

## **Non-Interference Compliance**

Regarding Facility id 146162

Channel 239

### **Description of Exhibit 12 Contents**

This exhibit demonstrates that the proposed facility complies with contour overlap and interference protection provisions in all of the applicable rule sections and that this application for a construction permit is in full compliance with 47 C.F.R. § 74.1204.

**Let it be noted that should any actual real world interference occur, the applicant acknowledges that it will promptly suspend operation of this translator in accordance with 47 C.F.R. § 74.1203.**

Page 2 of this exhibit is an explanation of the method used to demonstrate compliance with contour overlap and interference provisions based on 47 C.F.R. § 74.1204(d), which states:

*[A]n application otherwise precluded by this section will be accepted if it can be demonstrated that no actual interference will occur due to intervening terrain, lack of population or such other factors as may be applicable.*

Page 3 contains a tabulation of the vertical radiation pattern of the proposed antenna and the minimum ground clearance of the interfering contour based on this pattern.

Pages 4 through 5 include a tabulation of the vertical radiation pattern for the proposed antenna provided by the antenna manufacturer.

Page 6 of this exhibit contains the tabulated data from the interference analysis, which shows all stations whose protected contours come within 50 km of the 34 dBμ F(50,10) contour of the proposed translator. These tabulated values were calculated using data from the FCC's CDBS files and 30 arc second terrain data. The column labeled "Adj" shows the number of channels difference between the entry and the proposed translator. The column labeled "Dist" shows the distance in km. The column labeled "Overlap" shows the area of contour overlap in square kilometers.

Page 7 of this exhibit is a portion of a USGS 1:24,000 scale 7.5 minute quadrangle at full scale with the calculated area of interference overlaid. The sheet includes the quadrangle name and measurement scale at the bottom-left corner (note: "Mt" refers to meters). The area of interference was calculated using the free space equation and 120 radials.

Page 8 of this exhibit is a high resolution aerial photo of the vicinity surrounding the proposed translator's tower site provided by the U.S. Geological Survey's National Aerial Photography Program. It has been included to provide clarification of the nature of the buildings in the vicinity.

**Note: The tallest building within the zone of interference is 25ft (7.6m) tall. This proposal provides 31.4m (103ft) of ground clearance which is more than adequate to protect this building so a lack of population has been demonstrated within the area of interference and this application is therefore in full compliance with 47 C.F.R. § 74.1204.**

### Compliance with 47 C.F.R. § 74.1204(d)

All authorized second and third adjacent stations with which the proposed translator has contour overlap are tabulated below. Column four show the station's signal level at the proposed translator's tower site, and column five gives the minimum value within the entire standard interfering contour of the proposed translator (100 dBμ for most classes, 94 for class B, 97 for class B1). The minimum second or third adjacent F(50,50) contour within the proposed translator's standard interfering contour was used to calculate the proposed translator's actual "worst-case" interfering contour.

Application_id	File Number	Callsign	Contour at Tower	Min. Contour
1165775	BLH20070129API	WXFX	90.1	73.4
169274	BLH19920130KA	WQKS-FM	72.1	72.1
Minimum F(50,50) Contour of Adjacent Station within Proposed Translator's Standard Interfering Contour				<b>72.1</b>

FCC 02-244 at Section II.A.5 states that "when demonstrating that 'no actual interference will occur due to . . . other factors,' pursuant to Section 74.1204(d), an applicant may use the undesired-to-desired signal ratio method." The undesired-to-desired ratio for second and third adjacent stations required by § 74.1204(a) is 40 dB. Since the minimum protected contour strength within the proposed translator's standard interference contour is **72.1 dBμ**, this makes the proposed translator's worst-case interfering contour **112.1 dBμ**. By the free-space equation, this contour is calculated to extend a maximum of **275.4 m** from the transmit antenna.

The maximum horizontal plane of the interfering contour was calculated for 120 radials and plotted on the pertinent portion of a USGS quadrangle (page 7 of this exhibit). However, the field strength of the proposed translator's antenna varies with angle of depression from horizontal. The antenna relative fields are tabulated on the following page at 5 degree increments, starting at 5 degrees below horizontal. Antenna relative field strength data was provided and certified by the manufacturer of the proposed antenna. Using a free-space calculation that neglects any loss due to reflection, the vertical ground clearance of the proposed translator's interference contour has been tabulated. As shown on the following page, the area of interference clears the tower ground level (TGL) by **31.4 m** at the lowest point. The applicant has taken into account USGS quadrangles and relevant aerial photography in stating that no structures, except possibly tower support structures, puncture the area of interference.

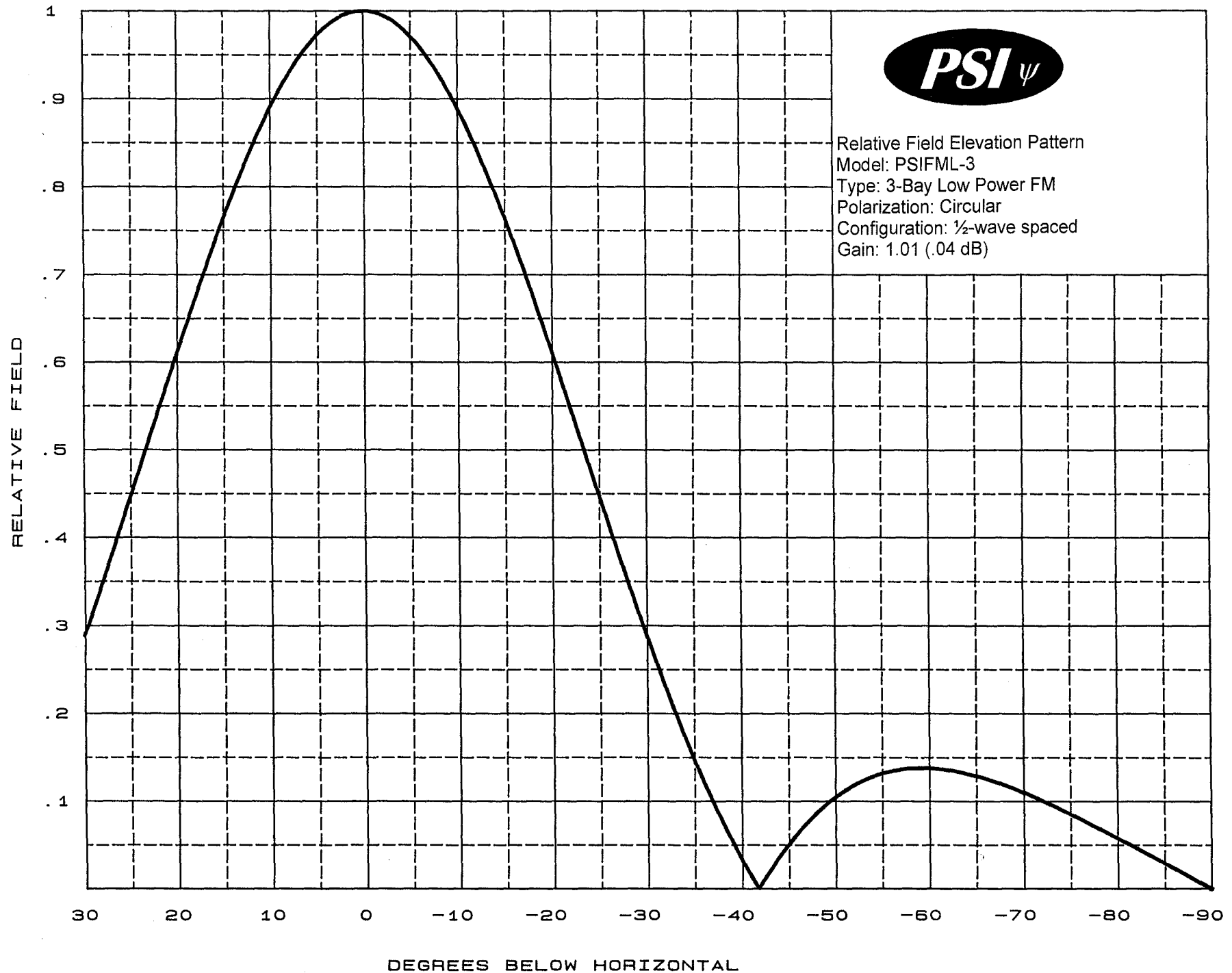
**Note: The tallest building within the zone of interference is 25ft (7.6m) tall. This proposal provides 31.4m (103ft) of ground clearance which is more than adequate to protect this building so a lack of population has been demonstrated within the area of interference and this application is therefore in full compliance with 47 C.F.R. § 74.1204.**

<b>Antenna Manufacturer:</b>	<b>PSI</b>
<b>Antenna Model:</b>	<b>FML-3(.5)</b>
<b>CORAGL:</b>	<b>89 m</b>
<b>Maximum ERP:</b>	<b>0.25 kW</b>
<b>Interfering Contour:</b>	<b>112.1 dBμ</b>
<b>Max Int. Contour Distance:</b>	<b>275.4 m</b>
<b>Min Ground Clearance:</b>	<b>31.4 m</b>

Depression Angle Below Horizontal	Antenna Relative Field	ERP (watts)	Distance to Interfering Contour from Antenna (m)	Horizontal Distance of Interfering Contour from Tower (m)	Vertical Clearance of Interfering Contour above TGL (m)
5	.971	235.7	267.4	266.4	65.7
10	.889	197.6	244.8	241.1	46.5
15	.764	145.9	210.4	203.2	34.5
20	.611	93.3	168.3	158.1	31.4
25	.447	50.0	123.1	111.6	37.0
30	.288	20.7	79.3	68.7	49.3
35	.147	5.4	40.5	33.2	65.8
40	.033	0.3	9.1	7.0	83.2
45	.050	0.6	13.8	9.7	79.3
50	.104	2.7	28.6	18.4	67.1
55	.131	4.3	36.1	20.7	59.4
60	.138	4.8	38.0	19.0	56.1
65	.129	4.2	35.5	15.0	56.8
70	.110	3.0	30.3	10.4	60.5
75	.085	1.8	23.4	6.1	66.4
80	.058	0.8	16.0	2.8	73.3
85	.029	0.2	8.0	0.7	81.0
90	.001	0.0	0.3	0.0	88.7
Minimum Clearance above TGL:					<b>31.4 m</b>



Relative Field Elevation Pattern  
Model: PSIFML-3  
Type: 3-Bay Low Power FM  
Polarization: Circular  
Configuration:  $\frac{1}{2}$ -wave spaced  
Gain: 1.01 (.04 dB)





# **Propagation Systems Inc.**

Elevation Pattern Tabulation

Antenna: PSIFML-3 Special

Bay spacing: 1/2 wave

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-90.0	0.001	-60.000	-50.0	0.104	-19.664	-10.0	0.889	-1.020
-89.0	0.006	-44.795	-49.0	0.095	-20.404	-9.0	0.910	-0.824
-88.0	0.012	-38.775	-48.0	0.086	-21.319	-8.0	0.928	-0.649
-87.0	0.017	-35.177	-47.0	0.075	-22.481	-7.0	0.945	-0.496
-86.0	0.023	-32.697	-46.0	0.063	-23.967	-6.0	0.959	-0.364
-85.0	0.029	-30.770	-45.0	0.050	-25.994	-5.0	0.971	-0.252
-84.0	0.035	-29.194	-44.0	0.036	-28.896	-4.0	0.982	-0.162
-83.0	0.040	-27.861	-43.0	0.020	-33.784	-3.0	0.990	-0.091
-82.0	0.046	-26.705	-42.0	0.004	-48.432	-2.0	0.995	-0.041
-81.0	0.052	-25.685	-41.0	0.014	-37.021	-1.0	0.999	-0.011
-80.0	0.058	-24.772	-40.0	0.033	-29.542	0.0	1.000	0.000
-79.0	0.063	-23.967	-39.0	0.054	-25.411	1.0	0.999	-0.011
-78.0	0.069	-23.231	-38.0	0.075	-22.464	2.0	0.995	-0.041
-77.0	0.074	-22.569	-37.0	0.098	-20.159	3.0	0.990	-0.091
-76.0	0.080	-21.955	-36.0	0.122	-18.264	4.0	0.982	-0.162
-75.0	0.085	-21.381	-35.0	0.147	-16.638	5.0	0.971	-0.252
-74.0	0.090	-20.871	-34.0	0.173	-15.215	6.0	0.959	-0.364
-73.0	0.096	-20.390	-33.0	0.201	-13.947	7.0	0.945	-0.496
-72.0	0.101	-19.948	-32.0	0.229	-12.806	8.0	0.928	-0.649
-71.0	0.105	-19.551	-31.0	0.258	-11.761	9.0	0.910	-0.824
-70.0	0.110	-19.184	-30.0	0.288	-10.811	10.0	0.889	-1.018
-69.0	0.114	-18.843	-29.0	0.319	-9.930	11.0	0.867	-1.235
-68.0	0.118	-18.538	-28.0	0.350	-9.115	12.0	0.844	-1.475
-67.0	0.122	-18.264	-27.0	0.382	-8.359	13.0	0.819	-1.738
-66.0	0.126	-18.020	-26.0	0.414	-7.652	14.0	0.792	-2.024
-65.0	0.129	-17.803	-25.0	0.447	-6.994	15.0	0.764	-2.335
-64.0	0.132	-17.620	-24.0	0.480	-6.378	16.0	0.735	-2.671
-63.0	0.134	-17.472	-23.0	0.513	-5.800	17.0	0.705	-3.031
-62.0	0.136	-17.354	-22.0	0.546	-5.258	18.0	0.675	-3.418
-61.0	0.137	-17.268	-21.0	0.579	-4.752	19.0	0.643	-3.833
-60.0	0.138	-17.220	-20.0	0.611	-4.278	20.0	0.611	-4.276
-59.0	0.138	-17.210	-19.0	0.643	-3.833	21.0	0.579	-4.752
-58.0	0.137	-17.248	-18.0	0.675	-3.418	22.0	0.546	-5.258
-57.0	0.136	-17.325	-17.0	0.705	-3.031	23.0	0.513	-5.800
-56.0	0.134	-17.452	-16.0	0.735	-2.671	24.0	0.480	-6.375
-55.0	0.131	-17.630	-15.0	0.764	-2.335	25.0	0.447	-6.991
-54.0	0.128	-17.874	-14.0	0.792	-2.026	26.0	0.414	-7.652
-53.0	0.123	-18.189	-13.0	0.818	-1.740	27.0	0.382	-8.356
-52.0	0.118	-18.582	-12.0	0.844	-1.477	28.0	0.350	-9.115
-51.0	0.111	-19.065	-11.0	0.867	-1.237	29.0	0.319	-9.930
						30.0	0.288	-10.807

file: FML 3-bay elevation tabulation

revision: A

Date: 1/28/08

# **Adjacent Channel Study** **For Station W239BN, Facility\_id: 146162**

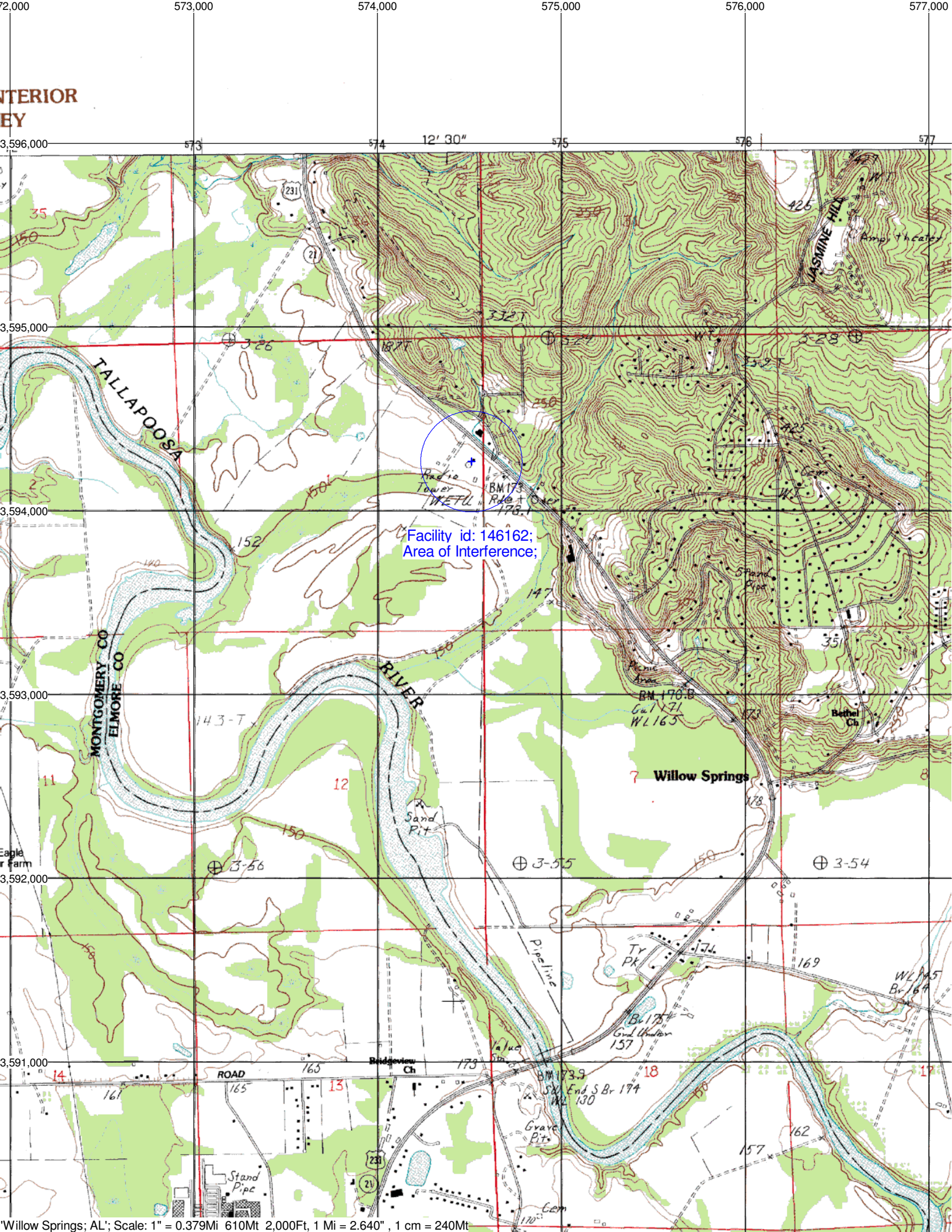
## **Co-channel through third adjacent:**

Application_id	Facility_id	Prefix	ARN	Call	Licensee	Class	City	State	Status	ERP	RCAMSL	Channel	Adj	Dist	Overlap
1165775	17479	BLH	20070129API	WXFX	CUMULUS LICENSING LLC	C2	PRATTVILLE	AL	LIC	5.4	397	236	3	9.1	1.4918
169274	43628	BLH	19920130KA	WQKS-FM	MONTGOMERY BROADCAST PROPERTIES, LTI	A	MONTGOMERY	AL	LIC	0.9	306	241	2	14	1.4918
1234807	150964	BLFT	20080215AEL	W238BS	RADIO ASSIST MINISTRY, INC.	D	CLANTON	AL	LIC	0.019	263	238	1	58.4	0
175823	48682	BLH	19920803KD	WTGZ	NEW WORLD COMMUNICATIONS, INC.	A	TUSKEGEE	AL	LIC	4.3	233	240	1	59.4	0
1250887	146140	BLFT	20080617ACT	W242AX	RADIO ASSIST MINISTRY, INC.	D	AUBURN	AL	LIC	0.013	249	242	3	67.7	0
145506	73194	BMLH	19900228KC	WKXN	AUTAGAVILLE RADIO, INC.	A	GREENVILLE	AL	LIC	4	192	240	1	82.4	0
1049798	156366	BNPFT	20030827ANO	W241BD	EDUCATIONAL MEDIA FOUNDATION	D	CALERA	AL	CP	0.038	227	241	2	89.5	0
638741	146167	BNPFT	20030317CSI	NEW	RADIO ASSIST MINISTRY, INC.	D	LUVERNE	AL	APP	0.01	242.3	242	3	91	0
1244592	52040	BLH	20080502ABD	WRLD-FM	ABG GEORGIA LICENSES, LLC	C3	VALLEY	AL	LIC	25	276	237	2	103	0
1070200	730	BLH	20050527BFJ	WBHJ	CXR HOLDINGS, L.L.C.	C2	MIDFIELD	AL	LIC	12	487	239	0	124	0
1097637	52320	BLH	20050527BCT	WHMA-FM	WILLIAMS COMMUNICATIONS, INC.	A	HOBSON CITY	AL	LIC	0.53	551	238	1	130.4	0
1065513	54797	BLH	20050603ABJ	WFFN	APEX BROADCASTING, INC.	C2	COALING	AL	LIC	17.5	329.5	237	2	140.6	0
110585	73639	BLH	19880323KD	WTVY-FM	WOODS COMMUNICATIONS GROUP, INC.	C0	DOTHAN	AL	LIC	100	423	238	1	163.4	0

## **Intermediate Frequencies (53 and 54 channels difference):**

Application_id	Facility_id	Prefix	ARN	Call	Licensee	Class	City	State	Status	ERP	RCAMSL	Channel	Adj	Dist	Clr
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