

***AMENDMENT TO APPLICATION
FOR CONSTRUCTION PERMIT***

PROPOSED NEW FM TRANSLATOR STATION
WACO, TEXAS
FACILITY ID: 156281
106.3 MHz / 0.099 kW ERP / ND

WILDCATTER WIRELESS, INC.

JULY, 2013

AMENDMENT TO APPLICATION FOR CONSTRUCTION PERMIT

The following engineering statement and attached exhibits have been prepared for **Wildcatter Wireless, Inc.** ("Wildcatter"), applicant for a new FM translator station to serve Waco, Texas, and are in support of their amendment to application for construction permit.¹

This amendment is being submitted as part of the Commission's Translator Auction 83 settlement process. The original application submitted by Wildcatter was assigned FCC file No. BNPFT-20030317HJT. Upon initial review by the Staff, it was determined that the application mutually exclusive with two other applications. These other two applications were filed by Bible Broadcasting Network, Inc. ("BBN"), under FCC file number BNPFT-20030317ADY (Facility ID: 147263), and Educational Media Foundation ("EMF") under FCC file number BNPFT-20030314BTD (Facility ID: 140656). These three applications constituted MX Group 471.

Earlier during the settlement window, EMF submitted a minor change to their original proposal, which extricated their application from the MX Group. This amendment to the original Wildcatter application seeks to provide a minor technical change to that facility to eliminate the remaining mutual exclusivity with BBN. In order to eliminate the mutual exclusivity between the Wildcatter and BBN applications, Wildcatter proposes a change in the channel of operation, and effective radiated power. No change in the site location is proposed. These changes will result in a condition whereby Wildcatter can provide a bi-directional study pursuant to Section 74.1204(d) that no mutual exclusivity remains.

¹ The Facility ID for the proposed translator facility is 156281.

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The proposed facility would operate on channel 292 with an effective radiated power of 99 Watts at a center of radiation of 221.5 meters AMSL.² A non-directional antenna is proposed for use by the facility. Since no change to the site location is proposed, the original 60 dBu service contour and the contour described under this amendment would have common overlap. The changes proposed to the original facility are therefore minor in nature.

The primary station for the proposed translator was originally specified as KNON(FM) at Dallas, Texas.³ This remains unchanged for this application. Exhibit E-1 illustrates the predicted 60 dBu service contour of the proposed translator as well as the 60 dBu contour from KNON(FM).

The proposed facility would not impact LPFM licensing opportunities within any of the Appendix A markets. The closest three Appendix A markets to the proposed facility are the Dallas-Fort Worth, Tyler-Longview, and Killeen-Temple markets. Exhibit E-2 illustrates the proposed site location along with the grid and grid buffer for each of these three markets. As this exhibit demonstrates, the proposed facility would reside outside the buffer of each.

The proposed facility would be in compliance with the provisions of Section 74.1204 of the Commission's Rules. Exhibit E-3 is a tabular allocation study for the proposed facility. As this study demonstrates, the proposed facility would comply with all of the contour protection requirements to other proposed and authorized facilities of relevance with the exception of the

² The average terrain for the proposed facility is determined by the 120 degree true radial on which the average elevation is 116.9 meters AMSL. Terrain was sampled from the FCC 30-second terrain database.

³ The Facility ID for KNON(FM) at Dallas, TX is 601.

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BBN application and KIXT(FM) at Hewitt, Texas.⁴ The situation to these two facilities will be studied under Section 74.1204(d). Exhibit E-4 illustrates this tabular allocation study in a graphical contour based format.

Although normally prohibited contour overlap between the proposed facility and the BBN translator and between the proposed facility and KIXT(FM) would occur, no populated areas would be affected by the predicted interference regions. The situation between the two translator facilities will be examined first. Subsequent to that analysis, the situation with KIXT(FM) will be discussed.

Exhibit E-5 illustrates the vicinity of the Wildcatter and BBN applications. As this map demonstrates, the 80.7 dBu contour from the Wildcatter application intersects the BBN site, and the 83.9 dBu contour from BBN intersects the Wildcatter site. As a result, for Wildcatter to interfere with BBN, the field strength in the vicinity of the site must equal or exceed 123.9 dBu. Conversely, for BBN to interfere with Wildcatter in the vicinity of their site, the BBN field strength must equal or exceed 120.7 dBu.⁵

The power density for the proposed facility at a field strength of 123.9 dBu is given by the following equation:

$$S = \frac{E^2}{Z_0} = \frac{(1.5668)^2}{377} = 0.006511$$

⁴ The Facility ID for KIXT(FM) at Hewitt, Texas is 170995.

⁵ The specified field strength interference values are predicated on 40 dB ratio for third adjacent facilities.

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In this equation, S represents the calculated power density in Watts per square meter, E is the electric field intensity, which for 123.9 dBu is 1.5668 Volts per meter, and Z_0 is the characteristic impedance of free space of 377 ohms.

The power density is also given by:

$$S = \frac{P}{4\pi R^2}$$

Where S is the same units, P is the power in Watts (99 Watts in this case), and R is the distance from the antenna. Rearranging the terms in the equation, it can be solved for the distance to the desired power density as follows:

$$R^2 = \frac{P}{4\pi S}$$

The results of these calculations for depression angles of 0 degrees to 90 degrees are tabulated in Exhibit E-6. In addition to the tabular data in Exhibit E-6, several graphs are included, which graphically illustrate the interference situation for a given azimuth slice. As indicated on the form pages, a Shively 6812B-2 antenna is proposed for use by the facility. The relative field value listed at the various depression angles is based on the published data for this antenna, and was obtained from the Shively web page.

The registered structure on which the antenna would be mounted is a tower mounted to a building. The building itself is 92.4 meters in height, with the remainder of the structure overall height comprising the tower on top of the building. At a center of radiation value of 95 meters AGL, the proposed antenna would be located 3 meters above the roof line of the building. The closest

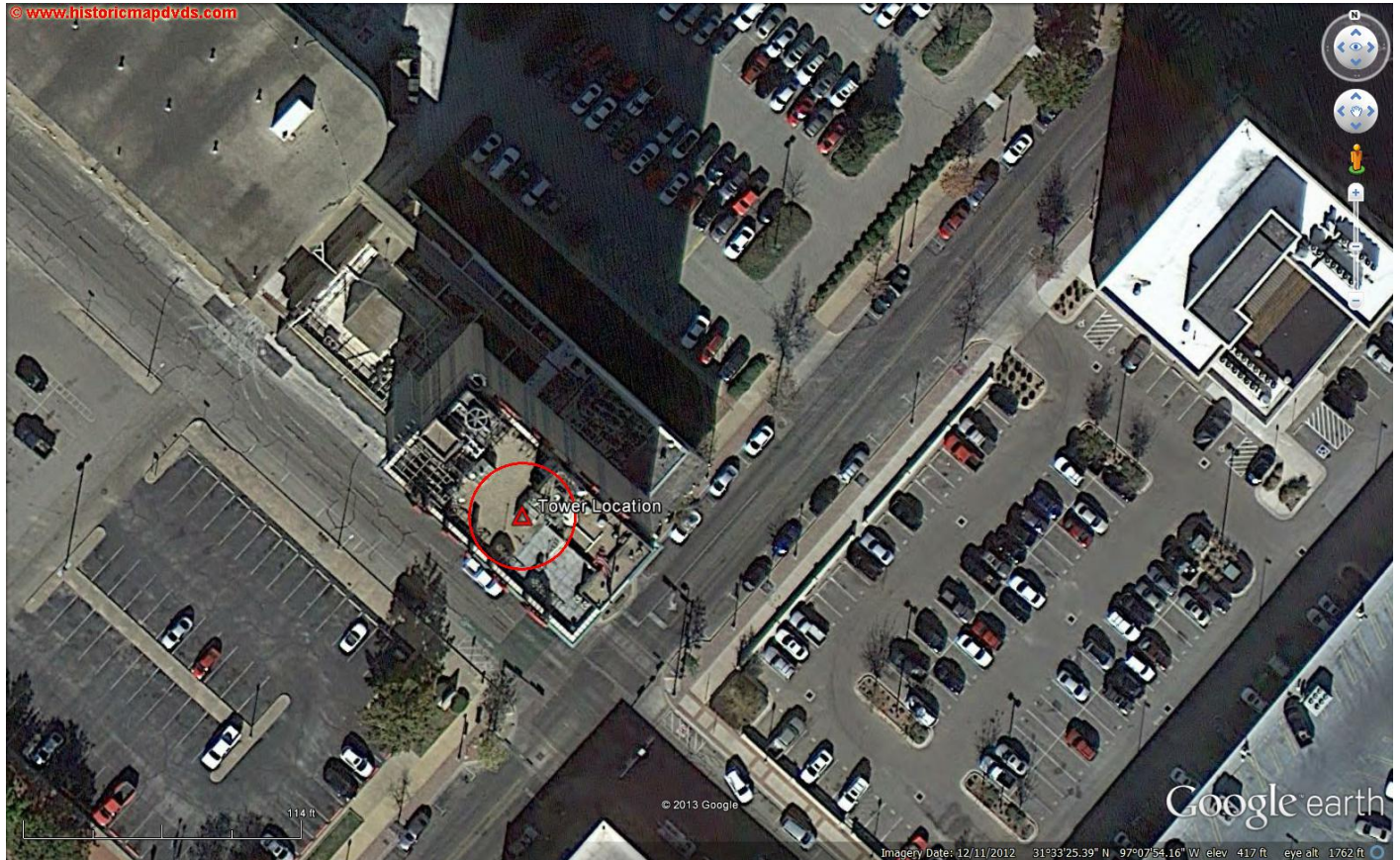
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approach to ground level would be at an elevation of 84.4 meters AGL at a distance of approximately 20 feet, or 6 meters. The satellite image below illustrates the tower location and a radius of 6 meters. As indicated, this 6 meter radius is confined to the rooftop of the building.



However, based on simple trigonometry, the center of radiation at 3 meters above the rooftop and the distance to the edge of the building of 6 meters, results in a depression angle of at less than 26.5 degrees to leave the rooftop. At depression angles of greater than 26.5 degrees the interference zone would be confined to the rooftop and affect zero population as the roof is of ferrous and concrete material, and will attenuate the signal sufficiently that no interference will result. For the depression angles of less than 26.5 degrees the interference zone will overshoot the rooftop and exist in free space adjacent to the building. It can be reasonably assumed that no

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persons will be located in, traversing through, or lounging in the vicinity of this region. As a result, any potential interference to the BBN translator from Wildcatter would affect zero population.

For the converse situation the calculations are performed identically. In this situation where the potential interference from BBN to Wildcatter at the BBN site is considered, the electric field strength is 1.5668 V/m, and the power density is 0.006511 W/m². Exhibit E-7 provides the resulting tabulation for the interference zone in the vicinity of the BBN antenna. It should be noted that the antenna model listed on the tabulation is a Scala FMO, rather than the SWR FMEC/1 listed within the BBN application. The FMO was utilized due to fact that its relative field is 1.0 at all azimuths in the vertical plane, while the exact pattern for the FMEC/1 was not available. Thus, the analysis in this fashion represents an absolute worst case for the situation of the BBN facility back to the Wildcatter facility. As the tabulation indicates, the interference region is confined to areas 73.4 meters above ground or higher. The street level image below demonstrates no structures of that height in the vicinity of the tower, thus zero persons would be affected.

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As a result of this bi-directional demonstration, it is respectfully submitted that there is no mutual exclusivity between the two proposed facilities. As a result, each should be considered a singleton.

The remaining case to be considered is that between the proposed facility and KIXT(FM). Exhibit E-8 demonstrates that the 68.2 dBu service contour takes in the proposed Wildcatter site. Since KIXT(FM) is second adjacent to the proposed translator, the 40 dB ratio is applied again resulting in a necessary field strength of 108.2 dBu from the translator to cause interference to that facility. Exhibit E-9 provides the calculation spreadsheet for this situation.

As this set of calculations demonstrates, the closest approach to ground level occurs at a depression angle of approximately 62 degrees. As was previously discussed, the resulting

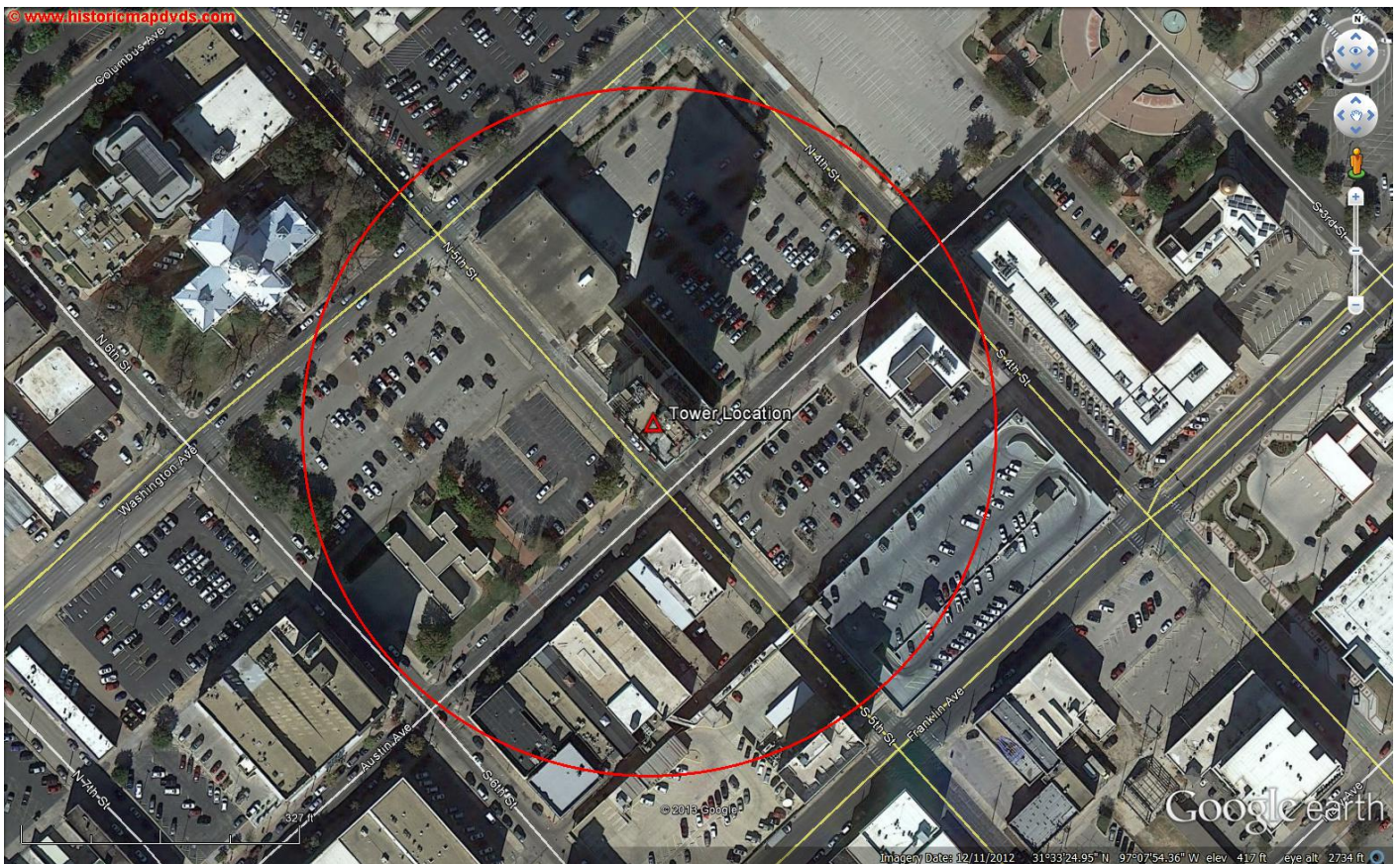
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interference region would be limited to the rooftop. At depression angles of less than 26.5 degrees, the next region of closest approach to ground occurs at 17 to 18 degrees. The horizontal distance for this area of closest approach to ground is 130 meters. Although the elevation of the bottom edge of this interference zone increases with approach to the translator site, the assumption will be made that the interference zone occurs at all points within a 130 meter radius at or above 52.7 meters, or 173 feet above ground level.



The preceding satellite image depicts two building that may potentially fall in this interference zone. The first is the building towards the east from the tower location.⁶ The second is the building to the south-southeast near the intersection of Franklin Avenue and South 5th Street. The building to the east is depicted in the next image.

⁶ Note that north is oriented towards the top of the page, and the streets are not oriented due north and south.

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This building is a 12 story structure with standard 12 foot floor heights, plus the oversized height of the top floor of 18 feet. This brings the total building height to 150 feet above ground level. However, as previously stated, the interference zone lies at or above 173 feet above ground level, thus, this building is entirely below the interference zone, thus no population would be affected. The second building under consideration is depicted next.

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10



The building under consideration is the one in the center of the photograph. It is of a similar height as the previously discussed building. As such, the interference zone once again would be at an elevation above the height of this structure. Therefore, no persons in this structure would be predicted to be subject to interference. All other structures in the vicinity of the site are much lower in elevation, and would be unaffected.

The proposed facility would not result in a significant environmental impact, and is exempt from environmental processing. The addition of the translator antenna to the structure would not increase the already existing environmental impact from the existing tower. In addition, the translator would not constitute an RF exposure hazard to persons on the ground in the vicinity of the structure.

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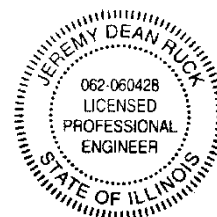
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11

The Commission's *FM Model* software package predicts a maximum power density at ground level of $0.100 \mu\text{W}/\text{cm}^2$ at a distance of 60 meters from the building base. At the roof, *FM Model* predicts a maximum power density of $184 \mu\text{W}/\text{cm}^2$. The rooftop is a controlled environment, and thus the higher tier limit is applicable. Wildcatter certifies that it will coordinate with all other users of the site to ensure that workers and other personnel having access to the site are not exposed to levels of radiofrequency radiation in excess of the applicable safety standards. Such coordination will include, but is not necessarily limited to, a reduction in transmitter power or cessation of operation.

The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature
License Expires November 30, 2013

Jeremy D. Ruck, PE
July 12, 2013

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7.12.2013

12

BNPFT20030317HJT
Latitude: 31-33-24.90 N
Longitude: 097-07-54 W
ERP: 0.099 kW
Channel: 292
Frequency: 106.3 MHz
AMSL Height: 221.5 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

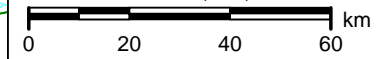
[illegible]

Proposed 60 dBu
Service Contour

KNON(FM) 60 dBu
Service Contour

Exhibit E-1
Service Contour Comparison
NEW - Waco, Texas
Wildcatter Wireless, Inc.
July, 2013

Scale 1:1,500,000



649560.X

BNPFT20030317HJT

Latitude: 31-33-24.90 N

Longitude: 097-07-54 W

ERP: 0.099 kW

Channel: 292

Frequency: 106.3 MHz

AMSL Height: 221.5 m

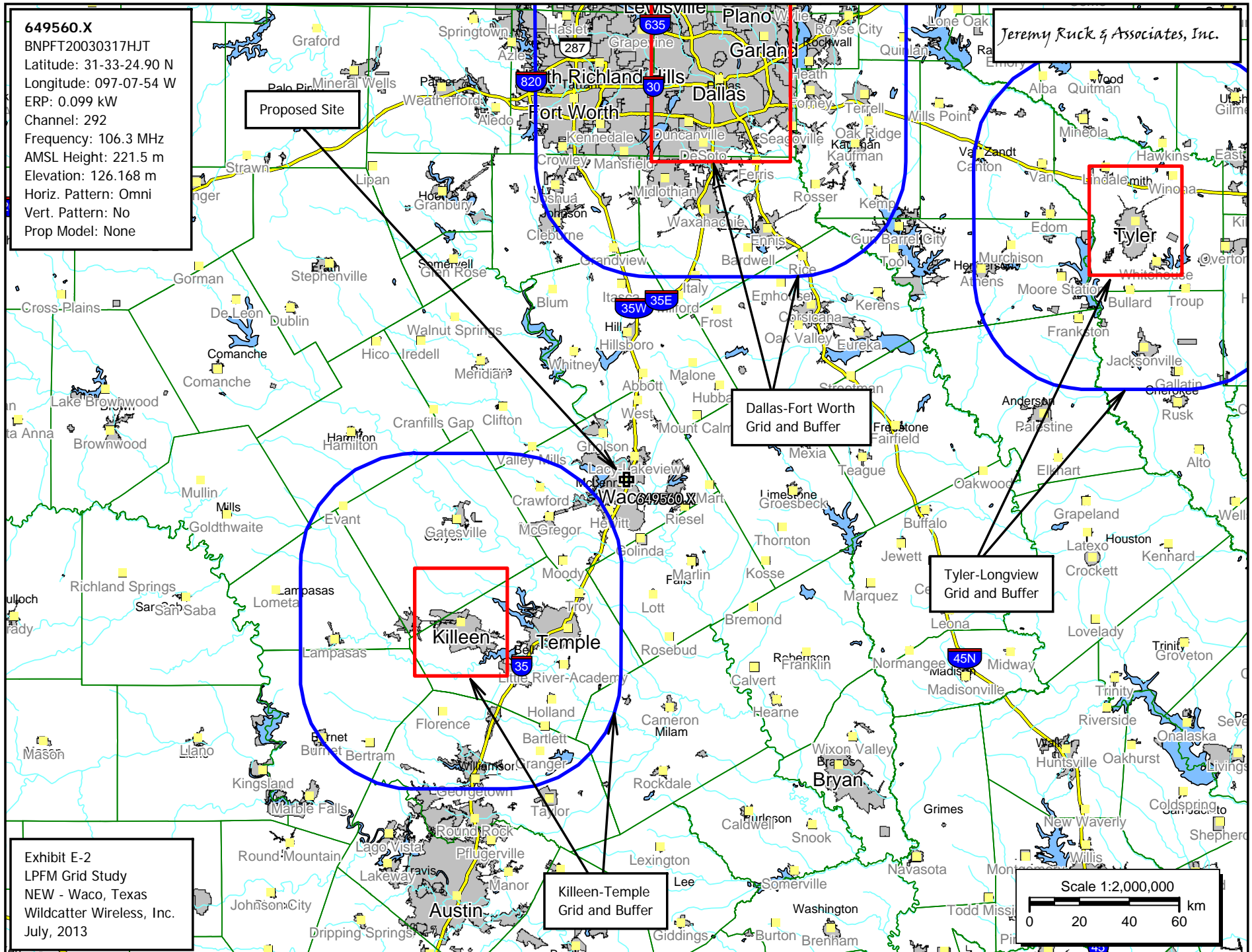
Elevation: 126.168 m

Horiz. Pattern: Omni

Vert. Pattern: No

Prop Model: None

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Consulting Engineers - Canton, Illinois

Exhibit E-3 - Tabular Allocation Study

NEW - Waco, Texas

REFERENCE
31 33 25.0 N.
97 07 54.0 W.

CH# 292D - 106.3 MHz, Pwr= 0.099 kW, HAAT= 80.2 M, COR= 222 M
Average Protected F(50-50)= 9.23 km
Omni-directional

DISPLAY DATES
DATA 07-12-13
SEARCH 07-12-13

CH CITY	CALL	TYPE ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
292C3 Belton	K00C	LIC_CN TX	214.8 34.6	66.79 BLH19920811KB	31 03 46.0 97 31 54.0	11.500 149	107.4 356	41.4 Townsquare Media Killeen-t	-47.9*	3.1
291C Denton	KHKS	LIC_C_ TX	7.6 187.7	115.73 BLH20020320AAE	32 35 19.0 96 58 05.0	100.000 508	125.3 698	84.3 Amfm Texas Licenses Lic	-18.9*	18.3
294C3 Hewitt	KIXT	LIC_NCX TX	203.1 23.0	24.33 BLH20100616AHJ	31 21 20.0 97 13 56.0	10.000 150	3.7 332	37.5 Prophecy Media Group, Lic	12.5	-13.8*
289D Waco	649560	APP_C_ TX	0.0 0.0	0.00 BNPFT20030317HJT	31 33 25.0 97 07 54.0	0.250 80	1.1 222	11.5 Wildcatter Wireless, Inc.	-10.3*	-12.2*
289D Waco	639896	APP_C_ TX	144.1 324.1	3.05 BNPFT20030317ADY	31 32 05.0 97 06 46.0	0.170 103	0.9 244	12.6 Bible Broadcasting Networ	-8.2*	-10.3*
293A Hico	AL3962	VAC ____ TX	296.4 115.9	94.96 RM11393	31 56 00.0 98 02 00.0	6.000 100	43.4 447	27.5 Liberman Broadcasting Of D	42.8	54.2
293C Jacksonville	K00I	LIC_CX TX	71.4 252.4	180.65 BLH20060622ABS	32 03 40.0 95 18 50.0	100.000 451	125.3 584	84.3 Access.1 Texas License Com	45.4	83.1

Terrain database is FCC NGDC 30 Sec , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
In & Out distances between contours are shown at closest points. Reference zone= West Zone, Co to 3rd adjacent.
All separation margins (if shown) include rounding.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
"*"affixed to 'IN' or 'OUT' values = site inside protected contour.

649560.X
BNPFT20030317HJT
Latitude: 31-33-24.90 N
Longitude: 097-07-54 W
ERP: 0.099 kW
Channel: 292
Frequency: 106.3 MHz
AMSL Height: 221.5 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

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- 60 dBu F(50,50) Service Contour
- 40 dBu F(50,10) Interference Contour
- 54 dBu F(50,10) Interference Contour
- 100 dBu F(50,10) Interference Contour

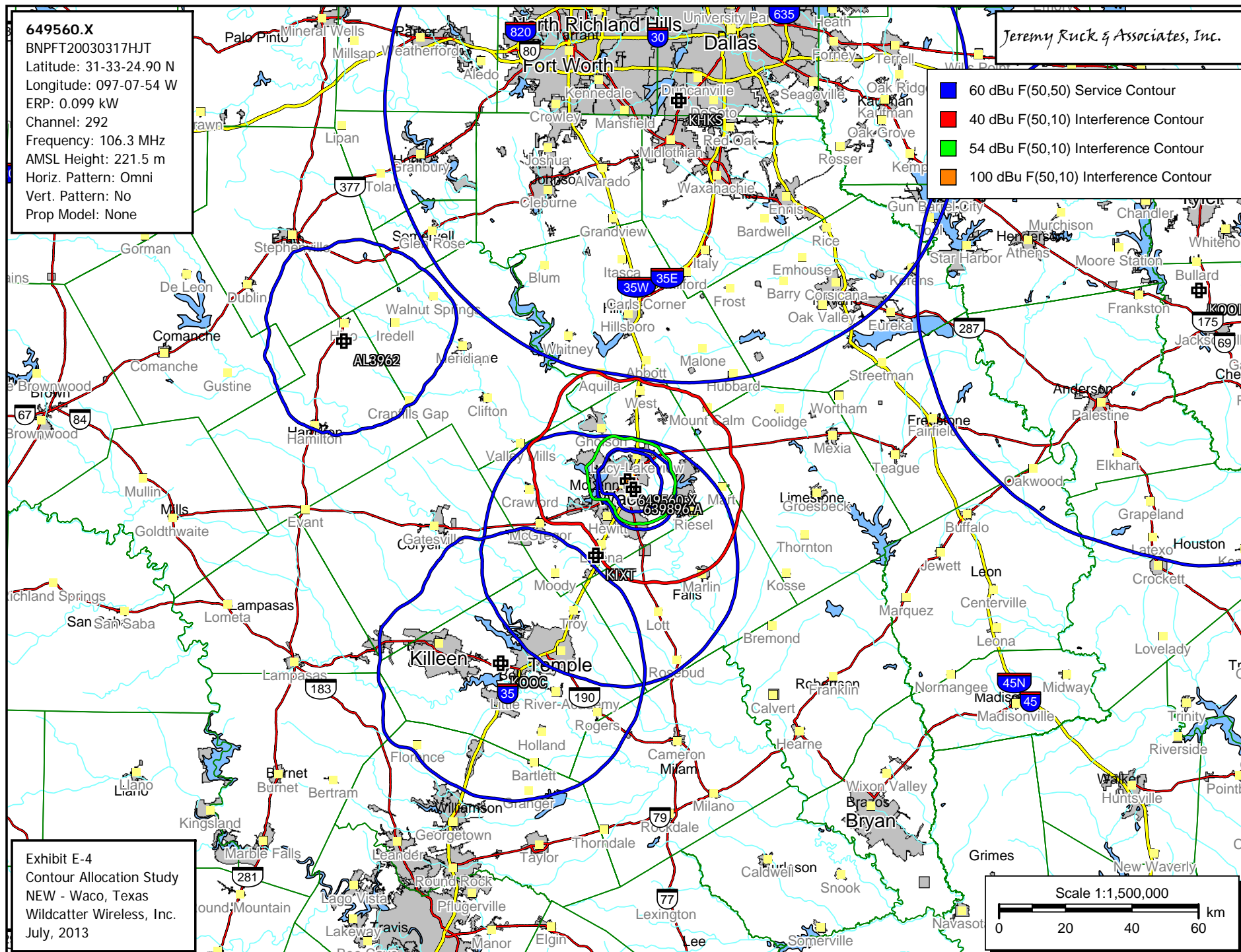
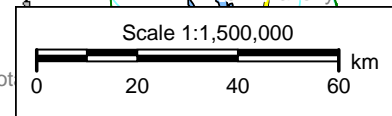


Exhibit E-4
Contour Allocation Study
NEW - Waco, Texas
Wildcatter Wireless, Inc.
July, 2013



649560.X

BNPFT20030317HJT
Latitude: 31-33-24.90 N
Longitude: 097-07-54 W
ERP: 0.099 kW
Channel: 292
Frequency: 106.3 MHz
AMSL Height: 221.5 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

639896.A

BNPFT20030317ADY
Latitude: 31-32-05 N
Longitude: 097-06-46 W
ERP: 0.17 kW
Channel: 289
Frequency: 105.7 MHz
AMSL Height: 244.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

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FCC F(50-50) 80.70 dBu (FCC HAAT)

FCC F(50-50) 83.90 dBu (FCC HAAT)

649560.X

639896.A

Waco

Beverly

Beverly Hills

Proposed 80.7 dBu
Service Contour

BBN 83.9 dBu
Service Contour

Exhibit E-5
Interference Study
NEW - Waco, Texas
Wildcatter Wireless, Inc.
July, 2013

Scale 1:50,000

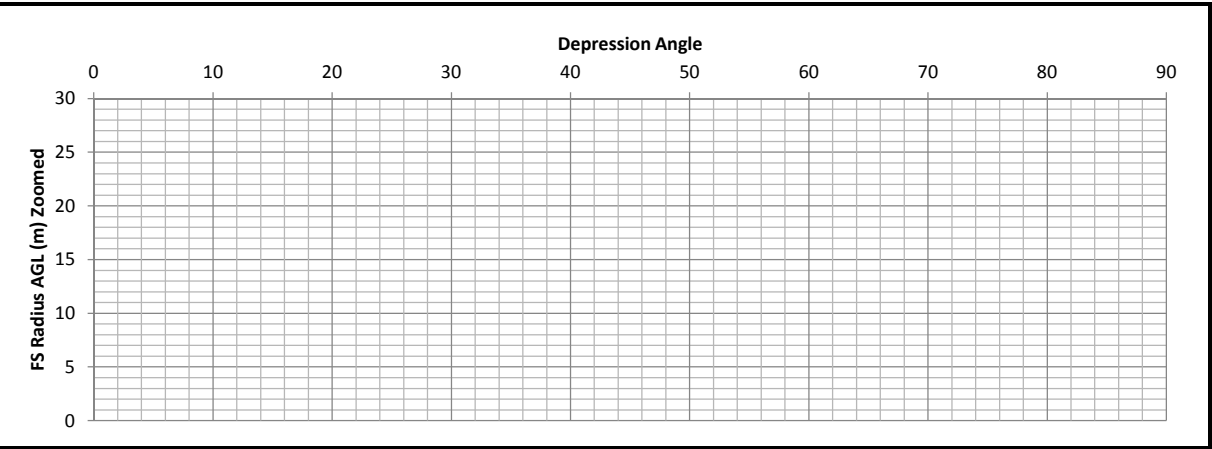
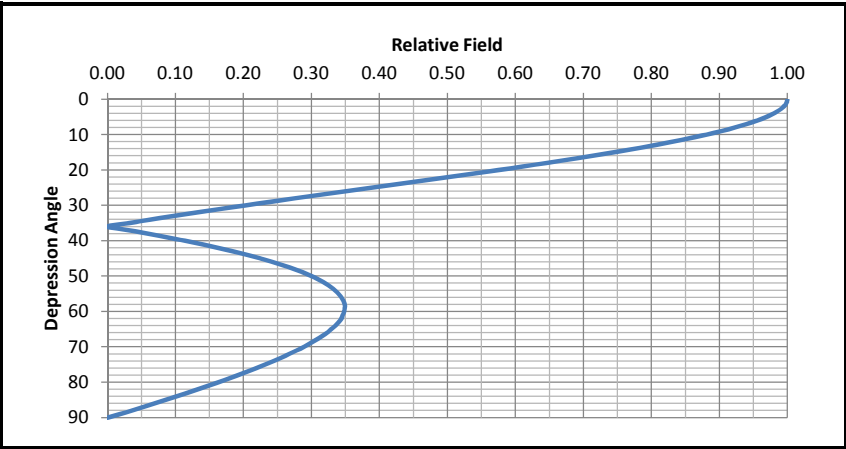


Exhibit E-6

Translator Proximity Interference Analysis

NEW (Wildcatter) - Waco, Texas

Antenna No:	2	<div><div></div><div></div><div></div></div>	Center of Radiation:	95 m AGL
Manufacturer:	Shively	<div><div></div><div></div><div></div></div>	Effective Radiated Power:	99 Watts
Model:	6812B-2		FS Contour:	123.9 dBu
Number of Bays:	2		E Field Strength:	1.56675 V/m
Bay Spacing:	Lambda		Z0 (Ohms):	377 Ohms
			Power Density:	0.006511164 W/m^2



Depression Angle	Relative Field	Relative Power	ERP Watts	Radii in meters			
				Field Strength	Horizontal	Vertical	AGL
0	1.0000	1.0000	99.00	34.78	34.78	0.00	95.00
1	0.9990	0.9980	98.80	34.75	34.74	0.61	94.39
2	0.9950	0.9900	98.01	34.61	34.59	1.21	93.79
3	0.9890	0.9781	96.83	34.40	34.35	1.80	93.20
4	0.9800	0.9604	95.08	34.09	34.01	2.38	92.62
5	0.9690	0.9390	92.96	33.71	33.58	2.94	92.06
6	0.9560	0.9139	90.48	33.25	33.07	3.48	91.52
7	0.9400	0.8836	87.48	32.70	32.45	3.98	91.02
8	0.9230	0.8519	84.34	32.11	31.79	4.47	90.53
9	0.9030	0.8154	80.73	31.41	31.02	4.91	90.09
10	0.8810	0.7762	76.84	30.64	30.18	5.32	89.68
11	0.8570	0.7344	72.71	29.81	29.26	5.69	89.31
12	0.8320	0.6922	68.53	28.94	28.31	6.02	88.98
13	0.8040	0.6464	64.00	27.97	27.25	6.29	88.71
14	0.7750	0.6006	59.46	26.96	26.16	6.52	88.48
15	0.7450	0.5550	54.95	25.91	25.03	6.71	88.29
16	0.7130	0.5084	50.33	24.80	23.84	6.84	88.16
17	0.6800	0.4624	45.78	23.65	22.62	6.92	88.08
18	0.6460	0.4173	41.31	22.47	21.37	6.94	88.06
19	0.6110	0.3733	36.96	21.25	20.10	6.92	88.08
20	0.5750	0.3306	32.73	20.00	18.79	6.84	88.16
21	0.5380	0.2894	28.65	18.71	17.47	6.71	88.29
22	0.5010	0.2510	24.85	17.43	16.16	6.53	88.47
23	0.4640	0.2153	21.31	16.14	14.86	6.31	88.69
24	0.4260	0.1815	17.97	14.82	13.54	6.03	88.97
25	0.3880	0.1505	14.90	13.50	12.23	5.70	89.30
26	0.3510	0.1232	12.20	12.21	10.97	5.35	89.65
27	0.3130	0.0980	9.70	10.89	9.70	4.94	90.06
28	0.2760	0.0762	7.54	9.60	8.48	4.51	90.49
29	0.2390	0.0571	5.65	8.31	7.27	4.03	90.97
30	0.2020	0.0408	4.04	7.03	6.09	3.51	91.49
31	0.1660	0.0276	2.73	5.77	4.95	2.97	92.03
32	0.1310	0.0172	1.70	4.56	3.86	2.41	92.59
33	0.0970	0.0094	0.93	3.37	2.83	1.84	93.16
34	0.0630	0.0040	0.39	2.19	1.82	1.23	93.77
35	0.0310	0.0010	0.10	1.08	0.88	0.62	94.38
36	0.0000	0.0000	0.00	0.00	0.00	0.00	95.00
37	0.0310	0.0010	0.10	1.08	0.86	0.65	94.35
38	0.0600	0.0036	0.36	2.09	1.64	1.28	93.72
39	0.0870	0.0076	0.75	3.03	2.35	1.90	93.10
40	0.1140	0.0130	1.29	3.97	3.04	2.55	92.45
41	0.1390	0.0193	1.91	4.84	3.65	3.17	91.83
42	0.1630	0.0266	2.63	5.67	4.21	3.79	91.21
43	0.1850	0.0342	3.39	6.44	4.71	4.39	90.61
44	0.2060	0.0424	4.20	7.17	5.15	4.98	90.02
45	0.2250	0.0506	5.01	7.83	5.53	5.53	89.47

Depression Angle	Relative Field	Relative Power	ERP Watts	Radii in meters			
				Field Strength	Horizontal	Vertical	AGL
45	0.2250	0.0506	5.01	7.83	5.53	5.53	89.47
46	0.2430	0.0590	5.85	8.45	5.87	6.08	88.92
47	0.2600	0.0676	6.69	9.04	6.17	6.61	88.39
48	0.2750	0.0756	7.49	9.57	6.40	7.11	87.89
49	0.2880	0.0829	8.21	10.02	6.57	7.56	87.44
50	0.3000	0.0900	8.91	10.44	6.71	7.99	87.01
51	0.3110	0.0967	9.58	10.82	6.81	8.41	86.59
52	0.3200	0.1024	10.14	11.13	6.85	8.77	86.23
53	0.3280	0.1076	10.65	11.41	6.87	9.11	85.89
54	0.3350	0.1122	11.11	11.65	6.85	9.43	85.57
55	0.3400	0.1156	11.44	11.83	6.78	9.69	85.31
56	0.3440	0.1183	11.72	11.97	6.69	9.92	85.08
57	0.3470	0.1204	11.92	12.07	6.57	10.12	84.88
58	0.3490	0.1218	12.06	12.14	6.43	10.30	84.70
59	0.3490	0.1218	12.06	12.14	6.25	10.41	84.59
60	0.3480	0.1211	11.99	12.10	6.05	10.48	84.52
61	0.3460	0.1197	11.85	12.04	5.83	10.53	84.47
62	0.3440	0.1183	11.72	11.97	5.62	10.57	84.43
63	0.3400	0.1156	11.44	11.83	5.37	10.54	84.46
64	0.3350	0.1122	11.11	11.65	5.11	10.47	84.53
65	0.3290	0.1082	10.72	11.44	4.84	10.37	84.63
66	0.3230	0.1043	10.33	11.24	4.57	10.26	84.74
67	0.3150	0.0992	9.82	10.96	4.28	10.09	84.91
68	0.3070	0.0942	9.33	10.68	4.00	9.90	85.10
69	0.2980	0.0888	8.79	10.37	3.71	9.68	85.32
70	0.2890	0.0835	8.27	10.05	3.44	9.45	85.55
71	0.2780	0.0773	7.65	9.67	3.15	9.14	85.86
72	0.2670	0.0713	7.06	9.29	2.87	8.83	86.17
73	0.2560	0.0655	6.49	8.90	2.60	8.52	86.48
74	0.2440	0.0595	5.89	8.49	2.34	8.16	86.84
75	0.2320	0.0538	5.33	8.07	2.09	7.79	87.21
76	0.2190	0.0480	4.75	7.62	1.84	7.39	87.61
77	0.2050	0.0420	4.16	7.13	1.60	6.95	88.05
78	0.1910	0.0365	3.61	6.64	1.38	6.50	88.50
79	0.1770	0.0313	3.10	6.16	1.17	6.04	88.96
80	0.1630	0.0266	2.63	5.67	0.98	5.58	89.42
81	0.1480	0.0219	2.17	5.15	0.81	5.08	89.92
82	0.1330	0.0177	1.75	4.63	0.64	4.58	90.42
83	0.1170	0.0137	1.36	4.07	0.50	4.04	90.96
84	0.1010	0.0102	1.01	3.51	0.37	3.49	91.51
85	0.0850	0.0072	0.72	2.96	0.26	2.95	92.05
86	0.0690	0.0048	0.47	2.40	0.17	2.39	92.61
87	0.0520	0.0027	0.27	1.81	0.09	1.81	93.19
88	0.0360	0.0013	0.13	1.25	0.04	1.25	93.75
89	0.0180	0.0003	0.03	0.63	0.01	0.63	94.37
90	0.0000	0.0000	0.00	0.00	0.00	0.00	95.00

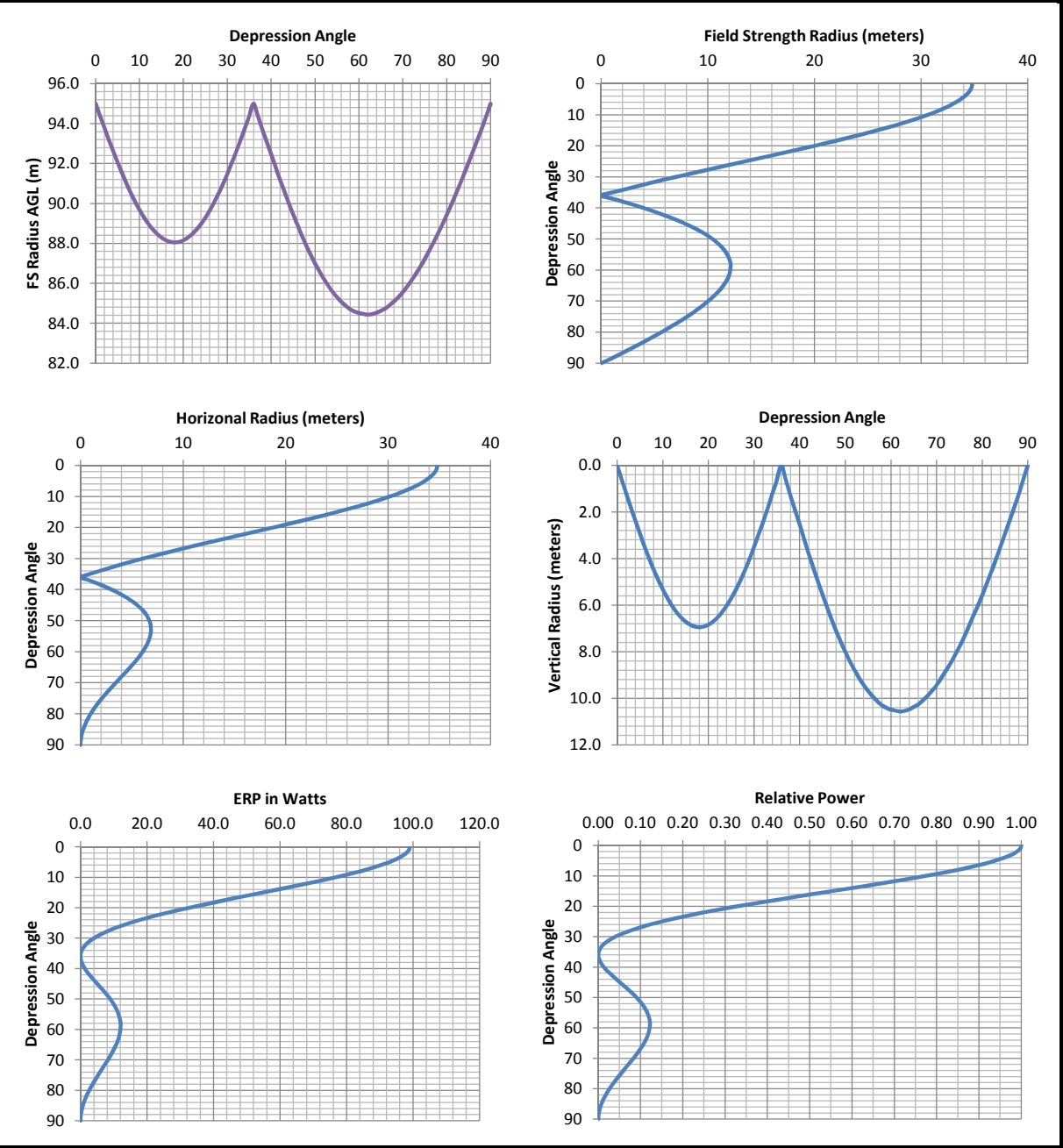
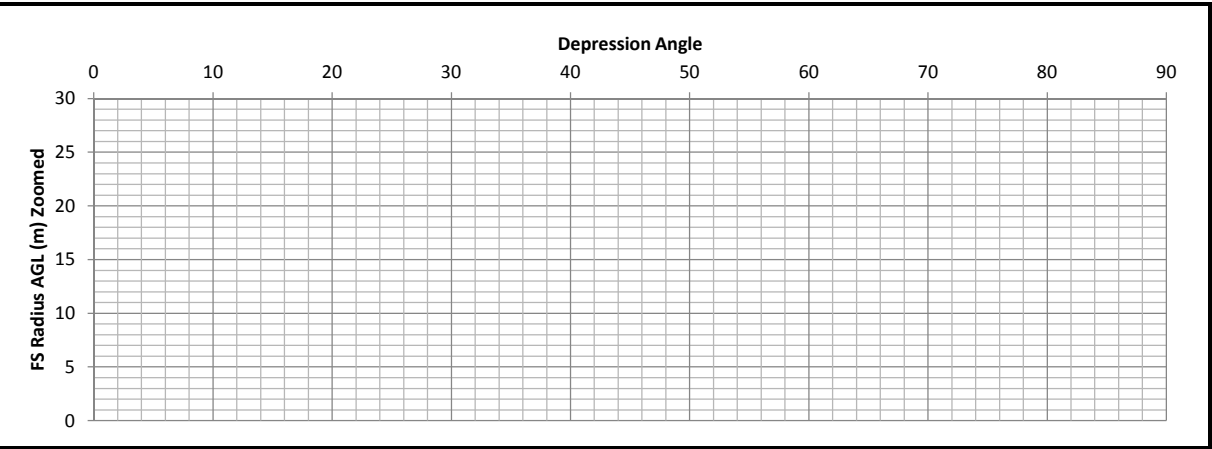
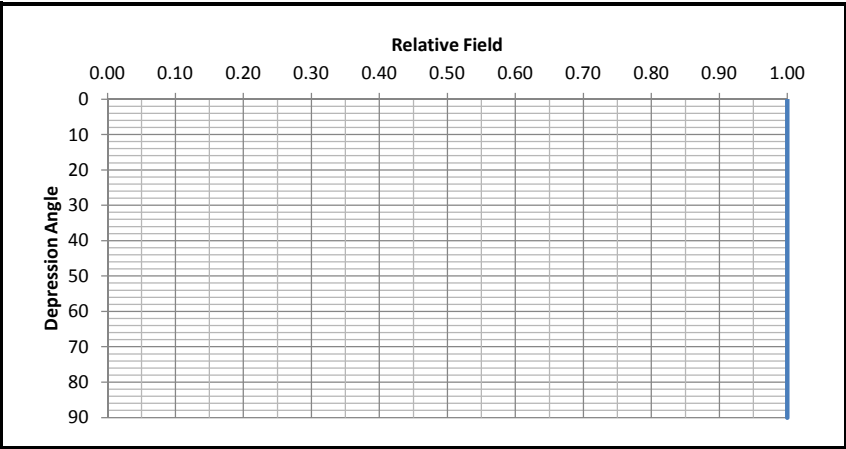


Exhibit E-7

Translator Proximity Interference Analysis

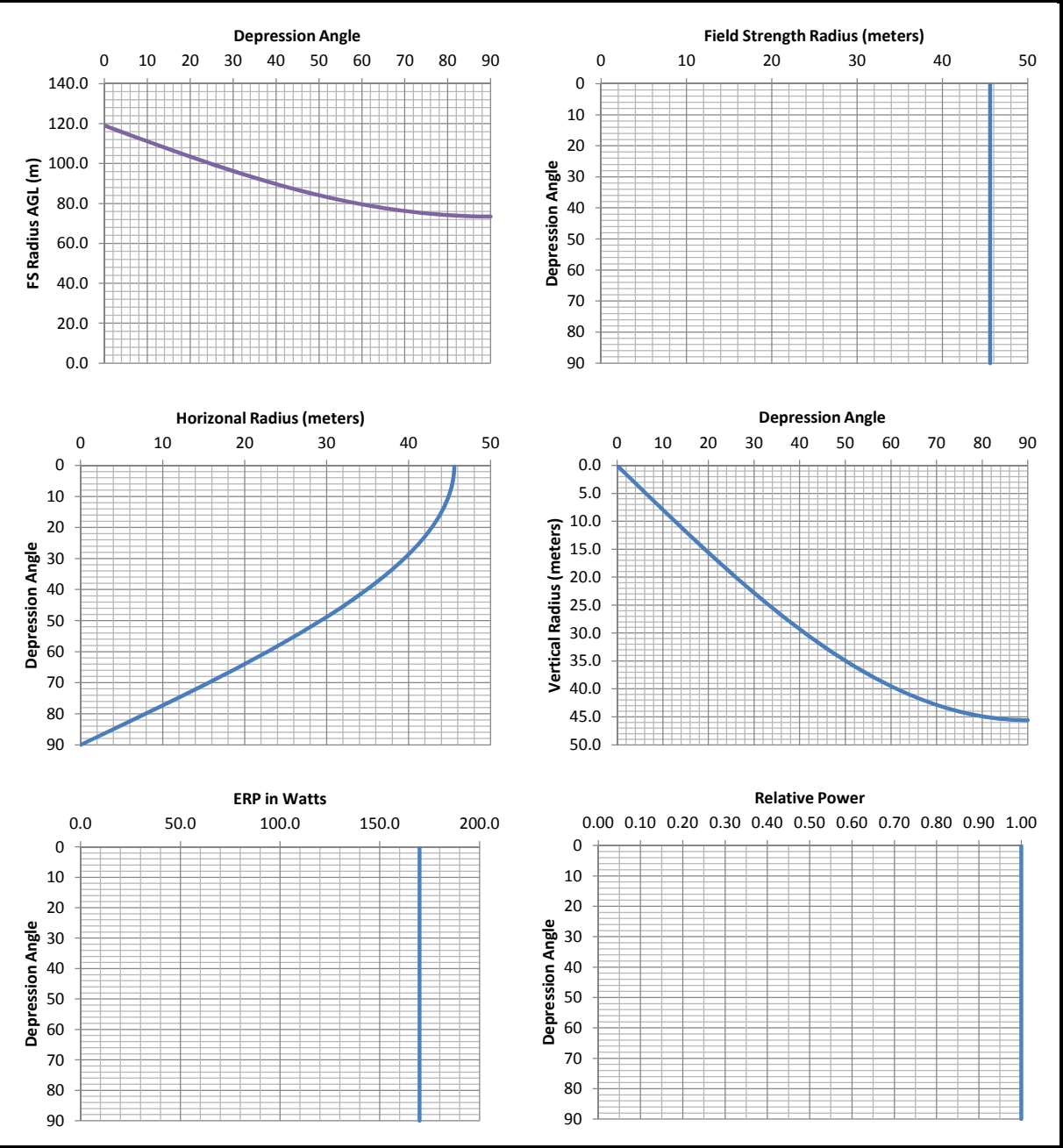
NEW (BBN to Wildcatter) - Waco, Texas

Antenna No:	54	⬆	⬆	Center of Radiation:	119 m AGL
Manufacturer:	Scala	⬆⬆⬆		Effective Radiated Power:	170 Watts
Model:	FMO			FS Contour:	123.9 dBu
Number of Bays:	1			E Field Strength:	1.56675 V/m
Bay Spacing:	N/A			Z0 (Ohms):	377 Ohms
				Power Density:	0.006511164 W/m^2



Depression Angle	Relative Field	Relative Power	ERP Watts	Radii in meters			
				Field Strength	Horizontal	Vertical	AGL
0	1.0000	1.0000	170.00	45.58	45.58	0.00	119.00
1	1.0000	1.0000	170.00	45.58	45.57	0.80	118.20
2	1.0000	1.0000	170.00	45.58	45.55	1.59	117.41
3	1.0000	1.0000	170.00	45.58	45.52	2.39	116.61
4	1.0000	1.0000	170.00	45.58	45.47	3.18	115.82
5	1.0000	1.0000	170.00	45.58	45.41	3.97	115.03
6	1.0000	1.0000	170.00	45.58	45.33	4.76	114.24
7	1.0000	1.0000	170.00	45.58	45.24	5.56	113.44
8	1.0000	1.0000	170.00	45.58	45.14	6.34	112.66
9	1.0000	1.0000	170.00	45.58	45.02	7.13	111.87
10	1.0000	1.0000	170.00	45.58	44.89	7.92	111.08
11	1.0000	1.0000	170.00	45.58	44.74	8.70	110.30
12	1.0000	1.0000	170.00	45.58	44.59	9.48	109.52
13	1.0000	1.0000	170.00	45.58	44.41	10.25	108.75
14	1.0000	1.0000	170.00	45.58	44.23	11.03	107.97
15	1.0000	1.0000	170.00	45.58	44.03	11.80	107.20
16	1.0000	1.0000	170.00	45.58	43.82	12.56	106.44
17	1.0000	1.0000	170.00	45.58	43.59	13.33	105.67
18	1.0000	1.0000	170.00	45.58	43.35	14.09	104.91
19	1.0000	1.0000	170.00	45.58	43.10	14.84	104.16
20	1.0000	1.0000	170.00	45.58	42.83	15.59	103.41
21	1.0000	1.0000	170.00	45.58	42.55	16.34	102.66
22	1.0000	1.0000	170.00	45.58	42.26	17.08	101.92
23	1.0000	1.0000	170.00	45.58	41.96	17.81	101.19
24	1.0000	1.0000	170.00	45.58	41.64	18.54	100.46
25	1.0000	1.0000	170.00	45.58	41.31	19.26	99.74
26	1.0000	1.0000	170.00	45.58	40.97	19.98	99.02
27	1.0000	1.0000	170.00	45.58	40.61	20.69	98.31
28	1.0000	1.0000	170.00	45.58	40.25	21.40	97.60
29	1.0000	1.0000	170.00	45.58	39.87	22.10	96.90
30	1.0000	1.0000	170.00	45.58	39.47	22.79	96.21
31	1.0000	1.0000	170.00	45.58	39.07	23.48	95.52
32	1.0000	1.0000	170.00	45.58	38.66	24.15	94.85
33	1.0000	1.0000	170.00	45.58	38.23	24.83	94.17
34	1.0000	1.0000	170.00	45.58	37.79	25.49	93.51
35	1.0000	1.0000	170.00	45.58	37.34	26.14	92.86
36	1.0000	1.0000	170.00	45.58	36.88	26.79	92.21
37	1.0000	1.0000	170.00	45.58	36.40	27.43	91.57
38	1.0000	1.0000	170.00	45.58	35.92	28.06	90.94
39	1.0000	1.0000	170.00	45.58	35.42	28.69	90.31
40	1.0000	1.0000	170.00	45.58	34.92	29.30	89.70
41	1.0000	1.0000	170.00	45.58	34.40	29.90	89.10
42	1.0000	1.0000	170.00	45.58	33.87	30.50	88.50
43	1.0000	1.0000	170.00	45.58	33.34	31.09	87.91
44	1.0000	1.0000	170.00	45.58	32.79	31.66	87.34
45	1.0000	1.0000	170.00	45.58	32.23	32.23	86.77

Depression Angle	Relative Field	Relative Power	ERP Watts	Radii in meters			
				Field Strength	Horizontal	Vertical	AGL
45	1.0000	1.0000	170.00	45.58	32.23	32.23	86.77
46	1.0000	1.0000	170.00	45.58	31.66	32.79	86.21
47	1.0000	1.0000	170.00	45.58	31.09	33.34	85.66
48	1.0000	1.0000	170.00	45.58	30.50	33.87	85.13
49	1.0000	1.0000	170.00	45.58	29.90	34.40	84.60
50	1.0000	1.0000	170.00	45.58	29.30	34.92	84.08
51	1.0000	1.0000	170.00	45.58	28.69	35.42	83.58
52	1.0000	1.0000	170.00	45.58	28.06	35.92	83.08
53	1.0000	1.0000	170.00	45.58	27.43	36.40	82.60
54	1.0000	1.0000	170.00	45.58	26.79	36.88	82.12
55	1.0000	1.0000	170.00	45.58	26.14	37.34	81.66
56	1.0000	1.0000	170.00	45.58	25.49	37.79	81.21
57	1.0000	1.0000	170.00	45.58	24.83	38.23	80.77
58	1.0000	1.0000	170.00	45.58	24.15	38.66	80.34
59	1.0000	1.0000	170.00	45.58	23.48	39.07	79.93
60	1.0000	1.0000	170.00	45.58	22.79	39.47	79.53
61	1.0000	1.0000	170.00	45.58	22.10	39.87	79.13
62	1.0000	1.0000	170.00	45.58	21.40	40.25	78.75
63	1.0000	1.0000	170.00	45.58	20.69	40.61	78.39
64	1.0000	1.0000	170.00	45.58	19.98	40.97	78.03
65	1.0000	1.0000	170.00	45.58	19.26	41.31	77.69
66	1.0000	1.0000	170.00	45.58	18.54	41.64	77.36
67	1.0000	1.0000	170.00	45.58	17.81	41.96	77.04
68	1.0000	1.0000	170.00	45.58	17.08	42.26	76.74
69	1.0000	1.0000	170.00	45.58	16.34	42.55	76.45
70	1.0000	1.0000	170.00	45.58	15.59	42.83	76.17
71	1.0000	1.0000	170.00	45.58	14.84	43.10	75.90
72	1.0000	1.0000	170.00	45.58	14.09	43.35	75.65
73	1.0000	1.0000	170.00	45.58	13.33	43.59	75.41
74	1.0000	1.0000	170.00	45.58	12.56	43.82	75.18
75	1.0000	1.0000	170.00	45.58	11.80	44.03	74.97
76	1.0000	1.0000	170.00	45.58	11.03	44.23	74.77
77	1.0000	1.0000	170.00	45.58	10.25	44.41	74.59
78	1.0000	1.0000	170.00	45.58	9.48	44.59	74.41
79	1.0000	1.0000	170.00	45.58	8.70	44.74	74.26
80	1.0000	1.0000	170.00	45.58	7.92	44.89	74.11
81	1.0000	1.0000	170.00	45.58	7.13	45.02	73.98
82	1.0000	1.0000	170.00	45.58	6.34	45.14	73.86
83	1.0000	1.0000	170.00	45.58	5.56	45.24	73.76
84	1.0000	1.0000	170.00	45.58	4.76	45.33	73.67
85	1.0000	1.0000	170.00	45.58	3.97	45.41	73.59
86	1.0000	1.0000	170.00	45.58	3.18	45.47	73.53
87	1.0000	1.0000	170.00	45.58	2.39	45.52	73.48
88	1.0000	1.0000	170.00	45.58	1.59	45.55	73.45
89	1.0000	1.0000	170.00	45.58	0.80	45.57	73.43
90	1.0000	1.0000	170.00	45.58	0.00	45.58	73.42



649560.X

BNPFT20030317HJT
Latitude: 31-33-24.90 N
Longitude: 097-07-54 W
ERP: 0.099 kW
Channel: 292
Frequency: 106.3 MHz
AMSL Height: 221.5 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

KIXT

BLH20100616AHJ
Latitude: 31-21-20 N
Longitude: 097-13-56 W
ERP: 10.00 kW
Channel: 294
Frequency: 106.7 MHz
AMSL Height: 332.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

Exhibit E-8

Interference Study
NEW - Waco, Texas
Wildcatter Wireless, Inc.
July, 2013

Jeremy Ruck & Associates, Inc.

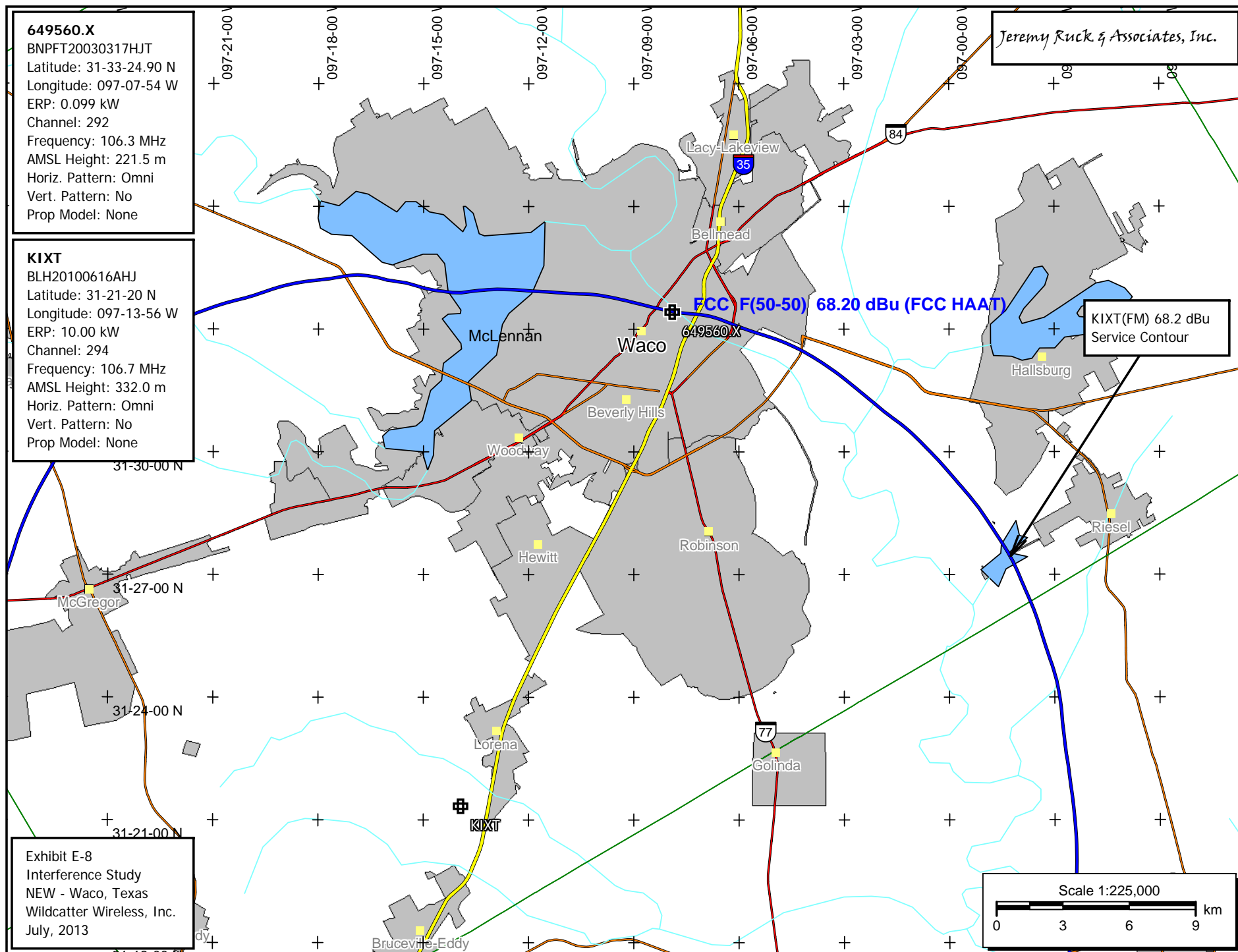
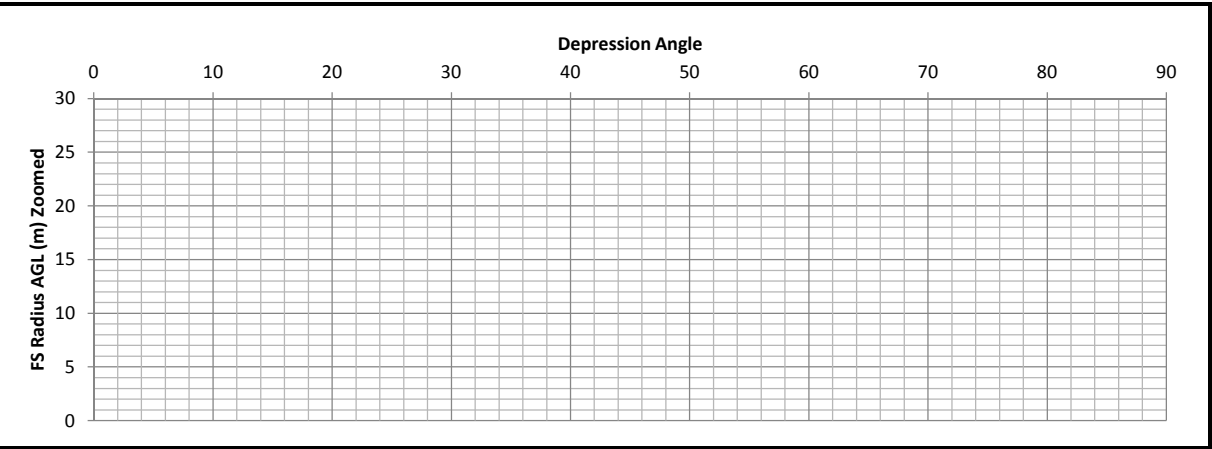
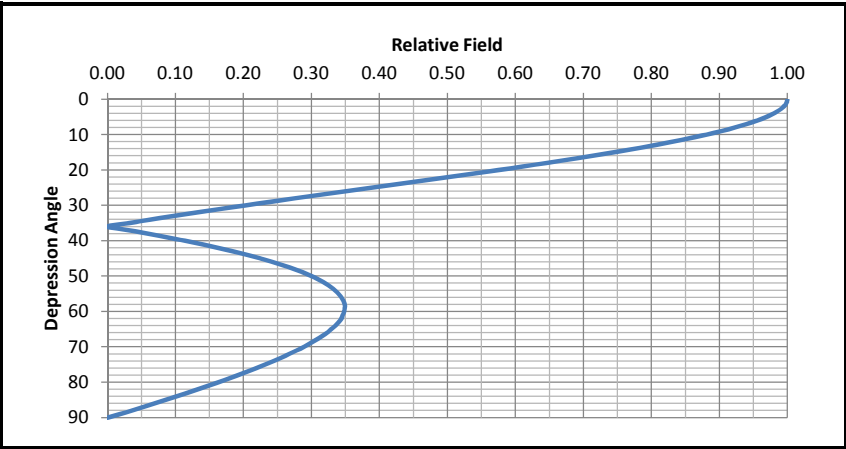


Exhibit E-9

Translator Proximity Interference Analysis

NEW (Wildcatter to KXKT) - Waco, Texas

Antenna No:	2	<div><div></div><div></div><div></div></div>	Center of Radiation:	95 m AGL
Manufacturer:	Shively	<div><div></div><div></div><div></div></div>	Effective Radiated Power:	99 Watts
Model:	6812B-2		FS Contour:	108.2 dBu
Number of Bays:	2		E Field Strength:	0.25704 V/m
Bay Spacing:	Lambda		Z0 (Ohms):	377 Ohms
			Power Density:	0.00017525 W/m^2



Depression Angle	Relative Field	Relative Power	ERP Watts	Radii in meters			
				Field Strength	Horizontal	Vertical	AGL
0	1.0000	1.0000	99.00	212.02	212.02	0.00	95.00
1	0.9990	0.9980	98.80	211.81	211.78	3.70	91.30
2	0.9950	0.9900	98.01	210.96	210.83	7.36	87.64
3	0.9890	0.9781	96.83	209.69	209.40	10.97	84.03
4	0.9800	0.9604	95.08	207.78	207.28	14.49	80.51
5	0.9690	0.9390	92.96	205.45	204.67	17.91	77.09
6	0.9560	0.9139	90.48	202.69	201.58	21.19	73.81
7	0.9400	0.8836	87.48	199.30	197.82	24.29	70.71
8	0.9230	0.8519	84.34	195.70	193.79	27.24	67.76
9	0.9030	0.8154	80.73	191.46	189.10	29.95	65.05
10	0.8810	0.7762	76.84	186.79	183.95	32.44	62.56
11	0.8570	0.7344	72.71	181.70	178.37	34.67	60.33
12	0.8320	0.6922	68.53	176.40	172.55	36.68	58.32
13	0.8040	0.6464	64.00	170.47	166.10	38.35	56.65
14	0.7750	0.6006	59.46	164.32	159.44	39.75	55.25
15	0.7450	0.5550	54.95	157.96	152.58	40.88	54.12
16	0.7130	0.5084	50.33	151.17	145.32	41.67	53.33
17	0.6800	0.4624	45.78	144.18	137.88	42.15	52.85
18	0.6460	0.4173	41.31	136.97	130.26	42.33	52.67
19	0.6110	0.3733	36.96	129.55	122.49	42.18	52.82
20	0.5750	0.3306	32.73	121.91	114.56	41.70	53.30
21	0.5380	0.2894	28.65	114.07	106.49	40.88	54.12
22	0.5010	0.2510	24.85	106.22	98.49	39.79	55.21
23	0.4640	0.2153	21.31	98.38	90.56	38.44	56.56
24	0.4260	0.1815	17.97	90.32	82.51	36.74	58.26
25	0.3880	0.1505	14.90	82.26	74.56	34.77	60.23
26	0.3510	0.1232	12.20	74.42	66.89	32.62	62.38
27	0.3130	0.0980	9.70	66.36	59.13	30.13	64.87
28	0.2760	0.0762	7.54	58.52	51.67	27.47	67.53
29	0.2390	0.0571	5.65	50.67	44.32	24.57	70.43
30	0.2020	0.0408	4.04	42.83	37.09	21.41	73.59
31	0.1660	0.0276	2.73	35.20	30.17	18.13	76.87
32	0.1310	0.0172	1.70	27.78	23.55	14.72	80.28
33	0.0970	0.0094	0.93	20.57	17.25	11.20	83.80
34	0.0630	0.0040	0.39	13.36	11.07	7.47	87.53
35	0.0310	0.0010	0.10	6.57	5.38	3.77	91.23
36	0.0000	0.0000	0.00	0.00	0.00	0.00	95.00
37	0.0310	0.0010	0.10	6.57	5.25	3.96	91.04
38	0.0600	0.0036	0.36	12.72	10.02	7.83	87.17
39	0.0870	0.0076	0.75	18.45	14.34	11.61	83.39
40	0.1140	0.0130	1.29	24.17	18.52	15.54	79.46
41	0.1390	0.0193	1.91	29.47	22.24	19.33	75.67
42	0.1630	0.0266	2.63	34.56	25.68	23.13	71.87
43	0.1850	0.0342	3.39	39.22	28.69	26.75	68.25
44	0.2060	0.0424	4.20	43.68	31.42	30.34	64.66
45	0.2250	0.0506	5.01	47.71	33.73	33.73	61.27

Depression Angle	Relative Field	Relative Power	ERP Watts	Radii in meters			
				Field Strength	Horizontal	Vertical	AGL
45	0.2250	0.0506	5.01	47.71	33.73	33.73	61.27
46	0.2430	0.0590	5.85	51.52	35.79	37.06	57.94
47	0.2600	0.0676	6.69	55.13	37.60	40.32	54.68
48	0.2750	0.0756	7.49	58.31	39.01	43.33	51.67
49	0.2880	0.0829	8.21	61.06	40.06	46.08	48.92
50	0.3000	0.0900	8.91	63.61	40.89	48.73	46.27
51	0.3110	0.0967	9.58	65.94	41.50	51.24	43.76
52	0.3200	0.1024	10.14	67.85	41.77	53.46	41.54
53	0.3280	0.1076	10.65	69.54	41.85	55.54	39.46
54	0.3350	0.1122	11.11	71.03	41.75	57.46	37.54
55	0.3400	0.1156	11.44	72.09	41.35	59.05	35.95
56	0.3440	0.1183	11.72	72.94	40.79	60.47	34.53
57	0.3470	0.1204	11.92	73.57	40.07	61.70	33.30
58	0.3490	0.1218	12.06	74.00	39.21	62.75	32.25
59	0.3490	0.1218	12.06	74.00	38.11	63.43	31.57
60	0.3480	0.1211	11.99	73.78	36.89	63.90	31.10
61	0.3460	0.1197	11.85	73.36	35.57	64.16	30.84
62	0.3440	0.1183	11.72	72.94	34.24	64.40	30.60
63	0.3400	0.1156	11.44	72.09	32.73	64.23	30.77
64	0.3350	0.1122	11.11	71.03	31.14	63.84	31.16
65	0.3290	0.1082	10.72	69.76	29.48	63.22	31.78
66	0.3230	0.1043	10.33	68.48	27.85	62.56	32.44
67	0.3150	0.0992	9.82	66.79	26.10	61.48	33.52
68	0.3070	0.0942	9.33	65.09	24.38	60.35	34.65
69	0.2980	0.0888	8.79	63.18	22.64	58.99	36.01
70	0.2890	0.0835	8.27	61.27	20.96	57.58	37.42
71	0.2780	0.0773	7.65	58.94	19.19	55.73	39.27
72	0.2670	0.0713	7.06	56.61	17.49	53.84	41.16
73	0.2560	0.0655	6.49	54.28	15.87	51.91	43.09
74	0.2440	0.0595	5.89	51.73	14.26	49.73	45.27
75	0.2320	0.0538	5.33	49.19	12.73	47.51	47.49
76	0.2190	0.0480	4.75	46.43	11.23	45.05	49.95
77	0.2050	0.0420	4.16	43.46	9.78	42.35	52.65
78	0.1910	0.0365	3.61	40.50	8.42	39.61	55.39
79	0.1770	0.0313	3.10	37.53	7.16	36.84	58.16
80	0.1630	0.0266	2.63	34.56	6.00	34.03	60.97
81	0.1480	0.0219	2.17	31.38	4.91	30.99	64.01
82	0.1330	0.0177	1.75	28.20	3.92	27.92	67.08
83	0.1170	0.0137	1.36	24.81	3.02	24.62	70.38
84	0.1010	0.0102	1.01	21.41	2.24	21.30	73.70
85	0.0850	0.0072	0.72	18.02	1.57	17.95	77.05
86	0.0690	0.0048	0.47	14.63	1.02	14.59	80.41
87	0.0520	0.0027	0.27	11.03	0.58	11.01	83.99
88	0.0360	0.0013	0.13	7.63	0.27	7.63	87.37
89	0.0180	0.0003	0.03	3.82	0.07	3.82	91.18
90	0.0000	0.0000	0.00	0.00	0.00	0.00	95.00

