000 NTSCSERVICE: 745000

DTVALT DTV ALLOTMENT

0.96	0.91	0.88	0.80	0.75	0.66	0.60	0.54	0.47	0.39	0.36	0.33
0.29	0.28	0.30	0.33	0.38	0.41	0.43	0.43	0.39	0.35	0.32	0.31
0.34	0.40	0.49	0.59	0.70	0.79	0.87	0.94	0.98	1.00	0.99	0.96

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

USING NTSC GRADE B FOR SERVICE AREA

	Area	Pop
within Noise Limited Contour	18192.083984	792940
not affected by terrain losses	15223.250977	770711

KBFK-LP 35-26-16 118-44-28 36(+) 150.000 kw 1046.1 m DA 10.0 % 73.8
BAKERSFIELD CA

PROPOSED

1.00	0.97	0.88	0.76	0.60	0.46	0.25	0.06	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.06	0.25	0.46	0.60	0.76	0.88	0.97

Ref Az: 250.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	32.92	3398(0.45%)

KFRE-T 37-04-37 119-26-01 36(N) 372.000 kw 1419 m DA 90.0 % 40.8 dBu
SANGER CA 14995 761 DTVSERVICE: 761000 NTSCSERVICE: 745000

CP MOD BMPCDT20020215AAB

0.22	0.20	0.24	0.29	0.32	0.32	0.29	0.24	0.20	0.22	0.29	0.37
0.45	0.52	0.58	0.64	0.69	0.75	0.82	0.88	0.93	0.97	1.00	1.00
0.98	0.93	0.88	0.82	0.75	0.69	0.64	0.58	0.52	0.45	0.37	0.29

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	31164.214844	1216948
not affected by terrain losses	27297.667969	1202438

KBFK-LP 35-26-16 118-44-28 36(+) 150.000 kw 1046.1 m DA 10.0 % 73.8
BAKERSFIELD CA

PROPOSED

1.00	0.97	0.88	0.76	0.60	0.46	0.25	0.06	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.06	0.25	0.46	0.60	0.76	0.88	0.97

Ref Az: 250.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	11.99	36(0.00%)

Summary of Calculations

Facility	Channel	Type	Baseline	Permissible	IX	%Base
KMEX-T, LOS ANGELES, CA	35	DTV	14420479	0.5	0	0.00
DKMEXT, LOS ANGELES, CA	35	DTV	13783593	0.5	0	0.00
DKNBC, LOS ANGELES, CA	36	DTV	14561729	0.5	0	0.00
KNBC, LOS ANGELES, CA	36	DTV	14557824	0.5	0	0.00
DKMSGT, SANGER, CA	36	DTV	761000	0.5	3398	0.45
KFRE-T, SANGER, CA	36	DTV	1216948	0.5	36	0.00

OET-69 LPTV/CLASS A INTERFERENCE CAUSED STUDY

CELL SIZE : 1.00

Using offset in determining thresholds

K21FP 35-26-17 118-44-25 21(+) 0.350 kw 1085 m DA 50.0 % 72.4 dBu
BAKERSFIELD CA
LIC BLTT20021009AAE

1.00	0.94	0.83	0.80	0.93	1.00	0.98	0.92	0.83	0.71	0.58	0.41
0.14	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
0.13	0.40	0.56	0.71	0.82	0.92	0.98	0.98	0.89	0.78	0.83	0.95

Ref Az: 250.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	443.503174	14047
not affected by terrain losses	407.704712	14047

KBFK-L 35-26-16 118-44-28 36(+) 150.000 kw 1046.1 m DA 10.0 % 73.8
BAKERSFIELD CA
PROPOSED

1.00	0.97	0.88	0.76	0.60	0.46	0.25	0.06	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.06	0.25	0.46	0.60	0.76	0.88	0.97

Ref Az: 250.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -9.00

Interference	Area	Pop
	0	0

K21FP 35-26-17 118-44-25 21(+) 0.320 kw 1085 m DA 50.0 % 72.4 dBu
BAKERSFIELD CA
CP BPTT20000726AAY

1.00	1.00	1.00	1.00	1.00	0.99	0.95	0.89	0.81	0.73	0.62	0.53
0.43	0.29	0.15	0.07	0.09	0.14	0.15	0.14	0.09	0.07	0.15	0.29
0.43	0.53	0.62	0.73	0.81	0.89	0.95	0.99	1.00	1.00	1.00	1.00

Ref Az: 270.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	455.378662	10674
not affected by terrain losses	430.521729	10674

KBFK-L 35-26-16 118-44-28 36(+) 150.000 kw 1046.1 m DA 10.0 % 73.8
BAKERSFIELD CA
PROPOSED

1.00	0.97	0.88	0.76	0.60	0.46	0.25	0.06	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.06	0.25	0.46	0.60	0.76	0.88	0.97

Ref Az: 250.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -9.00

Interference	Area	Pop
	0	0

K50CL 35-22-30 119-00-57 21(+) 0.955 kw 172.5 m 50.0 % 72.4 dBu

BELRIDGE CA

APP BMJPTTL20000829ASI

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	116.418503	172885
not affected by terrain losses	116.418503	172885

KBFK-L 35-26-16 118-44-28 36(+) 150.000 kw 1046.1 m DA 10.0 % 73.8

BAKERSFIELD CA

PROPOSED

1.00	0.97	0.88	0.76	0.60	0.46	0.25	0.06	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.06	0.25	0.46	0.60	0.76	0.88	0.97

Ref Az: 250.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -9.00

	Area	Pop
Interference	0	0

KJCN-C 35-21-38 120-39-21 36(-) 25.000 kw 764 m DA 50.0 % 73.8 dBu

PASO ROBLES CA

LIC BLTTL19870602IA

1.00	0.97	0.95	0.93	0.92	0.94	0.98	1.00	0.98	0.95	0.88	0.77
0.63	0.47	0.35	0.23	0.22	0.22	0.23	0.22	0.22	0.23	0.35	0.47
0.63	0.77	0.88	0.95	0.98	1.00	0.98	0.94	0.92	0.93	0.95	0.97

(75.0 1.00)(285.0 1.00)

Ref Az: 270.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	3041.155029	186915
not affected by terrain losses	2404.055420	164468

KBFK-L 35-26-16 118-44-28 36(+) 150.000 kw 1046.1 m DA 10.0 % 73.8

BAKERSFIELD CA

PROPOSED

1.00	0.97	0.88	0.76	0.60	0.46	0.25	0.06	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.06	0.25	0.46	0.60	0.76	0.88	0.97

Ref Az: 250.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 28.00

	Area	Pop
Interference	0	0

Summary of Calculations

Facility	Channel	Type	Baseline	Permissible	IX	%Base
K21FP, BAKERSFIELD, CA	21	TV	14047	0.5	0	0
K21FP, BAKERSFIELD, CA	21	TV	10674	0.5	0	0
K50CL, BELRIDGE, CA	21	TV	172885	0.5	0	0
KJCN-C, PASO ROBLES, CA	36	TV	186915	0.5	0	0

ANTENNA CONCEPTS, INC.

ANTENNA CONCEPTS, INC.

ELEVATION PATTERN ANTENNA CONCEPTS

DATE 3/16/93

BEAM TILT 0

ANTENNA GAIN : 16 BAYNULL FILL 0 8

ELEVATION	FIELD	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
+2.00	0.564	+	+	+	+	+	+	+	+	+	+
+0.00	1.000	+	+	+	+	+	+	+	+	+	+
-2.00	0.564						*				
-4.00	0.099		*								
-6.00	0.167			*							
-8.00	0.093			*							
-10.00	0.078		*								
-12.00	0.083			*							
-14.00	0.038		*								
-16.00	0.073			*							
-18.00	0.016		*								
-20.00	0.064			*							
-22.00	0.005		*								
-24.00	0.057		*								
-26.00	0.002		*								
-28.00	0.052		*								
-30.00	0.004		*								
-32.00	0.049		*								
-34.00	0.013		*								
-36.00	0.044		*								
-38.00	0.026		*								
-40.00	0.034		*								
-42.00	0.041		*								
-44.00	0.011		*								
-46.00	0.049		*								
-48.00	0.023		*								
-50.00	0.032		*								
-52.00	0.052		*								
-54.00	0.017		*								
-56.00	0.036		*								
-58.00	0.060		*								
-60.00	0.036		*								
-62.00	0.016		*								
-64.00	0.062		*								
-66.00	0.077		*								
-68.00	0.054		*								
-70.00	0.005		*								
-72.00	0.053		*								
-74.00	0.105			*							
-76.00	0.144			*							
-78.00	0.166			*							
-80.00	0.174			*							
-82.00	0.172			*							
-84.00	0.163			*							
-86.00	0.151			*							
-88.00	0.138			*							
-90.00	0.124			*							