

Exhibit 7 - Statement A
Comprehensive Engineering Statement
prepared for
Radio License Holdings LLC
WDVD(FM) Detroit, MI
Facility ID 8631
Ch. 242B 20 kW 240 m

Radio License Holdings LLC (“*Cumulus*”) is the licensee of WDVD(FM), Channel 242B, Detroit, Michigan, (FCC Facility ID 8631, FCC File Number BLH-19861112KB). *Cumulus* herein requests a modification of its license to specify the use of a new common antenna to serve WDVD as well as WZLH, WYCD and WDRQ (Aux). Per Section 73.1690(c) of the Commission’s Rules, this antenna replacement was made without prior authorization.

Allocation Considerations

Figure 1 provides a coverage map based on the authorized facility parameters. **Table I** demonstrates the system gains and losses for the transmitter power output calculation.

The replacement antenna is a new Master FM Antenna which will be used by WZLH(FM) (Channel 254B, Detroit, MI), WYCD(FM) (Channel 258B, Detroit, MI), and the WDRQ(FM) Auxiliary facility (Channel 226B, Detroit, MI). It is a non-directional antenna manufactured by ERI as model number 1183-2CP-2. The antenna is mounted within 1 meter of the current WDVD(FM) authorization, complying with §73.1690(c)(1) for antenna replacement. WDVD(FM) has commenced full power program test operation as permitted by the rules. Since a new combiner is used in the facility, the manufacturer’s Intermodulation Report is included as a separate attachment.

Monitoring Station and International Considerations

The site is located 17.02 km from Canada, well within the 320 km coordination distance. The nearest FCC monitoring station is 230.01 km distant at Allegan, Michigan. Since no change is proposed to the authorization, no coordination or notification is required. With respect to AM stations, WRDT(AM) (560 kHz, Monroe, MI) utilizes the same tower for its 14 Watt non-directional night time operation using a folded unipole style radiator. According to representatives of the applicant, no changes have been observed in the operating impedance of WRDT as a result of the antenna installation.

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Environmental Considerations

The proposed facility will utilize a Master FM antenna system, in common with WDZH(FM), WYCD(FM) and WDRQ(FM) Auxiliary, with a circularly-polarized omnidirectional antenna, at 238 meters AGL on a registered tower (ASRN 1001506). The use of existing transmitting locations has been characterized as being environmentally preferable by the Commission, according to Note 1 of §1.1306 of the FCC Rules. Because no change in structure height is proposed, no change in current structure marking and lighting requirements is anticipated. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.

Human Exposure to Radiofrequency Radiation

In keeping with §1.1307(b) of the Commission's Rules, the proposed operation has been evaluated for human exposure to radiofrequency energy using the procedures outlined by the Federal Communications Commission in FCC OET Bulletin 65 ("OET-65"). OET-65 describes a means of determining whether a proposed facility exceeds the radiofrequency exposure guidelines specified in §1.1310 of the Commission's Rules. Under present Commission policy, a facility may be presumed to comply with the limits in §1.1310 of the Commission's Rules if it satisfies the exposure criteria set forth in OET-65. Based upon that methodology, and as demonstrated in the following, the proposed transmitting system will comply with the cited adopted guidelines.

An effective radiated power ("ERP") of 20 kW, circularly polarized, will be employed, utilizing an ERI model number 1183-2CP-2, a 2-bay antenna with a bay spacing of 114 inches, or 0.93 wavelengths at 96.3 MHz. The "uncontrolled/general population" limit specified in §1.1310 for FM broadcast facilities is 200 $\mu\text{W}/\text{cm}^2$.

The formula used for calculating FM signal density in this analysis is essentially the same as equation (9) in OET-65.

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$$S = (33.4098) (F^2) (ERP) / D^2$$

Where:

S	=	power density in microwatts/cm ²
F	=	relative field factor
ERP	=	total (average) ERP in Watts
D	=	distance in meters

The general population / uncontrolled maximum permitted exposure (“MPE”) limit specified in §1.1310 for 96.3 MHz is 200 μW/cm². For the purpose of this study, “public access” will be considered at the base of the tower at a location two-meters above ground. Using FM Model program and a worst-case EPA Type 1 antenna it was determined that the authorized facility would contribute a worst-case RF power density of 14.5 μW/cm² at two meters above ground level near the antenna support structure, or 7.3 percent of the general population/uncontrolled limit. Since the calculated exposure from WDVD(FM) may be greater than 5 percent, a table has been prepared to determine the total worst case RF exposure levels near the support structure. Calculations for each facility were based on that facility’s ERP and antenna height above ground as reported in the Commission’s engineering databases. For each facility considered, the maximum contribution to power density at any location within 150 meters of the proposal was calculated. The table below supplies a summary of calculated RF contributions from other known, authorized, non-excluded facilities, along with that of WDVD.

FCC policy prefers the use of FM Model to predict the RF exposure of a proposal. As a worst-case prediction, the default “ring-stub” style antenna is used, with full wave bay spacing where the number of bays is known.¹ The table below indicates that the total “worst-case” exposure level would be 62.9 percent of the general population/uncontrolled MPE limit at any ground level location within 150 meters of the facility. Since it is expected that these maximum levels would not occur at the same location, the total RF electromagnetic field at any point two meters above ground level would be less than 62.9 percent of the general population / uncontrolled MPE limit.

¹ For simplicity, a “worst case” single bay antenna was assumed for WCSX and W260CB. WMGC-FM uses a 12-bay antenna. WDVD(FM) and WYCD(FM) both use the new 2-bay ERI antenna. The peak level calculated by FM Model was used in the chart. Not all peak levels will occur at the same distance from the tower. The total level with respect to distance will result in lower calculated RF levels.

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Summary of Radiofrequency Radiation Calculations - Nearby Facilities

Station	Channel	ERP (kW)	Polarization	Bays	Distance (meters)	S - Calculated ($\mu\text{W}/\text{cm}^2$)	S - Limit ($\mu\text{W}/\text{cm}^2$)	% of Limit
WDVD(FM)	243B	20.0	C	2	236.0	14.5	200.0	7.3
WCSX(FM)	234B	13.5	C	1	295.0	6.8	200.0	3.4
WYCD(FM)	258B	17.5	C	2	236.0	12.7	200.0	6.3
WMGC-FM	286B	50.0	C	12	144.0	90.5	200.0	45.3
W260CB	260D	0.25	C	1	242.0	0.2	200.0	0.1
WRDT (AM) ²	560 kHz	0.014	V	1	1.0	44.4	614.0	0.5
Total Calculated Signal Density:								62.9

ERP: Effective Radiated Power
Polarization: C - Circular; H – Horizontal; V – Vertical
Field: Vertical Plane Field Value (from antenna manufacturer's data)
Height: Height of radiation center above ground level
S-Calculated: Calculated value of signal density at two meters above ground level (from formulae in OET-65)
S-Limit: §1.1310 uncontrolled/general population limit for signal density

As shown, in no case will the human exposure to RF electromagnetic fields at ground level exceed the uncontrolled/general population MPE limit specified in §1.1310.

Safety of Tower Workers and the General Public

Access to the compound, building and tower on which the antenna support structure is located will be restricted to trained building service and station personnel. Consequently, members of the general public are not exposed to RF levels in excess of the Commission's guidelines. Additionally, appropriate RF exposure warning signs will continue to be posted.

² The calculations for WRDT(AM) are different than those for the FM facilities. OET-65 specifies the method for calculating E and H field values. The calculations referenced were used assuming a distance of 1 meter from the tower. The worst case result (E field) was used in the chart to calculate total exposure for the general population.

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With respect to worker safety, a site exposure policy will continue to be employed protecting maintenance workers from excessive exposure when work must be performed on or near the antenna structures in areas where high RF levels may be present. Such protective measures may include, but will not be limited to, placement of RF exposure warning signs on the antenna support structure, restriction of access to areas where levels in excess of the guidelines may be expected, power reduction, or the complete shutdown of facilities when work or inspections must be performed in areas where the exposure guidelines would otherwise be exceeded. On-site RF exposure measurements may also be undertaken to establish the bounds of safe working areas. The applicant will coordinate exposure procedures with other users of this site.

Conclusion

It is therefore believed that the proposed facility satisfies all of the pertinent Commission Rules and Policies now in effect.

**EXHIBIT 7 - FIGURE 1
COVERAGE CONTOUR COMPARISON**

prepared May 2019 for

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**Cavell, Mertz & Associates, Inc.
Manassas, Virginia**

WDVD(FM) License

20 kW 240 m
54 dBμ F(50,50)

70 dBμ F(50,50)

Detroit, MI

**CAVELL
MERTZ**
& Associates, Inc.

Scale 1:1,000,000
0 10 20 30 km

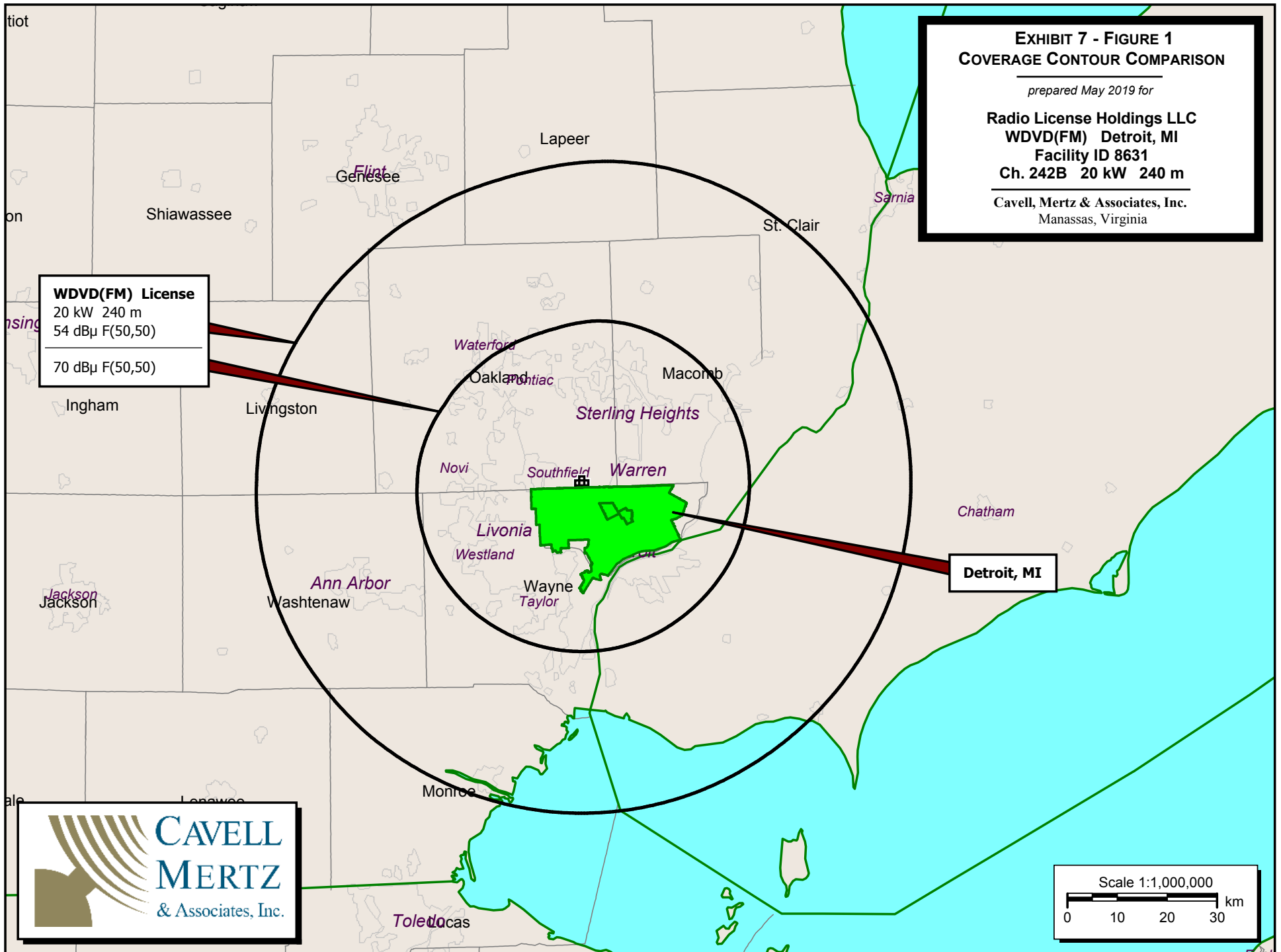


Exhibit 7 - Table I
ANTENNA / LINE SYSTEM GAINS AND LOSSES
prepared May 2019 for
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Proposed Effective Radiated Power:	20.000 kW	13.01 dBk
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Antenna System

ERI 1183-2CP-2

Max Power Gain:	0.955	-0.20 dB
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Antenna Input Power:	20.941 kW	13.21 dBk
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Line and Other Losses

910 feet, 4-1/16" Hard Line	Loss:	0.66 dB
4-1/16" air-dielectric cable at 0.073 dB/100 feet		

Combiner Loss	Loss:	0.21 dB
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Total Loss:	0.88 dB
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<u>Transmitter Power Output:</u>	25.6 kW	14.09 dBk
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