

TECHNICAL EXHIBIT  
APPLICATION FOR DTV CONSTRUCTION PERMIT  
STATION WTLF-DT  
FACILITY ID: 82735  
TALLAHASSEE, FLORIDA  
CH 24 1000 KW 39 M

Technical Narrative

This Technical Exhibit supports an application for a DTV construction permit for the digital operation of station WTLF-DT at Tallahassee, Florida. Station WTLF-DT is currently licensed to operate on channel 24 with a maximum directional antenna effective radiated power (ERP) of 24 kilowatts (kW) and an antenna height above average terrain (HAAT) of 39 meters (BLCDT-20030303ABF). This application proposes to modify the WTLF-DT licensed operation by increasing the ERP and by changing to a non-directional antenna system. No other changes are proposed.

Station WTLF-DT proposes to operate on DTV channel 24 from its currently licensed site, N 30° 29' 40" W 84° 25' 03". Specifically, it is proposed to increase the maximum ERP to 1000 kW and to side mount an Andrew ATW30H3-HSO non-directional antenna on the existing 59 meter tower (Antenna Structure Registration #1066059).

There are no known authorized full service AM stations within 5 kilometers (3 miles) and no known

authorized full service NTSC or DTV stations within 16 kilometers (10 miles) of the WTLF-DT transmitter site. The following is a list of authorized full service FM stations within 16 kilometers (10 miles) of the proposed DTV site.

<u>Station</u>	<u>Channel</u>	<u>Bearing(°True)</u>	<u>Distance(km)</u>
WGWD(FM), Gretna, FL	227C3	274	4.01
WBWT(FM), Midway, FL	264C3	91	12.54
WXSR(FM), Quincy, FL	268C2	91	12.54
WBZE(FM), Tallahassee, FL	255C1	91	12.83
WWLD(FM), Cairo, GA	272C2	91	12.83
WVFS(FM), Tallahassee, FL	209A	117	13.56
WANM(FM), Tallahassee, FL	213A	120	14.09

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 more than 1,200 kilometers from the Canadian border. The proposed transmitter site is more than 1,000 kilometers from the US/Mexican border area. The closest FCC monitoring station is at Powder Springs, Georgia, located 375 kilometers to the north. The proposed DTV site is outside the National Radio Quiet Zone (VA/WVA), the closest point being more than 850 kilometers to the north. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 2,100 kilometers to the northwest. The closest radio astronomy site operating on TV channel 37 is at Green Bank, West Virginia, located more than 970 kilometers to the north. These separations are sufficient to not be a concern for coordination purposes.

Figure 1 is a map showing the DTV predicted coverage contours. The map provides the 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, except the proposed HAAT was calculated based on 36 evenly spaced radials rather than eight. The Tallahassee city limits were derived from information contained in the 2000 U.S. Census for Florida. As shown, the 48 dBu contour encompasses the entire city limits of Tallahassee.

Figure 2 is a DTV channel 24 separation study toward other NTSC and DTV allotments based on a 50 kilometer "buffer". Although the separation requirements are only applicable to new DTV allotments, they can be used as an indication of which stations have the potential of receiving interference from the proposed channel 24 DTV operation.

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 Section 73.623(c)(2).<sup>1</sup> Interference calculations for the proposed WTLF-DT operation are summarized below with respect to all authorized NTSC, DTV, and Class A facilities.

The study indicated that the WTLF-DT operation is involved in prohibited contour overlap to the co-channel Class A station WWEO-CA at De Funiak Springs, FL. However, as the results of the study show below, the proposed WTLF-DT operation is not predicted to cause any interference to WWEO-CA. It is also apparent that the WTLF-DT proposal on

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<sup>1</sup> 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. An Alpha based processor computer system was employed.

channel 24 complies with the FCC's interference standards towards all authorized NTSC and DTV assignments.

<b>Protected Station</b>	<b>Facility</b>	<b>Ch.</b>	<b>City</b>	<b>State</b>	<b>FCC Service Population</b>	<b>Proposed Interference Population</b>	<b>% of Baseline</b>
BPET-19960724KO	APP	16	MARIANNA	FL	339,754	13	0.00%
WJXS-CA	LIC	24	SYLACAUGA	AL	---	---	NONE
WBMM	CP	24	TUSKEGEE	AL	473,058	521	0.11%
NEW	PLN	24	TUSKEGEE	AL	473,058	1,268	0.27%
WWEO-CA	CP	24	DE FUNIAK SPRINGS	FL	---	---	NONE
WMFE-TV	CP	24	ORLANDO	FL	1,953,897	---	NONE
WMFE-TV	LIC	24	ORLANDO	FL	---	---	NONE
WTSP-DT	PLN	24	ST. PETERSBURG	FL	---	---	NONE
WTSP	CP	24	ST. PETERSBURG	FL	---	---	NONE
WPXC-TV	CP	24	BRUNSWICK	GA	995,934	---	NONE
WBSG-DT	PLN	24	BRUNSWICK	GA	995,934	140	0.01%
WGXA	LIC	24	MACON	GA	475,358	4,728	1.00%
WFGX-DT	FL	25	FORT WALTON BEACH	FL	155,182	---	NONE
WFGX	FL	25	FORT WALTON BEACH	FL	155,182	---	NONE
WACS-TV	LIC	25	DAWSON	GA	306,101	---	NONE
WTXL-TV	LIC	27	TALLAHASSEE	FL	609,523	---	NONE
WPGX	CP	28	PANAMA CITY	FL	210,756	---	NONE
WPGX	LIC	28	PANAMA CITY	FL	210,756	---	NONE
WFXL	LIC	31	ALBANY	GA	405,837	---	NONE

The proposed facility has been evaluated in terms of potential radiofrequency electromagnetic field exposure at ground level in accordance with OET Bulletin No. 65, Evaluating Compliance with FCC Specified Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields<sup>2</sup>. The power density at the base of the tower was calculated using the appropriate procedures contained in the Bulletin.

The proposed WTLF-DT antenna will be side mounted on the existing WTLF-DT tower. The antenna center of radiation is located 52 meters above ground level. The calculated power density at 2 meters above ground level (AGL) was calculated using the appropriate equation contained in the Bulletin. The vertical relative field pattern and tabulation for the proposed antenna are shown in Figure 3. The maximum vertical relative field value towards the tower base (-60 to -90 elevation) is 0.032. Therefore, using a "worst-case" vertical relative field value of 0.04, the calculated power density at 2 meters above the ground is 0.0214 milliwatts per square centimeter ( $\text{mW}/\text{cm}^2$ ), which is 5.9% of the Commission's recommended limit of  $0.36 \text{ mW}/\text{cm}^2$  for channel 24, applicable to uncontrolled exposure areas. Since this is not a multi-user site, it is believed that this proposal is in compliance with the FCC's RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with warning signs. Furthermore, in the event that workers or other authorized personal enter the restricted area 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.

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<sup>2</sup> OET Bulletin 65, Second Edition 97-01, August, 1997.

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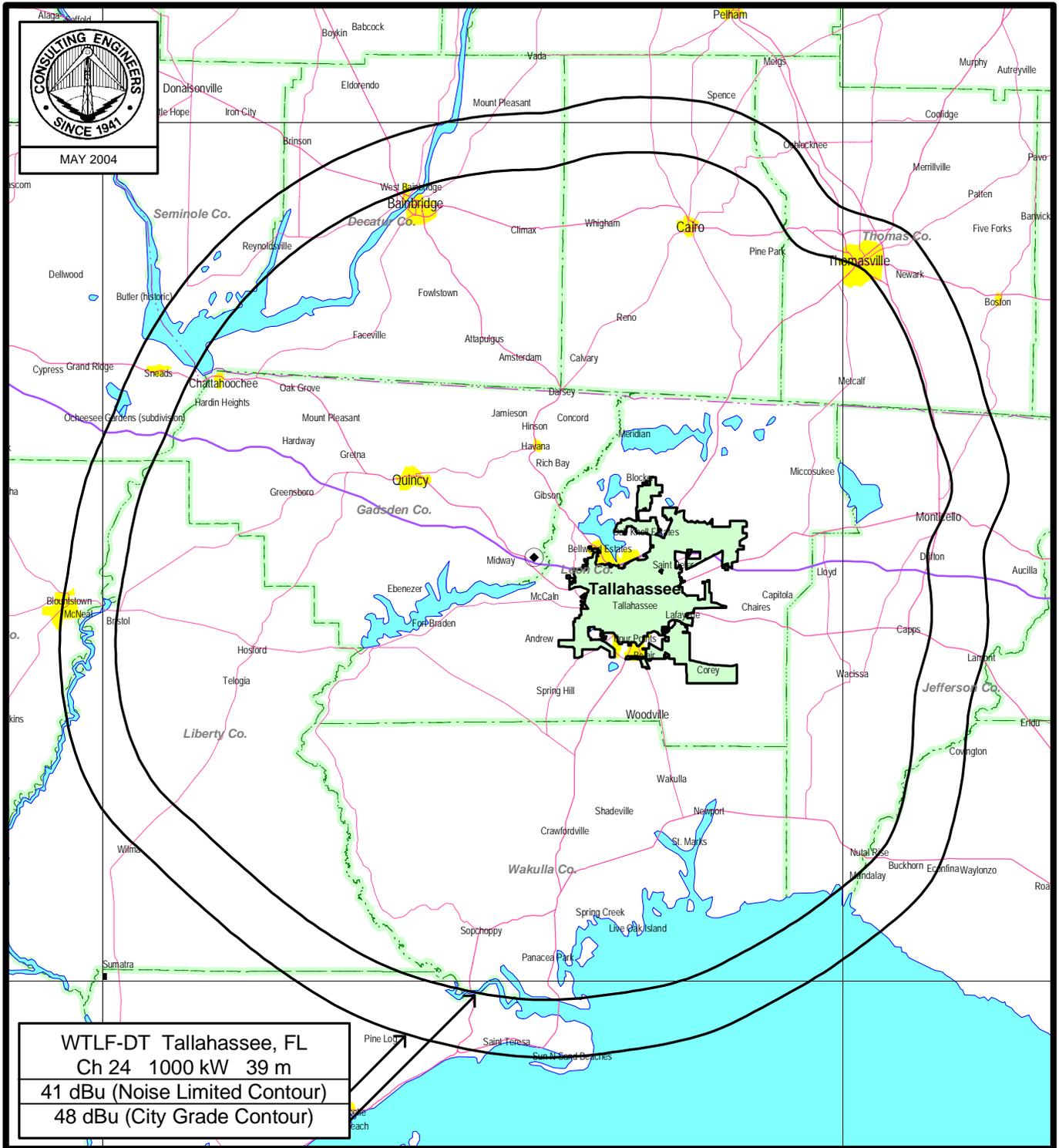
It is noted that this technical exhibit only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be provided to the FCC by the tower owner as part of the tower registration process.

W. Jeffrey Reynolds

du Treil, Lundin & Rackley, Inc.  
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May 14, 2004

Figure 1



## PREDICTED FCC COVERAGE CONTOURS

DTV STATION WTLF-DT  
TALLAHASSEE, FLORIDA  
CH 24 1000 KW 39 M

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

CDBS TV/DTV SEPARATION STUDY

Job Title: WTLF-DT Separation Study  
 Channel: 24  
 Type: DT

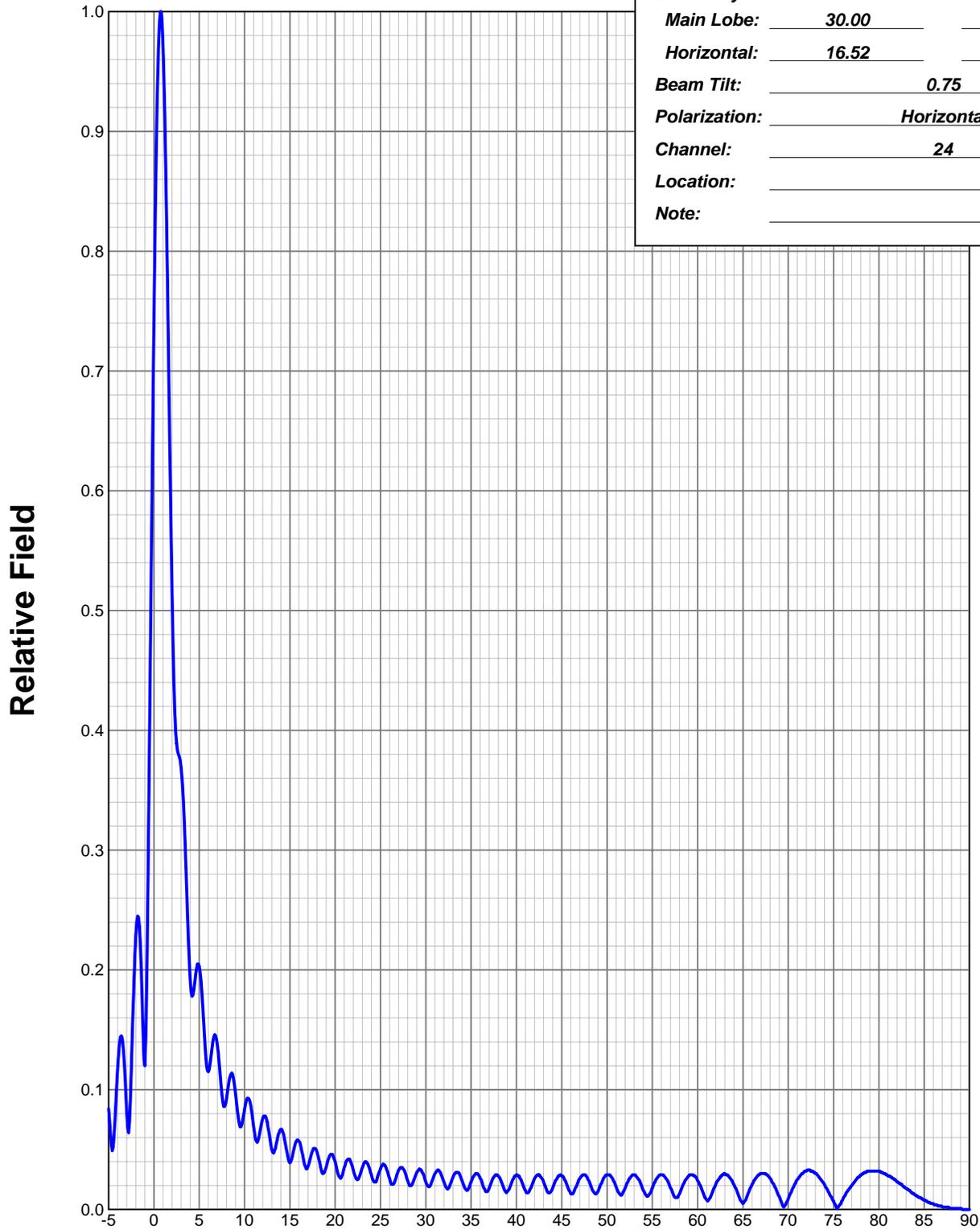
Separation Buffer: 50 km  
 Coordinates: 30-29-40 084-25-03  
 Zone: III

Call Id	City St	File Status	Channel Num	ERP Zone	HAAT	DA Id	Latitude Longitude	Bearing	Dist. (km)	Req. min	max
960724 82944	MARIANNA FL	APP C	BPET 19960724KOIII	16(+)	5000.000 141	D 33854	30-36-24 084-48-42	288.4	39.8 15.71	24.1	96.6 Short
WTLF 82735	TALLAHASSEE FL	LIC C	BLCDT 20030303ABIII	24( )	24.000 39	D 65784	30-29-40 084-25-03	99.0	0.0	223.7	223.7
WWEO-C 2941	DE FUNIAK FL	S CP C	BPTTL 20010710AA	24(+)	7.500 24202	D	30-44-18 086-06-22	280.0	164.2 80.44	0.0	0.0 Class A
DNEW	TUSKEGEE AL	DTV		24( ) III	104.600 325	D	32-03-36 085-57-02	320.5	226.8 3.11	223.7	223.7 Close
WBMM 68427	TUSKEGEE AL	CP C	BPCDT 20030725ABIII	24( )	100.000 325	D 60235	32-04-05 085-56-41	320.7	227.1 3.43	223.7	223.7 Close
DWBSGT	BRUNSWICK GA	DTV		24( ) III	262.300 600	D	31-08-22 081-56-15	72.5	247.8 24.15	223.7	223.7 Clear
WPXC-T 71236	BRUNSWICK GA	CP C	BMPCD 20010629ABIII	24( )	650.000 403	D 40210	30-49-17 081-44-13	81.2	259.5 35.76	223.7	223.7 Clear
WGXA 58262	MACON GA	LIC C	BLCT 19820430KK	24(+) II	1290.000 244	N	32-44-58 083-33-35	17.7	262.9 18.34	244.6	244.6 Clear
WTLX-T 41065	TALLAHASSEE FL	LIC C	BLCT 19860822KIIII	27(+)	1170.000 262		30-34-27 084-12-09	66.7	22.4 1.65	24.1	96.6 Close
WPGX 2942	PANAMA CITY FL	CP C	BPCT 20040217ADIII	28(-)	1260.000 228	D 65515	30-23-42 085-32-02	264.4	107.8 11.20	24.1	96.6 Close
WPGX 2942	PANAMA CITY FL	LIC C	BLCT 19880628KFIII	28(-)	1260.000 228	D 18025	30-23-42 085-32-02	264.4	107.8 11.20	24.1	96.6 Close
WFXL 70815	ALBANY GA	LIC C	BLCT 19820212KHIII	31(-)	1580.000 302		31-19-52 083-51-43	29.5	106.9 10.28	24.1	96.6 Close



### ELEVATION PATTERN

Type:	ATW30H3H	
Directivity:	Numeric	dBd
Main Lobe:	30.00	14.77
Horizontal:	16.52	12.18
Beam Tilt:	0.75	
Polarization:	Horizontal	
Channel:	24	
Location:		
Note:		



**ANDREW®****ELEVATION TABULATED DATA**Type: ATW30H3HPolarization: Horizontal

Angle	Field	dB									
-5.00	0.084	-21.51	6.50	0.140	-17.08	42.00	0.026	-31.70	88.00	0.001	-60.00
-4.75	0.059	-24.66	6.75	0.146	-16.74	43.00	0.023	-32.77	89.00	0.001	-60.00
-4.50	0.052	-25.68	7.00	0.137	-17.27	44.00	0.018	-34.89	90.00	0.000	0.00
-4.25	0.082	-21.67	7.25	0.118	-18.60	45.00	0.028	-31.06			
-4.00	0.119	-18.49	7.50	0.096	-20.35	46.00	0.013	-37.72			
-3.75	0.142	-16.98	7.75	0.086	-21.31	47.00	0.026	-31.70			
-3.50	0.143	-16.89	8.00	0.092	-20.72	48.00	0.024	-32.40			
-3.25	0.120	-18.45	8.25	0.106	-19.53	49.00	0.015	-36.48			
-3.00	0.081	-21.83	8.50	0.113	-18.94	50.00	0.029	-30.75			
-2.75	0.069	-23.29	8.75	0.110	-19.17	51.00	0.019	-34.42			
-2.50	0.116	-18.71	9.00	0.097	-20.26	52.00	0.018	-34.89			
-2.25	0.180	-14.89	9.25	0.080	-21.94	53.00	0.029	-30.75			
-2.00	0.229	-12.80	9.50	0.069	-23.22	54.00	0.016	-35.92			
-1.75	0.245	-12.23	9.75	0.073	-22.73	55.00	0.018	-34.89			
-1.50	0.221	-13.11	10.00	0.084	-21.51	56.00	0.029	-30.75			
-1.25	0.161	-15.84	11.00	0.069	-23.22	57.00	0.018	-34.89			
-1.00	0.120	-18.42	12.00	0.076	-22.38	58.00	0.013	-37.72			
-0.75	0.218	-13.25	13.00	0.050	-26.02	59.00	0.028	-31.06			
-0.50	0.385	-8.29	14.00	0.067	-23.48	60.00	0.024	-32.40			
-0.25	0.570	-4.89	15.00	0.039	-28.18	61.00	0.008	-41.94			
0.00	0.742	-2.59	16.00	0.057	-24.88	62.00	0.021	-33.56			
0.25	0.880	-1.12	17.00	0.036	-28.87	63.00	0.030	-30.46			
0.50	0.970	-0.26	18.00	0.048	-26.38	64.00	0.021	-33.56			
0.75	1.000	0.00	19.00	0.035	-29.12	65.00	0.005	-46.02			
1.00	0.972	-0.25	20.00	0.040	-27.96	66.00	0.021	-33.56			
1.25	0.891	-1.01	21.00	0.035	-29.12	67.00	0.030	-30.46			
1.50	0.772	-2.25	22.00	0.033	-29.63	68.00	0.026	-31.70			
1.75	0.638	-3.91	23.00	0.035	-29.12	69.00	0.011	-39.17			
2.00	0.514	-5.78	24.00	0.029	-30.75	70.00	0.009	-40.92			
2.25	0.429	-7.36	25.00	0.034	-29.37	71.00	0.025	-32.04			
2.50	0.389	-8.20	26.00	0.026	-31.70	72.00	0.032	-29.90			
2.75	0.379	-8.43	27.00	0.033	-29.63	73.00	0.030	-30.46			
3.00	0.369	-8.66	28.00	0.024	-32.40	74.00	0.021	-33.56			
3.25	0.341	-9.36	29.00	0.031	-30.17	75.00	0.007	-43.10			
3.50	0.293	-10.66	30.00	0.023	-32.77	76.00	0.008	-41.94			
3.75	0.237	-12.51	31.00	0.030	-30.46	77.00	0.020	-33.98			
4.00	0.192	-14.33	32.00	0.023	-32.77	78.00	0.029	-30.75			
4.25	0.179	-14.97	33.00	0.027	-31.37	79.00	0.032	-29.90			
4.50	0.189	-14.47	34.00	0.024	-32.40	80.00	0.032	-29.90			
4.75	0.203	-13.85	35.00	0.023	-32.77	81.00	0.028	-31.06			
5.00	0.203	-13.85	36.00	0.026	-31.70	82.00	0.023	-32.77			
5.25	0.185	-14.66	37.00	0.018	-34.89	83.00	0.018	-34.89			
5.50	0.155	-16.19	38.00	0.028	-31.06	84.00	0.012	-38.42			
5.75	0.126	-18.03	39.00	0.015	-36.48	85.00	0.008	-41.94			
6.00	0.115	-18.79	40.00	0.029	-30.75	86.00	0.005	-46.02			
6.25	0.125	-18.06	41.00	0.016	-35.92	87.00	0.002	-53.98			



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