POSITIVE HOPE INC
KVIB-LP 101.1 FM SAN DIEGO, CA
FAC ID NO. 197704

MINOR CHANGE OF LICENSED FACILITY

Channel	266
New Location:	32° 45' 42.8" N 117° 08' 48.9" W-- NAD 83
Structure Height	10 m
Tower Height	Building 4 m + 6 m pole
Antenna AGL	8.5 m
Ground	109.6 m
Antenna COR	118.1 m
HAAT	44 m (see below*)
Power	47 w (see below**)

< Automatic Min/Max ERP calculation on LMS form is less accurate >

*FCC HAAT Calculation:

<div style="background:green-box">

Antenna Height Above Average Terrain Calculations -- Results

Input Data

Latitude   **32° 45' 42.8"** North
Longitude   **117° 8' 48.9"** West   (NAD 83)

Height of antenna radiation center above mean sea level: **118.1** meters AMSL

Number of Evenly Spaced Radials = **8**   0° is referenced to True North

Results

Calculated HAAT = **44 meters**

Antenna Height Above Average Terrain calculated
using 1 km GLOBE terrain data

Individual "Radial HAAT" Values, in meters

0°	-3.9 m
45°	-26.9 m
90°	-35.4 m
135°	47.2 m
180°	105.2 m
225°	108.5 m
270°	114.9 m
315°	45.7 m

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**Power Calculation

Select Contour Type:
```
F(50,50) Service Contour -- FM and NTSC (analog) TV
F(50,10) Interfering Contour
F(50,90) Digital TV Service Contour
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Select Channel Range:
(not TV Virtual Channel)
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FM Radio or TV Transmit Channels 2-6
TV Transmit Channels 7-13
TV Transmit Channels 14-69
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Find This:
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Field Strength, given a Distance (in km)
Distance, Given a Field Strength (in dBu)
FM ERP, given Distance and Field Strength [F(50,50) Service Contour]
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1		
ERP (kW)	5.64	Distance (km)
44	60	Field (dBu)
HAAT (meters)		

[Find Result]   [Clear Form]

Results:

Calculated ERP (rounded per Section 73.212) = **0.047 kW**
(FM 60 dBu Service Contour only)

Note: Facility is limited to 50 w towards Mexico (Annex 1, Sec 2.1.2 US-Mex FM Broadcast Service agreement) but LPFM is limited to 5.64 km broadcast radius.

SPACING

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                        Positive Hope, Inc.
 REFERENCE                                        DISPLAY DATES
 32 45 42.80 N.              CLASS = L1 Int =      DATA   05-30-23
 117 08 48.90 W.      Current  Spacings to 2nd Adj.   SEARCH 08-25-23
 ------------------------ Channel 266 - 101.1 MHz ---------------------------


 Call          Channel Location          Azi    Dist   FCC    Margin
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 *KGB-FM   LIC   268B   San Diego     CA   121.4  6.79   66.5   -59.7
 *KFBG     CP    264B   San Diego     CA   311.3  12.82  66.5   -53.7
 *KFBG     LIC   264B   San Diego     CA   311.4  12.83  66.5   -53.7
  KVIB-LP  LIC   266L1  San Diego     CA   184.0  3.86   23.5   -19.6
**K266CO   CP -D 266D   El Cajon      CA   110.3  20.97  31.5   -10.5
 XHITZ-FM+OPE    212C   Tijuana       BN   160.2  30.03  27.0   3.0
 XHITZ-FM+OPE    212C   Tijuana       BN   161.7  30.19  27.0   3.2
 XHATFM    USE   266B   Ensenada      BN   154.5  111.86 91.0   20.9
 XHATFM    ALO   266B   Ensenada      BN   154.5  111.86 91.0   20.9
 XHATFM    LIC -D 266B   Ensenada      BN   154.5  111.86 91.0   20.9
 KATY-FM   LIC   267A   Idyllwild     CA   18.9   113.06 55.5   57.6
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KRTH   LIC   266B   Los Angeles   CA      332.6   183.66   111.5  72.2
KAEH   LIC   265A   Beaumont      CA      6.2     127.88    55.5  72.4

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       Reference station has protected zone issue: Mexico
       All separation margins include rounding
       * See Second Adjacent Waiver Request
       ** Grandfathered short-spaced at 20.24 km per current licensed location APN
       0000116543, Proposed station distance of 20.97 km is greater, complying to
       short-spacing.
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Minor Change Move

Facility proposes a 3.86 km move from the licensed facility, which is considered a minor change under Section 73.870(a).

60 dBu FCC Contour

MEXICAN BORDER COMPLIANCE

Both 60 dBu and 34 dBu contours meet compliance of 8.7 km and 32 km limitations toward Mexico via use of a directional antenna.

F(50,50) 60 dBu

F(50,10) 34 dBu

8.7 km

32 km
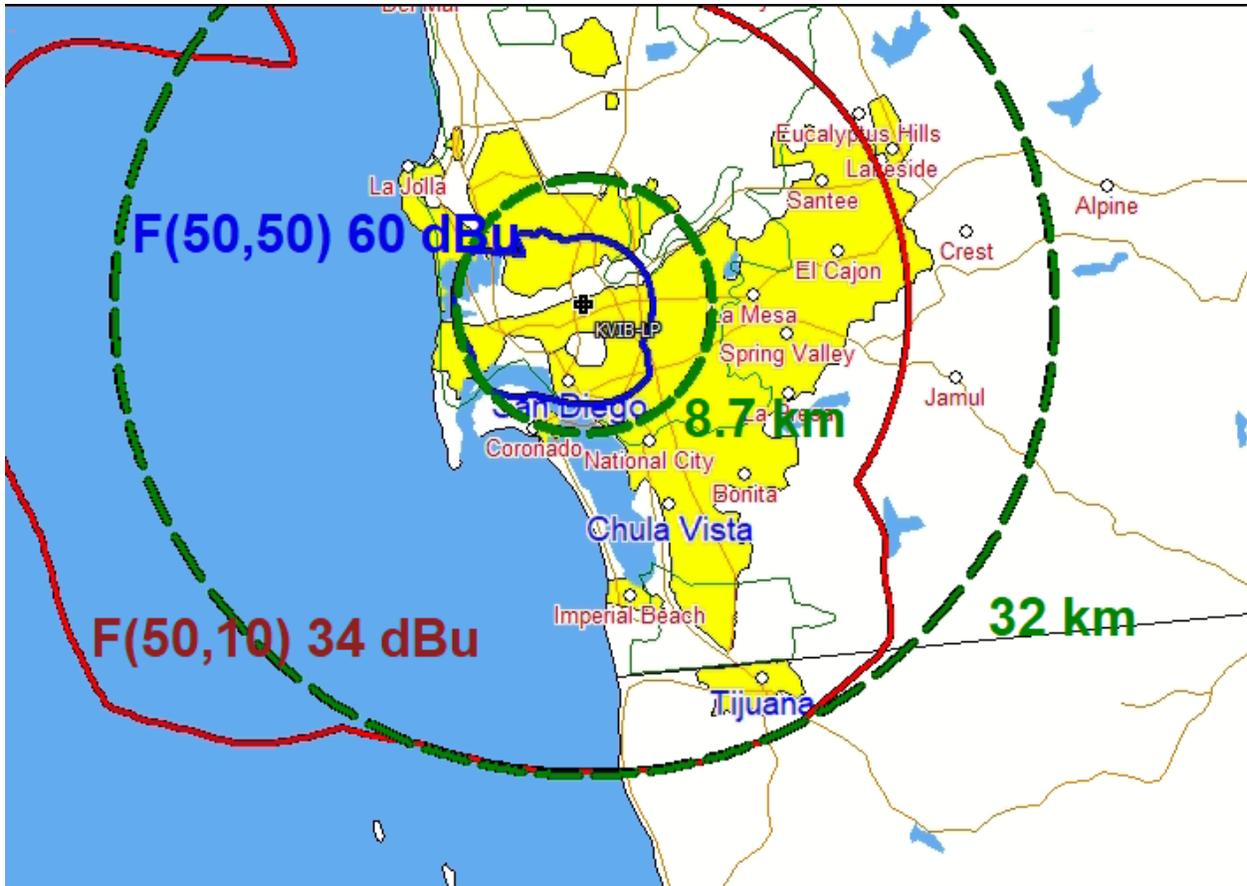
Applicant proposes using directional antennas solely for the purpose of meeting the international border zone distance requirements of §73.807(g). Hence, the directional pattern is not entered into Schedule 2100 Form 318 per the form instructions Page 14. However, pattern is included below -- a modified omnidirectional antenna with customized pattern work for a null towards the south.

Graph is Relative Field

Azi	Field	dBk	kw
000	1.000	-13.279	0.047
010	1.000	-13.279	0.047
020	1.000	-13.279	0.047
030	1.000	-13.279	0.047
040	1.000	-13.279	0.047
050	1.000	-13.279	0.047
060	1.000	-13.279	0.047
070	1.000	-13.279	0.047
080	1.000	-13.279	0.047
090	1.000	-13.279	0.047
100	1.000	-13.279	0.047
110	1.000	-13.279	0.047
120	1.000	-13.279	0.047
130	1.000	-13.279	0.047
140	1.000	-13.279	0.047
150	0.790	-15.326	0.029
160	0.650	-17.021	0.020
170	0.610	-17.572	0.017
180	0.580	-18.010	0.016
190	0.570	-18.162	0.015
200	0.560	-18.315	0.015
210	0.590	-17.862	0.016
220	0.800	-15.217	0.030
230	1.000	-13.279	0.047
240	1.000	-13.279	0.047
250	1.000	-13.279	0.047
260	1.000	-13.279	0.047
270	1.000	-13.279	0.047
280	1.000	-13.279	0.047
290	1.000	-13.279	0.047
300	1.000	-13.279	0.047
310	1.000	-13.279	0.047
320	1.000	-13.279	0.047
330	1.000	-13.279	0.047
340	1.000	-13.279	0.047
350	1.000	-13.279	0.047
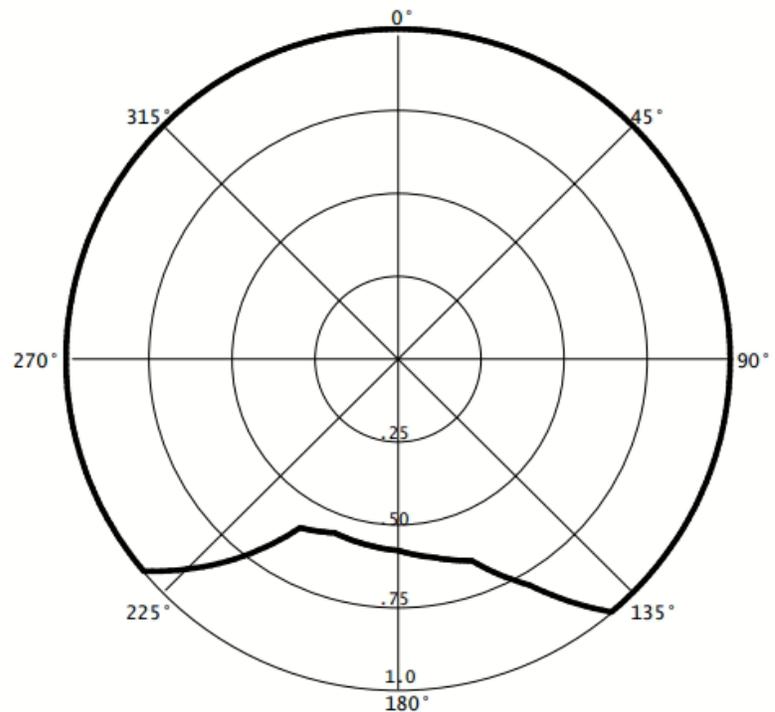
TOWAIR (PASS)

DETERMINATION Results

Structure does not require registration. The structure meets the 6.10-meter (20-foot) Rule criteria.

Your Specifications

NAD83 Coordinates

Latitude	32-45-42.8 north
Longitude	117-08-48.9 west

Measurements (Meters)

Overall Structure Height (AGL)	10
Support Structure Height (AGL)	4
Site Elevation (AMSL)	109.6

Structure Type

BPIPE - Building with Pipe	

Environmental Compliance

A ½ wave two-bay flying V antenna was used to gauge the maximum RF for the proposal in OET program FM Model demonstrating a peak exposure of 14.4 µW/cm^2 at 8.8 m at 6.8 meters below the COR of the antenna (at a level of a person 1.7 m). This is 7.2% of the FCC Maximum Permissible Exposure (MPR) for 200 µW/cm^2, meeting the limits for uncontrolled exposure. RF warning signs will be posts. If roof or antenna work needs to occur, station will be turned off.

14.356237415994 µW/cm^2

8.8m

View Tabular Results +
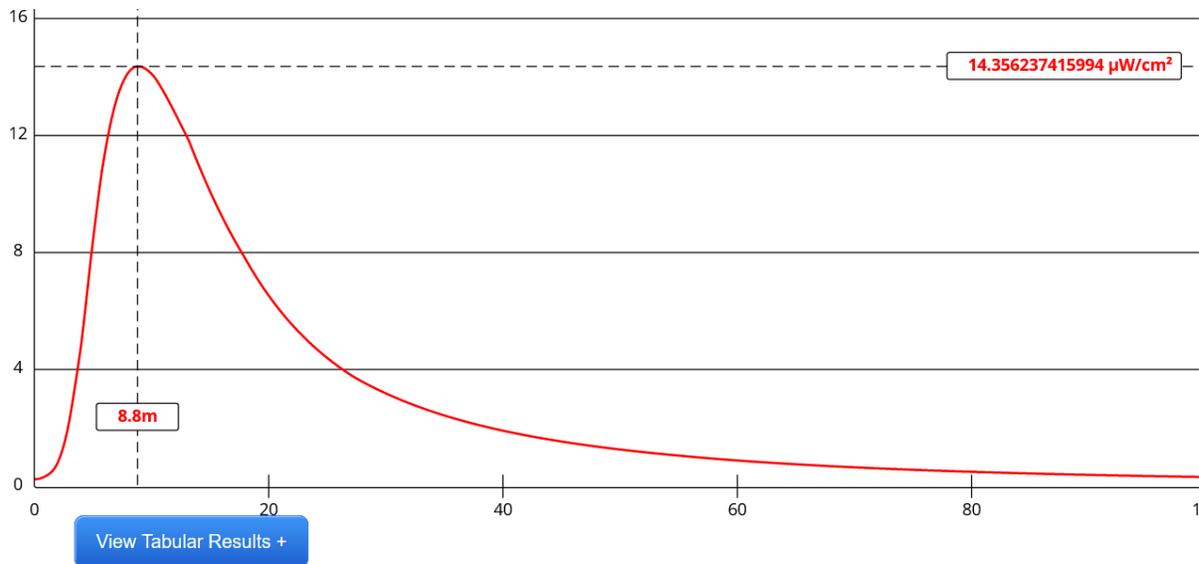
Channel Selection	Channel 266 (101.1 MHz) ⌄		
Antenna Type **+**	EPA Type 2: Opposed V Dipole ⌄		
Height (m)	6.8	Distance (m)	100
ERP-H (W)	47	ERP-V (W)	47
Num of Elements	2	λ	.5
Num of Points	500	Apply	

Second Adjacent Waiver Request

License respectfully requests a "second adjacent channel waiver" with regards to Section 47 C.F.R. Section 73.807 of the FCC rules based upon the "Living Way" precedence (Living Way Ministries, Inc., Memorandum Opinion and Order, 17 FCC Red 17054, 17056, ¶ 5 (2002), recon. denied 23 FCC Red 15070 (2008)). This will be accomplished by used Free Space methodology of calculation.

Using U/D methodology, at the proposed KVIB-LP transmitter location KGB-FM has a signal strength of 99.5 dBu and KFMB-FM / KFMB-FM-CP has a signal strength of 87.3 dBu.

Interference will occur when the smaller of two station's (KFMB-FM) signal strength's interfering signal exceeds the desired signal by 40 dbu. So the area of predicted interference would then be bounded by the 127.3 dBu contour.

The distance to this contour, using free space method:
$D = (7.01*P^{1/2})/E$,
where P is power (watts), E is field strength (v/m), and D is distance to contour (meters):
P = 47 w, E = 127.3 dBu D = 20.8 meters

However, the field strength of the proposed LPFM's antenna system falls quickly at depression angles below the horizon. Using elevation pattern data provided by Bext for a "flying v" type antenna setup (2 Bay Bext Telecom TFC2K ½ wave spaced) the distance to the 127.3 dBu contour at various depression angles is tabulated below. The data shows that the lowest point at which the signal strength rises to 127.3 dBu is 4.2 meters below the center of radiation of the antenna system, or 4.3 meters above the ground. Therefore, this is sufficient clearance of the one-story structures, and the interference area encompasses zero population. The table below show that the lowest elevation point of the 127.3 F(50,10) interfering contour is 4.3 meters above ground.

Due to zero population within this radiation radius, this meets the "Living Way" Criteria to qualify for a Waiver of 47 C.F.R. Section 73.807.

Thus, the applicant requests a second adjacent waiver based upon evidence no interference is proposed.

MAX ERP	DEPRESSION ANGLE BELOW HORIZON	RELATIVE FIELD	dB FROM RELATIVE	ERP	ANGULAR DISTANCE TO 127.3 dBu CONTOUR	VERTICAL DISTANCE (below antenna)	HORIZONTAL DISTANCE TO 127.3 dBu CONTOUR	CLEARANCE OF CONTOUR ABOVE GROUND
47	0	1.001	0.009	47.09	20.7	0	20.7	8.5
47	0.4	1	0.000	47.00	20.7	0.1	20.6	8.4
47	0.8	0.999	-0.009	46.91	20.7	0.2	20.6	8.3
47	1.1	0.998	-0.017	46.81	20.6	0.3	20.5	8.2
47	1.5	0.997	-0.026	46.72	20.6	0.5	20.5	8
47	1.9	0.995	-0.044	46.53	20.6	0.6	20.5	7.9
47	2.3	0.993	-0.061	46.34	20.5	0.8	20.4	7.7
47	2.6	0.991	-0.079	46.16	20.5	0.9	20.4	7.6
47	3	0.988	-0.105	45.88	20.4	1	20.3	7.5
47	3.4	0.986	-0.122	45.69	20.4	1.2	20.3	7.3

47	3.8	0.983	-0.149	45.42	20.3	1.3	20.2	7.2
47	4.1	0.979	-0.184	45.05	20.3	1.4	20.2	7.1
47	4.5	0.976	-0.211	44.77	20.2	1.5	20.1	7
47	4.9	0.972	-0.247	44.40	20.1	1.7	20	6.8
47	5.3	0.967	-0.291	43.95	20	1.8	19.9	6.7
47	5.6	0.962	-0.336	43.50	19.9	1.9	19.8	6.6
47	6	0.957	-0.382	43.04	19.8	2	19.6	6.5
47	6.4	0.951	-0.436	42.51	19.7	2.1	19.5	6.4
47	6.8	0.945	-0.491	41.97	19.5	2.3	19.3	6.2
47	7.1	0.939	-0.547	41.44	19.4	2.3	19.2	6.2
47	7.5	0.933	-0.602	40.91	19.3	2.5	19.1	6
47	7.9	0.926	-0.668	40.30	19.2	2.6	19	5.9
47	8.3	0.919	-0.734	39.69	19	2.7	18.8	5.8
47	8.6	0.912	-0.800	39.09	18.9	2.8	18.6	5.7
47	9	0.905	-0.867	38.49	18.7	2.9	18.4	5.6
47	9.4	0.897	-0.944	37.82	18.6	3	18.3	5.5
47	9.8	0.889	-1.022	37.15	18.4	3.1	18.1	5.4
47	10.2	0.881	-1.100	36.48	18.2	3.2	17.9	5.3
47	10.5	0.872	-1.190	35.74	18	3.2	17.6	5.3
47	10.9	0.863	-1.280	35.00	17.8	3.3	17.4	5.2
47	11.3	0.854	-1.371	34.28	17.7	3.4	17.3	5.1
47	11.7	0.845	-1.463	33.56	17.5	3.5	17.1	5
47	12	0.835	-1.566	32.77	17.3	3.5	16.9	5
47	12.4	0.826	-1.660	32.07	17.1	3.6	16.7	4.9
47	12.8	0.816	-1.766	31.30	16.9	3.7	16.4	4.8
47	13.2	0.806	-1.873	30.53	16.7	3.8	16.2	4.7
47	13.5	0.796	-1.982	29.78	16.5	3.8	16	4.7
47	13.9	0.785	-2.103	28.96	16.2	3.8	15.7	4.7
47	14.3	0.775	-2.214	28.23	16	3.9	15.5	4.6
47	14.7	0.764	-2.338	27.43	15.8	4	15.2	4.5
47	15	0.754	-2.453	26.72	15.6	4	15	4.5
47	15.4	0.742	-2.592	25.88	15.3	4	14.7	4.5
47	15.8	0.731	-2.722	25.11	15.1	4.1	14.5	4.4
47	16.2	0.719	-2.865	24.30	14.9	4.1	14.3	4.4
47	16.5	0.707	-3.012	23.49	14.6	4.1	13.9	4.4
47	16.9	0.696	-3.148	22.77	14.4	4.1	13.7	4.4
47	17.3	0.684	-3.299	21.99	14.1	4.1	13.4	4.4
47	17.7	0.672	-3.453	21.22	13.9	4.2	13.2	4.3
47	18	0.66	-3.609	20.47	13.6	4.2	12.9	4.3
47	18.4	0.648	-3.768	19.74	13.4	4.2	12.7	4.3
47	18.8	0.636	-3.931	19.01	13.1	4.2	12.4	4.3
47	19.2	0.624	-4.096	18.30	12.9	4.2	12.1	4.3
47	19.6	0.612	-4.265	17.60	12.6	4.2	11.8	4.3
47	19.9	0.599	-4.451	16.86	12.4	4.2	11.6	4.3
47	20.3	0.587	-4.627	16.19	12.1	4.1	11.3	4.4

47	20.7	0.574	-4.822	15.49	11.9	4.2	11.1	4.3
47	21.1	0.562	-5.005	14.84	11.6	4.1	10.8	4.4
47	21.4	0.549	-5.209	14.17	11.3	4.1	10.5	4.4
47	21.8	0.536	-5.417	13.50	11.1	4.1	10.3	4.4
47	22.2	0.524	-5.613	12.91	10.8	4	10	4.5
47	22.6	0.511	-5.832	12.27	10.5	4	9.6	4.5
47	22.9	0.499	-6.038	11.70	10.3	4	9.4	4.5
47	23.3	0.486	-6.267	11.10	10	3.9	9.1	4.6
47	23.7	0.474	-6.484	10.56	9.8	3.9	8.9	4.6
47	24.1	0.461	-6.726	9.99	9.5	3.8	8.6	4.7
47	24.4	0.449	-6.955	9.48	9.3	3.8	8.4	4.7
47	24.8	0.436	-7.210	8.93	9	3.7	8.1	4.8
47	25.2	0.424	-7.453	8.45	8.7	3.7	7.8	4.8
47	25.6	0.412	-7.702	7.98	8.5	3.6	7.6	4.9
47	25.9	0.399	-7.981	7.48	8.2	3.5	7.3	5
47	26.3	0.387	-8.246	7.04	8	3.5	7.1	5
47	26.7	0.375	-8.519	6.61	7.7	3.4	6.8	5.1
47	27.1	0.363	-8.802	6.19	7.5	3.4	6.6	5.1
47	27.4	0.351	-9.094	5.79	7.2	3.3	6.3	5.2
47	27.8	0.339	-9.396	5.40	7	3.2	6.1	5.3
47	28.2	0.327	-9.709	5.03	6.7	3.1	5.9	5.4
47	28.6	0.316	-10.006	4.69	6.5	3.1	5.7	5.4
47	29	0.304	-10.343	4.34	6.3	3	5.5	5.5
47	29.3	0.293	-10.663	4.03	6	2.9	5.2	5.6
47	29.7	0.282	-10.995	3.74	5.8	2.8	5	5.7
47	30.1	0.271	-11.341	3.45	5.6	2.8	4.8	5.7
47	30.5	0.259	-11.734	3.15	5.3	2.6	4.5	5.9
47	30.8	0.248	-12.111	2.89	5.1	2.6	4.3	5.9
47	31.2	0.237	-12.505	2.64	4.9	2.5	4.1	6
47	31.6	0.227	-12.879	2.42	4.7	2.4	4	6.1
47	32	0.216	-13.311	2.19	4.4	2.3	3.7	6.2
47	32.3	0.206	-13.723	1.99	4.2	2.2	3.5	6.3
47	32.7	0.195	-14.199	1.79	4	2.1	3.3	6.4
47	33.1	0.185	-14.657	1.61	3.8	2	3.1	6.5
47	33.5	0.175	-15.139	1.44	3.6	1.9	3	6.6
47	33.8	0.166	-15.598	1.30	3.4	1.8	2.8	6.7
47	34.2	0.156	-16.138	1.14	3.2	1.7	2.6	6.8
47	34.6	0.147	-16.654	1.02	3	1.7	2.4	6.8
47	35	0.137	-17.266	0.88	2.8	1.6	2.2	6.9
47	35.3	0.128	-17.856	0.77	2.6	1.5	2.1	7
47	35.7	0.119	-18.489	0.67	2.4	1.3	1.9	7.2
47	36.1	0.111	-19.094	0.58	2.3	1.3	1.8	7.2
47	36.5	0.102	-19.828	0.49	2.1	1.2	1.6	7.3
47	36.8	0.094	-20.537	0.42	1.9	1.1	1.5	7.4
47	37.2	0.085	-21.412	0.34	1.7	1	1.3	7.5

47	37.6	0.077	-22.270	0.28	1.5	0.9	1.1	7.6
47	38	0.07	-23.098	0.23	1.4	0.8	1.1	7.7
47	38.4	0.062	-24.152	0.18	1.2	0.7	0.9	7.8
47	38.7	0.055	-25.193	0.14	1.1	0.6	0.8	7.9
47	39.1	0.047	-26.558	0.10	0.9	0.5	0.6	8
47	39.5	0.04	-27.959	0.08	0.8	0.5	0.6	8
47	39.9	0.033	-29.630	0.05	0.6	0.3	0.4	8.2
47	40.2	0.026	-31.701	0.03	0.5	0.3	0.3	8.2
47	40.6	0.02	-33.979	0.02	0.4	0.2	0.3	8.3
47	41	0.013	-37.721	0.01	0.2	0.1	0.1	8.4
47	41.4	0.007	-43.098	0.00	0.1	0	0	8.5
47	41.7	0.001	-60.000	0.00	0	0	0	8.5
47	42.1	0.005	-46.021	0.00	0.1	0	0	8.5
47	42.5	0.01	-40.000	0.00	0.2	0.1	0.1	8.4
47	42.9	0.016	-35.918	0.01	0.3	0.2	0.2	8.3
47	43.2	0.021	-33.556	0.02	0.4	0.2	0.2	8.3
47	43.6	0.026	-31.701	0.03	0.5	0.3	0.3	8.2
47	44	0.031	-30.173	0.05	0.6	0.4	0.4	8.1
47	44.4	0.036	-28.874	0.06	0.7	0.4	0.5	8.1
47	44.7	0.04	-27.959	0.08	0.8	0.5	0.5	8
47	45.1	0.045	-26.936	0.10	0.9	0.6	0.6	7.9
47	45.5	0.049	-26.196	0.11	1	0.7	0.7	7.8
47	45.9	0.053	-25.514	0.13	1	0.7	0.6	7.8
47	46.2	0.057	-24.883	0.15	1.1	0.7	0.7	7.8
47	46.6	0.061	-24.293	0.17	1.2	0.8	0.8	7.7
47	47	0.064	-23.876	0.19	1.3	0.9	0.8	7.6
47	47.4	0.068	-23.350	0.22	1.4	1	0.9	7.5
47	47.8	0.071	-22.975	0.24	1.4	1	0.9	7.5
47	48.1	0.074	-22.615	0.26	1.5	1.1	1	7.4
47	48.5	0.077	-22.270	0.28	1.5	1.1	0.9	7.4
47	48.9	0.079	-22.047	0.29	1.6	1.2	1	7.3
47	49.3	0.082	-21.724	0.32	1.7	1.2	1.1	7.3
47	49.6	0.085	-21.412	0.34	1.7	1.2	1.1	7.3
47	50	0.087	-21.210	0.36	1.8	1.3	1.1	7.2
47	50.4	0.089	-21.012	0.37	1.8	1.3	1.1	7.2
47	50.8	0.091	-20.819	0.39	1.8	1.3	1.1	7.2
47	51.1	0.093	-20.630	0.41	1.9	1.4	1.1	7.1
47	51.5	0.095	-20.446	0.42	1.9	1.4	1.1	7.1
47	51.9	0.096	-20.355	0.43	1.9	1.4	1.1	7.1
47	52.3	0.098	-20.175	0.45	2	1.5	1.2	7
47	52.6	0.099	-20.087	0.46	2	1.5	1.2	7
47	53	0.1	-20.000	0.47	2	1.5	1.2	7
47	53.4	0.101	-19.914	0.48	2	1.6	1.1	6.9
47	53.8	0.102	-19.828	0.49	2.1	1.6	1.2	6.9
47	54.1	0.103	-19.743	0.50	2.1	1.7	1.2	6.8

47	54.5	0.104	-19.659	0.51	2.1	1.7	1.2	6.8
47	54.9	0.105	-19.576	0.52	2.1	1.7	1.2	6.8
47	55.3	0.105	-19.576	0.52	2.1	1.7	1.1	6.8
47	55.6	0.106	-19.494	0.53	2.1	1.7	1.1	6.8
47	56	0.106	-19.494	0.53	2.1	1.7	1.1	6.8
47	56.4	0.106	-19.494	0.53	2.1	1.7	1.1	6.8
47	56.8	0.107	-19.412	0.54	2.2	1.8	1.2	6.7
47	57.2	0.107	-19.412	0.54	2.2	1.8	1.1	6.7
47	57.5	0.107	-19.412	0.54	2.2	1.8	1.1	6.7
47	57.9	0.106	-19.494	0.53	2.1	1.7	1.1	6.8
47	58.3	0.106	-19.494	0.53	2.1	1.7	1.1	6.8
47	58.7	0.106	-19.494	0.53	2.1	1.7	1	6.8
47	59	0.106	-19.494	0.53	2.1	1.7	1	6.8
47	59.4	0.105	-19.576	0.52	2.1	1.8	1	6.7
47	59.8	0.105	-19.576	0.52	2.1	1.8	1	6.7
47	60.2	0.104	-19.659	0.51	2.1	1.8	1	6.7
47	60.5	0.103	-19.743	0.50	2.1	1.8	1	6.7
47	60.9	0.103	-19.743	0.50	2.1	1.8	1	6.7
47	61.3	0.102	-19.828	0.49	2.1	1.8	1	6.7
47	61.7	0.101	-19.914	0.48	2	1.7	0.9	6.8
47	62	0.1	-20.000	0.47	2	1.7	0.9	6.8
47	62.4	0.099	-20.087	0.46	2	1.7	0.9	6.8
47	62.8	0.098	-20.175	0.45	2	1.7	0.9	6.8
47	63.2	0.097	-20.265	0.44	2	1.7	0.9	6.8
47	63.5	0.096	-20.355	0.43	1.9	1.6	0.8	6.9
47	63.9	0.095	-20.446	0.42	1.9	1.7	0.8	6.8
47	64.3	0.094	-20.537	0.42	1.9	1.7	0.8	6.8
47	64.7	0.092	-20.724	0.40	1.9	1.7	0.8	6.8
47	65	0.091	-20.819	0.39	1.8	1.6	0.7	6.9
47	65.4	0.09	-20.915	0.38	1.8	1.6	0.7	6.9
47	65.8	0.088	-21.110	0.36	1.8	1.6	0.7	6.9
47	66.2	0.087	-21.210	0.36	1.8	1.6	0.7	6.9
47	66.6	0.086	-21.310	0.35	1.7	1.5	0.6	7
47	66.9	0.084	-21.514	0.33	1.7	1.5	0.6	7
47	67.3	0.083	-21.618	0.32	1.7	1.5	0.6	7
47	67.7	0.081	-21.830	0.31	1.6	1.4	0.6	7.1
47	68.1	0.08	-21.938	0.30	1.6	1.4	0.5	7.1
47	68.4	0.078	-22.158	0.29	1.6	1.4	0.5	7.1
47	68.8	0.077	-22.270	0.28	1.5	1.3	0.5	7.2
47	69.2	0.075	-22.499	0.26	1.5	1.4	0.5	7.1
47	69.6	0.074	-22.615	0.26	1.5	1.4	0.5	7.1
47	69.9	0.072	-22.853	0.24	1.4	1.3	0.4	7.2
47	70.3	0.07	-23.098	0.23	1.4	1.3	0.4	7.2
47	70.7	0.069	-23.223	0.22	1.4	1.3	0.4	7.2
47	71.1	0.067	-23.479	0.21	1.3	1.2	0.4	7.3

47	71.4	0.066	-23.609	0.20	1.3	1.2	0.4	7.3
47	71.8	0.064	-23.876	0.19	1.3	1.2	0.4	7.3
47	72.2	0.062	-24.152	0.18	1.2	1.1	0.3	7.4
47	72.6	0.061	-24.293	0.17	1.2	1.1	0.3	7.4
47	72.9	0.059	-24.583	0.16	1.2	1.1	0.3	7.4
47	73.3	0.057	-24.883	0.15	1.1	1	0.3	7.5
47	73.7	0.056	-25.036	0.15	1.1	1	0.3	7.5
47	74.1	0.054	-25.352	0.14	1.1	1	0.3	7.5
47	74.4	0.052	-25.680	0.13	1	0.9	0.2	7.6
47	74.8	0.051	-25.849	0.12	1	0.9	0.2	7.6
47	75.2	0.049	-26.196	0.11	1	0.9	0.2	7.6
47	75.6	0.047	-26.558	0.10	0.9	0.8	0.2	7.7
47	76	0.046	-26.745	0.10	0.9	0.8	0.2	7.7
47	76.3	0.044	-27.131	0.09	0.9	0.8	0.2	7.7
47	76.7	0.043	-27.331	0.09	0.8	0.7	0.1	7.8
47	77.1	0.041	-27.744	0.08	0.8	0.7	0.1	7.8
47	77.5	0.039	-28.179	0.07	0.8	0.7	0.1	7.8
47	77.8	0.038	-28.404	0.07	0.7	0.6	0.1	7.9
47	78.2	0.036	-28.874	0.06	0.7	0.6	0.1	7.9
47	78.6	0.035	-29.119	0.06	0.7	0.6	0.1	7.9
47	79	0.033	-29.630	0.05	0.6	0.5	0.1	8
47	79.3	0.031	-30.173	0.05	0.6	0.5	0.1	8
47	79.7	0.03	-30.458	0.04	0.6	0.5	0.1	8
47	80.1	0.028	-31.057	0.04	0.5	0.4	0	8.1
47	80.5	0.027	-31.373	0.03	0.5	0.4	0	8.1
47	80.8	0.026	-31.701	0.03	0.5	0.4	0	8.1
47	81.2	0.024	-32.396	0.03	0.4	0.3	0	8.2
47	81.6	0.023	-32.765	0.02	0.4	0.3	0	8.2
47	82	0.022	-33.152	0.02	0.4	0.3	0	8.2
47	82.3	0.02	-33.979	0.02	0.4	0.3	0	8.2
47	82.7	0.019	-34.425	0.02	0.3	0.2	0	8.3
47	83.1	0.018	-34.895	0.02	0.3	0.2	0	8.3
47	83.5	0.016	-35.918	0.01	0.3	0.2	0	8.3
47	83.8	0.015	-36.478	0.01	0.3	0.2	0	8.3
47	84.2	0.014	-37.077	0.01	0.2	0.1	0	8.4
47	84.6	0.012	-38.416	0.01	0.2	0.1	0	8.4
47	85	0.011	-39.172	0.01	0.2	0.1	0	8.4
47	85.4	0.01	-40.000	0.00	0.2	0.1	0	8.4
47	85.7	0.009	-40.915	0.00	0.1	0	0	8.5
47	86.1	0.009	-40.915	0.00	0.1	0	0	8.5
47	86.5	0.008	-41.938	0.00	0.1	0	0	8.5
47	86.9	0.007	-43.098	0.00	0.1	0	0	8.5
47	87.2	0.006	-44.437	0.00	0.1	0	0	8.5
47	87.6	0.005	-46.021	0.00	0.1	0	0	8.5
47	88	0.004	-47.959	0.00	0	0	0	8.5

47	88.4	0.004	-47.959	0.00	0	0	0	8.5
47	88.7	0.003	-50.458	0.00	0	0	0	8.5
47	89.1	0.002	-53.979	0.00	0	0	0	8.5
47	89.5	0.001	-60.000	0.00	0	0	0	8.5
47	89.9	0.0001	-80.000	0.00	0	0	0	8.5
47	90.2	0.001	-60.000	0.00	0	0	0	8.5
47	90.6	0.001	-60.000	0.00	0	0	0	8.5
47	91	0.002	-53.979	0.00	0	0	0	8.5
47	91.4	0.003	-50.458	0.00	0	0	0	8.5
47	91.7	0.004	-47.959	0.00	0	0	0	8.5
47	92.1	0.005	-46.021	0.00	0.1	0	0	8.5
47	92.5	0.006	-44.437	0.00	0.1	0	0	8.5
47	92.9	0.007	-43.098	0.00	0.1	0	0	8.5
47	93.2	0.008	-41.938	0.00	0.1	0	0	8.5
47	93.6	0.008	-41.938	0.00	0.1	0	0	8.5
47	94	0.009	-40.915	0.00	0.1	0	0	8.5
47	94.4	0.01	-40.000	0.00	0.2	0.1	0	8.4
47	94.8	0.011	-39.172	0.01	0.2	0.1	0	8.4
47	95.1	0.012	-38.416	0.01	0.2	0.1	0	8.4
47	95.5	0.013	-37.721	0.01	0.2	0.1	0	8.4
47	95.9	0.015	-36.478	0.01	0.3	0.2	0	8.3
47	96.3	0.016	-35.918	0.01	0.3	0.2	0	8.3
47	96.6	0.017	-35.391	0.01	0.3	0.2	0	8.3
47	97	0.018	-34.895	0.02	0.3	0.2	0	8.3
47	97.4	0.02	-33.979	0.02	0.4	0.3	0	8.2
47	97.8	0.021	-33.556	0.02	0.4	0.3	0	8.2
47	98.1	0.022	-33.152	0.02	0.4	0.3	0	8.2
47	98.5	0.023	-32.765	0.02	0.4	0.3	0	8.2
47	98.9	0.025	-32.041	0.03	0.5	0.4	0	8.1
47	99.3	0.026	-31.701	0.03	0.5	0.4	0	8.1
47	99.6	0.027	-31.373	0.03	0.5	0.4	0	8.1
47	100	0.028	-31.057	0.04	0.5	0.4	0	8.1
47	100.4	0.03	-30.458	0.04	0.6	0.5	-0.1	8
47	100.8	0.031	-30.173	0.05	0.6	0.5	-0.1	8
47	101.1	0.033	-29.630	0.05	0.6	0.5	-0.1	8
47	101.5	0.034	-29.370	0.05	0.7	0.6	-0.1	7.9
47	101.9	0.036	-28.874	0.06	0.7	0.6	-0.1	7.9
47	102.3	0.037	-28.636	0.06	0.7	0.6	-0.1	7.9
47	102.6	0.039	-28.179	0.07	0.8	0.7	-0.1	7.8
47	103	0.04	-27.959	0.08	0.8	0.7	-0.1	7.8
47	103.4	0.041	-27.744	0.08	0.8	0.7	-0.1	7.8
47	103.8	0.043	-27.331	0.09	0.8	0.7	-0.1	7.8
47	104.2	0.044	-27.131	0.09	0.9	0.8	-0.2	7.7
47	104.5	0.046	-26.745	0.10	0.9	0.8	-0.2	7.7
47	104.9	0.047	-26.558	0.10	0.9	0.8	-0.2	7.7

47	105.3	0.048	-26.375	0.11	0.9	0.8	-0.2	7.7
47	105.7	0.05	-26.021	0.12	1	0.9	-0.2	7.6
47	106	0.051	-25.849	0.12	1	0.9	-0.2	7.6
47	106.4	0.053	-25.514	0.13	1	0.9	-0.2	7.6
47	106.8	0.054	-25.352	0.14	1.1	1	-0.3	7.5
47	107.2	0.056	-25.036	0.15	1.1	1	-0.3	7.5
47	107.5	0.057	-24.883	0.15	1.1	1	-0.3	7.5
47	107.9	0.059	-24.583	0.16	1.2	1.1	-0.3	7.4
47	108.3	0.06	-24.437	0.17	1.2	1.1	-0.3	7.4
47	108.7	0.061	-24.293	0.17	1.2	1.1	-0.3	7.4
47	109	0.063	-24.013	0.19	1.3	1.2	-0.4	7.3
47	109.4	0.064	-23.876	0.19	1.3	1.2	-0.4	7.3
47	109.8	0.065	-23.742	0.20	1.3	1.2	-0.4	7.3
47	110.2	0.067	-23.479	0.21	1.3	1.2	-0.4	7.3
47	110.5	0.068	-23.350	0.22	1.4	1.3	-0.4	7.2
47	110.9	0.07	-23.098	0.23	1.4	1.3	-0.4	7.2
47	111.3	0.071	-22.975	0.24	1.4	1.3	-0.5	7.2
47	111.7	0.072	-22.853	0.24	1.4	1.3	-0.5	7.2
47	112	0.073	-22.734	0.25	1.5	1.3	-0.5	7.2
47	112.4	0.075	-22.499	0.26	1.5	1.3	-0.5	7.2
47	112.8	0.076	-22.384	0.27	1.5	1.3	-0.5	7.2
47	113.2	0.077	-22.270	0.28	1.5	1.3	-0.5	7.2
47	113.6	1/9	-22.158	0.29	1.6	1.4	-0.6	7.1
47	113.9	1/9	-21.938	0.30	1.6	1.4	-0.6	7.1
47	114.3	1/9	-21.830	0.31	1.6	1.4	-0.6	7.1
47	114.7	1/9	-21.724	0.32	1.7	1.5	-0.7	7
47	115.1	1/9	-21.618	0.32	1.7	1.5	-0.7	7
47	115.4	1/9	-21.514	0.33	1.7	1.5	-0.7	7
47	115.8	1/9	-21.412	0.34	1.7	1.5	-0.7	7
47	116.2	1/9	-21.310	0.35	1.7	1.5	-0.7	7
47	116.6	1/9	-21.210	0.36	1.8	1.6	-0.8	6.9
47	116.9	1/9	-21.210	0.36	1.8	1.6	-0.8	6.9
47	117.3	1/9	-21.110	0.36	1.8	1.6	-0.8	6.9
47	117.7	1/9	-21.012	0.37	1.8	1.5	-0.8	7
47	118.1	1/9	-20.915	0.38	1.8	1.5	-0.8	7
47	118.4	1/9	-20.915	0.38	1.8	1.5	-0.8	7
47	118.8	1/9	-20.819	0.39	1.8	1.5	-0.8	7
47	119.2	1/9	-20.724	0.40	1.9	1.6	-0.9	6.9
47	119.6	1/9	-20.724	0.40	1.9	1.6	-0.9	6.9
47	119.9	1/9	-20.724	0.40	1.9	1.6	-0.9	6.9
47	120.3	1/9	-20.630	0.41	1.9	1.6	-0.9	6.9
47	120.7	1/9	-20.630	0.41	1.9	1.6	-0.9	6.9
47	121.1	1/9	-20.630	0.41	1.9	1.6	-0.9	6.9
47	121.4	1/9	-20.537	0.42	1.9	1.6	-0.9	6.9
47	121.8	1/9	-20.537	0.42	1.9	1.6	-0.9	6.9

47	122.2	1/9	-20.537	0.42	1.9	1.6	-1	6.9
47	122.6	1/9	-20.537	0.42	1.9	1.6	-1	6.9
47	123	1/9	-20.537	0.42	1.9	1.5	-1	7
47	123.3	1/9	-20.630	0.41	1.9	1.5	-1	7
47	123.7	1/9	-20.630	0.41	1.9	1.5	-1	7
47	124.1	1/9	-20.630	0.41	1.9	1.5	-1	7
47	124.5	1/9	-20.724	0.40	1.9	1.5	-1	7
47	124.8	1/9	-20.724	0.40	1.9	1.5	-1	7
47	125.2	1/9	-20.819	0.39	1.8	1.4	-1	7.1
47	125.6	1/9	-20.819	0.39	1.8	1.4	-1	7.1
47	126	1/9	-20.915	0.38	1.8	1.4	-1	7.1
47	126.3	1/9	-21.012	0.37	1.8	1.4	-1	7.1
47	126.7	1/9	-21.110	0.36	1.8	1.4	-1	7.1
47	127.1	1/9	-21.210	0.36	1.8	1.4	-1	7.1
47	127.5	1/9	-21.310	0.35	1.7	1.3	-1	7.2
47	127.8	1/9	-21.514	0.33	1.7	1.3	-1	7.2
47	128.2	1/9	-21.618	0.32	1.7	1.3	-1	7.2
47	128.6	0.081	-21.830	0.31	1.6	1.2	-0.9	7.3
47	129	0.08	-21.938	0.30	1.6	1.2	-1	7.3
47	129.3	0.078	-22.158	0.29	1.6	1.2	-1	7.3
47	129.7	0.076	-22.384	0.27	1.5	1.1	-0.9	7.4
47	130.1	0.074	-22.615	0.26	1.5	1.1	-0.9	7.4
47	130.5	0.072	-22.853	0.24	1.4	1	-0.9	7.5
47	130.8	0.07	-23.098	0.23	1.4	1	-0.9	7.5
47	131.2	0.068	-23.350	0.22	1.4	1	-0.9	7.5
47	131.6	0.065	-23.742	0.20	1.3	0.9	-0.8	7.6
47	132	0.062	-24.152	0.18	1.2	0.8	-0.8	7.7
47	132.4	0.06	-24.437	0.17	1.2	0.8	-0.8	7.7
47	132.7	0.057	-24.883	0.15	1.1	0.8	-0.7	7.7
47	133.1	0.054	-25.352	0.14	1.1	0.8	-0.7	7.7
47	133.5	0.051	-25.849	0.12	1	0.7	-0.6	7.8
47	133.9	0.048	-26.375	0.11	0.9	0.6	-0.6	7.9
47	134.2	0.044	-27.131	0.09	0.9	0.6	-0.6	7.9
47	134.6	0.041	-27.744	0.08	0.8	0.5	-0.5	8