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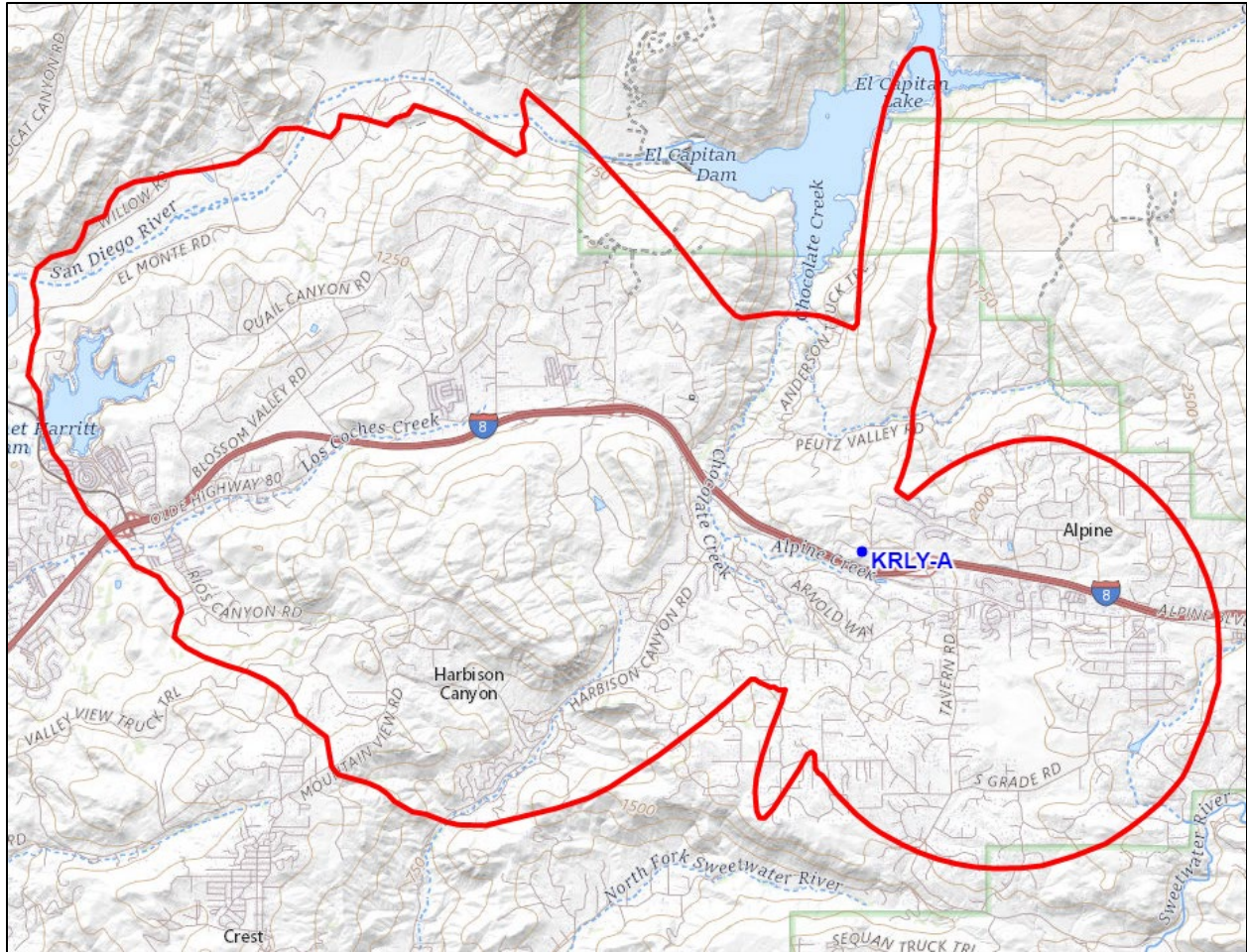
Minor modification for KRLY-LP

ALPINE, CA

**EAST COUNTY BROADCASTING, INC.**

BLL-20050606AHL

## **PROPOSED 60dBu F(50,50) SERVICE CONTOUR**



ALPINE, CA – Channel: 300LP100 (107.9 MHz) ~ ERP: 0.050 kW DA  
Elev: 528.3 m ~ RCAGL: 11 meters ~ RCAMSL: 539.3 m ~ HAAT: 24 m (NED1)  
Overall tower height: 12.2 meters AGL ~ ASR: None (no airports within 8km)  
NAD83 Latitude: 32° 50' 29.3" NL – Longitude: 116° 47' 15.4" WL  
No nearby AM stations.  
Waiver requested.  
Treatment for DA for international agreement compliance requested.

NAD83 LATITUDE: 32 - 50' 29.3" - LONGITUDE: 116 - 47' 15.4"  
CHANNEL: 300 - CLASS: LP100

CHAN	FREQ	CALL	LOCATION	CLS	DIST	REQ	CLEAR	BEAR
297	107.3		TIJUANA	BN C1	42.0	73.0	-31.0	194.3
:								
*	See explanation							
297	107.3	XHFGFM	TIJUANA	BN B1	42.0	45.0	-3.0	193.9
:								
*	See explanation							
297	107.3	XHFGFM	TIJUANA	BN B1	42.0	45.0	-3.0	193.9
:								
*	See explanation							
298	107.5	KXO-FM : KXO, INC.	EL CENTRO	CA B	116.1	67.0	49.1	93.2
298	107.5	KXO-FM : KXO, INC.	EL CENTRO	CA B	116.3	67.0	49.3	91.6
299	107.7		TIJUANA	BN B1	46.9	54.0	-7.1	212.2
:								
*	See explanation							
299	107.7	XHRST-FM	TIJUANA	BN A	46.1	32.0	14.1	213.3
:								
299	107.7		TECATE	BN A	33.2	32.0	1.2	152.9
:								
300	107.9		ENSENADA	BN A	110.5	43.0	67.5	172.6
:								
300	107.9	XHSLRFM	SAN LUIS RIO COLORAD	SO C1	195.7	91.0	104.7	102.6
:								
300	107.9	XHSLR	SAN LUIS RIO COLORAD	SO C1	195.7	91.0	104.7	102.6
:								
300	107.9		SAN LUIS RIO COLORAD	SO C1	195.7	91.0	104.7	102.6
:								
300	107.9	KWVE-FM : CALVARY CHAPEL OF	SAN CLEMENTE COSTA MESA	CA B	118.8	112.0	6.8	324.5
300	107.9		SAN LUIS RIO COLORAD	SO C1	195.7	91.0	104.7	102.6
:								
300	107.9	XHSLRFM	SAN LUIS RIO COLORAD	SO C1	195.7	91.0	104.7	102.6
:								
300	107.9	KRLY-LP : EAST COUNTY BROADCASTING, INC.	ALPINE	CA L1	4.4	24.0	-19.6	73.9
:								
*	Currently licensed facility							

**WAIVER REQUEST OF §73.807(g)(2)**

KRLY-LP  
Channel 300LP100 (107.9)  
Alpine, California

The proposed facility meets all §73.807 minimum distance separation requirements with the exception of the following Mexican allotment records for which the instant application would be short-spaced, pursuant to §73.807(g)(2):

Facility ID	Chan. Class	Call	Location	Required distance (km)	Actual distance (km)
738170	297C1		Tijuana, BCN	73	42
95029	297B1	XHFGFM	Tijuana, BCN	45	42
95029	297B1	XHFGFM	Tijuana, BCN	45	42
738171	299B1		Tijuana, BCN	47	54

KRLY-LP's currently licensed facility was originally authorized on March 31, 2004 on file number BNPL-20000608AAX and licensed on December 2, 2005 on file number BLL-20050606AHL. This is a first generation LPFM station that has been at the same site for nearly 17 years.

While specific public records are not available related to the original grant in respect to the protection of the 297B1 allotment at Tijuana, which the original KRLY-LP application was granted in the face of, the allotment record to upgrade the facility to C1 was accepted by the International Bureau (IB) on May 23, 2007 as a restricted allotment limited to 1.25 kW ERP and 300m or the equivalent along the azimuth of 74.75 deg in the direction of Channel 298B in El Centro, CA, and limited to 16.0 kW and 300 meters HAAT or the equivalent along the azimuth of 345.06 deg in the direction of Channel 296A at Fallbrook.<sup>1</sup>

The allotment for Channel 299B1 at Tijuana, BCN does not appear in the 1992 US/Mexico International Agreement, but does appear in CDBS originally as a Class A allotment (which would meet distance separation requirements)<sup>2</sup> and was subsequently accepted by IB on December 2, 2008 as a Class B1 restricted allotment limited to operating with 9.5 kW and 191.75m HAAT, or the equivalent, along the 22.98 deg azimuth in the direction of Channel 299B at Twentynine Palms, CA; 9.0 kW and 191.75 m HAAT, or its equivalent, along the azimuth of 76.6 deg in the direction of Channel 298B at El Centro, CA and 0.975 kW ERP and 191.75m HAAT, or the equivalent along the azimuth of 334.51 deg in the direction of Channel 300B in San Clemente, CA.<sup>3</sup>

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<sup>1</sup> See CDBS application IDs 291356 (marked archive), 298793 (marked archive) and 1185357 (marked current). In the fmeng table: 1185357 has a last change date of May 10, 2007, 291356 as May 23, 2007 and 298793 as May 23, 2007. None of these records have any dates in app\_tracking. Facility ID 95029 has no facility status date in the CDBS facility table. In LMS raw data, Facility 738170 shows with a status date of May 10, 2007. Facility ID 95029 appears in LMS with a status date of August 6, 2019. All of these dates are subsequent to the grant of the original LPFM application.

<sup>2</sup> CDBS application ID 288372. CDBS application and app\_tracking tables indicate no dates for this class A allotment. No record of this application appears in the fmcmts table. The fm\_eng\_data table indicates this Class A allotment with a last change date of May 24, 2007, which is subsequent to the LPFM application.

<sup>3</sup> This is an unusual allotment as it is reported as a Class B1 yet has two restrictions that specify operation at 9 or 9.5 kW at 191.75 meters HAAT. At 191.75 meters HAAT, the maximum ERP to reach a

In respect to the three allotment records on Channel 297 (third-adjacent channel), the licensed facility's unrounded distance is 44.4 km, which rounds to 44 km; and the proposed facility's unrounded and rounded distance is 42 km, thus creating an increase in short-spacing.

In respect to the allotment on Channel 299B1 (first-adjacent channel), the licensed facility's unrounded distance is 50.4 km, which rounds to 50 km; and the proposed facility's unrounded distance is 46.9 km, which rounds to 47 km, thus creating an increase in short-spacing.

After a discussion with Media Bureau (MB) staff, whom consulted with IB, it appears that the main concern was the 51 dBu contour of the current and proposed facility in respect to the allotment at Channel 299B1. When reviewing the directions towards Mexico, the US Mexican agreement does have provisions for reviewing all radials within 125 km of the other country. In this case, the radials in the direction of Mexico are between 98 and 231 degrees, which does take into consideration Islas Coronado, which are the islands located off of the Baja California mainland west coast.

KRLY-LP proposes to operate 50 watts ERP and utilize a Nicom BKG1P dipole antenna at an azimuth of 125 degrees.

When comparing the land area in square kilometers, we find that that while the proposed 51 dBu contour does have a gain area of 28.30 square kilometers, it is offset by a loss area of 213.70 sq km, thus making this proposal result in an overall reduction of the 51 dBu interfering contour by 185.50 square kilometers.<sup>4</sup> All but less than 1 square kilometer of gain area are along the radials not within 125 kilometers of the Mexican border.

KRLY-LP licensed 51 dBu interfering contour	425.80 sq km
KRLY-LP proposed 51 dBu interfering contour	240.30 sq km
Overlap between licensed and proposed contour	212.10 sq km
Gain area of proposed contour	28.20 sq km
Loss area of proposed contour	213.70 sq km
Net difference	185.50 sq km <b>loss</b>

*We are unable to narrow this down to the area between the 98 and 231 degree radials, but the included contour maps will make it perfectly clear the amount of loss.*

KRLY-LP is located in Alpine, California, an area inside of a mountain pass along Interstate 8 east of San Diego. The community population is 13,143 and the area receives an average annual daily traffic of 93,500 vehicles.<sup>5</sup> As the only broadcast facility (primary or secondary,

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45 km 57 dBu service contour is 6.75 kW. We will build our sample contour around 6.75 kW at 191.75m HAAT and reduce for the allotment restriction at San Clemente, California. This would mean that the 57 dBu contour towards the proposed facility would extend to 45 kilometers pursuant to the international agreement.

<sup>4</sup> Based on the details of the proposed restricted allotments that were accepted by IB in 2007, we have also constructed estimated directional patterns for both the Channels 297C1 and 299B1 allotments. For the Channel 299B1 allotment, we had determined that the gain and loss areas were reduced however, even inside the 57 dBu service contour of the Channel 299B1 allotment based on the estimated directional pattern, it would still result in a substantial loss area.

<sup>5</sup> Based on State of California Department of Transportation (Caltrans) Annual Traffic Census 2017 data from Interstate 8 at Tavern Road in Alpine. This figure takes into consideration both directions.

radio or television) licensed to Alpine, KRLY-LP is a true definition of community radio being the community's only local voice. Earlier this year, KRLY-LP lost their transmission site of 17 years. Due to substantial local public support, a new site was identified and offered to KRLY-LP. However, due to the events that have taken place along the border area since KRLY-LP has come on the air, it has become difficult to find a viable location to move the station to permit KRLY-LP to resume operations including Emergency Alert System.

The applicant recognizes that any request for a waiver faces a high hurdle, even at the starting gate, and that a waiver is appropriate only if special circumstances warrant a deviation from the general rule and such deviation would serve the public interest.<sup>6</sup>

In the instant case, KRLY-LP experienced a hardship through the loss of its site and the subsequent actions by Mexico's IFT and predecessor SCT through the accepted international notification process, which has created a hardship to be able to resume service from any viable site in a manner that would not derogate the international agreement and the IFT/SCT's prior concurrence of the currently licensed facility.

The public interest will be served by permitting KRLY-LP to resume services, including Emergency Alert System as the only broadcast facility that specifically serves Alpine, a mountain community with 13,143 persons and an interstate traffic volume of 93,000 vehicles per day.

The public interest is further served by the proposal of a directional facility that while creating a *de minimis* gain area within United States territory, it is also substantially offset by a significantly larger loss area, also entirely in the United States, which would as an overall result, reduce interference to the Mexican allotment on Channel 299B1. For Channel 297C1 at Tijuana, there is a *de minimis* net gain of 400 square meters of overlap when comparing the 100 dBu interfering contour of the authorized location and the proposed location based on allotments and no actual contour overlap based on the station's actual facility as reported by IFT.<sup>7</sup>

Finally, we note that the *Local Community Radio Act* of 2010 states that the Commission shall not amend its rules to reduce the co-channel, first and second-adjacent channel separation requirements between LPFM stations and full-service FM stations.<sup>8</sup> REC has never interpreted

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<sup>6</sup> See *Northwest Cellular*, 897 F. 2d. at 1166.

<sup>7</sup> While we concede and recognize that demonstration of meeting the international agreement does not allow for the use of actual facilities, we are only making this point known as it may be an additional public interest factor in the event of any negotiation with IFT as well as a factor towards the public interest prong of a waiver request. Channel 297C1 is used by XHFG, Tijuana, BCN. IFT Folio Electronico FER035396CO-105099. According to information downloaded from IFT on August 4, 2022, XHFG is operating from 32-28-42.38 N / 116-53-50.4 W at with 30 kW at 30 meters RCAGL (which we calculated as 439 meters RCAMSL) into a directional antenna. We used a nondirectional antenna in our determination as a directional antenna would only diminish service. Alpine is shielded from Tijuana due to intervening terrain. Retrieved August 4, 2022 from KML file: [http://maps.ift.org.mx/coberturasuer/coberturasV4/FM/AC/XHFG-FM\\_AC.kmz](http://maps.ift.org.mx/coberturasuer/coberturasV4/FM/AC/XHFG-FM_AC.kmz)

<sup>8</sup> Pub. L. 111-371, 124 Stat. 4072 (2011).

the definition of "full-service FM station" to also include a foreign allotment and in past application processing, the Commission appears to share the same interpretation of the law.<sup>9</sup>

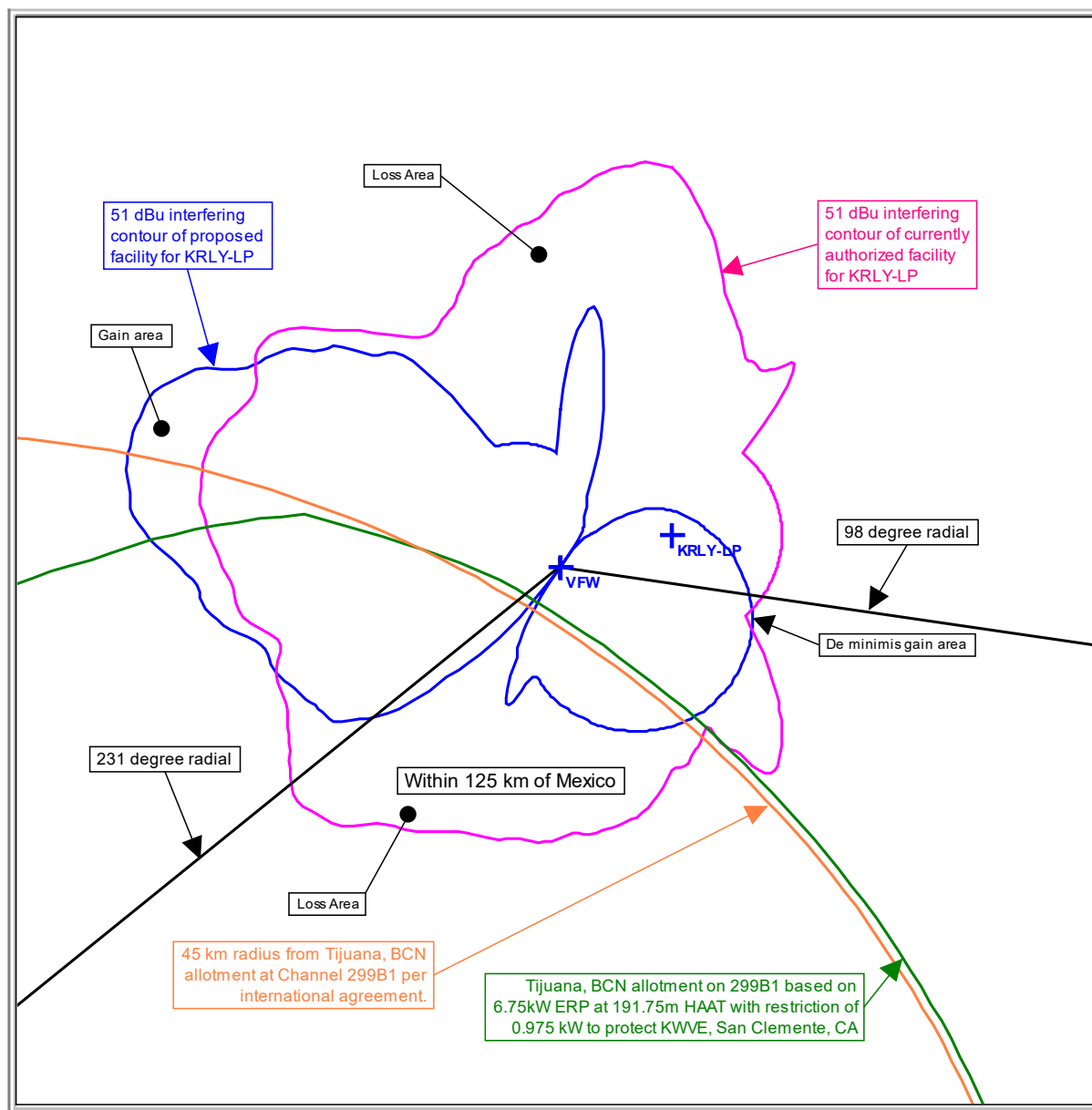
Based on these circumstances, hardships, public interest benefits and supporting data presented, KRLY-LP is requesting a waiver of §73.807(g)(2) in respect to the distance separation towards various reserved allotments on Channels 297 and 299 at Tijuana, BCN, Mexico.

Prepared by,  
/S/  
Michelle Bradley, CBT  
REC Networks

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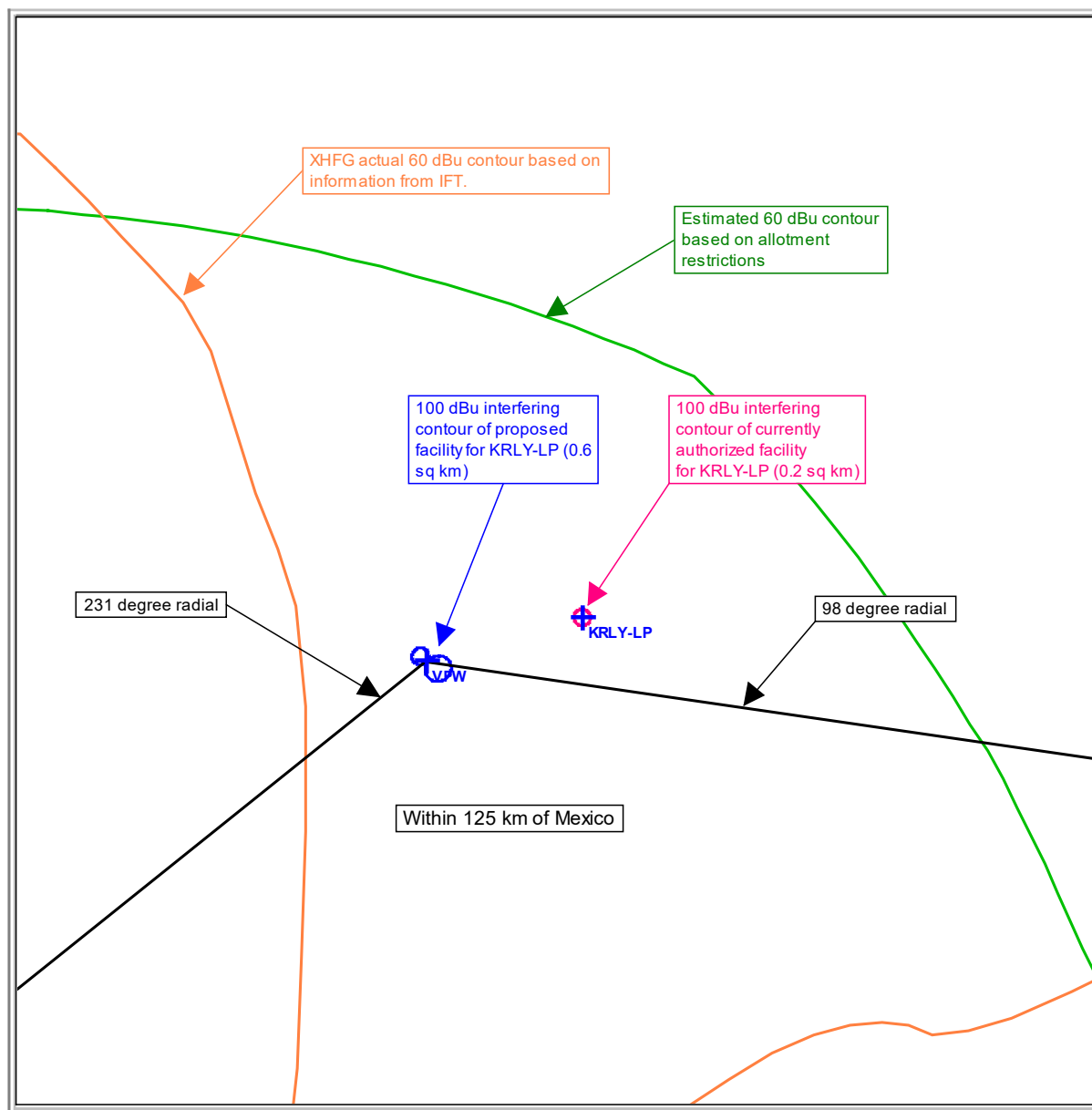
<sup>9</sup> See *North End Woodward Community Coalition*, File Number BNPL-20131113ABG (granted May 20, 2014).

## Current and Proposed 51 dBu interfering contours vs. 299B1 at Tijuana





## Current and Proposed 100 dBu interfering contours vs. 297C1 at Tijuana





**ESTIMATED FIELD VALUES & ERPs FOR CHANNEL 297C1 AT TIJUANA,BCN**

Based on 100 kW at 300 meters HAAT

0	10	20	30	40	50	60	70	80
0.381	0.366	0.351	0.279	0.222	0.177	0.141	0.112	0.112
14.5	13.4	12.3	7.8	4.9	3.1	1.99	1.25	1.25
90	100	110	120	130	140	150	160	170
0.141	0.177	0.222	0.279	0.351	0.44	0.555	0.698	0.820
1.99	3.1	4.9	7.8	12.3	19.4	30.8	48.7	67.2
180	190	200	210	220	230	240	250	260
1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100	100	100	100	100	100	100	100	100
270	280	290	300	310	320	330	340	350
1.000	1.000	1.000	0.795	0.633	0.503	0.400	0.400	0.396
100	100	100	63.2	40.1	25.3	16.0	16.0	15.7

Accepted by the International Bureau (IB) on May 23, 2007 as a restricted allotment limited to 1.25 kW ERP and 300m or the equivalent along the azimuth of 74.75 deg in the direction of Channel 298B in El Centro, CA, and limited to 16.0 kW and 300 meters HAAT or the equivalent along the azimuth of 345.06 deg in the direction of Channel 296A at Fallbrook.

**ESTIMATED FIELD VALUES & ERPs FOR CHANNEL 299B1 AT TIJUANA,BCN**

Based on 6.75 kW at 197.5 meters HAAT

0	10	20	30	40	50	60	70	80
0.602	0.756	0.950	1.000	1.000	1.000	1.000	1.000	1.000
2.43	3.8	6.0	6.75	6.75	6.75	6.75	6.75	6.75
90	100	110	120	130	140	150	160	170
1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.75	6.75	6.75	6.75	6.75	6.75	6.75	6.75	6.75
180	190	200	210	220	230	240	250	260
1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6.75	6.75	6.75	6.75	6.75	6.75	6.75	6.75	6.75
270	280	290	300	310	320	330	340	350
1.000	1.000	0.950	0.756	0.602	0.479	0.381	0.381	0.479
6.75	6.75	6.0	3.8	2.43	1.53	0.97	0.97	1.54

Accepted by IB on December 2, 2008 as a Class B1 restricted allotment limited to operating with 9.5 kW and 191.75m HAAT, or the equivalent, along the 22.98 deg azimuth in the direction of Channel 299B at Twentynine Palms, CA; 9.0 kW and 191.75 m HAAT, or its equivalent, along the azimuth of 76.6 deg in the direction of Channel 298B at El Centro, CA and 0.975 kW ERP and 191.75m HAAT, or the equivalent along the azimuth of 334.51 deg in the direction of Channel 300B in San Clemente, CA..

**REQUEST FOR DIRECTIONAL ANTENNA HANDLING**  
**PURSUANT TO §73.816 AND SHOWING OF**  
**COMPLIANCE WITH §73.807(g)(5)**

KRLY-LP  
Channel 300LP100 (107.9)  
Alpine, California

As this facility is within 125 kilometers of the common border with Mexico, it is subject to the requirements of §73.807(g)(5), which is an interpretation of Annex 1, Section 2 of the *Agreement Between The Government of the United States of America and the Government of the United Mexican States Relating to the FM Broadcasting Service in the Band 88-108 MHz (Morelia 1992)*.

§73.807(g)(5)(i) requires that LPFM stations located within 125 kilometers of the Mexican border are limited to 50 watts (0.05 kW) ERP, a 60 dBu service contour of 8.7 kilometers and a 34 dBu interfering contour of 32 kilometers in the direction of the Mexican border.<sup>10</sup> The proposed station would operate at 50 watts (0.050 kW) ERP, pursuant to §73.811(a).<sup>11</sup>

The area that is within 125 km of the Mexican border spans the arc along the radials between 98 and 231 degrees, which does take into consideration Islas Coronado, which are the islands located off of the Baja California mainland west coast.

As a nondirectional facility at 50 watts, both the 34 dbu interfering contour and the 60 dBu service contour would not meet the international agreement as they would both exceed the designated radii of 32 and 8.7 kilometers respectively.

To address this shortcoming, KRLY-LP proposes to use a Nicom BKG1P directional antenna on a bearing of 125 degrees. Based on the manufacturer's specifications for this antenna and the resulting contours based on the terrain those directions, it has been determined that the use of such an antenna would result in both a 34 dBu interfering and a 60 dBu service contour both being in compliance within the area that is within 125 km of Mexico.

Pursuant to §73.816(d)(3)(iii), as this antenna is being used solely for the purpose of meeting the international border zone distance requirements of §73.807(g), that the proof of performance and verification requirements of §73.316(c) would not apply.

Prepared by,

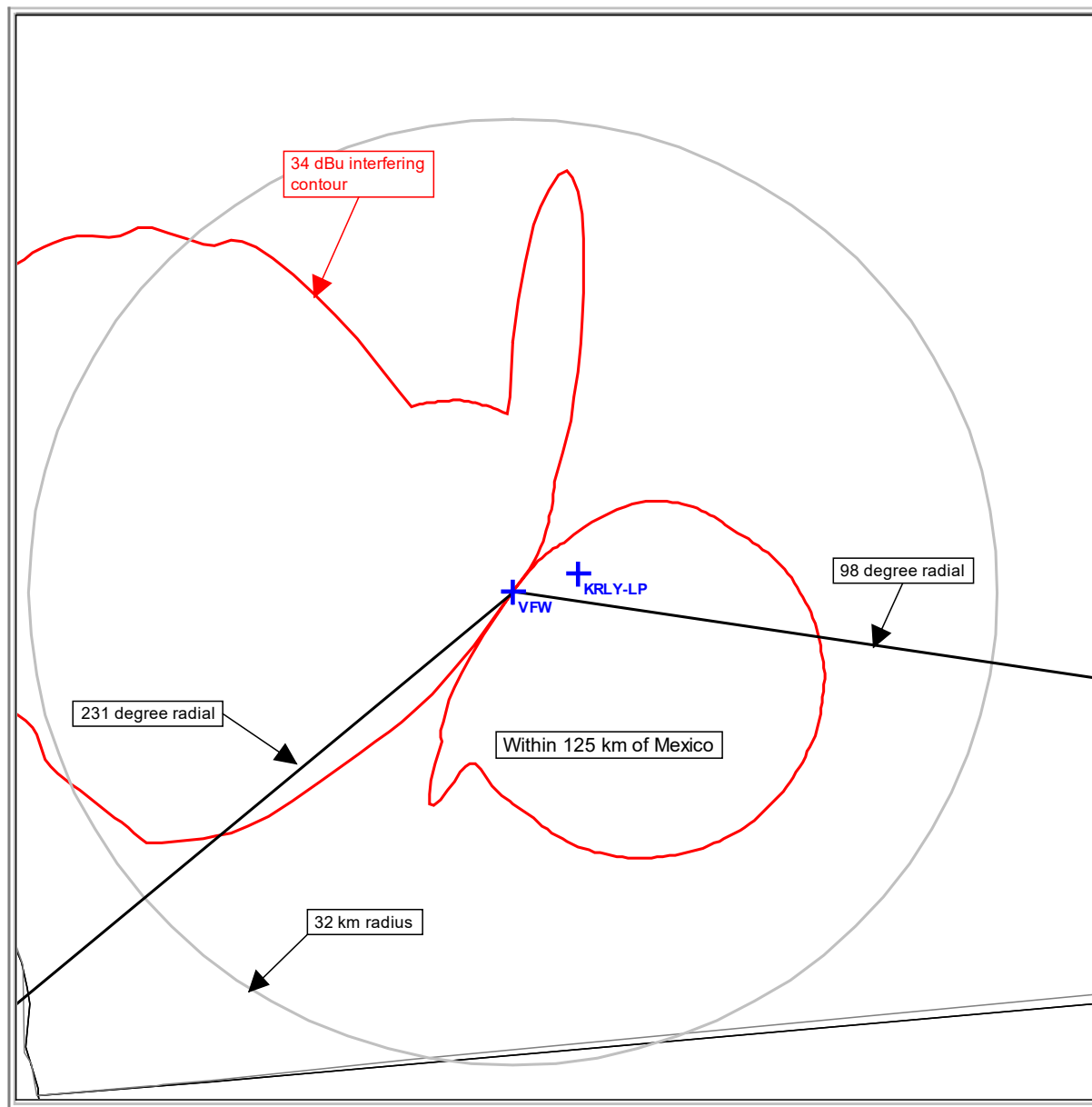
/S/  
Michelle Bradley, CBT  
REC Networks  
August 4, 2022

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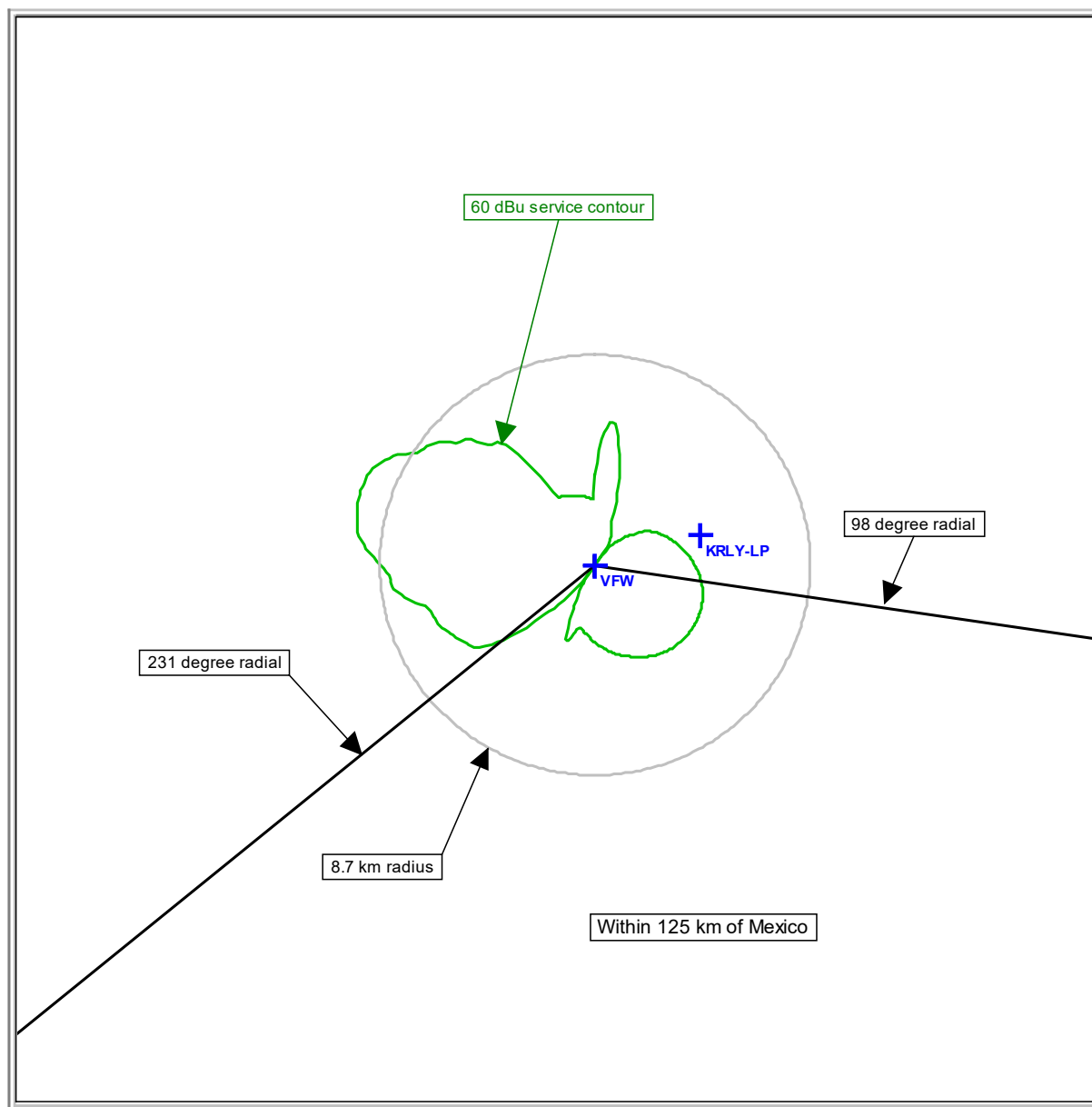
<sup>10</sup> 47 C.F.R. §73.807(g)(5)(i).

<sup>11</sup> 47 C.F.R. §73.811(a).

Proposed 34 dBu contour - less than 32 km in all directions towards Mexico.



Proposed 60 dBu contour - less than 8.7 km in all directions towards Mexico.



### PROPOSED DIRECTIONAL ANTENNA FIELD VALUES

0	10	20	30	40	50	60	70	80
0.305	0.240	0.140	0.035	0.025	0.150	0.325	0.460	0.595
90	100	110	120	130	140	150	160	170
0.735	0.855	0.945	0.980	0.990	0.945	0.855	0.735	0.595
180	190	200	210	220	230	240	250	260
0.460	0.325	0.150	0.025	0.035	0.140	0.240	0.305	0.370
270	280	290	300	310	320	330	340	350
0.420	0.460	0.490	0.500	0.500	0.490	0.460	0.420	0.370

Additional radial: Field value 1.000 at **125** degrees.

### DISTANCES TO 34 dBu INTERFERING CONTOUR

Radials between 98 and 231 are within 125 km of Mexico.  
Distance along those radials must remain at 32 km or less.  
Those radials will be shaded.

Site: VFW  
Coordinates: 32-50-29.3 N, 116-47-15.4 W  
Freq: 107.90000 MHz  
ERP: 50.00 W

Bearing	ERP W	HAAT	DH	Distance	Lat	Lon
0	4.65	59	620	16.99	32.994252	-116.787611
1	4.44	80	620	19.76	33.019157	-116.783912
2	4.23	102	590	22.34	33.042267	-116.779246
3	4.03	129	550	24.84	33.064596	-116.773658
4	3.84	146	650	26.14	33.075967	-116.768042
5	3.65	162	670	27.27	33.085778	-116.762100
6	3.48	180	580	28.43	33.095734	-116.755711
7	3.33	189	700	28.74	33.098048	-116.750005
8	3.18	188	760	28.35	33.093967	-116.745253
9	3.03	179	710	27.41	33.084939	-116.741586
10	2.88	165	700	26.00	33.071747	-116.739155
11	2.74	149	670	24.32	33.056197	-116.737810
12	2.60	132	700	22.51	33.039485	-116.737401
13	2.46	116	760	20.79	33.023655	-116.737444
14	2.33	101	810	18.94	33.006748	-116.738470
15	2.20	90	800	17.37	32.992338	-116.739412
16	1.92	80	870	15.45	32.975062	-116.741946
17	1.66	71	970	13.80	32.960207	-116.744344
18	1.41	59	850	12.24	32.946144	-116.747081
19	1.19	43	870	10.01	32.926630	-116.752675
20	0.98	25	850	7.95	32.908654	-116.758484
21	0.79	5	830	7.54	32.904824	-116.758644
22	0.63	-12	830	7.09	32.900613	-116.759151
23	0.48	-30	790	6.64	32.896469	-116.759807
24	0.35	-47	890	6.14	32.891921	-116.760861
25	0.25	-62	920	5.61	32.887217	-116.762208
26	0.20	-75	810	5.32	32.884461	-116.762642
27	0.16	-87	830	4.99	32.881468	-116.763343
28	0.12	-95	780	4.68	32.878661	-116.764065
29	0.09	-100	660	4.33	32.875502	-116.765150
30	0.06	-104	700	3.93	32.872075	-116.766573
31	0.04	-109	640	3.54	32.868802	-116.768059
32	0.02	-113	610	3.05	32.864736	-116.770304
33	0.01	-118	600	2.57	32.860828	-116.772647
34	0.00	-123	550	1.91	32.855677	-116.776205
35	0.00	-126	530	0.00	32.841472	-116.787611
36	0.00	-129	560	1.75	32.854191	-116.776610
37	0.00	-130	600	2.18	32.857109	-116.773583

Bearing	ERP W	HAAT	DH	Distance	Lat	Lon
38	0.01	-129	610	2.65	32.860218	-116.770174
39	0.02	-126	570	2.98	32.862280	-116.767550
40	0.03	-122	640	3.35	32.864552	-116.764553
41	0.04	-117	670	3.66	32.866341	-116.761870
42	0.06	-114	730	3.93	32.867731	-116.759458
43	0.08	-112	730	4.21	32.869182	-116.756842
44	0.10	-109	850	4.49	32.870492	-116.754240
45	0.12	-105	880	4.73	32.871544	-116.751801
46	0.25	-104	940	5.61	32.876529	-116.744377
47	0.40	-107	1130	6.37	32.880506	-116.737755
48	0.60	-116	980	7.02	32.883727	-116.731712
49	0.84	-129	1020	7.67	32.886687	-116.725650
50	1.12	-147	890	8.26	32.889186	-116.719869
51	1.45	-168	930	8.83	32.891426	-116.714115
52	1.80	-190	860	9.36	32.893262	-116.708629
53	2.20	-211	840	9.84	32.894708	-116.703431
54	2.65	-231	910	10.29	32.895868	-116.698393
55	3.12	-248	890	10.72	32.896752	-116.693527
56	3.51	-261	840	11.02	32.896871	-116.689728
57	3.92	-268	750	11.32	32.896904	-116.685877
58	4.35	-270	750	11.61	32.896765	-116.682141
59	4.80	-268	790	11.88	32.896463	-116.678519
60	5.28	-266	830	12.15	32.896072	-116.674878
61	5.78	-267	800	12.42	32.895577	-116.671249
62	6.30	-271	810	12.68	32.894941	-116.667721
63	6.84	-279	790	12.92	32.894177	-116.664280
64	7.41	-291	790	13.17	32.893348	-116.660787
65	8.00	-305	820	13.42	32.892428	-116.657301
66	8.49	-321	790	13.62	32.891214	-116.654373
67	8.99	-340	930	13.80	32.889908	-116.651517
68	9.50	-359	930	13.98	32.888516	-116.648724
69	10.04	-377	1000	14.18	32.887109	-116.645788
70	10.58	-391	1030	14.38	32.885620	-116.642899
71	11.14	-404	1040	14.57	32.884042	-116.640090
72	11.71	-415	1180	14.75	32.882385	-116.637345
73	12.30	-421	1150	14.93	32.880646	-116.634675
74	12.90	-422	1060	15.15	32.878928	-116.631672
75	13.52	-420	1160	15.38	32.877180	-116.628487
76	14.31	-413	1050	15.67	32.875460	-116.624798
77	15.12	-404	940	15.95	32.873626	-116.621217
78	15.96	-395	980	16.22	32.871691	-116.617695
79	16.82	-385	1110	16.49	32.869653	-116.614267
80	17.70	-377	1100	16.75	32.867513	-116.610946
81	18.60	-371	1100	17.01	32.865274	-116.607727
82	19.53	-369	1100	17.26	32.862945	-116.604589
83	20.48	-370	1150	17.51	32.860525	-116.601548
84	21.45	-373	1120	17.75	32.858016	-116.598617
85	22.45	-376	1060	17.98	32.855423	-116.595798
86	23.32	-376	1040	18.19	32.852733	-116.593361
87	24.22	-361	1070	18.39	32.849973	-116.591032
88	25.13	-344	1110	18.58	32.847148	-116.588791
89	26.06	-327	1060	18.77	32.844259	-116.586641
90	27.01	-312	1040	18.96	32.841308	-116.584594
91	27.98	-303	950	19.15	32.838299	-116.582608
92	28.96	-294	980	19.34	32.835231	-116.580719
93	29.95	-285	920	19.52	32.832109	-116.578928
94	30.97	-277	870	19.70	32.828935	-116.577236
95	32.00	-279	840	19.88	32.825710	-116.575645
96	32.89	-281	770	20.03	32.822463	-116.574434
97	33.78	-279	690	20.18	32.819174	-116.573282
98	34.69	-275	640	20.32	32.815848	-116.572224
99	35.62	-270	610	20.47	32.812487	-116.571261
100	36.55	-266	540	20.61	32.809093	-116.570393
101	37.50	-266	510	20.75	32.805667	-116.569611
102	38.46	-268	460	20.89	32.802211	-116.568927
103	39.43	-271	450	21.03	32.798729	-116.568341
104	40.41	-272	490	21.17	32.795211	-116.567803
105	41.40	-272	390	21.31	32.791671	-116.567375
106	42.04	-272	390	21.40	32.788232	-116.567552
107	42.69	-271	400	21.48	32.784783	-116.567806
108	43.34	-269	410	21.57	32.781328	-116.568145

Bearing	ERP W	HAAT	DH	Distance	Lat	Lon
109	43.99	-264	410	21.66	32.777869	-116.568572
110	44.65	-259	360	21.74	32.774404	-116.569076
111	45.32	-253	360	21.82	32.770938	-116.569667
112	45.98	-245	320	21.91	32.767472	-116.570345
113	46.66	-236	370	21.99	32.764004	-116.571102
114	47.34	-227	430	22.07	32.760533	-116.571926
115	48.02	-220	430	22.16	32.757062	-116.572829
116	48.22	-215	360	22.18	32.753830	-116.574387
117	48.41	-208	400	22.21	32.750619	-116.576013
118	48.61	-200	280	22.23	32.747428	-116.577708
119	48.81	-192	330	22.25	32.744259	-116.579471
120	49.00	-184	370	22.28	32.741114	-116.581301
121	49.20	-177	360	22.30	32.737997	-116.583207
122	49.40	-171	370	22.32	32.734901	-116.585171
123	49.60	-163	370	22.35	32.731836	-116.587211
124	49.80	-155	330	22.37	32.728793	-116.589306
125	50.00	-145	360	22.40	32.725778	-116.591468
126	49.80	-133	350	22.37	32.723047	-116.594108
127	49.60	-122	400	22.35	32.720358	-116.596802
128	49.40	-113	370	22.32	32.717706	-116.599539
129	49.20	-107	370	22.30	32.715104	-116.602337
130	49.00	-103	360	22.28	32.712539	-116.605178
131	48.81	-100	310	22.25	32.710026	-116.608076
132	48.61	-100	370	22.23	32.707558	-116.611022
133	48.41	-105	380	22.21	32.705137	-116.614016
134	48.22	-111	360	22.18	32.702762	-116.617057
135	48.02	-115	360	22.16	32.700435	-116.620143
136	47.34	-117	380	22.07	32.698546	-116.623719
137	46.66	-118	290	21.99	32.696717	-116.627321
138	45.98	-120	290	21.91	32.694945	-116.630942
139	45.32	-120	320	21.82	32.693234	-116.634588
140	44.65	-120	260	21.74	32.691592	-116.638263
141	43.99	-120	360	21.66	32.690020	-116.641966
142	43.34	-123	420	21.57	32.688510	-116.645689
143	42.69	-129	400	21.48	32.687071	-116.649436
144	42.04	-137	350	21.40	32.685702	-116.653206
145	41.40	-146	330	21.31	32.684397	-116.656990
146	40.41	-154	350	21.17	32.683535	-116.661092
147	39.43	-161	270	21.03	32.682768	-116.665206
148	38.46	-166	250	20.89	32.682051	-116.669297
149	37.50	-170	300	20.75	32.681420	-116.673391
150	36.55	-171	290	20.61	32.680877	-116.677485
151	35.62	-167	280	20.47	32.680412	-116.681572
152	34.69	-159	300	20.32	32.680034	-116.685655
153	33.78	-152	300	20.18	32.679742	-116.689731
154	32.89	-147	350	20.03	32.679536	-116.693796
155	32.00	-145	410	19.88	32.679392	-116.697836
156	30.97	-142	460	19.70	32.679555	-116.701979
157	29.95	-138	370	19.52	32.679815	-116.706100
158	28.96	-134	370	19.34	32.680171	-116.710196
159	27.98	-129	370	19.15	32.680623	-116.714264
160	27.01	-125	410	18.96	32.681169	-116.718300
161	26.06	-120	420	18.77	32.681785	-116.722291
162	25.13	-114	420	18.58	32.682503	-116.726249
163	24.22	-107	630	18.39	32.683314	-116.730166
164	23.32	-99	540	18.19	32.684216	-116.734039
165	22.45	-92	550	17.98	32.685227	-116.737872
166	21.45	-86	510	17.75	32.686573	-116.741726
167	20.48	-82	470	17.51	32.688036	-116.745523
168	19.53	-80	500	17.26	32.689615	-116.749260
169	18.60	-78	470	17.01	32.691301	-116.752928
170	17.70	-77	510	16.75	32.693083	-116.756521
171	16.82	-77	550	16.49	32.694977	-116.760041
172	15.96	-78	540	16.22	32.696991	-116.763483
173	15.12	-75	540	15.95	32.699114	-116.766840
174	14.31	-64	510	15.67	32.701318	-116.770106
175	13.52	-54	500	15.38	32.703646	-116.773281
176	12.90	-47	500	15.15	32.705565	-116.776317
177	12.30	-40	460	14.93	32.707351	-116.779258
178	11.71	-31	450	14.75	32.708867	-116.782108
179	11.14	-23	440	14.57	32.710470	-116.784893



Bearing	ERP W	HAAT	DH	Distance	Lat	Lon
180	10.58	-15	490	14.38	32.712150	-116.787611
181	10.04	-7	480	14.18	32.713924	-116.790257
182	9.50	1	530	13.98	32.715762	-116.792829
183	8.99	9	530	13.80	32.717492	-116.795334
184	8.49	13	490	13.62	32.719302	-116.797765
185	8.00	15	520	13.42	32.721199	-116.800118
186	7.41	14	540	13.17	32.723637	-116.802332
187	6.84	16	500	12.92	32.726111	-116.804448
188	6.30	21	450	12.68	32.728567	-116.806473
189	5.78	25	440	12.42	32.731135	-116.808385
190	5.28	28	480	12.15	32.733830	-116.810174
191	4.80	31	700	12.03	32.735220	-116.812164
192	4.35	32	690	11.91	32.736687	-116.814089
193	3.92	34	630	11.93	32.736959	-116.816295
194	3.51	36	480	11.92	32.737413	-116.818454
195	3.12	40	510	12.20	32.735518	-116.821360
196	2.65	47	510	12.72	32.731524	-116.825087
197	2.20	57	450	13.38	32.726353	-116.829445
198	1.80	71	450	14.11	32.720730	-116.834239
199	1.45	87	390	14.89	32.714840	-116.839431
200	1.12	103	390	15.34	32.711806	-116.843696
201	0.84	119	330	15.34	32.712648	-116.846378
202	0.60	132	340	14.72	32.718726	-116.846550
203	0.40	144	340	13.83	32.726946	-116.845391
204	0.25	154	280	12.68	32.737254	-116.842768
205	0.12	164	280	11.15	32.750530	-116.838028
206	0.10	173	280	10.90	32.753345	-116.838714
207	0.08	179	350	10.48	32.757466	-116.838502
208	0.06	183	350	9.91	32.762753	-116.837379
209	0.04	185	330	9.22	32.768924	-116.835430
210	0.03	187	310	8.43	32.775807	-116.832696
211	0.02	190	310	7.55	32.783272	-116.829201
212	0.01	194	310	6.55	32.791536	-116.824726
213	0.00	199	280	5.28	32.801617	-116.818400
214	0.00	206	280	3.48	32.815491	-116.808462
215	0.00	213	270	0.00	32.841472	-116.787611
216	0.00	223	310	4.46	32.809015	-116.815665
217	0.01	233	280	6.88	32.792051	-116.831906
218	0.02	241	300	8.77	32.779335	-116.845340
219	0.04	246	380	10.27	32.769694	-116.856719
220	0.06	248	390	11.49	32.762301	-116.866586
221	0.09	249	430	12.55	32.756257	-116.875663
222	0.12	253	370	13.61	32.750463	-116.885004
223	0.16	263	340	14.99	32.742839	-116.896911
224	0.20	274	280	16.59	32.734100	-116.910806
225	0.25	286	240	18.11	32.726230	-116.924509
226	0.35	295	180	20.37	32.714077	-116.944283
227	0.48	298	180	22.19	32.705223	-116.961096
228	0.63	296	150	23.66	32.698953	-116.975517
229	0.79	289	180	24.79	32.695054	-116.987540
230	0.98	279	180	25.66	32.692966	-116.997661
231	1.19	269	230	26.41	32.691785	-117.006973
232	1.41	261	180	27.16	32.690865	-117.016345
233	1.66	256	180	27.98	32.689774	-117.026451
234	1.92	252	200	28.81	32.688934	-117.036669
235	2.20	248	200	29.59	32.688566	-117.046625
236	2.33	243	210	29.73	32.691686	-117.050992
237	2.46	239	220	29.90	32.694735	-117.055585
238	2.60	234	220	29.99	32.698232	-117.059453
239	2.74	231	220	30.21	32.701216	-117.064401
240	2.88	228	220	30.42	32.704347	-117.069215
241	3.03	226	230	30.69	32.707323	-117.074525
242	3.18	224	240	30.94	32.710498	-117.079608
243	3.33	222	240	31.18	32.713822	-117.084551
244	3.48	220	240	31.40	32.717291	-117.089349
245	3.65	218	250	31.62	32.720905	-117.093986
246	3.84	217	230	31.96	32.724152	-117.099794
247	4.03	216	230	32.29	32.727576	-117.105442
248	4.23	214	230	32.54	32.731433	-117.110161
249	4.44	212	230	32.77	32.735432	-117.114697
250	4.65	209	210	32.90	32.739822	-117.118221

Bearing	ERP W	HAAT	DH	Distance	Lat	Lon
251	4.87	205	190	32.94	32.744570	-117.120683
252	5.09	201	190	32.97	32.749384	-117.122957
253	5.31	196	190	32.91	32.754478	-117.124203
254	5.54	194	200	33.09	32.758983	-117.127785
255	5.78	194	210	33.42	32.763192	-117.132923
256	5.99	196	210	33.87	32.767279	-117.139151
257	6.20	201	240	34.57	32.771016	-117.147896
258	6.41	207	240	35.38	32.774757	-117.157857
259	6.62	214	240	36.33	32.778541	-117.169135
260	6.84	219	240	37.08	32.782945	-117.178323
261	7.07	222	240	37.65	32.787874	-117.185427
262	7.30	226	240	38.30	32.792877	-117.193396
263	7.53	229	240	38.84	32.798224	-117.200090
264	7.76	229	230	39.12	32.804005	-117.203917
265	8.00	227	240	39.22	32.810029	-117.205765
266	8.16	225	240	39.23	32.816164	-117.206390
267	8.32	225	220	39.41	32.822218	-117.208790
268	8.49	228	220	39.85	32.828241	-117.213879
269	8.65	232	190	40.40	32.834388	-117.219979
270	8.82	235	190	40.86	32.840711	-117.225022
271	8.99	240	190	41.48	32.847199	-117.231613
272	9.16	246	180	42.15	32.853895	-117.238656
273	9.33	252	200	42.81	32.860791	-117.245373
274	9.50	258	220	43.46	32.867883	-117.251886
275	9.68	262	220	43.95	32.875047	-117.256450
276	9.86	266	210	44.43	32.882350	-117.260825
277	10.04	270	210	44.90	32.889786	-117.264995
278	10.22	271	240	45.17	32.897098	-117.266729
279	10.40	270	240	45.27	32.904262	-117.266662
280	10.58	269	240	45.38	32.911438	-117.266422
281	10.76	269	240	45.56	32.918759	-117.266861
282	10.95	270	240	45.83	32.926257	-117.267970
283	11.14	270	240	46.01	32.933647	-117.268045
284	11.33	269	240	46.11	32.940891	-117.267115
285	11.52	268	260	46.21	32.948131	-117.266009
286	11.62	267	230	46.22	32.955149	-117.263819
287	11.71	266	290	46.22	32.962136	-117.261483
288	11.81	266	290	46.31	32.969307	-117.259818
289	11.91	264	280	46.24	32.975995	-117.256343
290	12.00	261	250	46.08	32.982370	-117.251907
291	12.10	260	240	46.09	32.989173	-117.248972
292	12.20	259	220	46.09	32.995932	-117.245896
293	12.30	257	250	46.01	33.002357	-117.241858
294	12.40	254	240	45.84	33.008377	-117.236788
295	12.50	248	240	45.42	33.013333	-117.229113
296	12.50	242	240	44.91	33.017787	-117.220558
297	12.50	237	240	44.47	33.022326	-117.212623
298	12.50	232	310	44.01	33.026636	-117.204518
299	12.50	227	310	43.54	33.030682	-117.196185
300	12.50	220	260	42.84	33.033521	-117.185689
301	12.50	209	310	41.71	33.034099	-117.171173
302	12.50	199	350	40.65	33.034656	-117.157423
303	12.50	192	360	39.91	33.036487	-117.146763
304	12.50	189	310	39.63	33.040282	-117.140091
305	12.50	186	250	39.34	33.043962	-117.133407
306	12.50	184	250	39.16	33.048028	-117.127538
307	12.50	180	260	38.79	33.050986	-117.120016
308	12.50	176	280	38.40	33.053699	-117.112340
309	12.50	172	370	38.01	33.056218	-117.104603
310	12.50	167	370	37.50	33.057901	-117.095896
311	12.50	160	390	36.76	33.058013	-117.085309
312	12.50	152	380	35.85	33.056927	-117.073542
313	12.50	148	480	35.39	33.058236	-117.065352
314	12.50	146	430	35.14	33.060749	-117.058906
315	12.50	144	540	34.90	33.063171	-117.052478
316	12.40	139	510	34.26	33.062864	-117.043013
317	12.30	131	490	33.24	33.059867	-117.030870
318	12.20	123	400	32.16	33.056236	-117.018558
319	12.10	116	390	31.17	33.052855	-117.007040
320	12.00	113	330	30.64	33.052374	-116.998923
321	11.91	112	300	30.41	33.053863	-116.992973

Bearing	ERP W	HAAT	DH	Distance	Lat	Lon
322	11.81	111	340	30.18	33.055242	-116.987026
323	11.71	108	330	29.68	33.054554	-116.979317
324	11.62	103	380	28.88	33.051453	-116.969739
325	11.52	95	350	27.59	33.044628	-116.957407
326	11.33	85	360	25.90	33.034520	-116.943009
327	11.14	74	390	24.01	33.022495	-116.927879
328	10.95	63	320	22.14	33.010287	-116.913451
329	10.76	52	250	19.99	32.995564	-116.898039
330	10.58	43	160	17.77	32.979838	-116.882867
331	10.40	35	320	15.50	32.963372	-116.868163
332	10.22	29	290	14.25	32.954604	-116.859312
333	10.04	23	220	14.18	32.955117	-116.856631
334	9.86	16	240	14.12	32.955578	-116.853947
335	9.68	9	180	14.05	32.955996	-116.851264
336	9.50	4	120	13.98	32.956370	-116.848585
337	9.33	-2	190	13.93	32.956750	-116.845934
338	9.16	-11	220	13.86	32.957079	-116.843283
339	8.99	-21	180	13.80	32.957365	-116.840635
340	8.82	-27	240	13.74	32.957601	-116.837989
341	8.65	-30	330	13.68	32.957795	-116.835350
342	8.49	-31	340	13.62	32.957938	-116.832714
343	8.32	-33	300	13.55	32.958031	-116.830084
344	8.16	-36	270	13.49	32.958083	-116.827464
345	8.00	-41	320	13.42	32.958085	-116.824852
346	7.76	-45	390	13.32	32.957749	-116.822164
347	7.53	-53	440	13.22	32.957362	-116.819499
348	7.30	-62	510	13.12	32.956915	-116.816856
349	7.07	-65	590	13.02	32.956416	-116.814239
350	6.84	-60	790	12.92	32.955930	-116.811664
351	6.62	-49	690	12.82	32.955404	-116.809117
352	6.41	-39	610	12.73	32.954820	-116.806596
353	6.20	-30	610	12.63	32.954188	-116.804105
354	5.99	-21	560	12.52	32.953501	-116.801643
355	5.78	-13	450	12.42	32.952757	-116.799214
356	5.54	-4	460	12.30	32.951798	-116.796805
357	5.31	4	590	12.17	32.950784	-116.794438
358	5.09	17	580	12.04	32.949708	-116.792115
359	4.87	38	620	13.23	32.960432	-116.790086

### DISTANCES TO 60 dBu SERVICE CONTOUR

Radials between 98 and 231 are within 125 km of Mexico.  
Distance along those radials must remain at 8.7 km or less.  
Those radials will be shaded.

Site: VFW  
Coordinates: 32-50-29.3 N, 116-47-15.4 W  
Freq: 107.90000 MHz  
ERP: 50.00 W

Bearing	ERP W	HAAT	DH	Distance	Lat	Lon
0	4.65	59	620	3.71	32.874878	-116.787611
1	4.44	80	620	4.23	32.879531	-116.786820
2	4.23	102	590	4.75	32.884161	-116.785836
3	4.03	129	550	5.24	32.888556	-116.784673
4	3.84	146	650	5.50	32.890803	-116.783503
5	3.65	162	670	5.71	32.892644	-116.782279
6	3.48	180	580	5.92	32.894418	-116.780984
7	3.33	189	700	5.96	32.894715	-116.779825
8	3.18	188	760	5.88	32.893836	-116.778847
9	3.03	179	710	5.69	32.892038	-116.778073
10	2.88	165	700	5.41	32.889392	-116.777549
11	2.74	149	670	5.06	32.886139	-116.777272
12	2.60	132	700	4.71	32.882866	-116.777134
13	2.46	116	760	4.37	32.879805	-116.777073
14	2.33	101	810	4.00	32.876416	-116.777237
15	2.20	90	800	3.74	32.873973	-116.777242
16	1.92	80	870	3.41	32.870937	-116.777551
17	1.66	71	970	3.08	32.867964	-116.777968
18	1.41	59	850	2.77	32.865201	-116.778432
19	1.19	43	870	2.31	32.861083	-116.779572
20	0.98	25	850	1.91	32.857582	-116.780631
21	0.79	5	830	1.86	32.857065	-116.780486
22	0.63	-12	830	1.80	32.856500	-116.780383
23	0.48	-30	790	1.74	32.855870	-116.780336
24	0.35	-47	890	1.67	32.855169	-116.780351
25	0.25	-62	920	1.58	32.854368	-116.780453
26	0.20	-75	810	1.53	32.853865	-116.780416
27	0.16	-87	830	1.48	32.853317	-116.780427
28	0.12	-95	780	1.42	32.852709	-116.780499
29	0.09	-100	660	1.34	32.852037	-116.780640
30	0.06	-104	700	1.26	32.851271	-116.780877
31	0.04	-109	640	1.15	32.850369	-116.781248
32	0.02	-113	610	1.02	32.849245	-116.781830
33	0.01	-118	600	0.86	32.847937	-116.782614
34	0.00	-123	550	0.59	32.845849	-116.784097
35	0.00	-126	530	0.00	32.841472	-116.787611
36	0.00	-129	560	0.46	32.844783	-116.784748
37	0.00	-130	600	0.73	32.846687	-116.782933
38	0.01	-129	610	0.88	32.847738	-116.781784
39	0.02	-126	570	1.00	32.848441	-116.780894
40	0.03	-122	640	1.10	32.849058	-116.780034
41	0.04	-117	670	1.19	32.849523	-116.779281
42	0.06	-114	730	1.26	32.849881	-116.778599
43	0.08	-112	730	1.32	32.850155	-116.777973
44	0.10	-109	850	1.38	32.850368	-116.777385
45	0.12	-105	880	1.43	32.850535	-116.776823
46	0.25	-104	940	1.58	32.851356	-116.775427
47	0.40	-107	1130	1.70	32.851900	-116.774299
48	0.60	-116	980	1.79	32.852262	-116.773345
49	0.84	-129	1020	1.87	32.852518	-116.772484
50	1.12	-147	890	1.94	32.852676	-116.771716
51	1.45	-168	930	2.00	32.852775	-116.770995
52	1.80	-190	860	2.12	32.853216	-116.769716
53	2.20	-211	840	2.24	32.853574	-116.768491
54	2.65	-231	910	2.34	32.853847	-116.767333
55	3.12	-248	890	2.44	32.854048	-116.766228
56	3.51	-261	840	2.50	32.854069	-116.765376
57	3.92	-268	750	2.57	32.854050	-116.764551

Bearing	ERP W	HAAT	DH	Distance	Lat	Lon
58	4.35	-270	750	2.63	32.854001	-116.763740
59	4.80	-268	790	2.69	32.853913	-116.762960
60	5.28	-266	830	2.74	32.853792	-116.762205
61	5.78	-267	800	2.79	32.853644	-116.761466
62	6.30	-271	810	2.84	32.853470	-116.760744
63	6.84	-279	790	2.89	32.853270	-116.760041
64	7.41	-291	790	2.94	32.853045	-116.759357
65	8.00	-305	820	2.98	32.852796	-116.758694
66	8.49	-321	790	3.02	32.852521	-116.758062
67	8.99	-340	930	3.07	32.852258	-116.757354
68	9.50	-359	930	3.12	32.851974	-116.756658
69	10.04	-377	1000	3.17	32.851670	-116.755975
70	10.58	-391	1030	3.21	32.851343	-116.755316
71	11.14	-404	1040	3.25	32.851000	-116.754660
72	11.71	-415	1180	3.30	32.850634	-116.754029
73	12.30	-421	1150	3.34	32.850251	-116.753414
74	12.90	-422	1060	3.38	32.849850	-116.752815
75	13.52	-420	1160	3.42	32.849431	-116.752233
76	14.31	-413	1050	3.47	32.849018	-116.751564
77	15.12	-404	940	3.52	32.848585	-116.750912
78	15.96	-395	980	3.56	32.848132	-116.750288
79	16.82	-385	1110	3.61	32.847660	-116.749682
80	17.70	-377	1100	3.65	32.847172	-116.749096
81	18.60	-371	1100	3.70	32.846667	-116.748529
82	19.53	-369	1100	3.74	32.846145	-116.747982
83	20.48	-370	1150	3.78	32.845608	-116.747455
84	21.45	-373	1120	3.82	32.845056	-116.746949
85	22.45	-376	1060	3.86	32.844490	-116.746465
86	23.32	-376	1040	3.89	32.843907	-116.746057
87	24.22	-361	1070	3.92	32.843312	-116.745670
88	25.13	-344	1110	3.96	32.842707	-116.745296
89	26.06	-327	1060	3.99	32.842091	-116.744945
90	27.01	-312	1040	4.02	32.841465	-116.744543
91	27.98	-303	950	4.06	32.840827	-116.744122
92	28.96	-294	980	4.10	32.840177	-116.743714
93	29.95	-285	920	4.14	32.839515	-116.743331
94	30.97	-277	870	4.18	32.838841	-116.742962
95	32.00	-279	840	4.22	32.838157	-116.742618
96	32.89	-281	770	4.25	32.837468	-116.742364
97	33.78	-279	690	4.28	32.836771	-116.742125
98	34.69	-275	640	4.31	32.836066	-116.741901
99	35.62	-270	610	4.34	32.835353	-116.741693
100	36.55	-266	540	4.37	32.834635	-116.741522
101	37.50	-266	510	4.40	32.833909	-116.741356
102	38.46	-268	460	4.43	32.833177	-116.741216
103	39.43	-271	450	4.46	32.832440	-116.741093
104	40.41	-272	490	4.49	32.831696	-116.740987
105	41.40	-272	390	4.52	32.830948	-116.740908
106	42.04	-272	390	4.53	32.830223	-116.740959
107	42.69	-271	400	4.55	32.829493	-116.741016
108	43.34	-269	410	4.57	32.828764	-116.741099
109	43.99	-264	410	4.59	32.828032	-116.741188
110	44.65	-259	360	4.60	32.827301	-116.741303
111	45.32	-253	360	4.62	32.826569	-116.741435
112	45.98	-245	320	4.64	32.825837	-116.741583
113	46.66	-236	370	4.66	32.825104	-116.741747
114	47.34	-227	430	4.67	32.824376	-116.741938
115	48.02	-220	430	4.69	32.823644	-116.742135
116	48.22	-215	360	4.69	32.822960	-116.742465
117	48.41	-208	400	4.70	32.822285	-116.742818
118	48.61	-200	280	4.70	32.821610	-116.743176
119	48.81	-192	330	4.71	32.820939	-116.743549
120	49.00	-184	370	4.71	32.820274	-116.743936
121	49.20	-177	360	4.72	32.819618	-116.744346
122	49.40	-171	370	4.72	32.818963	-116.744761
123	49.60	-163	370	4.72	32.818319	-116.745200
124	49.80	-155	330	4.73	32.817675	-116.745643
125	50.00	-145	360	4.74	32.817038	-116.746100
126	49.80	-133	350	4.73	32.816459	-116.746657
127	49.60	-122	400	4.72	32.815889	-116.747225
128	49.40	-113	370	4.72	32.815323	-116.747797

Bearing	ERP W	HAAT	DH	Distance	Lat	Lon
129	49.20	-107	370	4.72	32.814772	-116.748387
130	49.00	-103	360	4.71	32.814224	-116.748981
131	48.81	-100	310	4.71	32.813691	-116.749593
132	48.61	-100	370	4.70	32.813168	-116.750215
133	48.41	-105	380	4.70	32.812655	-116.750848
134	48.22	-111	360	4.69	32.812145	-116.751483
135	48.02	-115	360	4.69	32.811651	-116.752135
136	47.34	-117	380	4.67	32.811246	-116.752887
137	46.66	-118	290	4.66	32.810847	-116.753636
138	45.98	-120	290	4.64	32.810467	-116.754399
139	45.32	-120	320	4.62	32.810100	-116.755167
140	44.65	-120	260	4.60	32.809746	-116.755941
141	43.99	-120	360	4.59	32.809405	-116.756719
142	43.34	-123	420	4.57	32.809085	-116.757508
143	42.69	-129	400	4.55	32.808771	-116.758295
144	42.04	-137	350	4.53	32.808477	-116.759092
145	41.40	-146	330	4.52	32.808189	-116.759885
146	40.41	-154	350	4.49	32.807996	-116.760748
147	39.43	-161	270	4.46	32.807826	-116.761617
148	38.46	-166	250	4.43	32.807671	-116.762484
149	37.50	-170	300	4.40	32.807532	-116.763349
150	36.55	-171	290	4.37	32.807415	-116.764218
151	35.62	-167	280	4.34	32.807305	-116.765079
152	34.69	-159	300	4.31	32.807226	-116.765948
153	33.78	-152	300	4.28	32.807162	-116.766813
154	32.89	-147	350	4.25	32.807113	-116.767674
155	32.00	-145	410	4.22	32.807079	-116.768530
156	30.97	-142	460	4.18	32.807116	-116.769413
157	29.95	-138	370	4.14	32.807178	-116.770292
158	28.96	-134	370	4.10	32.807254	-116.771163
159	27.98	-129	370	4.06	32.807354	-116.772029
160	27.01	-125	410	4.02	32.807469	-116.772887
161	26.06	-120	420	3.99	32.807573	-116.773724
162	25.13	-114	420	3.96	32.807640	-116.774532
163	24.22	-107	630	3.92	32.807728	-116.775337
164	23.32	-99	540	3.89	32.807830	-116.776134
165	22.45	-92	550	3.86	32.807954	-116.776926
166	21.45	-86	510	3.82	32.808142	-116.777724
167	20.48	-82	470	3.78	32.808353	-116.778514
168	19.53	-80	500	3.74	32.808585	-116.779294
169	18.60	-78	470	3.70	32.808839	-116.780064
170	17.70	-77	510	3.65	32.809115	-116.780823
171	16.82	-77	550	3.61	32.809411	-116.781569
172	15.96	-78	540	3.56	32.809728	-116.782303
173	15.12	-75	540	3.52	32.810066	-116.783023
174	14.31	-64	510	3.47	32.810432	-116.783729
175	13.52	-54	500	3.42	32.810819	-116.784420
176	12.90	-47	500	3.38	32.811136	-116.785087
177	12.30	-40	460	3.34	32.811472	-116.785740
178	11.71	-31	450	3.30	32.811827	-116.786379
179	11.14	-23	440	3.25	32.812200	-116.787003
180	10.58	-15	490	3.21	32.812600	-116.787611
181	10.04	-7	480	3.17	32.813009	-116.788202
182	9.50	1	530	3.12	32.813445	-116.788776
183	8.99	9	530	3.07	32.813897	-116.789331
184	8.49	13	490	3.02	32.814366	-116.789866
185	8.00	15	520	2.98	32.814771	-116.790391
186	7.41	14	540	2.94	32.815209	-116.790896
187	6.84	16	500	2.89	32.815672	-116.791380
188	6.30	21	450	2.84	32.816159	-116.791844
189	5.78	25	440	2.79	32.816669	-116.792286
190	5.28	28	480	2.74	32.817202	-116.792703
191	4.80	31	700	2.72	32.817457	-116.793166
192	4.35	32	690	2.70	32.817753	-116.793610
193	3.92	34	630	2.70	32.817774	-116.794121
194	3.51	36	480	2.71	32.817839	-116.794623
195	3.12	40	510	2.77	32.817415	-116.795281
196	2.65	47	510	2.88	32.816597	-116.796098
197	2.20	57	450	3.00	32.815693	-116.796989
198	1.80	71	450	3.16	32.814458	-116.798055
199	1.45	87	390	3.29	32.813535	-116.799057

Bearing	ERP W	HAAT	DH	Distance	Lat	Lon
200	1.12	103	390	3.33	32.813326	-116.799800
201	0.84	119	330	3.27	32.814030	-116.800145
202	0.60	132	340	3.07	32.815878	-116.799915
203	0.40	144	340	2.83	32.818049	-116.799442
204	0.25	154	280	2.49	32.821004	-116.798455
205	0.12	164	280	1.99	32.825242	-116.796617
206	0.10	173	280	1.90	32.826152	-116.796503
207	0.08	179	350	1.77	32.827255	-116.796232
208	0.06	183	350	1.63	32.828551	-116.795787
209	0.04	185	330	1.45	32.830034	-116.795157
210	0.03	187	310	1.25	32.831766	-116.794280
211	0.02	190	310	1.00	32.833786	-116.793108
212	0.01	194	310	0.88	32.834729	-116.792626
213	0.00	199	280	0.73	32.835996	-116.791844
214	0.00	206	280	0.46	32.838079	-116.790335
215	0.00	213	270	0.00	32.841472	-116.787611
216	0.00	223	310	0.59	32.837201	-116.791305
217	0.01	233	280	0.86	32.835316	-116.793132
218	0.02	241	300	1.05	32.834023	-116.794538
219	0.04	246	380	1.41	32.831630	-116.797096
220	0.06	248	390	1.69	32.829855	-116.799211
221	0.09	249	430	1.91	32.828486	-116.801045
222	0.12	253	370	2.17	32.826993	-116.803124
223	0.16	263	340	2.43	32.825460	-116.805379
224	0.20	274	280	2.67	32.824163	-116.807500
225	0.25	286	240	2.90	32.823058	-116.809521
226	0.35	295	180	3.36	32.820451	-116.813511
227	0.48	298	180	3.79	32.818232	-116.817261
228	0.63	296	150	4.18	32.816335	-116.820825
229	0.79	289	180	4.54	32.814706	-116.824241
230	0.98	279	180	4.82	32.813588	-116.827143
231	1.19	269	230	5.07	32.812761	-116.829787
232	1.41	261	180	5.32	32.812010	-116.832467
233	1.66	256	180	5.56	32.811367	-116.835132
234	1.92	252	200	5.78	32.810883	-116.837688
235	2.20	248	200	5.99	32.810580	-116.840086
236	2.33	243	210	6.04	32.811097	-116.841172
237	2.46	239	220	6.09	32.811608	-116.842307
238	2.60	234	220	6.13	32.812223	-116.843282
239	2.74	231	220	6.19	32.812770	-116.844422
240	2.88	228	220	6.25	32.813360	-116.845519
241	3.03	226	230	6.31	32.813930	-116.846703
242	3.18	224	240	6.37	32.814543	-116.847842
243	3.33	222	240	6.43	32.815193	-116.848945
244	3.48	220	240	6.49	32.815879	-116.850011
245	3.65	218	250	6.54	32.816596	-116.851047
246	3.84	217	230	6.62	32.817245	-116.852317
247	4.03	216	230	6.69	32.817930	-116.853559
248	4.23	214	230	6.75	32.818704	-116.854614
249	4.44	212	230	6.81	32.819513	-116.855626
250	4.65	209	210	6.84	32.820399	-116.856444
251	4.87	205	190	6.86	32.821362	-116.857044
252	5.09	201	190	6.88	32.822339	-116.857614
253	5.31	196	190	6.87	32.823376	-116.857970
254	5.54	194	200	6.92	32.824306	-116.858768
255	5.78	194	210	6.99	32.825184	-116.859858
256	5.99	196	210	7.09	32.826017	-116.861276
257	6.20	201	240	7.25	32.826770	-116.863276
258	6.41	207	240	7.43	32.827544	-116.865454
259	6.62	214	240	7.63	32.828348	-116.867802
260	6.84	219	240	7.79	32.829277	-116.869739
261	7.07	222	240	7.91	32.830313	-116.871249
262	7.30	226	240	8.05	32.831360	-116.872994
263	7.53	229	240	8.18	32.832471	-116.874562
264	7.76	229	230	8.26	32.833680	-116.875493
265	8.00	227	240	8.29	32.834946	-116.875972
266	8.16	225	240	8.29	32.836238	-116.876159
267	8.32	225	220	8.34	32.837516	-116.876736
268	8.49	228	220	8.44	32.838790	-116.877918
269	8.65	232	190	8.56	32.840095	-116.879266
270	8.82	235	190	8.66	32.841438	-116.880363



Bearing	ERP W	HAAT	DH	Distance	Lat	Lon
271	8.99	240	190	8.80	32.842819	-116.881827
272	9.16	246	180	8.95	32.844246	-116.883412
273	9.33	252	200	9.11	32.845723	-116.885009
274	9.50	258	220	9.27	32.847248	-116.886594
275	9.68	262	220	9.39	32.848790	-116.887718
276	9.86	266	210	9.51	32.850368	-116.888819
277	10.04	270	210	9.62	32.851978	-116.889863
278	10.22	271	240	9.69	32.853554	-116.890298
279	10.40	270	240	9.71	32.855093	-116.890297
280	10.58	269	240	9.73	32.856635	-116.890263
281	10.76	269	240	9.78	32.858211	-116.890385
282	10.95	270	240	9.84	32.859829	-116.890661
283	11.14	270	240	9.88	32.861422	-116.890703
284	11.33	269	240	9.90	32.862983	-116.890524
285	11.52	268	260	9.93	32.864542	-116.890300
286	11.62	267	230	9.93	32.866049	-116.889826
287	11.71	266	290	9.93	32.867549	-116.889321
288	11.81	266	290	9.95	32.869092	-116.888969
289	11.91	264	280	9.94	32.870525	-116.888208
290	12.00	261	250	9.90	32.871885	-116.887227
291	12.10	260	240	9.90	32.873344	-116.886591
292	12.20	259	220	9.90	32.874794	-116.885924
293	12.30	257	250	9.88	32.876167	-116.885040
294	12.40	254	240	9.85	32.877452	-116.883933
295	12.50	248	240	9.75	32.878495	-116.882239
296	12.50	242	240	9.63	32.879424	-116.880349
297	12.50	237	240	9.53	32.880370	-116.878592
298	12.50	232	310	9.43	32.881268	-116.876806
299	12.50	227	310	9.33	32.882122	-116.875000
300	12.50	220	260	9.18	32.882719	-116.872742
301	12.50	209	310	8.94	32.882837	-116.869640
302	12.50	199	350	8.71	32.882976	-116.866751
303	12.50	192	360	8.55	32.883357	-116.864457
304	12.50	189	310	8.49	32.884131	-116.862962
305	12.50	186	250	8.42	32.884869	-116.861450
306	12.50	184	250	8.37	32.885702	-116.860139
307	12.50	180	260	8.28	32.886256	-116.858413
308	12.50	176	280	8.18	32.886728	-116.856619
309	12.50	172	370	8.07	32.887150	-116.854810
310	12.50	167	370	7.95	32.887389	-116.852800
311	12.50	160	390	7.77	32.887324	-116.850445
312	12.50	152	380	7.57	32.887011	-116.848599
313	12.50	148	480	7.47	32.887256	-116.846096
314	12.50	146	430	7.41	32.887776	-116.844727
315	12.50	144	540	7.36	32.888270	-116.843355
316	12.40	139	510	7.21	32.888123	-116.841272
317	12.30	131	490	6.99	32.887423	-116.838650
318	12.20	123	400	6.79	32.886835	-116.836261
319	12.10	116	390	6.61	32.886313	-116.834038
320	12.00	113	330	6.51	32.886326	-116.832438
321	11.91	112	300	6.47	32.886697	-116.831229
322	11.81	111	340	6.43	32.887039	-116.830012
323	11.71	108	330	6.33	32.886957	-116.828434
324	11.62	103	380	6.17	32.886327	-116.826424
325	11.52	95	350	5.90	32.884908	-116.823833
326	11.33	85	360	5.55	32.882868	-116.820863
327	11.14	74	390	5.14	32.880264	-116.817611
328	10.95	63	320	4.75	32.877716	-116.814580
329	10.76	52	250	4.29	32.874583	-116.811301
330	10.58	43	160	3.84	32.871405	-116.808189
331	10.40	35	320	3.45	32.868587	-116.805507
332	10.22	29	290	3.18	32.866726	-116.803598
333	10.04	23	220	3.17	32.866836	-116.802998
334	9.86	16	240	3.15	32.866928	-116.802393
335	9.68	9	180	3.13	32.867019	-116.801794
336	9.50	4	120	3.12	32.867092	-116.801192
337	9.33	-2	190	3.10	32.867154	-116.800590
338	9.16	-11	220	3.09	32.867207	-116.799991
339	8.99	-21	180	3.07	32.867251	-116.799393
340	8.82	-27	240	3.05	32.867284	-116.798796
341	8.65	-30	330	3.04	32.867300	-116.798199

Bearing	ERP W	HAAT	DH	Distance	Lat	Lon
342	8.49	-31	340	3.02	32.867314	-116.797608
343	8.32	-33	300	3.00	32.867311	-116.797016
344	8.16	-36	270	2.99	32.867332	-116.796440
345	8.00	-41	320	2.98	32.867362	-116.795870
346	7.76	-45	390	2.96	32.867322	-116.795285
347	7.53	-53	440	2.94	32.867282	-116.794705
348	7.30	-62	510	2.93	32.867223	-116.794128
349	7.07	-65	590	2.91	32.867147	-116.793553
350	6.84	-60	790	2.89	32.867071	-116.792985
351	6.62	-49	690	2.87	32.866977	-116.792421
352	6.41	-39	610	2.85	32.866875	-116.791862
353	6.20	-30	610	2.83	32.866755	-116.791307
354	5.99	-21	560	2.81	32.866626	-116.790759
355	5.78	-13	450	2.79	32.866489	-116.790217
356	5.54	-4	460	2.77	32.866308	-116.789679
357	5.31	4	590	2.74	32.866119	-116.789149
358	5.09	17	580	2.72	32.865913	-116.788627
359	4.87	38	620	2.96	32.868110	-116.788165