

TECHNICAL EXHIBIT  
APPLICATION FOR MODIFICATION OF  
DTV CONSTRUCTION PERMIT  
STATION WWLP  
SPRINGFIELD, MASSACHUSETTS  
CH 11 6 KW (MAX-DA) 268 M

Technical Narrative

This Technical Exhibit supports an application for modification of the DTV construction permit for station WWLP on analog channel 22 at Springfield, Massachusetts. Station WWLP is currently authorized (BPCDT-19991029ADM) for DTV operation on channel 11 (198-204 MHz) with a maximum directional effective radiated power (ERP) of 1.95 kilowatts (kW) and an antenna radiation center height above average terrain (HAAT) of 268 meters.

By means of this application, WWLP proposes to increase its ERP to 6 kW and to specify a nondirectional antenna. No other changes are proposed.

Station WWLP proposes to operate on DTV channel 11 from its authorized (CP) DTV site location with a nondirectional DTV antenna system maximum ERP of 6 kW and an HAAT of 268 meters. The proposed transmitter site will be located at N42°05'05", W72°42'14". The antenna structure registration number is 1004484.

Figure 1 provides the vertical plane radiation pattern for the proposed Dielectric THP-O-3-1 nondirectional antenna system.

There are no known authorized full service AM stations within 5 kilometers (3 miles) of the proposed transmitter site. The following is a list of known authorized full service FM and TV stations within 16 kilometers (10 miles) of the proposed site.

## I. FM Stations

Call Status	City State	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Distance (km) (mile)
WPKX LIC	Enfield CT	BLH910814KG	250A 97.9	2.20 161.0	42-05-05 72-42-14	.0	.00 .00
WAQY LIC	Springfield MA	BMLH930514KA	271B 102.1	17.0 238.0	42-05-00 72-42-16	196.4	.17 .11
WMASF LIC	Springfield MA	BLH801010AD	234B 94.7	50. 59.0	42-06-32 72-36-44	70.4	8.05 5.00
WSKB LIC	Westfield MA	BLED830222AT	208A 89.5	.100 -66.0	42-07-55 72-47-51	304.2	9.36 5.82
WTCC LIC	Springfield MA	BLED1562	214B1 90.7	4.0 28.0	42-06-32 72-34-45	75.3	10.67 6.63
WSCB LIC	Springfield MA	BLED821117AC	210A 89.9	.100 11.0	42-05-59 72-33-30	82.0	12.17 7.56
WAIC LIC	Springfield MA	BLED1070	220A 91.9	.230 20.0	42-06-44 72-33-29	75.7	12.46 7.74
Horizontally Polarized only							
WCCH LIC	Holyoke MA	BLED811130AS	278D 103.5	.009 144.0	42-11-55 72-38-27	22.3	13.69 8.51
WNEKFM LIC	Springfield MA	BLED930405KA	286D 105.1	.013 47.0	42-06-55 72-31-05	77.4	15.75 9.79
Commercial Channel Operation Educational							

## II. TV Stations (NTSC and DTV)

Call Status	City State	FCC File No.	Channel Zone	ERP(kw) HAAT(m)	Latitude Longitude	Bearing deg-True	Distance (km) (mile)
WWLP-D CP	SPRINGFIELD MA	BPCDT -19991029	11 I	1.95 DA 268	42-05-05 72-42-14	0.00	0.00 0.00
WWLP LIC	SPRINGFIELD MA	BLCT -19841128	22 (o) I	3390 DA 268	42-05-05 72-42-14	0.00	0.00 0.00
WWLP CP MOD	SPRINGFIELD MA	BPCT -19930826	22 (o) I	4470 DA 267	42-05-05 72-42-14	0.00	0.00 0.00
DWWLP DTVALT	SPRINGFIELD MA		11 I	3.2 268	42-05-05 72-42-14	0.00	0.00 0.00
WDMR-L LIC	SPRINGFIELD MA	BLTTL -19920424	65 (+) I	31.2 DA 202 max.	42-05-07 72-42-12	36.98	0.08 0.05
W12CL LIC	GRANBY CT	BLTVL -19930930	12 (-) I	.042 DA 54 max.	41-58-45 72-46-59	209.15	13.43 8.35

Although no adverse electromagnetic impact is expected, the applicant recognizes its responsibility to correct problems, which are a result of its proposed operation.

The proposed transmitter site is located 326.1 kilometers from the closest point of the Canadian border. Hence, coordination of the proposed WWLP DTV operation on channel 11 with Canada may be necessary. It is noted that WWLP site complies with the minimum distance separation requirements applicable to Canadian NTSC and DTV allotments contained in Appendix 2 of the Letter of Understanding between the FCC and Industry Canada related to use of DTV along the common border (September 2000).

The proposed site is more than 2637 kilometers from the closest point of the Mexican border. The closest FCC monitoring station is at Canandaigua, New York approximately 385 kilometers to the northwest. The closest point of the National Radio Quiet Zone (VA/WV) is more than 581 kilometers to the southwest. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 2715 kilometers to the northwest. The closest radio astronomy site operating on TV channel 37 is at Hancock, New Hampshire, located more than 111 kilometers to the north-northeast. These separations are sufficient to not be a concern for coordination purposes.

The distances to the predicted 36 dBu and 43 dBu, F(50,90) coverage contours were determined in accordance with the provisions of Section 73.625. The average elevations from 3.2 to 16.1 kilometers from the transmitter site, were obtained from the NGDC 30-second terrain database and were used for determining the distances to coverage contours.

Figure 2 is a map showing the predicted 36 dBu and 43 dBu, F(50,90), coverage contours. The Springfield city limits were derived from information contained in the 2000 U.S. Census for Massachusetts.

Figure 3 is the separation study for DTV channel 11 from the proposed WWLP site. The study has been used to determine the assignments requiring interference studies using the procedures outlined in the FCC's OET-69 bulletin. 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> The interference analysis was based on the presumption that other DTV facilities are operating at the DTV power level specified for their allotment and at their allotment site and HAAT. Interference calculations for the proposed WWLP DTV operation are summarized below. It is noted that the summary only includes stations with which interference (masked or unmasked) is calculated.

Protected NTSC/DTV Station	FCC Service Population	Current Interference	Proposed Interference Population
WENH-TV, NTSC Ch. 11 Durham, NH	4,118,262	0.5%	8,048 (0.2%)
WPIX, NTSC Ch. 11 New York, NY	18,299,991	1.8%	41,701 (0.2%)
WTXX-DT, DTV Ch. 12 Waterbury, CT	4,510,037	0.0%	38,585 (0.9%)
WPRI-TV, NTSC Ch. 12 Providence, RI	6,383,916	2.5%	901 (0.0%)

From the above, it is apparent that the proposed WWLP DTV operation on channel 11 complies with the FCC's 2%/10% interference standard towards all authorized analog and DTV assignments.

An evaluation of the potential for adverse impact to Class A LPTV stations was undertaken. The results indicate that the proposed operation will not adversely effect any eligible Class A LPTV stations other than W11BJ on channel 11

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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. The results have been found to be

at Hartford, Connecticut. However, W11BJ is located only 43.7 kilometers from WWLP and will be displaced by WWLP-DT's operation on co-channel 11. It is noted that W11BJ has a pending DTV displacement application to migrate to channel 16 (BPTVL-19980601QZ).

The proposed facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The radiation center for the proposed DTV antenna is located 151 meters above ground level. The maximum DTV ERP is 6 kW. A "worst-case" vertical plane relative field value of 0.3 (for angles below 60 degrees downward) is assumed for the antenna's downward radiation (see Figure 1). The calculated power density at a point 2 meters above ground level is 0.0008 mW/cm<sup>2</sup>. This is 0.40% of the FCC's recommended limit of 0.20 mW/cm<sup>2</sup> for channel 11 for an "uncontrolled" environment. Therefore, based on the new responsibility threshold of 5%, the proposal will comply with the new RF emission rules.

Access to the transmitting site is restricted and appropriately marked with warning signs. Furthermore, as this is a multi-user site, an agreement is in effect with the other stations in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that 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 RF protective clothing or scheduling work when the stations are at reduced power or shut down.

If there are questions concerning the technical portion of this application, please contact the office of the undersigned.

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September 26, 2001

Date

**26 Sep 2001**

Call Letters

Channel **11**

Location

Customer

Antenna Type

**THP-O-3-1**

## ELEVATION PATTERN

RMS Gain at Main Lobe

**3.2 (5.05 dB)**

Beam Tilt

**0.00 Degrees**

RMS Gain at Horizontal

**3.2 (5.05 dB)**

Frequency

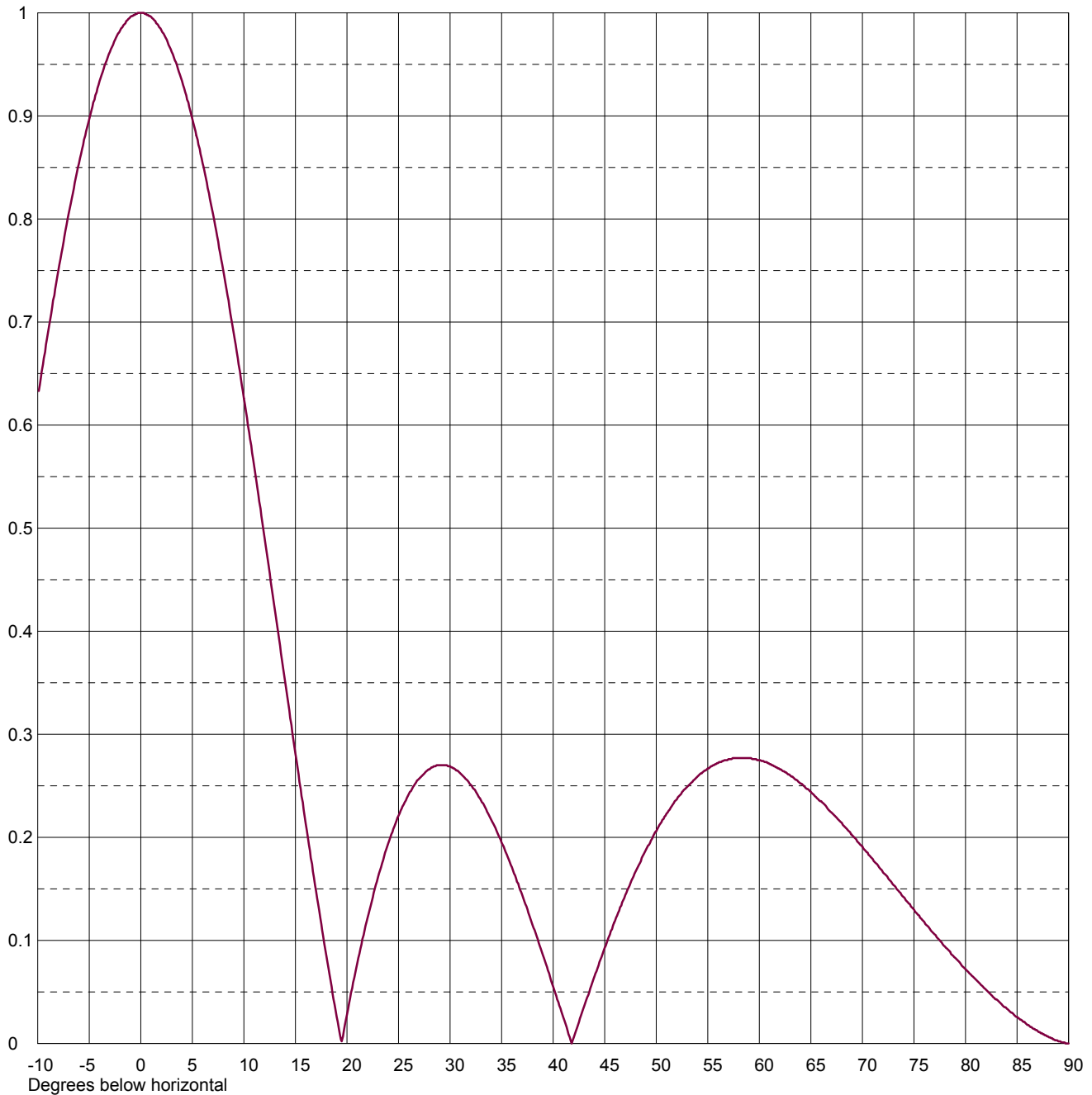
**201.00 MHz**

Calculated / Measured

**Calculated**

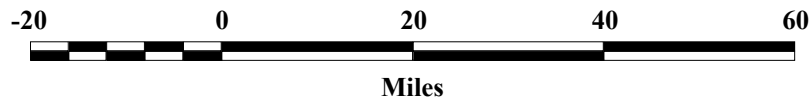
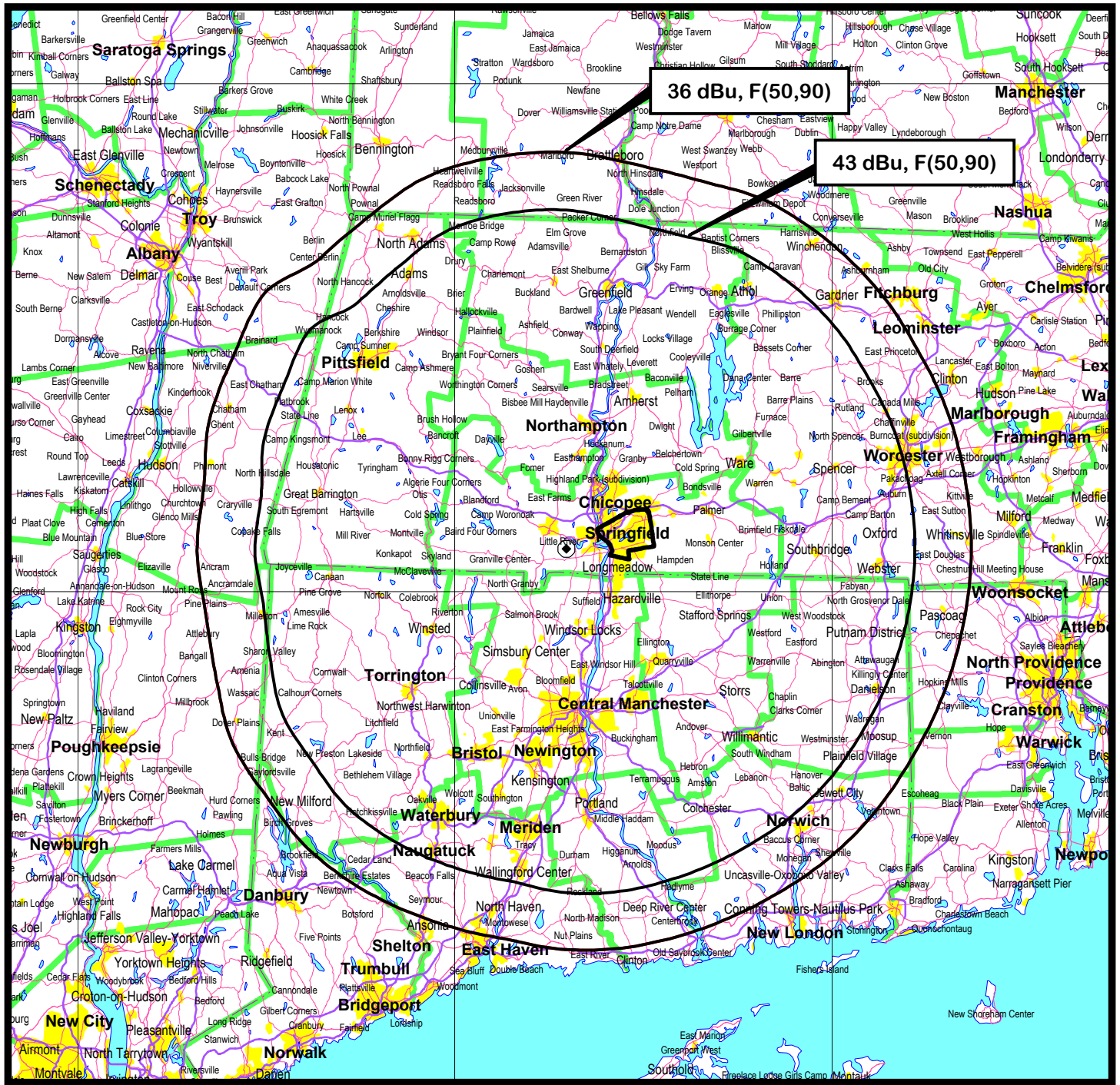
Drawing #

**03H03200-90**



Remarks:

Figure 2



**PREDICTED DTV COVERAGE CONTOURS  
STATION WWLP  
SPRINGFIELD, MASSACHUSETTS  
CH 11 6 KW 268 M**



## DTV to NTSC Separation Study

Job Title :Proposed WWLP-DT	Separation Buffer	50 km
Zone : 1	FCC TV DB Date :	09/25/01
Channel 11 (198-204 MHz)	Coordinates :	42-05-05 72-42-14

Call Status	City St	FCC File No.	Channel Zone	ERP(kW) HAAT(m)		Latitude Longitude	Bear. True	Dist. (km)	Req. (km)
WJAR LIC	PROVIDENCE RI BLCT	-2395	10 (+) I	316 305		41-51-54 71-17-15	101.3	119.92 -5.08	9.0/125.0 SHORT
WTEN LIC	ALBANY NY BLCT	-1285	10 (-) I	316 305	DA	42-38-15 73-59-54	300.5	123.06 -1.94	9.0/125.0 SHORT
WENH-T LIC	DURHAM NH BMLET	-19960516	*11 (o)	316 301		43-10-33 71-12-29	44.7	172.48 -72.12	244.6 SHORT
WPIX LIC	NEW YORK NY BLCT	-19810826	11 (+) I	58.9 506		40-42-43 74-00-49	216.0	187.74 -56.86	244.6 SHORT
WPRI-T LIC	PROVIDENCE RI BLCT	-1750	12 (+) I	316 305		41-52-37 71-16-56	100.6	120.07 -4.93	9.0/125.0 SHORT

\*\* End of TV Separation Study for Channel 11 \*\*

DTV to DTV Separation Study

Job Title : Proposed WWLP-DT  
Zone : 1  
Channel 11 (198-204 MHz)

Separation Buffer 50 km  
FCC DTV DB Date: 09/25/01  
Coordinates : 42-05-05 72-42-14

Call Status	City St	FCC File No.	Channel Zone	ERP(kW) HAAT(m)	Latitude Longitude	Bear. True	Dist. (km)	Req. (km)
DWTNH DTVALT	NEW HAVEN CT		10 I	8.6 363	41-25-23 72-57-06	195.7	76.32 -33.68	20.0/110.0 SHORT
WTNH-D APP	NEW HAVEN CT	BMPCDT-19990422	10 I	21 342	41-25-22 72-57-06	195.7	76.36 -33.64	20.0/110.0 SHORT
WTNH-D LIC	NEW HAVEN CT	BLCDT -19990416	10 I	7.9 DA 342	41-25-22 72-57-06	195.7	76.36 -33.64	20.0/110.0 SHORT
DWWLP DTVALT	SPRINGFIELD MA		11 I	3.2 268	42-05-05 72-42-14	0.0	0.00	
WWLP-D	SPRINGFIELD		11	1.95 DA	42-05-05	0.0	0.00	
D DTVALT	WILKESBARRE PA		11 I	3.7 509	41-11-01 75-52-02	250.2	281.95 37.35	244.6 CLEAR
WBRE-D	WILKES-BARRE		11	30	41-10-58	250.2	282.51	244.6
CP MOD	PA	BMPCDT-20000501	I	471	75-52-26		37.91	CLEAR
DWTXX DTVALT	WATERBURY CT		12 I	3.2 366	41-31-04 73-01-07	202.6	68.19 -41.81	20.0/110.0 SHORT
WTXX CP	WATERBURY CT	BPCDT -19991101	12 I	1.7 507	41-42-11 72-49-55	194.1	43.71 -75.29	20.0/110.0 SHORT
WNYT-D APP	ALBANY NY	BPCDT -20010328	12 I	9.1 436	42-37-31 74-00-38	299.7	123.28 13.28	20.0/110.0 CLEAR
WNYT APP	ALBANY NY	BPRM -20000413	12 I	10 421	42-37-37 74-00-49	299.7	123.59 13.59	20.0/110.0 CLEAR

\*\* End of DTV Separation Study for Channel 11 \*\*