

TECHNICAL EXHIBIT
IN SUPPORT OF
APPLICATION FOR MODIFICATION OF
DTV CONSTRUCTION PERMIT
STATION KLDO-DT (FAC. 51479)
LAREDO, TEXAS
CH 19 50 KW (MAX-DA) 132 M

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of an application for modification of construction permit for DTV station KLDO-DT on channel 19 at Laredo, Texas. Station KLDO-DT is currently authorized (BMPCDT-20060112AEV) to operate on digital channel 19 with a directional antenna maximum effective radiated power (ERP) of 5 kilowatts (kW) and an antenna height above average terrain (HAAT) of 109 meters.

Proposed Operation

It is proposed to operate with a directional antenna maximum ERP of 50 kW at an antenna HAAT of 132 meters. It is proposed to use an ERI ALP8L3-HSBR-19 antenna mounted at the 144.8 meter (475 foot) level on an existing tower structure (ASR 1252424). The proposed antenna radiation center above mean sea level is 289 meters.

Response to Paragraph 10 - Antenna Data

Figure 1 provides a graph of the horizontal plane relative field pattern for the proposed ERI ALP8L3-HSBR-19 directional antenna system.

Response to Paragraph 12 – City Coverage

Figure 2 is a map showing the FCC predicted DTV coverage contours. The map provides the FCC predicted 41 dBu f(50,90) noise-limited contour and 48 dBu f(50,90) city grade contour. The extent of the contours has been calculated using the normal FCC prediction method and a 3-second digitized terrain database. The Laredo city limits were derived from information contained in the 2000 U.S. Census for Texas. As shown, the 48 dBu contour encompasses the entire city limits of Laredo.

Coverage Replication

The proposed KLDO-DT operation will provide 100% replication of the Licensed NTSC operation on channel 27 and 99.4% replication of the DTV appendix B population. The relevant net service population figures are as follows based on the OET-69 Longley-Rice coverage analysis considering losses due to terrain and interference, using 2000 census data:

KLDO-TV Licensed NTSC Channel 27 operation: 191,739

KLDO-DT Channel 19 'Appendix B' allotment: 193,000 persons

KLDO-DT Proposed Channel 19 operation: 191,901 persons

NTSC/DTV/Class A Allocation Considerations

An interference analysis has been conducted using the procedures outlined in the FCC's OET-69 bulletin, which demonstrates that the proposal complies with the interference protection provisions of both Section 73.623(a) and Section 73.616.¹

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 2 km was employed. A Sun based processor computer system was employed.

Mexican Coordination

KLDO-DT is located 2.5 km east of the US/Mexican border area. Therefore, coordination of the proposal with Mexico is respectfully requested. Figure 3 is a separation study for DTV channel 19 from the proposed site based on the minimum distance separation requirements contained in the Memorandum of Understanding (MOU) between the US and Mexico which are applicable to full-service US and Mexican DTV stations. As indicated, the proposed KLDO-DT operation on channel 19 would be involved in 3 short-spacings, namely with a Mexican DTV assignment on channel 19 at Reynosa, TA (4.73 km short-spacing) and Mexican NTSC assignments on channels 21 and 33 at Nuevo Laredo, TA (2.16 km short-spacing).

With respect to the Nuevo Laredo channel 21 short-spacing, based on use of the provisions of OET-69 and the Longley-Rice (LR) model as permitted by the MOU², there would be no calculated interference to a maximum NTSC facility at Nuevo Laredo (ERP 5000 kW/HAAT 609 meters). Figure 4 provides the results of the OET-69 interference analysis.

With respect to the Nuevo Laredo channel 33 short-spacing, it is believed that this short-spacing is not applicable as the interference potential would be to an NTSC channel 19 operation from the NTSC channel 33 operation at Nuevo Laredo (-14 channel UHF sound image taboo).

With respect to the 4.73 km short-spacing with the Reynosa channel 19 DTV allotment, the proposed KLDO-DT operation will reduce the magnitude of the short-spacing currently approved by Mexico by 20.2 km as KLDO-DT's Appendix B allotment is currently short-spaced by 24.93 km to the Reynosa channel 19 allotment. Furthermore, based on a OET-69 interference analysis, the proposed KLDO-DT operation is predicted to cause less interference to the Reynosa channel 19 DTV allotment than the KLDO-DT Appendix B allotment. Figures 4A and 4B provide the outputs of the OET-69 interference studies to the Reynosa channel 19 DTV allotment from both the proposed operation and the KLDO-DT

² The LR methodology is set forth in Appendix 5 of the MOU.

Appendix B allotment, respectively.³ As indicated on Figures 4A and 4B, the proposed KLDO-DT operation will reduce the predicted interference area by 177 km². Therefore, it is believed that the proposed KLDO-DT operation complies with the interference criteria contained in the MOU.

Objectionable Interference

There are no known authorized full service AM stations within 5 kilometers (3 miles) of the proposed transmitter site. Figure 6 provides a tabulation of the TV and FM stations within 16 kilometers of the proposed site. Although no adverse electromagnetic impact is expected, the applicant recognizes its responsibility to correct problems, which are a result of its proposed DTV operation.

The proposed transmitter site is 2184 kilometers from the Canadian border. The closest FCC monitoring is at Kingsville, Texas, approximately 172 kilometers to the east. The proposed DTV site is outside the National Radio Quiet Zone (VA/WVA), the closest point being 2,100 kilometers to the northeast. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 1,476 kilometers to the north-northwest. The closest radio astronomy site operating on TV channel 37 is at Fort Davis, Texas located approximately 535 kilometers to the west-northwest. These separations are sufficient to not be a concern for coordination purposes.

Radiofrequency Electromagnetic Field Exposure

The proposed KLDO-DT facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The radiation center for the proposed DTV antenna is located 144.8 meters above ground level with a maximum ERP of 50 kW (horizontal polarization). A “worst-case” vertical plane relative field value of 0.3 (for angles below 60 degrees downward) is assumed for the antenna's downward radiation (see Figure 7 attached). The calculated power density at a point 2 meters above ground level is 0.0074 mW/cm². This is 2.2% of the FCC's recommended limit of 0.34 mW/cm² for channel 19 for an “uncontrolled” environment.

³ Operation with a nondirectional ERP of 1000 kW and an HAAT of 365 meters (US UHF

Therefore, based on the responsibility threshold of 5%, the proposal will comply with the RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with warning signs. In the event that workers or other authorized personnel enter restricted areas or climb the tower, 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. The proposed KLDO-DT operation appears to be otherwise categorically excluded from environmental processing.

Finally, it is noted that this technical exhibit only addresses the potential for radio frequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be or already has been provided to the FCC by the tower owner as part of the tower registration process.

If there are questions concerning the technical portion of this application, please contact the office of the undersigned.



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February 10, 2009

ALP8L3-HSBR-19

AZIMUTH PATTERN

Type: ALP-BR

Numeric	dBd
<u>2.75</u>	<u>4.39</u>

Directivity: 2.75

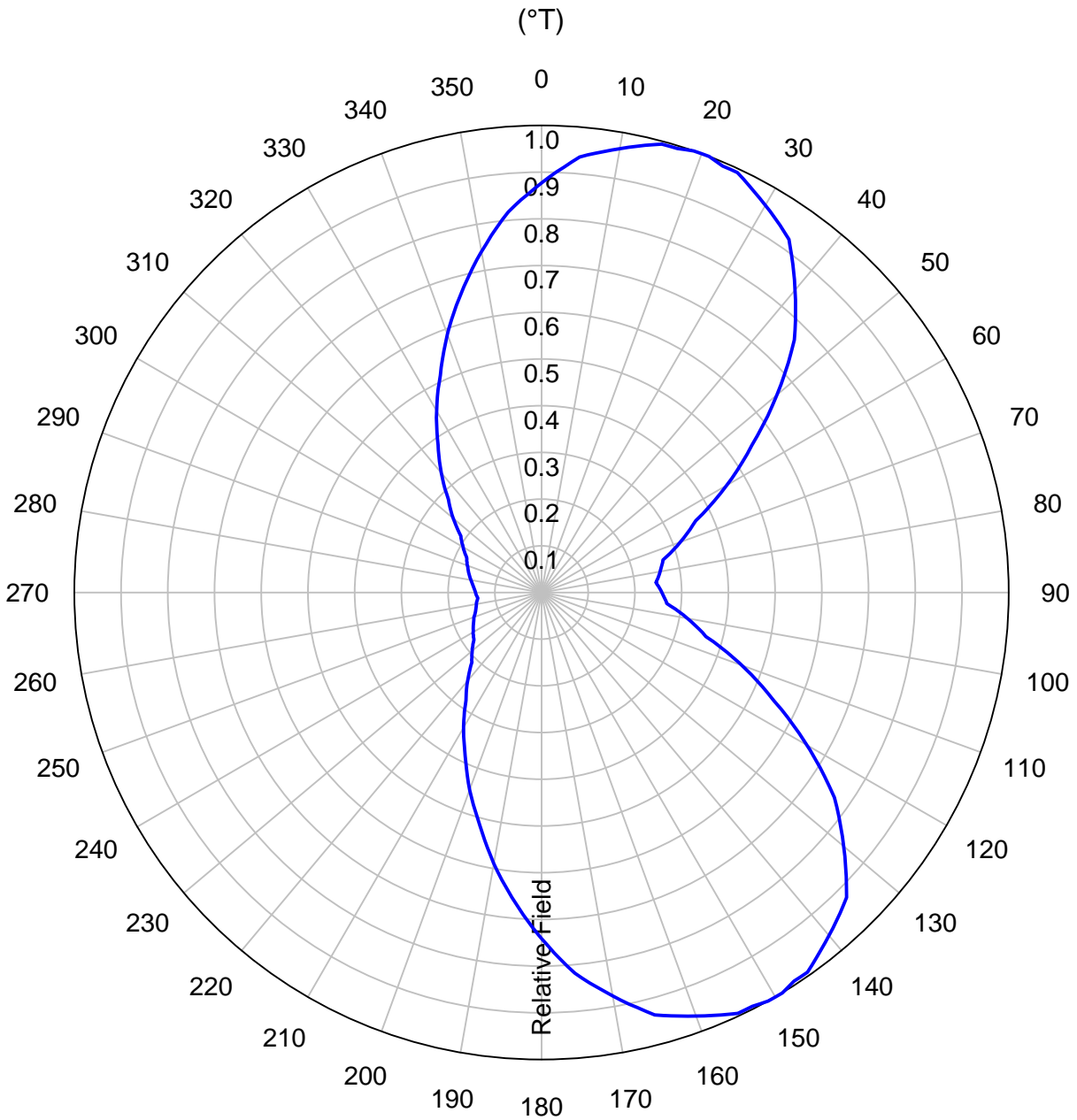
Peak(s) at:

Channel: 19

Location:

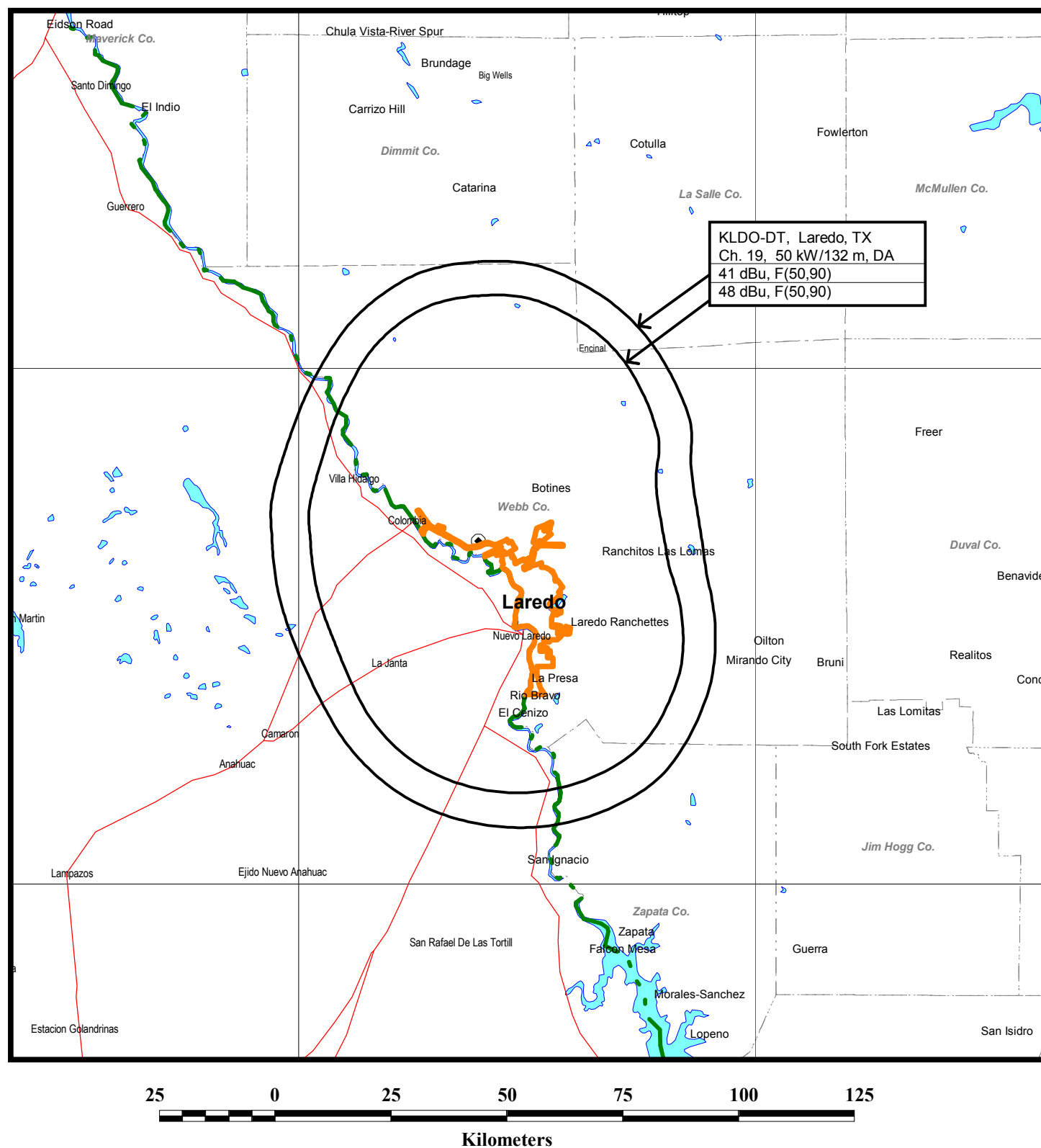
Polarization: Horizontal

Note: Pattern shape and directivity may vary with channel and mouting configuration.



Preliminary, subject to final design and review.

Figure 2



FCC PREDICTED COVERAGE CONTOURS

DTV STATION KLDO-DT
LAREDO, TEXAS

CH 19 50 KW (MAX-DA) 132 M

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

TV Study

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



Station Type:	DT	Station Coordinates:	027-39-52.90 099-36-24.90 (NAD 27)	
Station Channel:	19	Station Zone:	II	Equivalent Canadian Class: EX
Buffer Distance:	32 km	Comment:	KLDO-DT STA Request	

Callsign	Status	Channel	Service	Zone	City				State	Latitude	Dist. (km)	Min. (km)	Spacing (km)
Facility ID	ARN			Class	DA	Ant ID	ERP (kW)	HAAT (m)	Rec Type	Longitude	Bear. (deg)	Max. (km)	Comment
KLDO-TV	CP MOD	19	DT	2	LAREDO				TX	027-39-52.9	0	223.7	-223.7
51479	BMPCDT	20060112AEV		D	71879	5	109.4		C	099-36-24.9	0	223.7	SHORT
DKLDO-TV	DTVALT	19	DT	3	LAREDO				TX	27-30-03	20.51	223.7	-203.19
0					17147	81	67		C	099-30-37	152.38	223.7	SHORT
	MEXDTV	19	DT		REYNOSA				TA	26-04-59	218.27	223	-4.73
0					0	0	0		C	98-17-51	143.25	223	SHORT
KVCT	CP	19 +	TV	3	VICTORIA				TX	028-50-42	276.38	244.6	31.78
35846	BPCT	20030212AAC		N	59336	1000	312		C	097-07-33	61.04	244.6	CLEAR
	MEXTAB	21	TV		NUEVO LAREDO				TA	027-26-45	26.16	24	-2.16
0					0	0	0		C	099-30-27	158.04	32	SHORT
		21 Z	TA	2	NUEVO LAREDO				TA	027-29-48	21.39	24	2.61
97753					N				C	099-30-01	150.62	32	CLOSE
KLDO-TV	LIC	27 -	TV	3	LAREDO				TX	027-30-03	20.51	24.1	3.59
51479	BLCT	19850124KT		D	17147	3720	67		C	099-30-37	152.38	96.6	CLOSE
	MEXTAB	33	TV		NUEVO LAREDO				TA	027-26-45	26.16	24	-2.16
0					0	0	0		C	099-30-27	158.04	95	SHORT
		33 +	TA	2	NUEVO LAREDO				TA	027-29-48	21.39	24	2.61
98248					N				C	099-30-01	150.62	95	CLOSE

Figure 4

LR/OET-69 INTERFERENCE CAUSED

RSS/SUM Not Enabled

Cell Size (km): 1.00

Terrain Increment (km): 1.00

Using Offset in Determining Thresholds

XNUEV 27-26-45 99-30-27 21(Z) 5000.000 kw 752.4 m 50.0% 62.4 dBu

NUEVO LAREDO TA

Null null

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	38995.664062	156474
not affected by terrain losses	38471.343750	155952

KLDO 27-39-52.9 099-36-24.9 19(N) 50.000 kw 289 m DA 10.0% 39.2 dBu

LAREDO TX 6996 132 DTVSERVICE: 132000 NTSCSERVICE: 132000

CP MOD BMPCDT20060112AEV

0.877	0.965	1.000	0.958	0.844	0.657	0.456	0.316	0.258	0.258	0.316	0.457
0.657	0.844	0.958	1.000	0.965	0.877	0.741	0.589	0.450	0.334	0.246	0.194
0.169	0.154	0.142	0.141	0.154	0.169	0.194	0.247	0.334	0.449	0.589	0.741

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -24.00

	Area	Pop
Interference	0	0

Facility	Channel	Type	Baseline	Permissible	IX	%Base
XNUEV, NUEVO LAREDO, TA	21	TV	156474	2.0	0	0.00

Figure 5A

LR/OET-69 INTERFERENCE CAUSED FROM KLDO-DT ALLOTMENT

RSS/SUM Not Enabled

Cell Size (km): 1.00

Terrain Increment (km): 1.00

Using Offset in Determining Thresholds

NEW-DT 26-04-59 98-17-51 19(N) 1000.000 kw 409.6 m 90.0% 39.2 dBu

REYNOSA TA

APP BPFS20050922AAF

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	36441.125000	700577
not affected by terrain losses	36400.683594	700577

KLDOTV 27-30-04 99-30-37 19(N) 200.000 kw 192 m DA 10.0% 39.2 dBu

LAREDO TX 6996 132 DTVSERVICE: 132000 NTSCSERVICE: 132000

CP MOD BMPCDT20060112AEV

0.877 0.965 1.000 0.958 0.844 0.657 0.456 0.316 0.258 0.258 0.316 0.457

0.657 0.844 0.958 1.000 0.965 0.877 0.741 0.589 0.450 0.334 0.246 0.194

0.169 0.154 0.142 0.141 0.154 0.169 0.194 0.247 0.334 0.449 0.589 0.741

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 15.00

	Area	Pop
Interference	275.19	364(0.1)

Facility	Channel	Type	Baseline	Permissible	IX	%Base
NEW-DT, REYNOSA, TA	19	DTV	700577	2.0	364	0.05

Figure 5B

LR/OET-69 INTERFERENCE CAUSED FROM KLDO-DT PROPOSED

RSS/SUM Not Enabled
 Cell Size (km): 1.00
 Terrain Increment (km): 1.00
 Using Offset in Determining Thresholds

NEW-DT 26-04-59 98-17-51 19(N) 1000.000 kw 409.6 m 90.0% 39.2 dBu
 REYNOSA TA
 APP BPFS20050922AAF
 Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	36441.125000	700577
not affected by terrain losses	36400.683594	700577

KLDOTV 27-39-52.9 099-36-24.9 19(N) 50.000 kw 289 m DA 10.0% 39.2 dBu
 LAREDO TX 6996 132 DTVSERVICE: 132000 NTSCSERVICE: 132000
 CP MOD BMPCDT20060112AEV
 0.877 0.965 1.000 0.958 0.844 0.657 0.456 0.316 0.258 0.258 0.316 0.457
 0.657 0.844 0.958 1.000 0.965 0.877 0.741 0.589 0.450 0.334 0.246 0.194
 0.169 0.154 0.142 0.141 0.154 0.169 0.194 0.247 0.334 0.449 0.589 0.741
 Ref Az: 0.0
 Using DEFAULT vertical antenna pattern

D/U Baseline: 15.00

Interference			Area	Pop		
			98.64	31(0.0)		
Facility	Channel	Type	Baseline	Permissible	IX	%Base
NEW-DT, REYNOSA, TA	19	DTV	700577	2.0	31	0.01

TV Inquiry

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



Listed stations are within 16 km of the point at 027-39-52.90 099-36-24.90.

Callsign	Status	Channel	Offset	Service	City	State	Latitude	Longitude	Application ID	Distance (km)	
ARN		DA	Antenna ID	Rotation	ERP (kW)	HAAT (m)	RCAMSL (m)	Zone	Record Type	Facility ID	Bearing (deg)
KXOF-CA	APP	39	Z	CA	LAREDO		TX	027-39-53	099-36-25	1148032	0
BSTA	20060912AAU	C	75586	145	85		244		C	11699	318.47
KLDO-TV	CP MOD	19		DT	LAREDO		TX	027-39-52.9	099-36-24.9	1118348	0
BMPCDT	20060112AEV	D	71879	0	5	109.4	266.1	2	C	51479	0
KGNS-TV	STA	15		DS	LAREDO		TX	027-40-21	099-39-51	1030957	5.71
BMDSTA	20041103AKJ	N			2.16	285	435		C	10061	278.76
KGNS-TV	CP	8		DT	LAREDO		TX	027-40-21	099-39-51	1232510	5.71
BPCDT	20080619ADJ	D	87397	0	20	312	462.5	3	C	10061	278.76
KGNS-TV	STA	15		DS	LAREDO		TX	027-40-21	099-39-51	685390	5.71
BDSTA	20030829BFC	N			1.12	285	435		C	10061	278.76
KGNS-TV	LIC	8	Z	TV	LAREDO		TX	027-40-21	099-39-51	175938	5.71
BMLCT	19920806KE	D	20583	0	316	312	463	3	C	10061	278.76

FM Inquiry

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



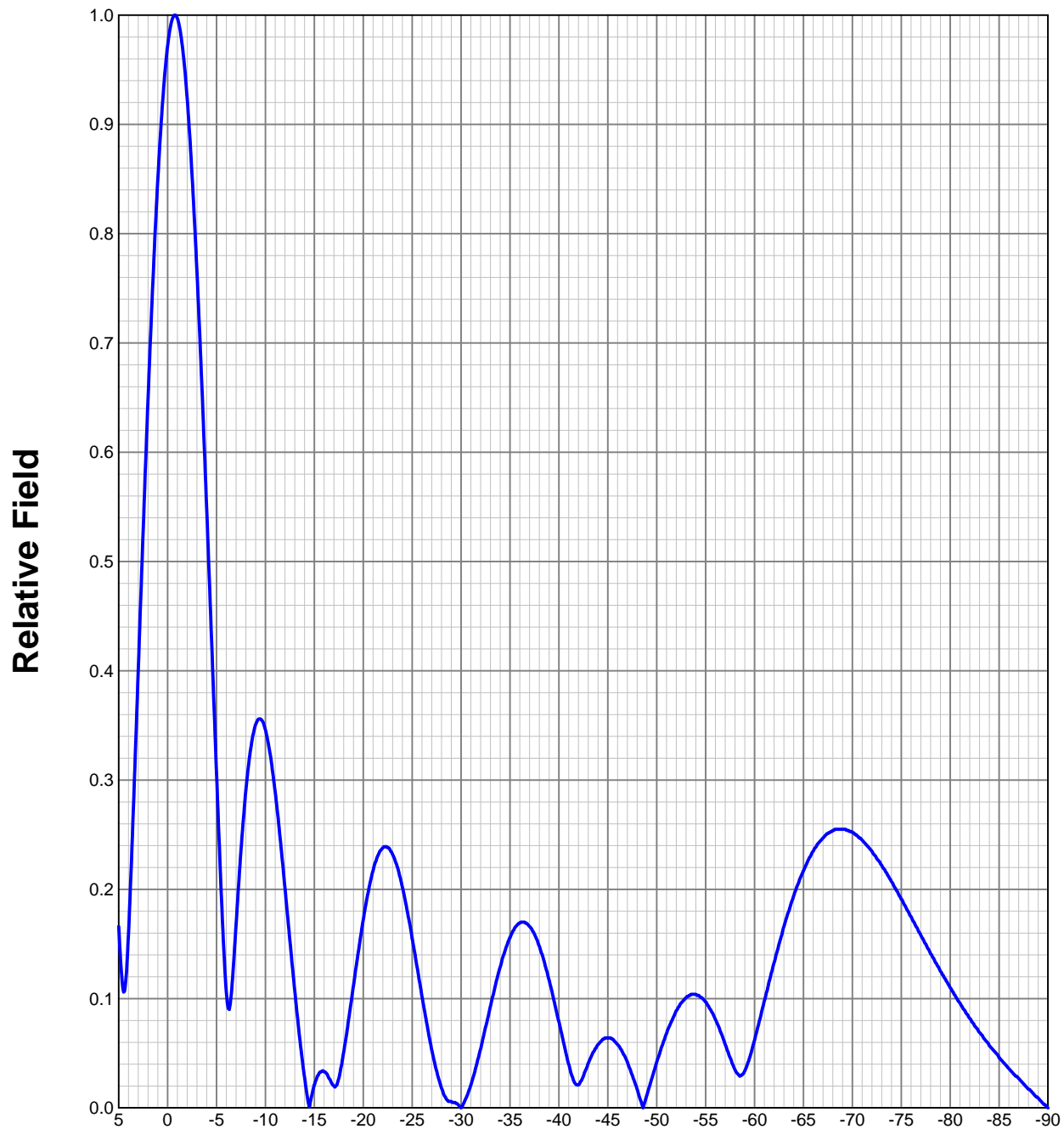
Listed stations are within 16 km of the point at 027-39-52.9 099-36-24.9.

Callsign	Status	Channel	Freq.	Service	City	State	Latitude	Longitude	Application ID	Distance (km)
ARN	DA	Antenna ID	Rotation	ERP (kW)	HAAT (m)	RCAMSL (m)	Class	Record Type	Facility ID	Bearing (deg)
KBNL	APP	210	89.9	FM	LAREDO	TX	027-39-27	099-35-10	1013552	2.2
BLED	20040920ABY	N		100	184	337	C1	A	73750	111.32
KBNL	LIC	210	89.9	FM	LAREDO	TX	027-39-27	099-35-10	1047355	2.2
BLED	20050218AAG	N		100	184	337	C1	C	73750	111.32
KBNL	APP	210	89.9	FM	LAREDO	TX	027-39-27	099-35-10	401356	2.2
BPED	19991005AAS	N		100	184	337	C1	A	73750	111.32
KBNL	CP	210	89.9	FM	LAREDO	TX	027-39-27	099-35-10	494929	2.2
BPED	19991005AAS	N		100	184	337	C1	A	73750	111.32
XHNLOFM		246	97.1	FA	NUEVO LAREDO	TA	027-35-41	099-35-48	291758	7.82
							B	C	95108	172.6
		229	93.7	FA	COLOMBIA	NL	027-42-09	099-45-25	295474	15.38
							A	C	95794	285.92
		222	92.3	FA	COLOMBIA	NL	027-42-09	099-45-25	299888	15.38
							A	C	96497	285.92

ALP8L3-HSBR-19

ELEVATION PATTERN

Type:	ALP8L3		Channel:	19
Directivity:	Numeric	dBd	Location:	
Main Lobe:	9.05	9.57	Beam Tilt:	-0.75
Horizontal:	8.55	9.32	Polarization:	Horizontal



Preliminary, subject to final design and review.