

ENGINEERING EXHIBIT
APPLICATION FOR MODIFICATION OF
CONSTRUCTION PERMIT
TELEVISION STATION KTVL-DT
MEDFORD, OREGON

July 3, 2002

CHANNEL 35 10.2 KW 1008 M

ENGINEERING EXHIBIT
APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT
TELEVISION STATION KTVL-DT
MEDFORD, OREGON
CHANNEL 35 10.2 KW 1008 M

Table of Contents

Engineering Statement

Figure 1	Tabulation of Average Elevations and Distances to Predicted Coverage Contours
Figure 2	Predicted Coverage Contours
Appendix	Transmitting Antenna Manufacturer's Vertical Plane Pattern Data

ENGINEERING EXHIBIT
APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT
TELEVISION STATION KTVL-DT
MEDFORD, OREGON
CHANNEL 35 10.2 KW 1008 M

Engineering Statement

This Engineering Exhibit was prepared on behalf of digital television broadcast station KTVL-DT, Medford, Oregon, in support of an application for modification of construction permit (See FCC File No. BPCDT-110081006AAJ.). KTVL-DT is paired with analog NTSC TV station KTVL(TV), Channel 10. KTVL-DT was allotted Channel 35, with a non-directional effective radiated power (ERP) of 309.7 kW and antenna height above average terrain (HAAT) of 1009 m, as its transitional DTV allotment channel. The instant application proposes operation of the KTVL-DT facility using an existing antenna structure located at the KTVL-DT allotment reference point. The proposal complies with the DTV application “checklist” filing requirements.*

Proposed Facilities

The proposed transmitting antenna will be side-mounted on an existing antenna structure located on Mt. Ashland, near Ashland, Jackson County, Oregon. The existing antenna structure supports the KTVL(TV) analog antenna. The transmitter site elevation is 2286.0 m AMSL (7500 ft AMSL). The antenna center of radiation will be located at 29 m (95 ft) above ground level (2315 m AMSL). The proposed KTVL-DT

* See FCC *Public Notice*, “Commission Details Application Filing Procedures Digital Television (DTV)”, Released: October 16, 1997; and, FCC *Public Notice*, “Additional Application Processing Guidelines for Digital Television (DTV)”, Released: August 10, 1998.

facility will operate on Channel 35 with a nominal non-directional average ERP of 10.1 dBk (10.2 kW) and antenna radiation center HAAT of 1008 m.[†] The proposed KTVL-DT facility meets the requirements of Section 73.622(f)(8) of the FCC Rules concerning the maximum permissible ERP for DTV stations operating on Channels 14-59.

There are no AM broadcast stations located within 3.2 km of the proposed transmitter site. The following is a list of known authorized full service FM and TV stations within 10 km of the proposed transmitter site:

Station	Channel	Bearing (deg. True)	Distance (km)
KTVL(TV), Medford-OR	10	0.0	0.0
KBDM(FM), Yreka City-CA	20	0.0	0.0
KTMT-FM, Medford-OR	229	0.0	0.0

No adverse electromagnetic impact is expected. However, the applicant recognizes its responsibility to correct objectionable electromagnetic interference problems that result from its proposed operation.

The proposed facility is located well beyond the Canadian and Mexican border areas. The closest FCC Monitoring station is located at Livermore, California at distance of 491.3 km at a bearing of 170.0°True. The closest Radio Astronomy site conducting research on Channel 37 is located at Owens Valley, California, at distance of 659.6 km at a bearing of 143°True.

The proposed facility provides minimum 48 dBu, f(50,90), coverage of Medford in compliance with Section 73.625(a)(1) of the FCC Rules, as adopted by the FCC in MM Docket No. 00-39. Figure 1 herein is a tabulation of the calculated distances

[†] Based on calculations using the U.S.G.S. 3-second linearly-interpolated terrain database.

to the predicted KTVL-DT coverage contours. Figure 2 herein is a map depicting the predicted coverage contours of the proposed facility.

Tower Registration

The KTVL-TV/DT antenna structure has not been registered with the FCC. Pursuant to the FCC's antenna structure registration requirements, the KTVL-TV/DT antenna structure is not required to be registered since it is less than 200-ft above ground and it is more than 20,000 feet from the closest public landing facility. The authorization for KTVL-DT indicates that the overall structure height is 151 feet (46.0 m) and that obstruction marking and lighting are not required.[‡]

Allocation Considerations

Since the proposed KTVL-DT will be co-located with KTVL-TV and operate with lesser ERP and HAAT than the KTVL-DT FCC allotment facility, the allocation criteria for KTVL-DT are met with respect to all other pertinent analog TV, Class A and digital TV allotments and assignments.

Environmental Considerations

With respect to the potential for human exposure to radio frequency (RF) radiation, calculations prepared in accordance with FCC Bulletin OET-65 (Edition 97-01) indicate that the proposal will not result in human exposure to RF radiation at ground level in excess of FCC standards. Power density calculations were conducted at 2-m above ground[§] based on the following conservative assumptions, with the following results:

[‡] For example, see FCC File No. BRCT-801002KF, Television Broadcast Station License.

[§] The radiation center height above ground is 29 m.

Call Sign	Channel	Peak Visual ERP or Average ERP (kW)	Aural ERP (kW)	Relative Field Factor **	FCC Limit ^{††} (mW/cm ²)	Percentage of Limit
KTVL-DT	35	10.2	--	0.20	0.399	4.7%

As indicated above, the exposure to RF radiation at 2-m above ground level will not exceed 4.7% of the FCC limit for general population / uncontrolled exposure. Therefore, the proposal complies with the FCC limits for human exposure to RF radiation and it is categorically excluded from environmental processing. The applicant, in coordination with any other users of the transmission facility, shall reduce power or cease operation as necessary to protect persons having access to the tower or antenna from radio frequency radiation in excess of the FCC guidelines.

Louis Robert du Treil, Jr.

July 3, 2002

** This is a conservative estimate of the relative field factor in the downward direction.

†† for general population/uncontrolled environments

Figure 1

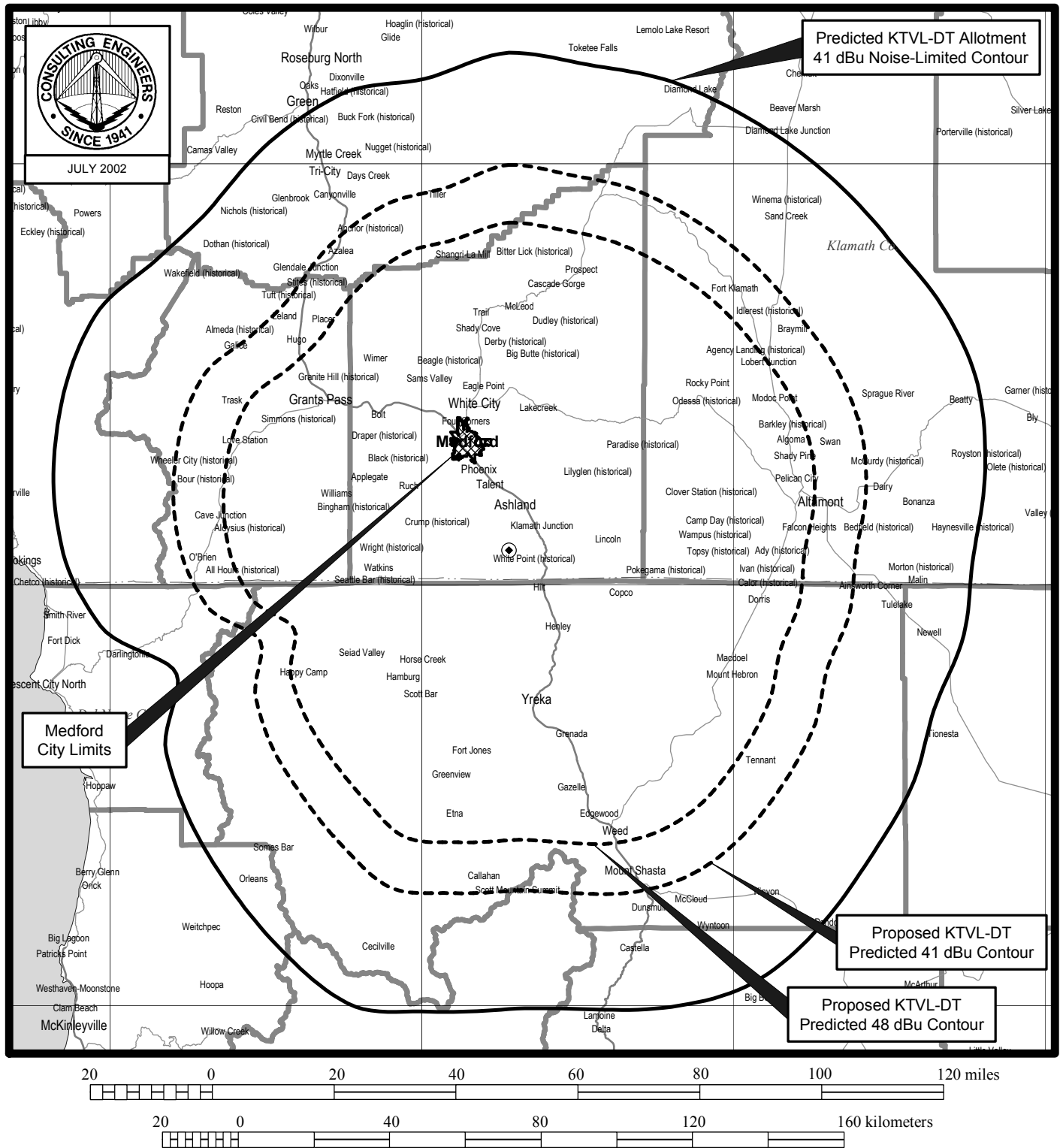
ENGINEERING EXHIBIT
 APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT
 TELEVISION STATION KTVL-DT
 MEDFORD, OREGON
 CHANNEL 35 10.2 KW 1008 M

Tabulation of Average Elevations and
Distances to Predicted Coverage Contours

Azimuth (deg.T)	3-16 km Average Terrain (m)	Antenna HAAT (m)	ERP (kW)	48 dBu f(50,90) Contour (km)	41 dBu f(50,90) Contour (km)
0	875	1440	10.2	86.6	101.8
45	1040	1275	10.2	84.4	98.3
90	1318	997	10.2	78.3	91.9
135	1124	1191	10.2	82.7	96.6
180	1394	921	10.2	76.6	90.0
225	1639	676	10.2	71.4	83.5
270	1518	797	10.2	74.0	86.8
315	1549	766	10.2	73.4	86.0

Note: The 3-16-km average terrain is 1307 m based on the eight conventional radials (0°, 45°, 90°, etc.) using the U.S.G.S. 3-second linearly-interpolated terrain database. The overall antenna radiation center height above average terrain is 1008 m based on the eight conventional radials.

Figure 2



PREDICTED COVERAGE CONTOURS

TELEVISION STATION KTVL-DT
MEDFORD, OREGON
CHANNEL 35 10.2 KW 1008 M

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

ENGINEERING EXHIBIT
APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT
TELEVISION STATION KTVL-DT
MEDFORD, OREGON
CHANNEL 35 10.2 KW 1008 M

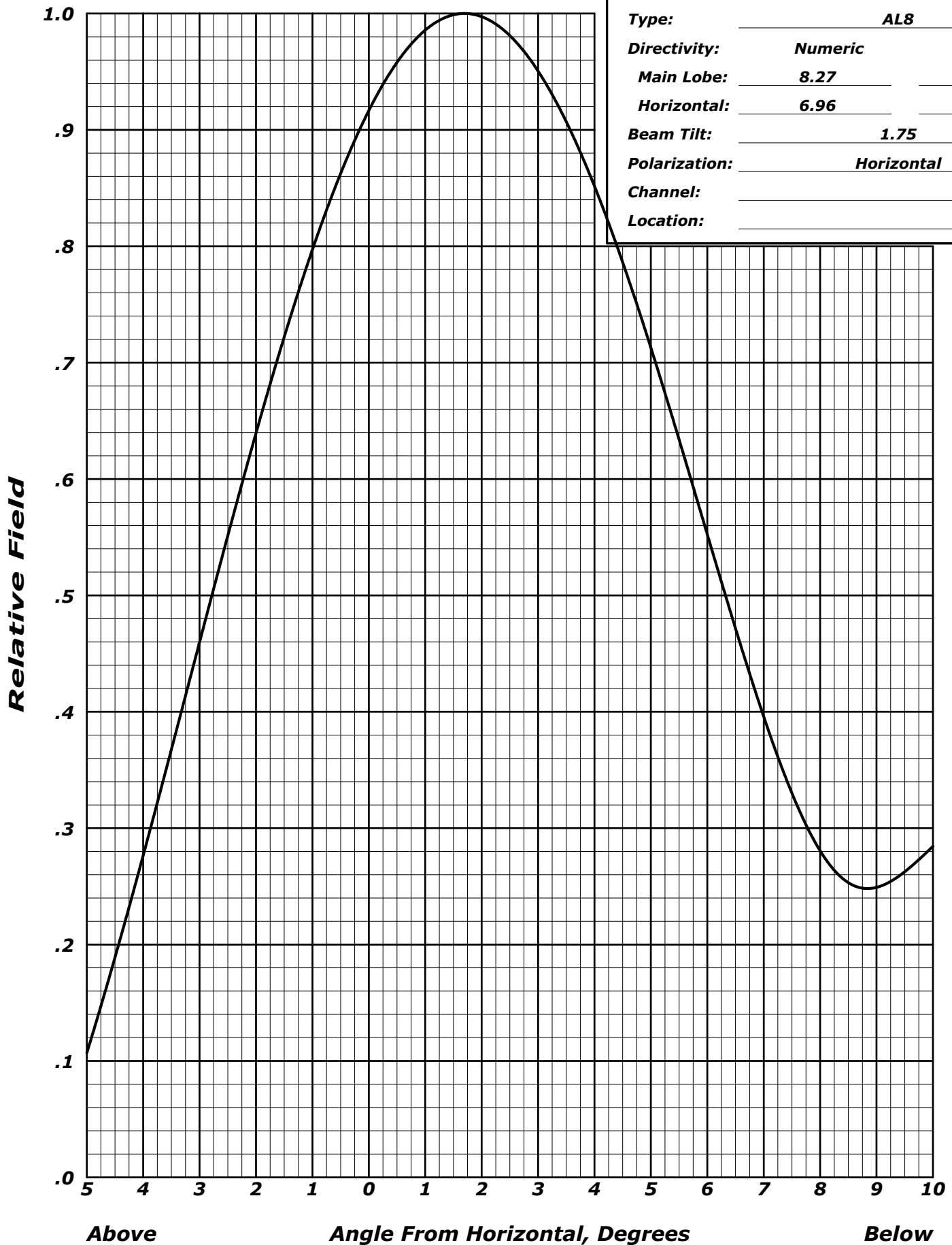
Transmitting Antenna Manufacturer's
Vertical Plane Pattern Data

(two pages follow)



ANDREW ELEVATION PATTERN

Type:	AL8	
Directivity:	Numeric	dBd
Main Lobe:	8.27	(9.18)
Horizontal:	6.96	(8.43)
Beam Tilt:	1.75	
Polarization:	Horizontal	
Channel:		
Location:		





TABULATED DATA FOR ELEVATION PATTERN

TYPE : AL8

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-5 To 10			10 To 90								
In 0.25 Increments			In 0.5 Increments								
-5.00	0.107	-19.43	8.75	0.248	-12.09	35.00	0.043	-27.30	62.50	0.093	-20.65
-4.75	0.147	-16.65	9.00	0.249	-12.07	35.50	0.057	-24.81	63.00	0.093	-20.60
-4.50	0.189	-14.47	9.25	0.254	-11.89	36.00	0.070	-23.11	63.50	0.093	-20.63
-4.25	0.232	-12.68	9.50	0.263	-11.61	36.50	0.080	-21.95	64.00	0.092	-20.72
-4.00	0.277	-11.17	9.75	0.273	-11.28	37.00	0.087	-21.18	64.50	0.090	-20.87
-3.75	0.322	-9.85	10.00	0.284	-10.92	37.50	0.092	-20.74	65.00	0.088	-21.09
-3.50	0.368	-8.69	10.50	0.307	-10.26	38.00	0.094	-20.57	65.50	0.086	-21.36
-3.25	0.414	-7.67	11.00	0.325	-9.76	38.50	0.093	-20.68	66.00	0.082	-21.68
-3.00	0.460	-6.75	11.50	0.336	-9.46	39.00	0.089	-21.04	66.50	0.079	-22.05
-2.75	0.506	-5.92	12.00	0.340	-9.38	39.50	0.082	-21.70	67.00	0.075	-22.46
-2.50	0.551	-5.17	12.50	0.334	-9.52	40.00	0.073	-22.68	67.50	0.072	-22.91
-2.25	0.596	-4.50	13.00	0.321	-9.88	40.50	0.063	-24.07	68.00	0.068	-23.39
-2.00	0.639	-3.88	13.50	0.300	-10.46	41.00	0.050	-26.03	68.50	0.064	-23.88
-1.75	0.682	-3.33	14.00	0.273	-11.28	41.50	0.036	-28.90	69.00	0.060	-24.39
-1.50	0.722	-2.83	14.50	0.242	-12.33	42.00	0.021	-33.63	69.50	0.057	-24.89
-1.25	0.761	-2.38	15.00	0.208	-13.64	42.50	0.006	-44.97	70.00	0.054	-25.36
-1.00	0.797	-1.97	15.50	0.175	-15.16	43.00	0.012	-38.45	70.50	0.051	-25.79
-0.75	0.831	-1.61	16.00	0.145	-16.79	43.50	0.028	-31.09	71.00	0.049	-26.16
-0.50	0.862	-1.29	16.50	0.123	-18.21	44.00	0.044	-27.20	71.50	0.048	-26.46
-0.25	0.891	-1.00	17.00	0.114	-18.89	44.50	0.059	-24.62	72.00	0.046	-26.66
0.00	0.917	-0.76	17.50	0.118	-18.59	45.00	0.073	-22.75	72.50	0.046	-26.78
0.25	0.939	-0.55	18.00	0.130	-17.69	45.50	0.086	-21.34	73.00	0.046	-26.81
0.50	0.958	-0.37	18.50	0.147	-16.68	46.00	0.097	-20.26	73.50	0.046	-26.78
0.75	0.974	-0.23	19.00	0.162	-15.83	46.50	0.107	-19.43	74.00	0.046	-26.69
1.00	0.986	-0.13	19.50	0.173	-15.22	47.00	0.115	-18.81	74.50	0.047	-26.56
1.25	0.994	-0.05	20.00	0.180	-14.88	47.50	0.121	-18.37	75.00	0.048	-26.42
1.50	0.999	-0.01	20.50	0.182	-14.79	48.00	0.125	-18.08	75.50	0.049	-26.27
1.75	1.000	-0.00	21.00	0.178	-14.97	48.50	0.127	-17.94	76.00	0.049	-26.14
2.00	0.997	-0.02	21.50	0.169	-15.42	49.00	0.127	-17.93	76.50	0.050	-26.01
2.25	0.991	-0.08	22.00	0.156	-16.16	49.50	0.125	-18.05	77.00	0.051	-25.92
2.50	0.981	-0.17	22.50	0.138	-17.22	50.00	0.122	-18.31	77.50	0.051	-25.85
2.75	0.967	-0.29	23.00	0.117	-18.67	50.50	0.116	-18.69	78.00	0.051	-25.81
3.00	0.951	-0.44	23.50	0.093	-20.61	51.00	0.110	-19.21	78.50	0.051	-25.81
3.25	0.930	-0.63	24.00	0.069	-23.20	51.50	0.101	-19.88	79.00	0.051	-25.85
3.50	0.907	-0.85	24.50	0.047	-26.59	52.00	0.092	-20.72	79.50	0.051	-25.92
3.75	0.881	-1.10	25.00	0.033	-29.69	52.50	0.082	-21.75	80.00	0.050	-26.04
4.00	0.852	-1.40	25.50	0.037	-28.61	53.00	0.071	-23.03	80.50	0.049	-26.20
4.25	0.820	-1.72	26.00	0.054	-25.41	53.50	0.059	-24.61	81.00	0.048	-26.40
4.50	0.786	-2.09	26.50	0.072	-22.82	54.00	0.047	-26.62	81.50	0.047	-26.65
4.75	0.750	-2.49	27.00	0.089	-20.98	54.50	0.034	-29.29	82.00	0.045	-26.94
5.00	0.713	-2.94	27.50	0.104	-19.70	55.00	0.022	-33.12	82.50	0.043	-27.29
5.25	0.674	-3.43	28.00	0.114	-18.84	55.50	0.011	-39.47	83.00	0.041	-27.70
5.50	0.634	-3.96	28.50	0.121	-18.34	56.00	0.007	-43.52	83.50	0.039	-28.16
5.75	0.593	-4.53	29.00	0.124	-18.14	56.50	0.016	-35.88	84.00	0.037	-28.70
6.00	0.552	-5.15	29.50	0.123	-18.22	57.00	0.027	-31.44	84.50	0.034	-29.30
6.25	0.512	-5.82	30.00	0.118	-18.58	57.50	0.037	-28.61	85.00	0.032	-30.00
6.50	0.472	-6.53	30.50	0.109	-19.22	58.00	0.047	-26.60	85.50	0.029	-30.80
6.75	0.433	-7.27	31.00	0.098	-20.19	58.50	0.056	-25.09	86.00	0.026	-31.72
7.00	0.396	-8.05	31.50	0.084	-21.53	59.00	0.064	-23.93	86.50	0.023	-32.78
7.25	0.361	-8.84	32.00	0.068	-23.38	59.50	0.071	-23.02	87.00	0.020	-34.05
7.50	0.330	-9.63	32.50	0.050	-25.96	60.00	0.077	-22.30	87.50	0.017	-35.56
7.75	0.303	-10.37	33.00	0.032	-29.79	60.50	0.082	-21.74	88.00	0.013	-37.45
8.00	0.281	-11.04	33.50	0.016	-35.89	61.00	0.086	-21.31	88.50	0.010	-39.91
8.25	0.264	-11.57	34.00	0.013	-37.44	61.50	0.089	-20.99	89.00	0.007	-43.40
8.50	0.253	-11.93	34.50	0.028	-31.20	62.00	0.091	-20.78	89.50	0.003	-49.40