EXHIBIT E

ENGINEERING STATEMENT
APPLICATION FOR A DTV
DISPLACEMENT APPLICATION
FOR AN EXISTING TELEVISION TRANSLATOR
WLMO-LP, LIMA, OHIO
CHANNEL 29 15 KW MAX DA ERP
377 METERS RC/AMSL

MAY 2018

COHEN, DIPPELL AND EVERIST, P.C.
CONSULTING ENGINEERS
RADIO AND TELEVISION
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington)
) ss
District of Columbia)

Donald G. Everist, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President, Secretary and Treasurer of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1420 N Street, N.W., Suite One, Washington, D.C. 20005;

That his qualifications are a matter of record in the Federal Communications Commission;

That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.

Donald G. Everist
District of Columbia
Professional Engineer
Registration No. 5714

Subscribed and sworn to before me this 14th day of May, 2018.

Notary Public

My Commission Expires: 2023

CAROLYN L. LYONS
NOTARY PUBLIC
DISTRICT OF COLUMBIA
EXPIRES FEB. 28, 2023

Introduction

This engineering statement has been prepared on behalf of West Central Ohio Broadcasting, Inc., licensee of low-power television station WLMO, Lima, Ohio. This statement supports the licensee's request for displacement to convert the current analog operation on the licensed channel and currently operating under special temporary authority ("STA") to Channel 29 with a DTV effective radiated power ("ERP") of 15 kW directional at a radiation center above mean sea level ("RCAMSL") of 377 meters.

WLMO has operated for several years under special temporary authority. The proposed operation is approximately 27.5 miles (44.2 km) from the existing STA site and approximately 18.7 miles (30.1 km) from the WLMO-LP licensed site.

Transmitter Site

The proposed directional antenna will be utilized in order to protect domestic and international constraints. The geographic coordinates of the site follow below.

North Latitude: 40° 23' 19"

West Longitude: 84° 21' 26.6"

NAD-27

North Latitude: 40° 23' 19.2"

West Longitude: 84° 21' 26.4"

NAD-83

The Antenna Structure Registration Number ("ASRN") for the existing tower is 1222849. A tower sketch has been included as Exhibit E-1.

Equipment Data

Transmitter:	Type-approved
Transmission Line:	Andrew, 50 ohm Air Dielectric, 1-5/8" or equivalent 115.8 meters (380 feet)
Antenna:	Alive Telecom, Model ATC-BCE512C1R-V3-29, 1.25º electrical beam tilt. Exhibit E-2 provides the antenna manufacturer antenna data
Filter Type:	Full-Service

Power Data

Transmitter: at output filter	1.85 kW	2.67 dBk
Transmission Line Loss:	64.1 %	1.93 dB
Input Into Antenna:	1.19 kW	0.74 dBk
Antenna Gain: Horiz.	12.67	11.03 dBd
Vert.	10.13	10.06 dBd
ERP: Horiz.	15.0 kW	11.76 dBk
Vert.	12.0 kW	10.79 dBk

Elevation Data

Elevation of site above mean sea level	291.7 meters (957 feet)
Center of radiation of antenna above ground level	85.3 meters (280 feet)

Center of radiation of antenna above mean sea level	377 meters (1237 feet)
Overall antenna structure height above ground level	91.4 meters (299.9 feet)
Overall antenna structure height above mean sea level	383.1 meters (1256.9 feet)

Note: slight height differences may result due to conversion to/from metric.

Interference Analysis

A study of predicted interference caused by the proposed WLMO-LP low-power digital operation has been performed using the Longley-Rice program for which the source data has been posted by the Commission on its website at fcc.gov/oet/tvstudy. Comparison of service/interference areas and population indicates this model closely matches the FCC's digital low power TV/translator evaluation program. Best efforts have been made to use data and calculation identical to the FCC's program. The model employs the Longley-Rice propagation methodology and evaluates in grid cells of approximately 1 sq. km. Using one-second terrain data sampled approximately every 1.0 km at one-degree azimuth intervals with 2010 census centroids, all studies are based upon data in the current LMS database update of the FCC's engineering database. A Longley-Rice study was performed with the proposed WLMO-LP low-power digital facilities and all relevant stations listed in the FCC data base. The study results and the included stations are listed in Exhibit E-3.

Coverage

Table I based on TVStudy 2.2 includes the distances to the 51 dBu F(50,90) coverage contour, the average elevation 3.2 to 16.1 km, and the antenna height above average terrain for every ten degrees in azimuth. Exhibit E-4 is a plot of that data.

International

Based on the TVStudy 2.2, the proposed operation is the F(50,10) 24.25 dBu interfering contour from the proposed operation does not extend beyond the U.S.-Canadian border. Therefore, no Canadian coordination will be required.

Other Licensed and Broadcast Facilities

No adverse technical effect is anticipated by the proposed DTV operation to any other FCC licensed facility since there are no FM or TV broadcast facilities within 0.2 km and no AM facility within 3.22 km. If required, the licensee will install filters or take other measures as necessary to resolve the problem.

Proposed Operation Versus Current Operation

The attached map (Exhibit E-5) provides the proposed Channel 29 operation to the current WLMO-LP STA Channel 38 operation as well as a map (Exhibit E-6) provides the proposed Channel 29 operation to the current WLMO-LP Channel 38 licensed operation. As shown the proposed noise-limited contour overlaps each current authorization.

FCC Rule, Section 1.1307

The proposed 15 kW directional operation will utilize an Alive Telecom, Model ATC-BCE512C1R-V3-29 antenna (or equivalent) described above with a center of radiation above

ground of 85.3 meters. The proposed antenna is side-mounted on a steel self-supporting lattice tower with an overall height of 91.4 meters above ground.

The proposed operation based upon the current OET Bulletin No. 65, Edition 97-01 dated August 1997 and Supplement A meets the provisions of the FCC radiofrequency field ("RFF") guidelines, and thus, complies with Section 1.1307 of the FCC Rules. The elevation pattern for the Alive Telecom, Model ATC-BCE512C1R-V3-29 antenna, [Exhibit E-2] shows a maximum relative field of less than 0.075 toward the ground (70° to 90° below the horizontal). Calculation according to OET Bulletin 65 predicts a maximum RFF power density of less than one $\mu W/cm^2$, 2 meters above ground or less than one percent (1%) of the 375 $\mu W/cm^2$ uncontrolled Maximum Permissible Exposure ("MPE") guideline.

Authorized personnel and rigging contractors will be alerted to the potential zone of high field levels on the tower, and if necessary, the station will operate with reduced power or terminate the operation of the transmitter as appropriate when it is necessary for authorized personnel or contractors to perform work on or near the tower. Workers and the general public, therefore, will not be subjected to RFF levels in excess of the current FCC guidelines.

Environmental Assessment

An environmental assessment ("EA") is categorically excluded under Section 1.1306 of the FCC Rules and Regulations as the tower was constructed prior to the requirements specified in WT Docket No. 03-128 and the licensee indicates:

(a)(1) The existing tower is not located in an officially designated wilderness area.

(a)(2)	The existing tower is not located in an officially designated wildlife preserve.
(a)(3)	The proposed facilities will not affect any listed threatened or endangered species or habitats.
(a)(3)(ii)	The proposed facilities will not jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats.
(a)(4)	The proposed facilities located on a tower which was built prior to the adoption of WT Docket No. 03-128 and is grandfathered and has not affected any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.
(a)(5)	The existing tower is not located near any known Indian religious sites.
(a)(6)	The existing tower is not located in a flood plain.
(a)(7)	The installation of the DTV facilities on an existing guyed tower will not involve a significant change in surface features of the ground in the vicinity of the tower.
(a)(8)	It is not proposed to equip the tower with high intensity white lights unless required by the FAA.
(b)	Workers and the general public will not be subjected to RFF levels in excess of the current FCC guidelines contained in OET Bulletin No. 65, Edition 97-01, dated August 1997 and Supplement A.

ABOVE MEAN SEA LEVEL

ABOVE GROUND

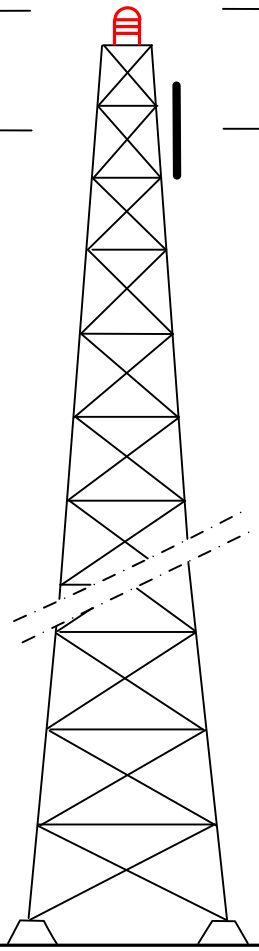
383.1 m (1256.9')

91.4 m (299.9')

C/R 377 m (1237')

85.3 m (280') C/R

PROPOSED ANTENNA



FREE-STANDING TOWER
ASRN: 1222849

NOT TO SCALE

291.7 m (957')

0.0 m (0')

EXHIBIT E - 1
VERTICAL SKETCH
FOR THE PROPOSED OPERATION OF
WLMO-LP, LIMA, OHIO
MAY 2018

COHEN, DIPPELL and EVERIST, P.C. Consulting Engineers

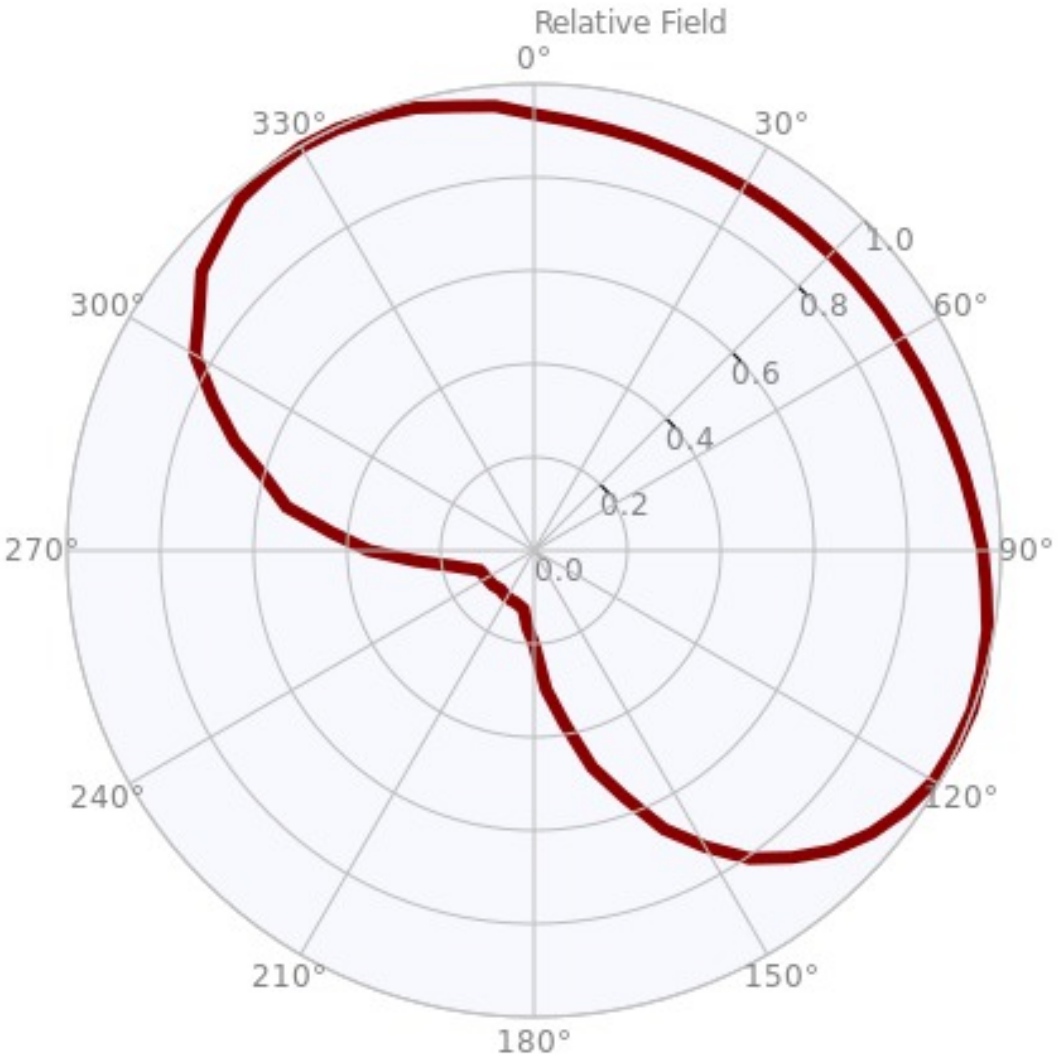
EXHIBIT E-2

ANTENNA MANUFACTURER DATA

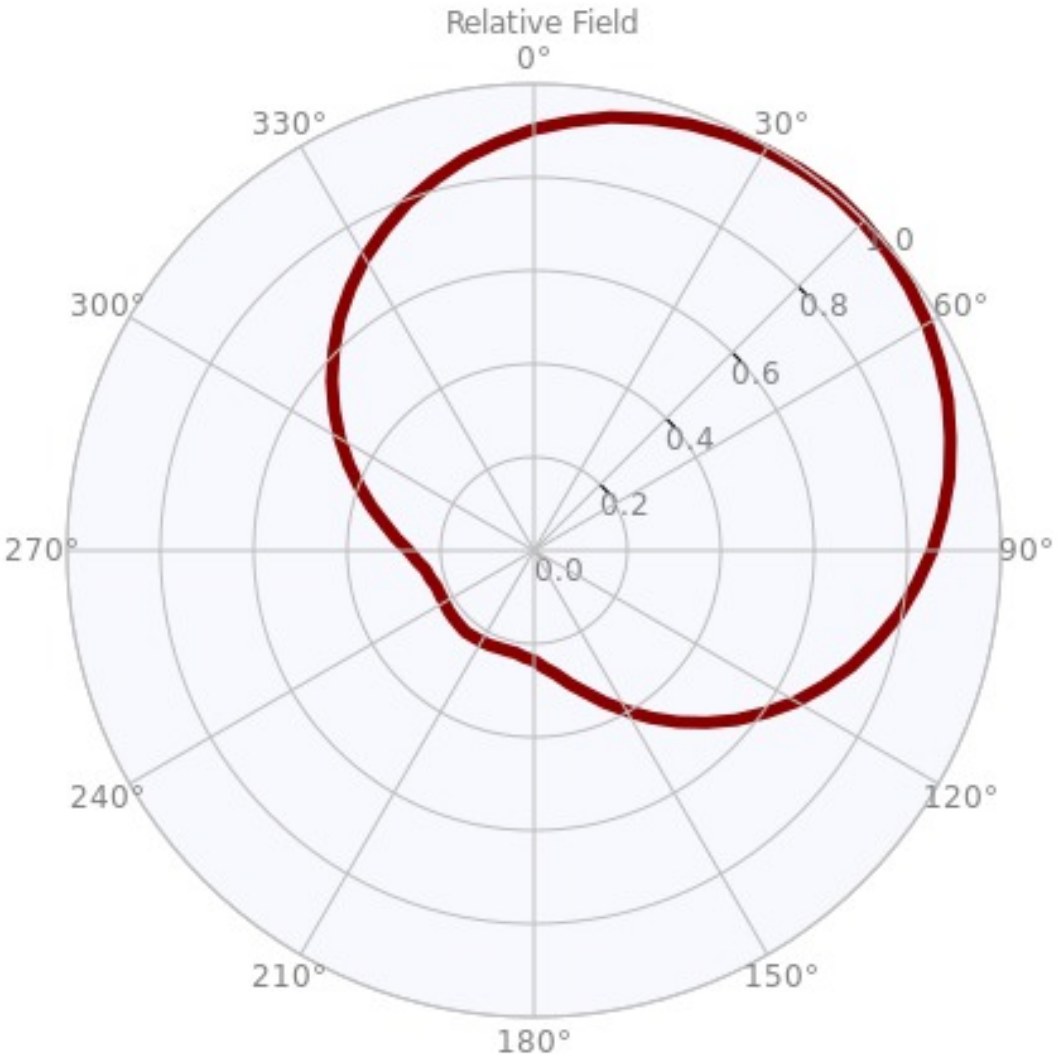
Summary

Antenna Specifications	
Antenna Type	Coaxial Slot
Antenna Model	ATC-BCE512C1R-V3-29
Electrical Specifications	
Channel(s)	29
Frequency Range (MHz)	560 - 566
Polarization	Elliptical
Horizontal Azimuth Pattern	C1R
Directivity	1.90
dB	2.79
Vertical Azimuth Pattern	V3-Medium Cardioid
Directivity	2.35
dB	3.71
Vertical Component	80 %
Azimuth Peak of Beam	40 °
Elevation Pattern	BC12
Directivity	12.00
dB	10.79
Electrical Beam Tilt	1.25 °
Antenna Peak Power Gain	
Horizontal Gain Power	12.67
Horizontal Gain Ratio	11.03 dBd
Vertical Gain Power	10.13
Vertical Gain Ratio	10.06 dBd
Line Type	1-5/8" 50 Ohm Air Flex Line
Line Length	380 ft
Total Line Loss	1.93 dB
Effective Radiated Power (ERP)	15 kW
ERP Vertical Power	12.00 kW
Transmitter Power Output (TPO)	
TPO Power	1.85 kW
TPO Ratio	2.67 dBk
Input Type	EIA 1-5/8"
Mechanical Specifications	
Mount Type	Side Mount
Length of Antenna	24.02 ft
Center of Radiation	12.01 ft
Radome Diameter	TBD
Color	White
Calculated Weight	Contact Alive Telelcom 1 2
Windload (Shear)	Contact Alive Telelcom 1 2

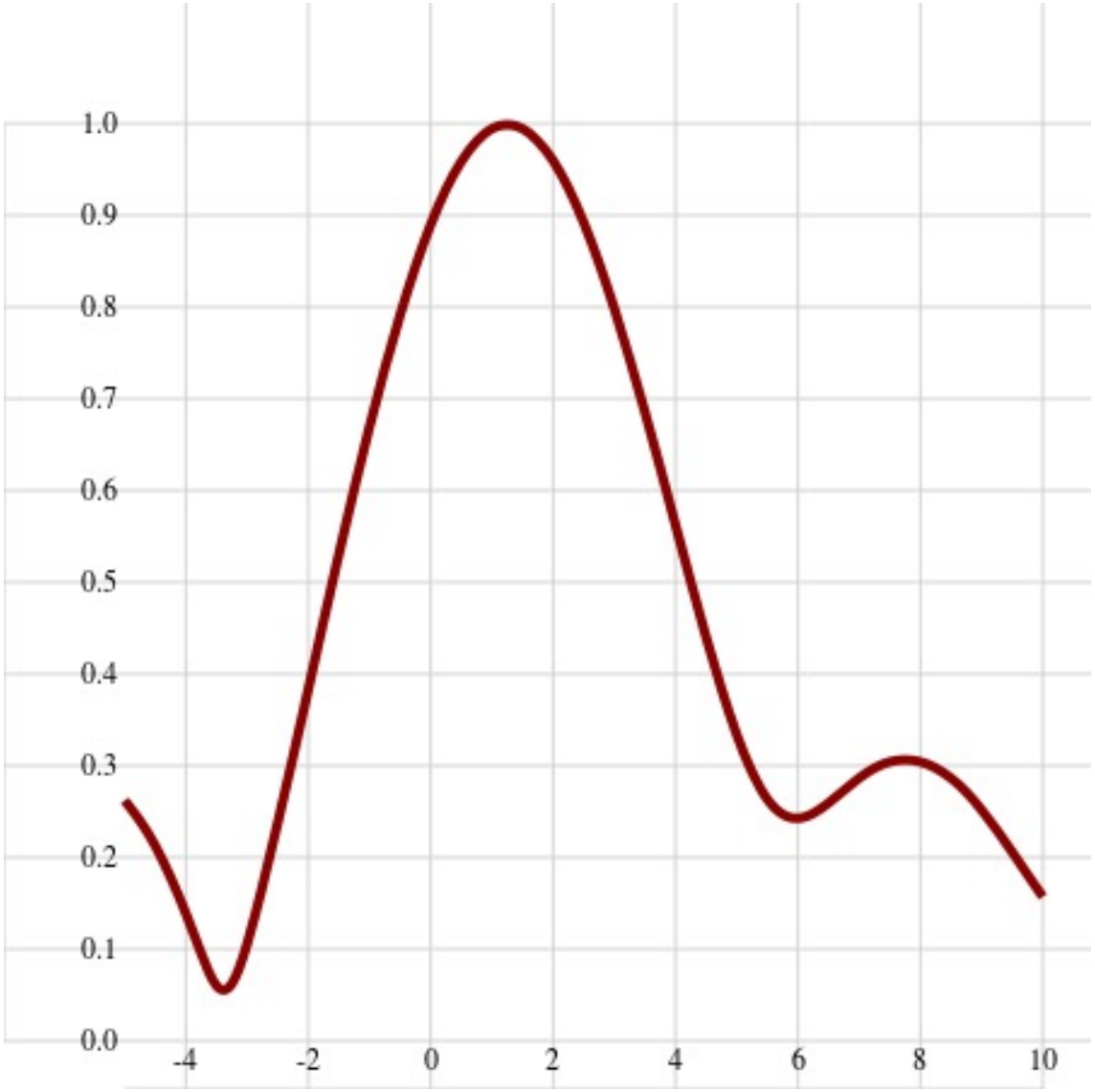
Horizontal Azimuth Pattern



Vertical Azimuth Pattern



Elevation pattern -5 to 10



Elevation pattern -5 to 90

Azimuth Horizontal Pattern Tabulation

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0°	0.939	-0.55	90°	0.961	-0.35	180°	0.200	-13.98	270°	0.354	-9.02
2°	0.936	-0.57	92°	0.963	-0.33	182°	0.189	-14.47	272°	0.365	-8.75
4°	0.934	-0.59	94°	0.969	-0.27	184°	0.173	-15.24	274°	0.411	-7.72
6°	0.929	-0.64	96°	0.976	-0.21	186°	0.157	-16.08	276°	0.458	-6.78
8°	0.924	-0.69	98°	0.982	-0.16	188°	0.140	-17.08	278°	0.504	-5.95
10°	0.919	-0.73	100°	0.986	-0.12	190°	0.128	-17.86	280°	0.538	-5.38
12°	0.917	-0.75	102°	0.988	-0.10	192°	0.124	-18.13	282°	0.550	-5.19
14°	0.916	-0.76	104°	0.991	-0.08	194°	0.123	-18.20	284°	0.550	-5.19
16°	0.913	-0.79	106°	0.994	-0.05	196°	0.121	-18.34	286°	0.616	-4.21
18°	0.910	-0.82	108°	0.997	-0.03	198°	0.120	-18.42	288°	0.659	-3.62
20°	0.907	-0.85	110°	0.999	-0.01	200°	0.118	-18.56	290°	0.681	-3.34
22°	0.905	-0.87	112°	1.000	0.00	202°	0.118	-18.56	292°	0.725	-2.79
24°	0.904	-0.88	114°	0.997	-0.03	204°	0.117	-18.64	294°	0.725	-2.79
26°	0.903	-0.89	116°	0.994	-0.05	206°	0.117	-18.64	296°	0.773	-2.24
28°	0.902	-0.90	118°	0.990	-0.09	208°	0.116	-18.71	298°	0.806	-1.87
30°	0.901	-0.91	120°	0.988	-0.10	210°	0.115	-18.79	300°	0.838	-1.54
32°	0.900	-0.92	122°	0.987	-0.11	212°	0.115	-18.79	302°	0.854	-1.37
34°	0.900	-0.92	124°	0.975	-0.22	214°	0.114	-18.86	304°	0.865	-1.26
36°	0.900	-0.92	126°	0.964	-0.32	216°	0.113	-18.94	306°	0.886	-1.05
38°	0.899	-0.92	128°	0.952	-0.43	218°	0.111	-19.09	308°	0.908	-0.84
40°	0.899	-0.92	130°	0.943	-0.51	220°	0.110	-19.17	310°	0.929	-0.64
42°	0.899	-0.92	132°	0.940	-0.54	222°	0.110	-19.17	312°	0.940	-0.54
44°	0.899	-0.92	134°	0.919	-0.73	224°	0.111	-19.09	314°	0.946	-0.48
46°	0.900	-0.92	136°	0.897	-0.94	226°	0.113	-18.94	316°	0.958	-0.37
48°	0.900	-0.92	138°	0.876	-1.15	228°	0.114	-18.86	318°	0.969	-0.27
50°	0.900	-0.92	140°	0.859	-1.32	230°	0.115	-18.79	320°	0.981	-0.17
52°	0.901	-0.91	142°	0.854	-1.37	232°	0.115	-18.79	322°	0.987	-0.11
54°	0.901	-0.91	144°	0.822	-1.70	234°	0.116	-18.71	324°	0.989	-0.10
56°	0.903	-0.89	146°	0.790	-2.05	236°	0.117	-18.64	326°	0.992	-0.07
58°	0.904	-0.88	148°	0.757	-2.42	238°	0.117	-18.64	328°	0.995	-0.04
60°	0.904	-0.88	150°	0.733	-2.70	240°	0.118	-18.56	330°	0.998	-0.02
62°	0.905	-0.87	152°	0.725	-2.79	242°	0.118	-18.56	332°	1.000	0.00
64°	0.908	-0.84	154°	0.681	-3.34	244°	0.120	-18.42	334°	0.999	-0.01
66°	0.911	-0.81	156°	0.638	-3.90	246°	0.121	-18.34	336°	0.996	-0.03
68°	0.914	-0.78	158°	0.594	-4.52	248°	0.123	-18.20	338°	0.993	-0.06
70°	0.916	-0.76	160°	0.561	-5.02	250°	0.124	-18.13	340°	0.990	-0.09
72°	0.917	-0.75	162°	0.550	-5.19	252°	0.124	-18.13	342°	0.988	-0.10
74°	0.922	-0.71	164°	0.504	-5.95	254°	0.140	-17.08	344°	0.985	-0.13
76°	0.927	-0.66	166°	0.458	-6.78	256°	0.157	-16.08	346°	0.979	-0.18
78°	0.931	-0.62	168°	0.411	-7.72	258°	0.173	-15.24	348°	0.972	-0.25
80°	0.935	-0.58	170°	0.377	-8.47	260°	0.185	-14.66	350°	0.966	-0.30
82°	0.936	-0.57	172°	0.365	-8.75	262°	0.189	-14.47	352°	0.963	-0.33
84°	0.943	-0.51	174°	0.321	-9.87	264°	0.233	-12.65	354°	0.960	-0.35
86°	0.950	-0.45	176°	0.277	-11.15	266°	0.277	-11.15	356°	0.953	-0.42
88°	0.956	-0.39	178°	0.233	-12.65	268°	0.321	-9.87	358°	0.946	-0.48

Azimuth Pattern Tabulation, FCC

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0°	0.939	-0.55	90°	0.961	-0.35	180°	0.200	-13.98	270°	0.354	-9.02
10°	0.919	-0.73	100°	0.986	-0.12	190°	0.128	-17.86	280°	0.538	-5.38
20°	0.907	-0.85	110°	0.999	-0.01	200°	0.118	-18.56	290°	0.681	-3.34
30°	0.901	-0.91	120°	0.988	-0.10	210°	0.115	-18.79	300°	0.838	-1.54
40°	0.899	-0.92	130°	0.943	-0.51	220°	0.110	-19.17	310°	0.929	-0.64
50°	0.900	-0.92	140°	0.859	-1.32	230°	0.115	-18.79	320°	0.981	-0.17
60°	0.904	-0.88	150°	0.733	-2.70	240°	0.118	-18.56	330°	0.998	-0.02
70°	0.916	-0.76	160°	0.561	-5.02	250°	0.124	-18.13	340°	0.990	-0.09
80°	0.935	-0.58	170°	0.377	-8.47	260°	0.185	-14.66	350°	0.966	-0.30

Elevation Pattern Tabulation

-5 to 10 in 0.25 increments, 10 to 90 in 0.50 increments

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-5.00	0.262	-11.63	8.75	0.272	-11.31	35.00	0.081	-21.83	62.50	0.042	-27.54
-4.75	0.241	-12.36	9.00	0.252	-11.97	35.50	0.078	-22.16	63.00	0.053	-25.51
-4.50	0.214	-13.39	9.25	0.230	-12.77	36.00	0.071	-22.97	63.50	0.062	-24.15
-4.25	0.179	-14.94	9.50	0.206	-13.72	36.50	0.060	-24.44	64.00	0.071	-22.97
-4.00	0.140	-17.08	9.75	0.181	-14.85	37.00	0.047	-26.56	64.50	0.078	-22.16
-3.75	0.095	-20.45	10.00	0.157	-16.08	37.50	0.035	-29.12	65.00	0.084	-21.51
-3.50	0.053	-25.51	10.50	0.117	-18.64	38.00	0.028	-31.06	65.50	0.088	-21.11
-3.25	0.054	-25.35	11.00	0.104	-19.66	38.50	0.032	-29.90	66.00	0.091	-20.82
-3.00	0.103	-19.74	11.50	0.121	-18.34	39.00	0.043	-27.33	66.50	0.093	-20.63
-2.75	0.167	-15.55	12.00	0.147	-16.65	39.50	0.055	-25.19	67.00	0.093	-20.63
-2.50	0.237	-12.51	12.50	0.167	-15.55	40.00	0.066	-23.61	67.50	0.092	-20.72
-2.25	0.309	-10.20	13.00	0.177	-15.04	40.50	0.073	-22.73	68.00	0.090	-20.92
-2.00	0.383	-8.34	13.50	0.173	-15.24	41.00	0.077	-22.27	68.50	0.086	-21.31
-1.75	0.458	-6.78	14.00	0.158	-16.03	41.50	0.077	-22.27	69.00	0.082	-21.72
-1.50	0.531	-5.50	14.50	0.132	-17.59	42.00	0.073	-22.73	69.50	0.077	-22.27
-1.25	0.602	-4.41	15.00	0.102	-19.83	42.50	0.065	-23.74	70.00	0.071	-22.97
-1.00	0.670	-3.48	15.50	0.075	-22.50	43.00	0.055	-25.19	70.50	0.065	-23.74
-0.75	0.734	-2.69	16.00	0.064	-23.88	43.50	0.043	-27.33	71.00	0.058	-24.73
-0.50	0.792	-2.03	16.50	0.076	-22.38	44.00	0.031	-30.17	71.50	0.050	-26.02
-0.25	0.845	-1.46	17.00	0.097	-20.26	44.50	0.025	-32.04	72.00	0.043	-27.33
0.00	0.891	-1.00	17.50	0.115	-18.79	45.00	0.028	-31.06	72.50	0.036	-28.87
0.25	0.930	-0.63	18.00	0.126	-17.99	45.50	0.038	-28.40	73.00	0.029	-30.75
0.50	0.960	-0.35	18.50	0.127	-17.92	46.00	0.050	-26.02	73.50	0.022	-33.15
0.75	0.982	-0.16	19.00	0.119	-18.49	46.50	0.060	-24.44	74.00	0.016	-35.92
1.00	0.996	-0.03	19.50	0.104	-19.66	47.00	0.069	-23.22	74.50	0.011	-39.17
1.25	1.000	0.00	20.00	0.083	-21.62	47.50	0.074	-22.62	75.00	0.010	-40.00
1.50	0.996	-0.03	20.50	0.061	-24.29	48.00	0.077	-22.27	75.50	0.013	-37.72
1.75	0.982	-0.16	21.00	0.048	-26.38	48.50	0.076	-22.38	76.00	0.017	-35.39
2.00	0.961	-0.35	21.50	0.052	-25.68	49.00	0.072	-22.85	76.50	0.021	-33.56
2.25	0.931	-0.62	22.00	0.069	-23.22	49.50	0.066	-23.61	77.00	0.026	-31.70
2.50	0.893	-0.98	22.50	0.086	-21.31	50.00	0.057	-24.88	77.50	0.030	-30.46
2.75	0.849	-1.42	23.00	0.098	-20.18	50.50	0.046	-26.74	78.00	0.033	-29.63
3.00	0.799	-1.95	23.50	0.104	-19.66	51.00	0.035	-29.12	78.50	0.037	-28.64
3.25	0.744	-2.57	24.00	0.102	-19.83	51.50	0.025	-32.04	79.00	0.039	-28.18
3.50	0.686	-3.27	24.50	0.093	-20.63	52.00	0.021	-33.56	79.50	0.041	-27.74
3.75	0.625	-4.08	25.00	0.079	-22.05	52.50	0.026	-31.70	80.00	0.043	-27.33
4.00	0.562	-5.01	25.50	0.062	-24.15	53.00	0.037	-28.64	80.50	0.044	-27.13
4.25	0.500	-6.02	26.00	0.045	-26.94	53.50	0.048	-26.38	81.00	0.044	-27.13
4.50	0.439	-7.15	26.50	0.038	-28.40	54.00	0.058	-24.73	81.50	0.044	-27.13
4.75	0.383	-8.34	27.00	0.045	-26.94	54.50	0.067	-23.48	82.00	0.044	-27.13
5.00	0.332	-9.58	27.50	0.060	-24.44	55.00	0.074	-22.62	82.50	0.043	-27.33
5.25	0.291	-10.72	28.00	0.074	-22.62	55.50	0.079	-22.05	83.00	0.042	-27.54
5.50	0.261	-11.67	28.50	0.084	-21.51	56.00	0.081	-21.83	83.50	0.041	-27.74
5.75	0.245	-12.22	29.00	0.089	-21.01	56.50	0.081	-21.83	84.00	0.039	-28.18
6.00	0.241	-12.36	29.50	0.088	-21.11	57.00	0.078	-22.16	84.50	0.037	-28.64
6.25	0.247	-12.15	30.00	0.081	-21.83	57.50	0.073	-22.73	85.00	0.034	-29.37
6.50	0.259	-11.73	30.50	0.069	-23.22	58.00	0.066	-23.61	85.50	0.032	-29.90
6.75	0.273	-11.28	31.00	0.055	-25.19	58.50	0.058	-24.73	86.00	0.029	-30.75
7.00	0.287	-10.84	31.50	0.040	-27.96	59.00	0.048	-26.38	86.50	0.025	-32.04
7.25	0.298	-10.52	32.00	0.032	-29.90	59.50	0.037	-28.64	87.00	0.022	-33.15
7.50	0.305	-10.31	32.50	0.036	-28.87	60.00	0.026	-31.70	87.50	0.019	-34.42
7.75	0.307	-10.26	33.00	0.049	-26.20	60.50	0.017	-35.39	88.00	0.015	-36.48
8.00	0.305	-10.31	33.50	0.062	-24.15	61.00	0.014	-37.08	88.50	0.011	-39.17
8.25	0.298	-10.52	34.00	0.073	-22.73	61.50	0.021	-33.56	89.00	0.008	-41.94
8.50	0.287	-10.84	34.50	0.079	-22.05	62.00	0.031	-30.17	89.50	0.004	-47.96
8.75	0.272	-11.31	35.00	0.081	-21.83	62.50	0.042	-27.54	90.00	0.003	-50.46

Azimuth Vertical Pattern Tabulation

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0°	0.903	-0.89	90°	0.853	-1.38	180°	0.236	-12.54	270°	0.269	-11.40
2°	0.908	-0.84	92°	0.846	-1.45	182°	0.234	-12.62	272°	0.276	-11.18
4°	0.918	-0.74	94°	0.830	-1.62	184°	0.231	-12.73	274°	0.290	-10.75
6°	0.928	-0.65	96°	0.816	-1.77	186°	0.228	-12.84	276°	0.303	-10.37
8°	0.938	-0.56	98°	0.800	-1.94	188°	0.225	-12.96	278°	0.317	-9.98
10°	0.943	-0.51	100°	0.793	-2.01	190°	0.223	-13.03	280°	0.324	-9.79
12°	0.947	-0.47	102°	0.784	-2.11	192°	0.223	-13.03	282°	0.333	-9.55
14°	0.954	-0.41	104°	0.767	-2.30	194°	0.223	-13.03	284°	0.351	-9.09
16°	0.961	-0.35	106°	0.750	-2.50	196°	0.222	-13.07	286°	0.370	-8.64
18°	0.968	-0.28	108°	0.733	-2.70	198°	0.222	-13.07	288°	0.388	-8.22
20°	0.972	-0.25	110°	0.724	-2.81	200°	0.222	-13.07	290°	0.397	-8.02
22°	0.974	-0.23	112°	0.714	-2.93	202°	0.222	-13.07	292°	0.407	-7.81
24°	0.979	-0.18	114°	0.696	-3.15	204°	0.223	-13.03	294°	0.428	-7.37
26°	0.984	-0.14	116°	0.676	-3.40	206°	0.224	-13.00	296°	0.449	-6.96
28°	0.989	-0.10	118°	0.658	-3.64	208°	0.225	-12.96	298°	0.470	-6.56
30°	0.991	-0.08	120°	0.648	-3.77	210°	0.225	-12.96	300°	0.480	-6.38
32°	0.992	-0.07	122°	0.638	-3.90	212°	0.225	-12.96	302°	0.491	-6.18
34°	0.994	-0.05	124°	0.617	-4.19	214°	0.226	-12.92	304°	0.512	-5.81
36°	0.997	-0.03	126°	0.596	-4.50	216°	0.227	-12.88	306°	0.533	-5.47
38°	0.999	-0.01	128°	0.575	-4.81	218°	0.228	-12.84	308°	0.554	-5.13
40°	1.000	0.00	130°	0.565	-4.96	220°	0.228	-12.84	310°	0.565	-4.96
42°	1.000	0.00	132°	0.554	-5.13	222°	0.228	-12.84	312°	0.575	-4.81
44°	0.997	-0.03	134°	0.533	-5.47	224°	0.227	-12.88	314°	0.596	-4.50
46°	0.994	-0.05	136°	0.512	-5.81	226°	0.226	-12.92	316°	0.617	-4.19
48°	0.993	-0.06	138°	0.491	-6.18	228°	0.225	-12.96	318°	0.638	-3.90
50°	0.991	-0.08	140°	0.480	-6.38	230°	0.225	-12.96	320°	0.648	-3.77
52°	0.991	-0.08	142°	0.470	-6.56	232°	0.225	-12.96	322°	0.658	-3.64
54°	0.984	-0.14	144°	0.449	-6.96	234°	0.224	-13.00	324°	0.676	-3.40
56°	0.979	-0.18	146°	0.428	-7.37	236°	0.223	-13.03	326°	0.696	-3.15
58°	0.974	-0.23	148°	0.407	-7.81	238°	0.222	-13.07	328°	0.714	-2.93
60°	0.972	-0.25	150°	0.397	-8.02	240°	0.222	-13.07	330°	0.724	-2.81
62°	0.968	-0.28	152°	0.388	-8.22	242°	0.222	-13.07	332°	0.733	-2.70
64°	0.961	-0.35	154°	0.370	-8.64	244°	0.222	-13.07	334°	0.750	-2.50
66°	0.954	-0.41	156°	0.351	-9.09	246°	0.223	-13.03	336°	0.767	-2.30
68°	0.947	-0.47	158°	0.333	-9.55	248°	0.223	-13.03	338°	0.784	-2.11
70°	0.943	-0.51	160°	0.324	-9.79	250°	0.223	-13.03	340°	0.793	-2.01
72°	0.938	-0.56	162°	0.317	-9.98	252°	0.225	-12.96	342°	0.800	-1.94
74°	0.928	-0.65	164°	0.303	-10.37	254°	0.228	-12.84	344°	0.816	-1.77
76°	0.918	-0.74	166°	0.290	-10.75	256°	0.231	-12.73	346°	0.830	-1.62
78°	0.908	-0.84	168°	0.276	-11.18	258°	0.234	-12.62	348°	0.846	-1.45
80°	0.903	-0.89	170°	0.269	-11.40	260°	0.236	-12.54	350°	0.853	-1.38
82°	0.897	-0.94	172°	0.266	-11.50	262°	0.240	-12.40	352°	0.859	-1.32
84°	0.884	-1.07	174°	0.260	-11.70	264°	0.248	-12.11	354°	0.872	-1.19
86°	0.872	-1.19	176°	0.252	-11.97	266°	0.257	-11.80	356°	0.884	-1.07
88°	0.859	-1.32	178°	0.244	-12.25	268°	0.265	-11.54	358°	0.897	-0.94

EXHIBIT E-3

ALLOCATION STUDY

tvstudy v2.2.5 (4uoc83)
Database: localhost, Study: WLMO-NewBreman3-Ch29-4, Model: Longley-Rice
Start: 2018.05.09 16:58:16

Study created: 2018.05.09 16:58:16

Study build station data: LMS TV 2018-05-08 #73

    Proposal: WLMO D29 LD APP New Breman, OH
 File number: NewBreman3-Ch29-4
 Facility ID: 509
Station data: User record
   Record ID: 234
     Country: U.S.
        Zone: II

Build options:
Protect pre-transition records not on baseline channel

Search options:
Non-U.S. records included
Baseline record excluded if station has CP

Individual records excluded:
0000001064   WRGT-TV D30 DT LIC DAYTON, OH BLANK0000001064

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	W22DE	N22+	TX	LIC	DAYTON, OH	BLTTL20100511AAU	74.7 km
No	WDFM-LP	N26-	TX	LIC	DEFIANCE, OH	BLTTL20031007AAN	101.5
No	WIPX-TV	D28	DT	CP	BLOOMINGTON, IN	BLANK0000034351	187.9
No	WSJV	D28	DT	LIC	ELKHART, IN	BLCDT20100115AAE	205.8
No	WIWU-CD	D28	DC	CP	MARION, IN	BLANK0000033170	111.8
No	WUDZ-LD	D28	LD	LIC	TERRE HAUTE, IN	BLANK0000010840	166.4
No	WLEX-TV	D28	DT	CP	LEXINGTON, KY	BLANK0000028121	261.7
No	WSYM-TV	D28	DT	CP	LANSING, MI	BLANK0000026760	232.4
No	WBQC-LD	D28	LD	APP	CINCINNATI, OH	BLANK0000052535	141.0
No	WSYX	D28	DT	CP	COLUMBUS, OH	BLANK0000027371	124.1
No	WCBZ-CD	D28	DC	LIC	Columbus, OH	BLANK0000044818	120.6

No	WPTO	D28	DT	LIC	OXFORD, OH	BLEDT20040714AAQ	141.7
No	WMAQ-TV	D29	DT	LIC	CHICAGO, IL	BLANK0000053194	320.6
No	WAUR-LD	D29	LD	CP	Ottawa, IL	BLANK0000035883	381.1
No	WEDX-LD	D29	LD	CP	FORT WAYNE, IN	BLANK0000036232	83.1
No	WJYL-CD	D29	DC	CP	JEFFERSONVILLE, IN	BLANK0000034246	257.6
No	WTTK	D29	DT	LIC	KOKOMO, IN	BLCDT20090930ABD	166.3
No	WSBT-TV	D29	DT	CP	SOUTH BEND, IN	BLANK0000034389	207.3
No	WKGB-TV	D29	DT	CP	BOWLING GREEN, KY	BLANK0000034655	416.4
Yes	WXIX-TV	D29	DT	LIC	NEWPORT, KY	BLCDT20000908ABI	141.7
No	WUHQ-LD	D29	LD	LIC	GRAND RAPIDS, MI	BLDTL20111121AAI	306.1
No	WOMS-CD	D29	DC	LIC	MUSKEGON, MI	BLDTA20110812ACT	349.7
No	WNEO	D29	DT	CP	ALLIANCE, OH	BLANK0000034304	296.3
Yes	W29EL-D	D29	LD	CP	LIMA, OH	BNPDTL20100609AFJ	57.2
No	WIVN-LD	D29	LD	CP	NEWCOMERSTOWN, OH	BPDTL20141020AAD	241.9
No	WIVN-LD	D29	LD	LIC	NEWCOMERSTOWN, OH	BLDTL20101222AAZ	241.9
Yes	WPTO	D29	DT	CP	OXFORD, OH	BLANK0000034602	141.2
No	WGTE-TV	D29	DT	LIC	TOLEDO, OH	BLEDT20031110AKO	160.9
No	W29EG-D	D29	LD	LIC	ZANESVILLE, OH	BLANK0000048395	164.5
No	WWAT-CD	D29	DC	CP	CHARLEROI, PA	BLANK0000034569	373.8
No	WIIC-LD	N29+	TX	LIC	PITTSBURGH, PA	BLTTL19981230JB	371.8
No	W29CO	N29z	TX	LIC	SHARON, PA	BLTTL20031216ACI	343.5
No	W29CO	D29	LD	CP	SHARON, PA	BDFCDTL20100405ABT	343.5
No	WDJT-TV	D29	DT	CP	MILWAUKEE, WI	BLANK0000034662	423.5
No	WCHS-TV	D29	DT	CP	CHARLESTON, WV	BLANK0000034592	304.8
No	W29EJ-D	D29	LD	CP	PARKERSBURG, WV	BNPDTL20101004ABC	269.9
No	W29DP-D	D29	LD	APP	WELCH, WV	BLDTT20130215AAE	406.4
No	WSJV	D30	DT	CP	ELKHART, IN	BLANK0000027461	205.8
No	W41DS-D	D30	LD	APP	FORT WAYNE, IN	BLANK0000052699	92.4
No	WSDI-LD	D30	LD	LIC	WOLCOTT, IN	BLANK0000040106	166.4
No	WKPC-TV	D30	DT	CP	LOUISVILLE, KY	BLANK0000034634	257.9
No	WKMR	D30	DT	CP	MOREHEAD, KY	BLANK0000029752	259.1
No	WBNX-TV	D30	DT	LIC	AKRON, OH	BLCDT20070430AXX	249.5
No	WHIZ-TV	D30	DT	CP	ZANESVILLE, OH	BLANK0000024560	207.9
No	WWRD-LP	N32+	TX	LIC	DAYTON, OH	BLTTL20071011AAP	82.2
No	CFMT-DT-1	D29	DT	LIC	LONDON, ON	BLANKCANADA188	378.8

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

```
    Channel: D29
       Mask: Full Service
   Latitude:  40 23 19.20 N (NAD83)
  Longitude:  84 21 26.40 W
Height AMSL: 377.0 m
       HAAT: 0.0 m
   Peak ERP: 15.0 kW
    Antenna: BCE512C1R-V3-29 0.0 deg
Elev Pattrn: Generic
```

50.2 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	13.2 kW	98.3 m	42.8 km
45.0	12.1	82.9	40.3
90.0	13.9	76.2	40.0
135.0	12.2	76.8	39.5
180.0	0.600	80.3	24.9
225.0	0.190	82.0	19.1
270.0	1.88	81.3	30.9
315.0	13.7	94.4	42.5

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m Computed HAAT: 84 m

Proposal 25.23 dBu contour does not cross Canadian border
Distance to Canadian border: 196.2 km

Distance to Mexican border: 1939.4 km

Conditions at FCC monitoring station: Allegan MI
Bearing: 332.2 degrees Distance: 280.0 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 275.9 degrees Distance: 1765.8 km

Study cell size: 1.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to BLCDT20000908ABI LIC scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WXIX-TV	D29	DT	LIC	NEWPORT, KY	BLCDT20000908ABI	
Undesireds:	WLMO	D29	LD	APP	New Breman, OH	NewBreman3-Ch29-4	141.7 km
	WTTK	D29	DT	LIC	KOKOMO, IN	BLCDT20090930ABD	165.5

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
19491.7	2,823,269	19309.7	2,802,203	17835.6	2,731,181	17821.5	2,721,554	0.08	0.35

Undesired	Total IX		Unique IX, before		Unique IX, after	
WLMO D29 LD APP	20.2	18,585			14.1	9,627
WTTK D29 DT LIC	1474.0	71,022	1474.0	71,022	1468.0	62,064

Interference to BNPDTL20100609AFJ CP scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	W29EL-D	D29	LD	CP	LIMA, OH	BNPDTL20100609AFJ	
Undesireds:	WLMO	D29	LD	APP	New Breman, OH	NewBreman3-Ch29-4	57.2 km
	WEDX-LD	D29	LD	CP	FORT WAYNE, IN	BLANK0000036232	33.8
	WIVN-LD	D29	LD	CP	NEWCOMERSTOWN, OH	BPDTL20141020AAD	266.7

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
884.6	23,286	884.6	23,286	877.6	23,253	870.7	23,208	0.79	0.19

Undesired	Total IX		Unique IX, before		Unique IX, after	
WLMO D29 LD APP	8.0	58			7.0	45
WEDX-LD D29 LD CP	7.0	33	7.0	33	6.0	20

Interference to BLANK0000034602 CP scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WPTO	D29	DT	CP	OXFORD, OH	BLANK0000034602	
Undesireds:	WLMO	D29	LD	APP	New Breman, OH	NewBreman3-Ch29-4	141.2 km
	WIPX-TV	D28	DT	CP	BLOOMINGTON, IN	BLANK0000034351	143.3
	WLEX-TV	D28	DT	CP	LEXINGTON, KY	BLANK0000028121	121.7
	WSYX	D28	DT	CP	COLUMBUS, OH	BLANK0000027371	157.2
	WJYL-CD	D29	DC	CP	JEFFERSONVILLE, IN	BLANK0000034246	141.0
	WSBT-TV	D29	DT	CP	SOUTH BEND, IN	BLANK0000034389	312.0
	WKGB-TV	D29	DT	CP	BOWLING GREEN, KY	BLANK0000034655	292.0
	WNEO	D29	DT	CP	ALLIANCE, OH	BLANK0000034304	365.6
	WGTE-TV	D29	DT	LIC	TOLEDO, OH	BLEDT20031110AKO	296.3
	WCHS-TV	D29	DT	CP	CHARLESTON, WV	BLANK0000034592	240.5

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
22249.4	2,982,369	21971.2	2,969,971	20820.4	2,936,070	20807.3	2,922,645	0.06	0.46

Undesired	Total IX		Unique IX, before		Unique IX, after	
WLMO D29 LD APP	25.2	19,342			13.1	13,425
WIPX-TV D28 DT CP	14.9	59	3.0	0	3.0	0
WLEX-TV D28 DT CP	11.0	73	5.0	12	5.0	12
WSYX D28 DT CP	1.0	0	0.0	0	0.0	0
WJYL-CD D29 DC CP	740.4	11,371	696.6	10,068	694.6	7,540
WSBT-TV D29 DT CP	22.0	5,019	11.0	205	11.0	205
WKGB-TV D29 DT CP	1.0	0	0.0	0	0.0	0
WNEO D29 DT CP	6.0	615	0.0	0	0.0	0
WGTE-TV D29 DT LIC	1.0	0	1.0	0	0.0	0
WCHS-TV D29 DT CP	416.4	23,367	379.4	18,091	375.4	16,331

Interference to proposal scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WLMO	D29	LD	APP	New Breman, OH	NewBreman3-Ch29-4	
Undesireds:	W29EL-D	D29	LD	CP	LIMA, OH	BNPDTL20100609AFJ	57.2 km
	WIVN-LD	D29	LD	CP	NEWCOMERSTOWN, OH	BPDTL20141020AAD	241.9

WPTO D29 DT CP OXFORD, OH BLANK0000034602 141.2

Service area		Terrain-limited		IX-free		Percent IX	
4081.5	190,050	4081.5	190,050	3930.3	187,355	3.70	1.42

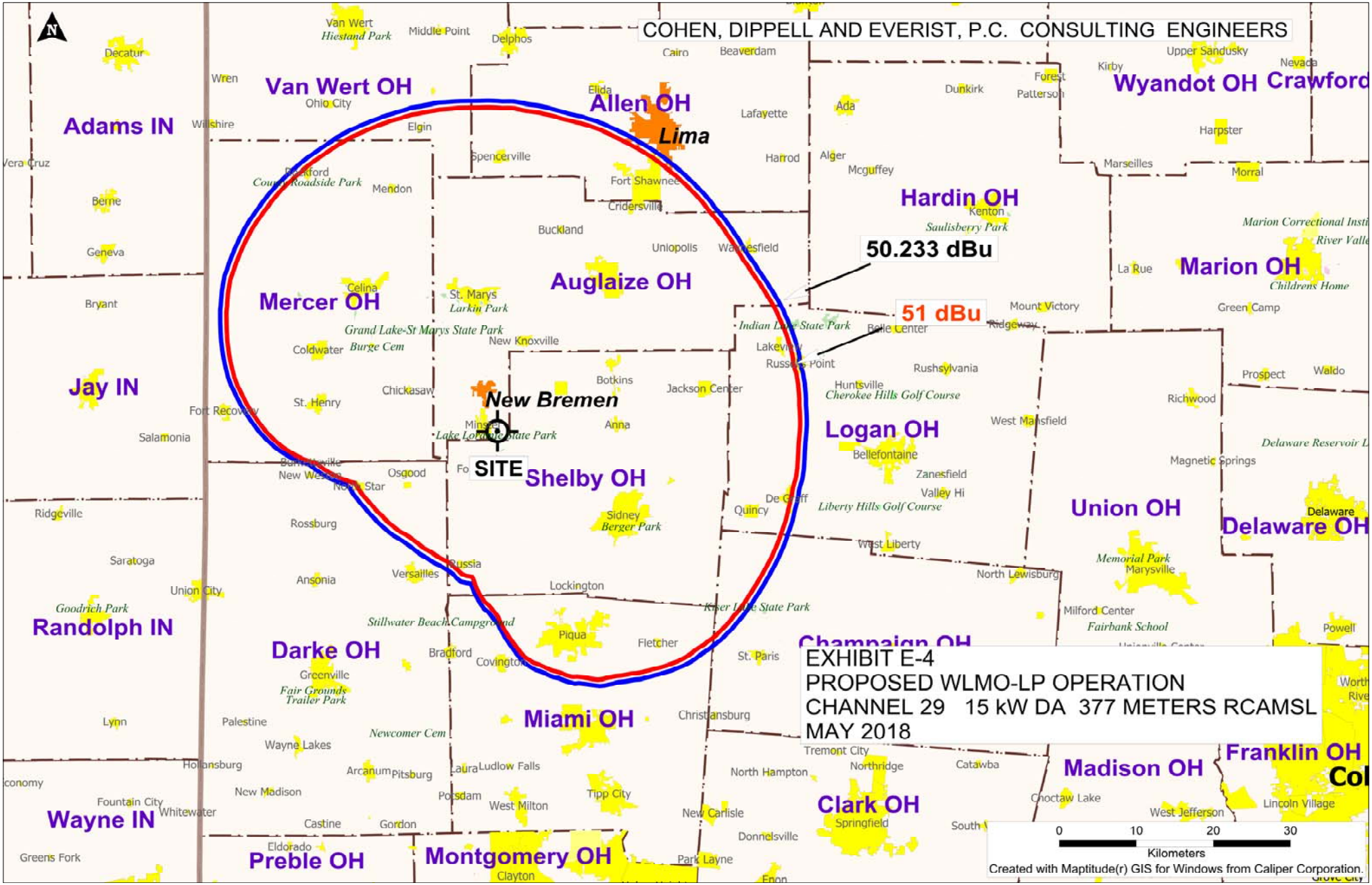
Undesired	Total IX		Unique IX		Prcnt Unique IX	
W29EL-D D29 LD CP	139.2	1,746	136.2	1,714	3.34	0.90
WPTO D29 DT CP	15.0	981	12.0	949	0.29	0.50

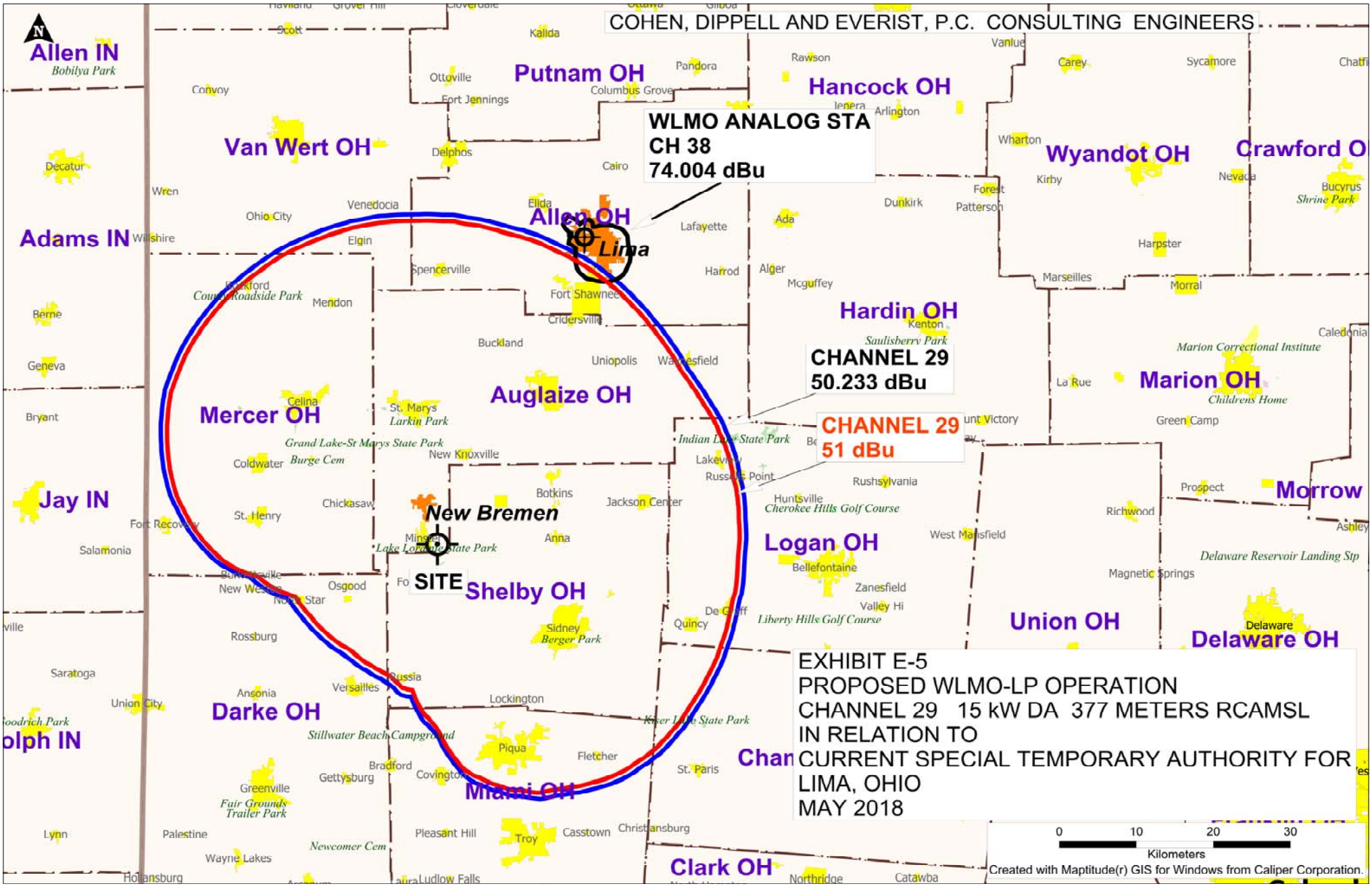
TABLE I
COMPUTED COVERAGE DATA
FOR THE PROPOSED DTV OPERATION OF
WLMO-LP, LIMA, OHIO
CHANNEL 29 15 KW MAX ERP 377 METERS RC/AMSL
MAY 2018

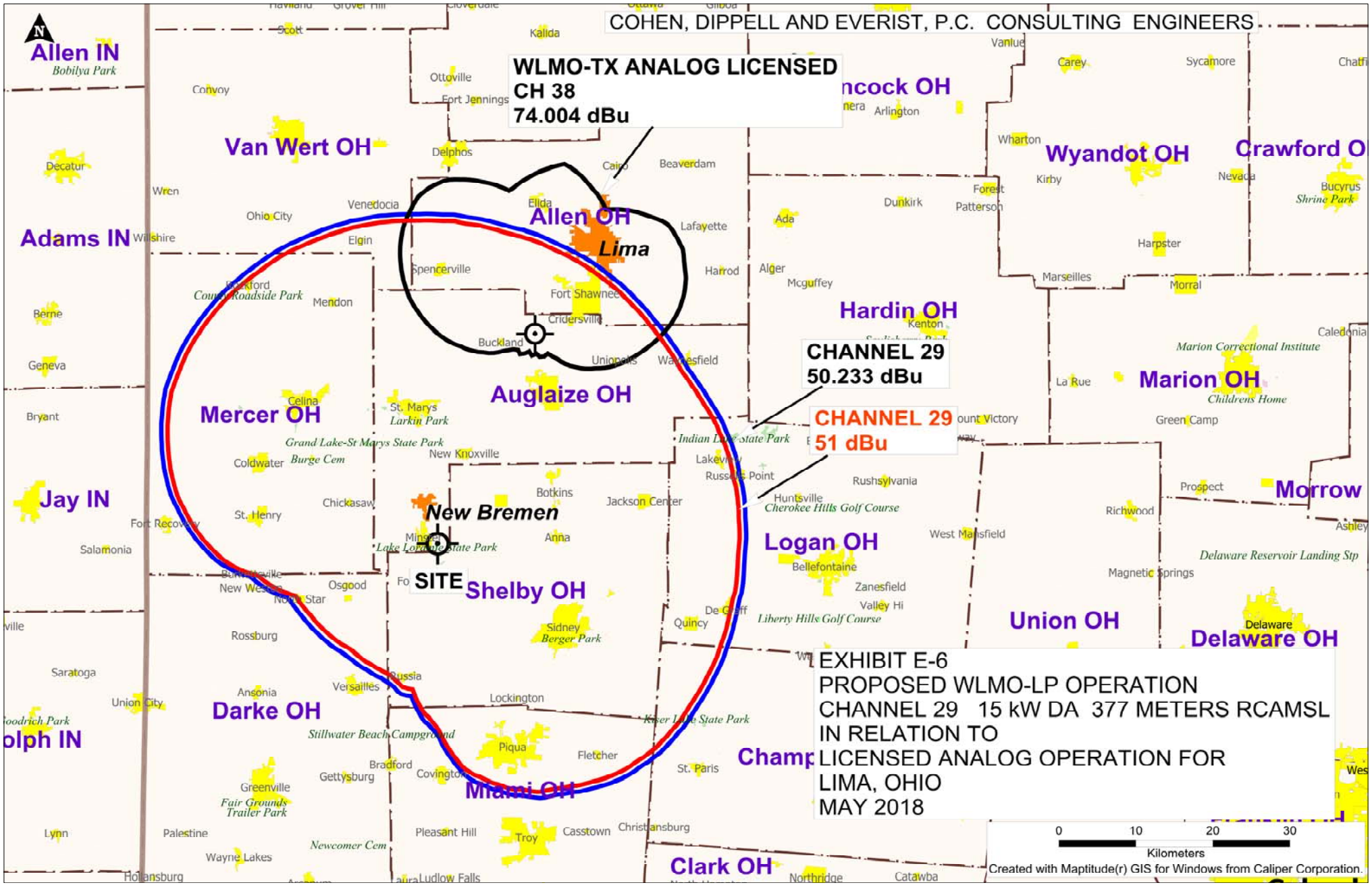
Radial	Average Elevation	Effective Height	Depression Angle	Effective Radiated Power	Distance to Contour 51 dBu	Distance to Contour 50.233 dBu
N ° E, T	meters	meters	degrees	kW	km	km
0	278.7	98.3	0.225	13.2	41.9	42.8
10	280.6	96.4	0.223	12.7	41.5	42.4
20	282.2	94.8	0.221	12.3	41.2	42.0
30	285.4	91.6	0.217	12.2	40.7	41.5
40	290.9	86.1	0.211	12.1	39.9	40.8
50	296.7	80.3	0.203	12.2	39.1	40.0
60	298.3	78.7	0.201	12.3	38.9	39.8
70	296.1	80.9	0.204	12.6	39.4	40.2
80	297.3	79.7	0.203	13.1	39.4	40.3
90	300.8	76.2	0.198	13.9	39.2	40.0
100	303.2	73.8	0.195	14.6	39.0	39.9
110	303.5	73.5	0.195	15.0	39.1	40.0
120	303.4	73.6	0.195	14.6	39.0	39.9
130	301.1	75.9	0.198	13.3	38.9	39.8
140	300.1	76.9	0.199	11.1	38.2	39.0
150	302.4	74.6	0.196	8.1	36.3	37.1
160	299.3	77.7	0.200	4.7	34.1	35.0
170	294.9	82.1	0.206	2.1	30.7	31.6
180	296.7	80.3	0.203	0.6	24.0	24.9
190	297.9	79.1	0.202	0.3	19.2	20.1
200	299.2	77.8	0.200	0.2	18.2	19.1
210	298.9	78.1	0.201	0.2	17.9	18.8
220	295.8	81.2	0.205	0.2	17.8	18.8
230	295.0	82.0	0.206	0.2	18.4	19.3
240	293.0	84.0	0.208	0.2	18.9	19.8
250	291.1	85.9	0.210	0.2	19.7	20.6
260	291.7	85.3	0.210	0.5	23.8	24.7
270	295.7	81.3	0.205	1.9	30.0	30.9

TABLE I
COMPUTED COVERAGE DATA
FOR THE PROPOSED DTV OPERATION OF
WLMO-LP, LIMA, OHIO
CHANNEL 29 15 KW MAX ERP 377 METERS RC/AMSL
MAY 2018

Radial	Average Elevation	Effective Height	Depression Angle	Effective Radiated Power	Distance to Contour 51 dBu	Distance to Contour 50.233 dBu
N ° E, T	meters	meters	degrees	kW	km	km
280	296.0	81.0	0.204	4.3	34.1	35.0
290	290.8	86.3	0.211	7.0	37.2	38.1
300	286.7	90.3	0.216	10.5	39.8	40.7
310	284.0	93.0	0.219	12.9	41.2	42.0
320	281.5	95.5	0.222	14.4	42.0	42.9
330	279.8	97.2	0.224	14.9	42.4	43.3
340	278.3	98.7	0.226	14.7	42.5	43.4
350	277.3	99.7	0.227	14.0	42.4	43.2


COHEN, DIPPELL AND EVERIST, P.C. CONSULTING ENGINEERS
EXHIBIT E-4
PROPOSED WLMO-LP OPERATION
CHANNEL 29 15 kW DA 377 METERS RCAMSL
MAY 2018
50.233 dBu
51 dBu
SITE
New Bremen
Lima
Van Wert OH
Allen OH
Wyandot OH
Crawford
Adams IN
Hardin OH
Marion OH
Auglaize OH
Mercer OH
Jay IN
Logan OH
Shelby OH
Union OH
Delaware OH
Randolph IN
Darke OH
Miami OH
Champaign OH
Franklin OH
Madison OH
Clark OH
Wayne IN
Preble OH
Montgomery OH
0 10 20 30
Kilometers
Created with Maptitude(r) GIS for Windows from Caliper Corporation.


COHEN, DIPPELL AND EVERIST, P.C. CONSULTING ENGINEERS
WLMO ANALOG STA
CH 38
74.004 dBu
CHANNEL 29
50.233 dBu
CHANNEL 29
51 dBu
SITE
New Bremen
Lima
Allen IN
Adams IN
Jay IN
Van Wert OH
Putnam OH
Hancock OH
Wyandot OH
Crawford O
Allen OH
Hardin OH
Marion OH
Morrow
Auglaize OH
Mercer OH
Logan OH
Shelby OH
Union OH
Delaware OH
Darke OH
Miami OH
Clark OH
EXHIBIT E-5
PROPOSED WLMO-LP OPERATION
CHANNEL 29 15 kW DA 377 METERS RCAMSL
IN RELATION TO
CURRENT SPECIAL TEMPORARY AUTHORITY FOR
LIMA, OHIO
MAY 2018
0 10 20 30
Kilometers
Created with Maptitude(r) GIS for Windows from Caliper Corporation.


COHEN, DIPPELL AND EVERIST, P.C. CONSULTING ENGINEERS
WLMO-TX ANALOG LICENSED
CH 38
74.004 dBu
CHANNEL 29
50.233 dBu
CHANNEL 29
51 dBu
SITE
New Bremen
Allen IN
Adams IN
Jay IN
Van Wert OH
Mercer OH
Auglaize OH
Allen OH
Lima
Hardin OH
Wyandot OH
Marion OH
Logan OH
Shelby OH
Union OH
Delaware OH
Darke OH
Miami OH
Champaign OH
Clark OH
Morrow
Crawford O
Hancock OH
EXHIBIT E-6
PROPOSED WLMO-LP OPERATION
CHANNEL 29 15 kW DA 377 METERS RCAMSL
IN RELATION TO
LICENSED ANALOG OPERATION FOR
LIMA, OHIO
MAY 2018
0 10 20 30
Kilometers
Created with Maptitude(r) GIS for Windows from Caliper Corporation.