Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

# ENGINEERING EXHIBIT

## Application for Post-Transition Digital Television Station Construction Permit

prepared for

**Wilderness Communications, LLC**
KLWB-DT New Iberia, LA
Facility ID 82476
Ch. 50 195 kW 303 m

*Wilderness Communications, LLC ("Wilderness")* is the licensee of television station KLWB(TV), analog Channel 50, New Iberia, LA. KLWB was originally authorized after April 3, 1997 and therefore does not have a companion digital channel. *Wilderness* herein proposes construction of the KLWB-DT post-transition digital facility on Channel 50 and intends to "flash cut" at the end of the transition. This channel was established in Appendix B of the Seventh Report and Order in MB Docket 87-278.

The instant proposal specifies an effective radiated power ("ERP") of 195 kW at 303 meters antenna height above average terrain ("HAAT"), with a directional antenna. The proposed coverage contour extends beyond that of the Appendix B parameters of 179 kW ERP and 303 meters HAAT principally due to differences in the directional antenna pattern. The Appendix B facility incorporates a hypothetical directional pattern for KLWB-DT which corresponds generally to the pattern associated with the licensed analog operation, but the pattern has become distorted with the FCC's "carry over" procedure to digital operation due to the impact of non-uniform terrain and differences in the F(50,50) and F(50,90) propagation curves.

The proposed digital Channel 50 operation will employ the existing directional antenna system licensed for KLWB's analog Channel 50. The antenna is top-mounted on the existing KLWB antenna supporting structure, having FCC Antenna Structure Registration ("ASR") number 1240294. No change to the overall structure height and no tower work are required to carry out this proposal.

The proposed KLWB-DT antenna system is a Dielectric model TFU-31JTH 6T180. The directional antenna's azimuthal pattern is depicted in **Figure 1**. **Figures 2** and **2A** provide the theoretical vertical plane (elevation) pattern[1].

A map is supplied as **Figure 3,** which depicts the standard predicted coverage contours. This map includes the boundaries of New Iberia, KLWB-DT's principal community. As demonstrated thereon, the proposed facility complies with §73.625(a)(1), as the entire principal community will be encompassed by the 48 dBμ contour.

The proposed KLWB-DT facility's predicted service population provides a 104.8 percent match of the Appendix B facility, as detailed in the table below.

**Post-Transition Population Summary**

| Population Summary (2000 Census)<br>OET Bulletin 69 method | Appendix B | Proposed |
|---|---|---|
| Within Noise Limited Contour | 767,950 | 804,752 |
| Not affected by terrain losses | 767,950 | 804,752 |
| Lost to all interference | 0 | 0 |
| Net DTV Service | **767,950** | **804,752** |
| Match of Appendix B | --- | **104.79%** |

## Freeze Waiver Request

A waiver of the Commission's August 3, 2004 "freeze" concerning expansion in service area[2] is requested. The proposal complies with the criteria for a freeze waiver request outlined in the Report and Order in the Third Periodic Review.[3] KLWB-DT will utilize its analog channel for post-transition operation and will employ its existing analog antenna.

[1] These patterns are supplied in terms of relative field. In recent years, FCC Staff have not required pattern data in dBk format however such patterns are available upon request.

[2] Public Notice *"Freeze on the Filing of Certain TV and DTV Requests for Allotment or Service Area Changes,"* DA 04-2446, released August 3, 2004.

[3] *Third Periodic Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television,* MB Docket No. 07-91, FCC 07-228, released December 31, 2007.

The map attached as **Figure 4** supplies a comparison of the 41 dBµ digital service contours corresponding to the proposed KLWB-DT facility and the Appendix B parameters. As shown thereon, the amount of contour extension does not exceed five miles at any azimuth.

Absent the waiver, the KLWB-DT directional ERP would have to be reduced to 96 kW to avoid a contour extension. At this power level, the resulting DTV service contour would not cover 231,735 persons within an area of 1,350 sq. km that are presently within the KLWB analog Grade B contour. The potential loss area is depicted in **Figure 4A**. Additionally, at 96 kW ERP the interference-free service population of 668,146 persons is an 87 percent match of the KLWB-DT Appendix B population of 767,950, well short of the 95 percent target for post-transition operation.

A detailed interference study per OET Bulletin 69[4] shows that the proposal complies with the 0.5 percent limit of new interference caused to other stations' Appendix B facilities, as summarized in the table below.

**Post-Transition Interference Analysis Summary**

| Ch | Call Sign | State/City<br>Facility ID | Power (kW)<br>HAAT (m) | Dist (km)<br>Bear (°T) | Appendix B Baseline Population (2000 Census) | New Interference From Proposal<br>Population | Percent |
|---|---|---|---|---|---|---|---|
| 49 | WNTZ-DT | MS NATCHEZ<br>16539 | 1000<br>313 | 149.6<br>10.3 | --- no interference caused --- | | |
| 50 | WPXL-DT | LA NEW ORLEANS<br>21729 | 1000<br>272 | 193.7<br>103.6 | --- no interference caused --- | | |
| 50 | KBTX-DT | TX BRYAN<br>6669 | 1000<br>477 | 390.2<br>274.5 | --- no interference caused --- | | |

[4]FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). The implementation of OET-69 for this study followed the guidelines of OET-69 as specified therein. A standard cell size of 2 km was employed. Comparisons of various results of this computer program (run on a Sun Sparc processor) to the Commission's implementation of OET-69 show excellent correlation.

**Other Allocation Considerations**

The nearest FCC monitoring station is 660 km distant at Kingsville, TX. This exceeds by a large margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The site is not located within the areas requiring coordination with "quiet" zones specified in §73.1030(a) and (b). There are no AM stations within 3.2 kilometers of the site, based on information contained within the Commission's database. The site location is beyond the border areas requiring international coordination.

**Human Exposure to Radiofrequency Electromagnetic Field (Environmental)**

The proposal will involve use of an existing transmitting antenna. 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. No tower construction or change in structure height is proposed. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission's OET Bulletin Number 65. Based on OET-65 equation (10), and considering 10 percent antenna relative field in downward elevations (pattern data shows less than 10 percent relative field at angles 10 to 90 degrees below the antenna), the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is 0.7 $\mu W/cm^2$, which is 0.2 percent of the general population/uncontrolled maximum permitted exposure limit. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

**Certification**

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direction, and that they are true and correct to the best of his knowledge and belief.

Joseph M. Davis, P.E.
March 30, 2008

**Chesapeake RF Consultants, LLC**
11993 Kahns Road
Manassas, VA 20112
703-650-9600

*List of Attachments*

| | |
|---|---|
| Figure 1 | Antenna Horizontal Plane Pattern |
| Figure 2, 2A | Antenna Vertical Plane (Elevation) Pattern |
| Figure 3 | Proposed Coverage Contours |
| Figure 4 | Coverage Contour Comparison |
| Figure 4A | Potential Loss Area Without Waiver |
| Form 301 | Saved Version of Engineering Sections from FCC Form at Time of Upload |

*This material was entered March 30, 2008 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's name and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.*

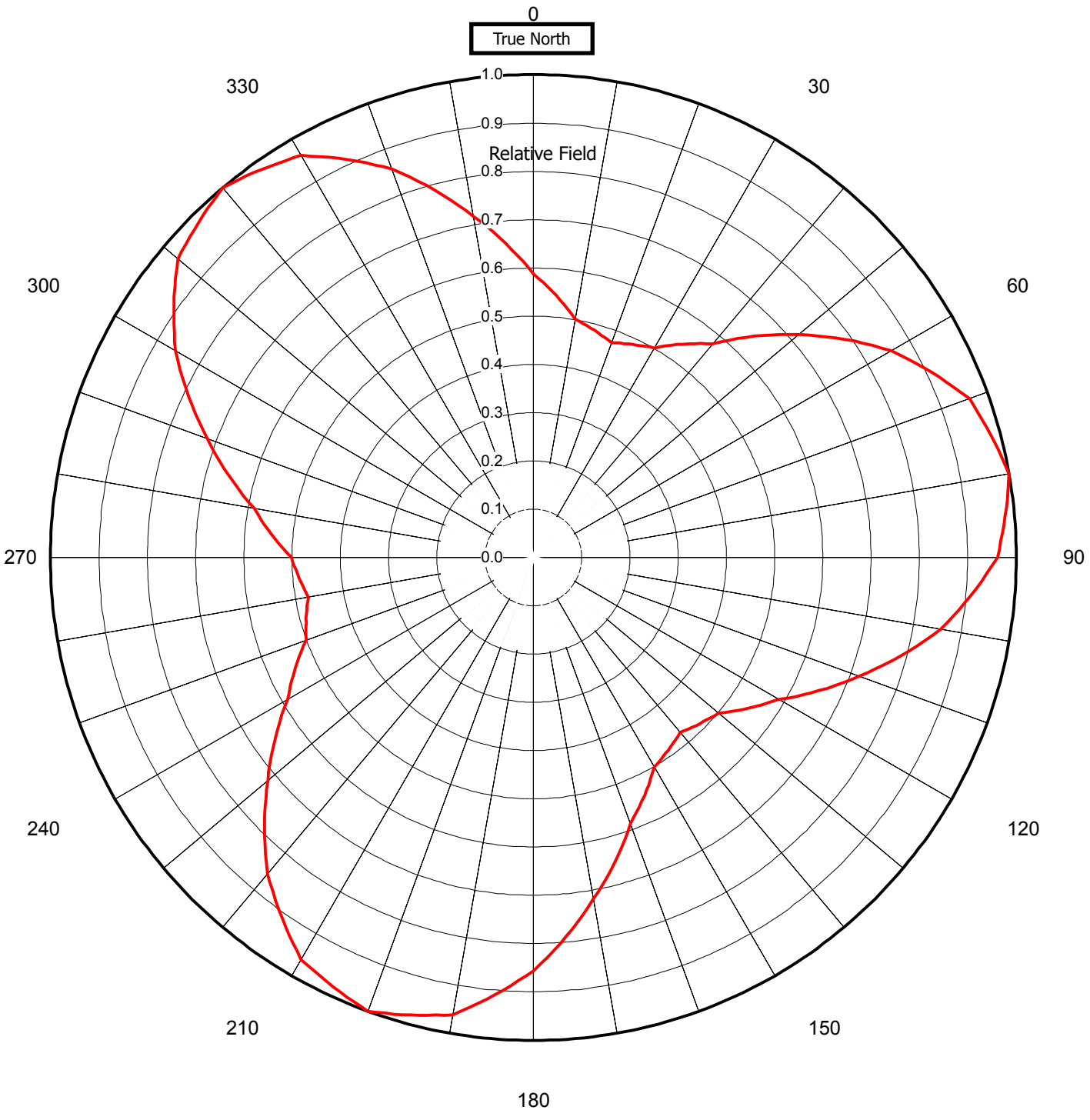
Dielectric

**Figure 1**
**Antenna Horizontal Plane Pattern**

| | | | |
|---|---|---|---|
| Proposal Number | **DCA-10757** | Revision: | **1** |
| Date | **27-Apr-05** | | |
| Call Letters | **KACB** | Channel | **50** |
| Location | **New Iberia, LA** | | |
| Customer | | | |
| Antenna Type | **TFU-31JTH 6T180** | | |

## AZIMUTH PATTERN

| | | | |
|---|---|---|---|
| Gain | **1.80** | **( 2.55 dB)** | |
| Calculated / Measured | **Calculated** | | |
| Frequency | **689.00 MHz** | | |
| Drawing # | **TFU-6T180-50** | | |



Dielectric

| | | | |
|---|---|---|---|
| Proposal Number | **DCA-10757** | Revision: | **1** |
| Date | **27-Apr-05** | | |
| Call Letters | **KACB** | Channel | **50** |
| Location | **New Iberia, LA** | | |
| Customer | | | |
| Antenna Type | **TFU-31JTH 6T180** | | |

# ELEVATION PATTERN

| | | | |
|---|---|---|---|
| RMS Gain at Main Lobe | **30.00 ( 14.77 dB )** | Beam Tilt | **0.75 deg** |
| RMS Gain at Horizontal | **17.00 ( 12.30 dB )** | Frequency | **689.00 MHz** |
| Calculated / Measured | **Calculated** | Drawing # | **31J300075-90** |

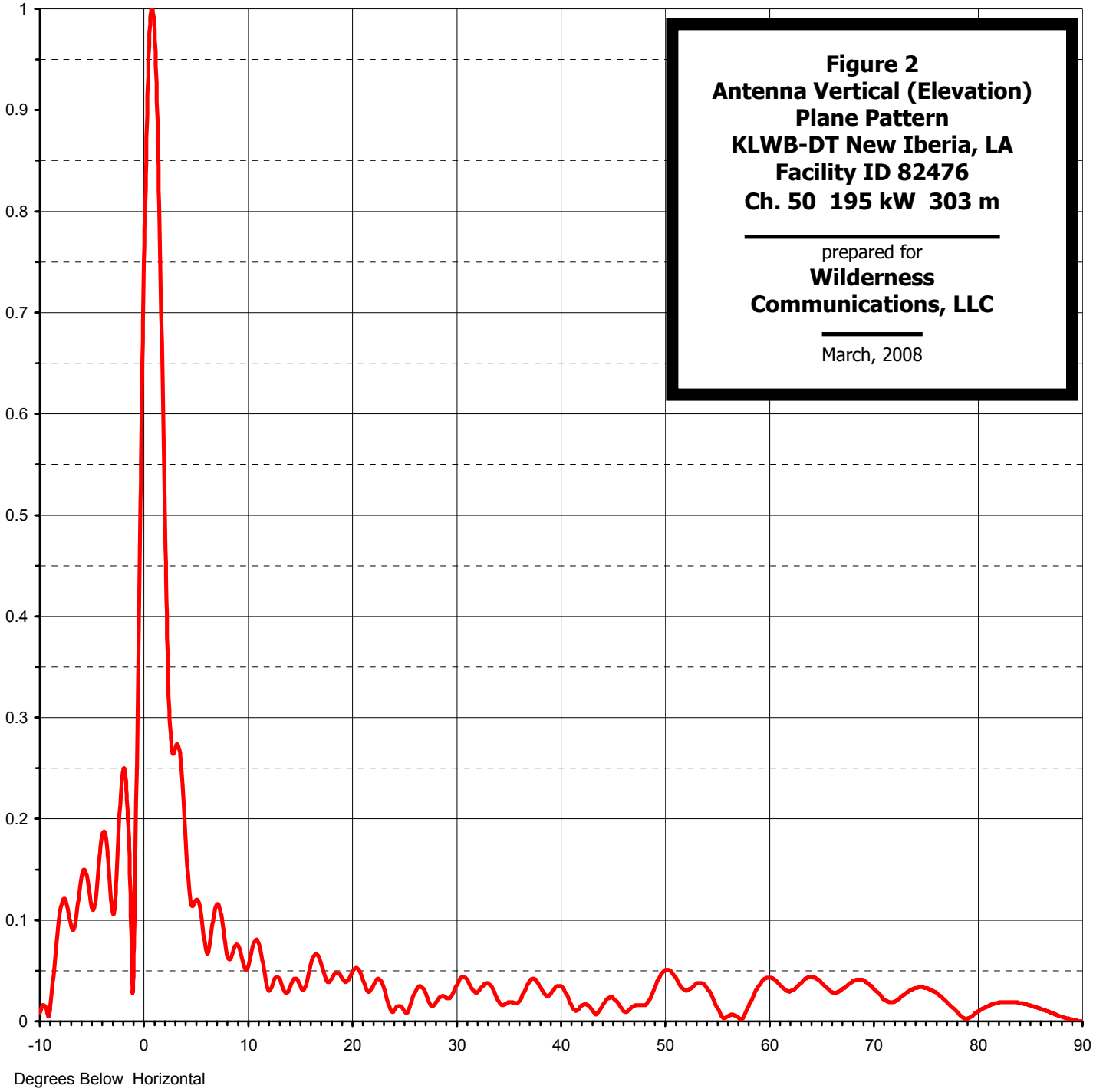



**Figure 2**
**Antenna Vertical (Elevation) Plane Pattern**
**KLWB-DT New Iberia, LA**
**Facility ID 82476**
**Ch. 50 195 kW 303 m**

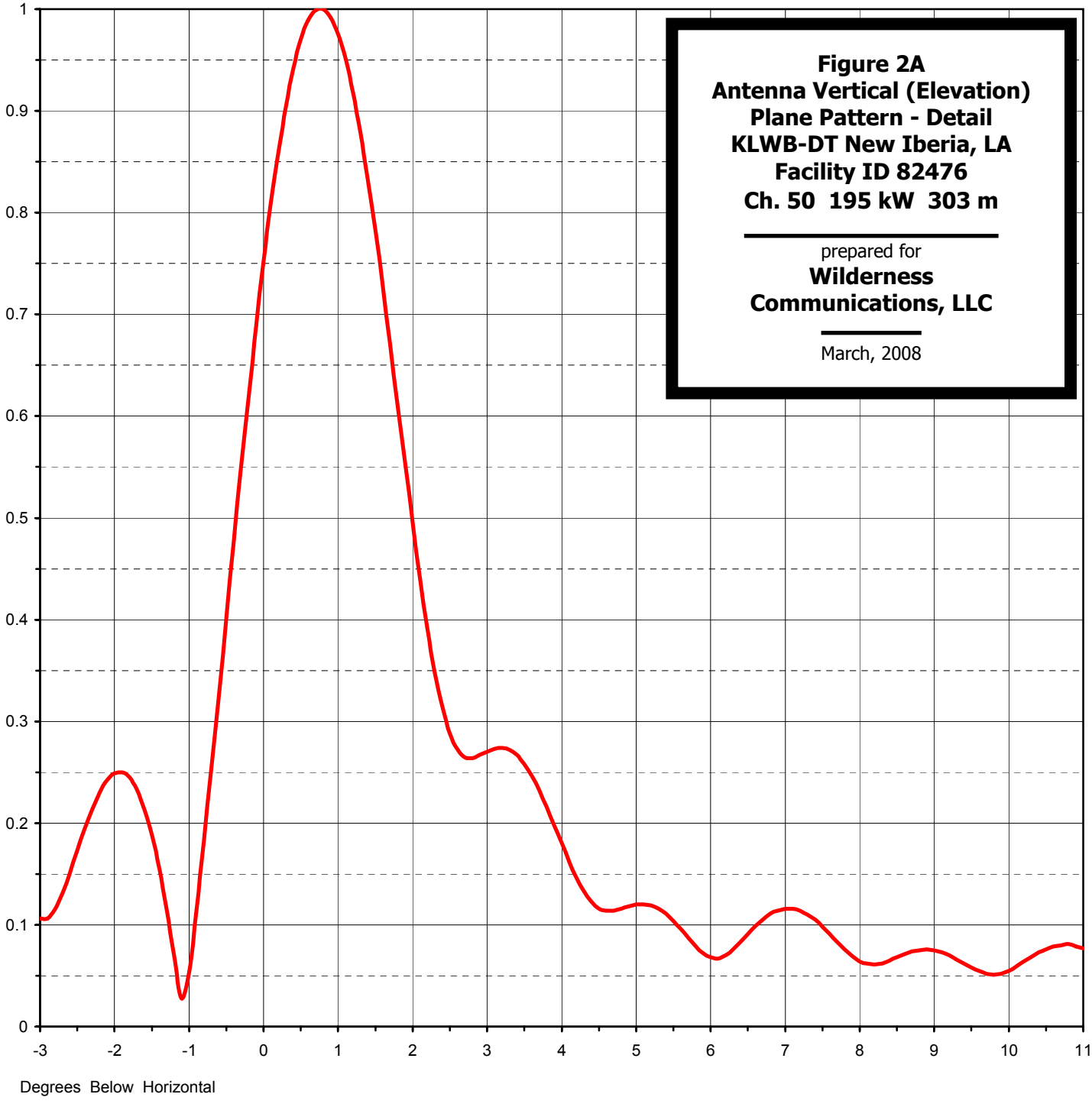
prepared for
**Wilderness Communications, LLC**

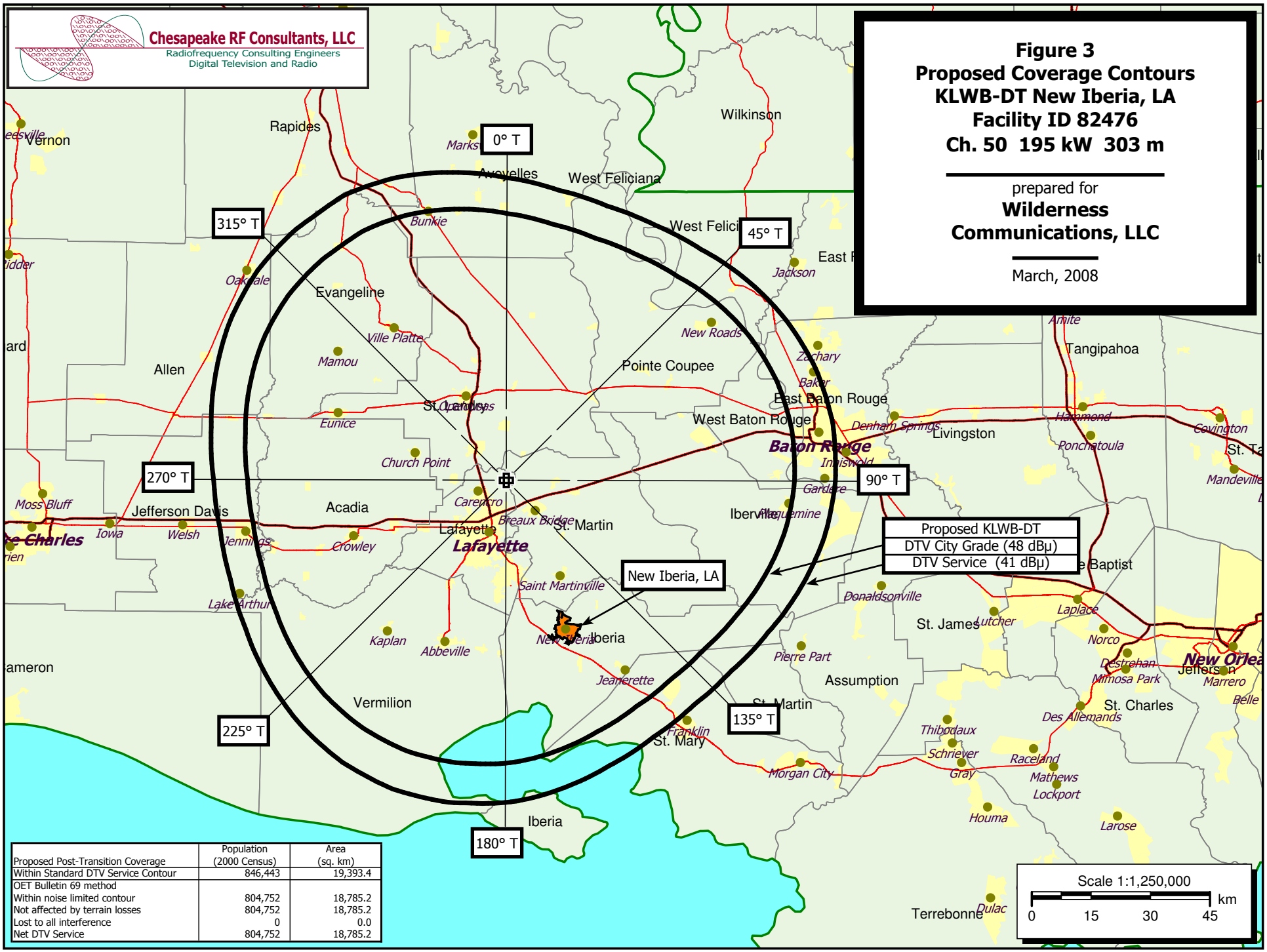
March, 2008

| | | | |
|---|---|---|---|
| Proposal Number | **DCA-10757** | Revision: | **1** |
| Date | **27-Apr-05** | | |
| Call Letters | **KACB** | Channel | **50** |
| Location | **New Iberia, LA** | | |
| Customer | | | |
| Antenna Type | **TFU-31JTH 6T180** | | |

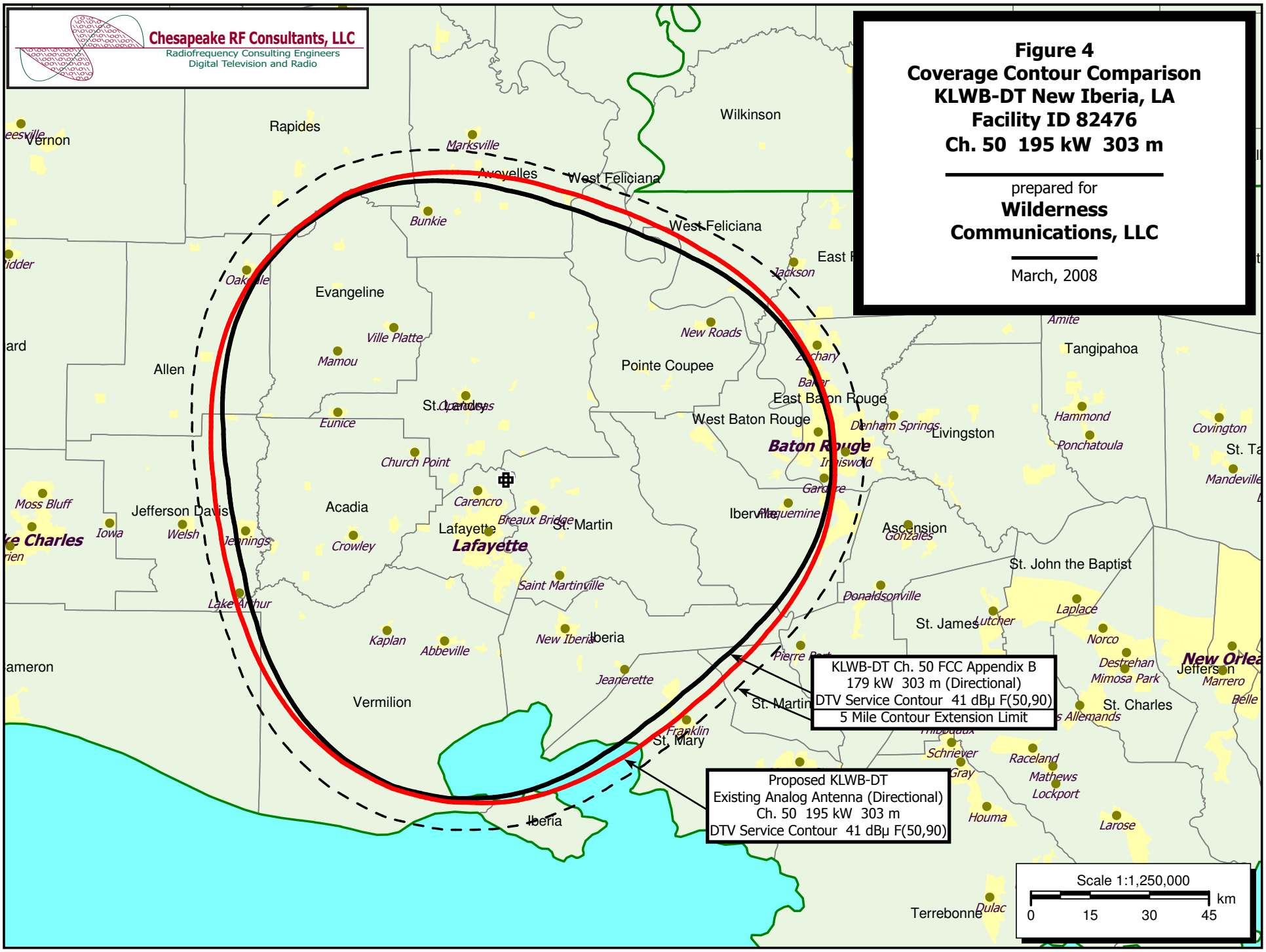
## ELEVATION PATTERN

| | | | |
|---|---|---|---|
| RMS Gain at Main Lobe | **30.00 ( 14.77 dB )** | Beam Tilt | **0.75 deg** |
| RMS Gain at Horizontal | **17.00 ( 12.30 dB )** | Frequency | **689.00 MHz** |
| Calculated / Measured | **Calculated** | Drawing # | **31J300075** |






| Proposed Post-Transition Coverage | Population (2000 Census) | Area (sq. km) |
|---|---|---|
| Within Standard DTV Service Contour | 846,443 | 19,393.4 |
| OET Bulletin 69 method | | |
| Within noise limited contour | 804,752 | 18,785.2 |
| Not affected by terrain losses | 804,752 | 18,785.2 |
| Lost to all interference | 0 | 0.0 |
| Net DTV Service | 804,752 | 18,785.2 |


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
Figure 4
Coverage Contour Comparison
KLWB-DT New Iberia, LA
Facility ID 82476
Ch. 50 195 kW 303 m
prepared for
Wilderness
Communications, LLC
March, 2008
KLWB-DT Ch. 50 FCC Appendix B
179 kW 303 m (Directional)
DTV Service Contour 41 dBµ F(50,90)
5 Mile Contour Extension Limit
Proposed KLWB-DT
Existing Analog Antenna (Directional)
Ch. 50 195 kW 303 m
DTV Service Contour 41 dBµ F(50,90)
Scale 1:1,250,000
km
0
15
30
45
Rapides
Wilkinson
Vernon
Marksville
Avoyelles
West Feliciana
Bunkie
Evangeline
Allen
Ville Platte
Mamou
Eunice
Church Point
Acadia
Jefferson Davis
Moss Bluff
Iowa
Welsh
Jennings
Crowley
Lake Arthur
Kaplan
Abbeville
Vermilion
Iberia
Jeanerette
Franklin
St. Mary
Carencro
Breaux Bridge
Lafayette
St. Martin
Saint Martinville
New Iberia
Pointe Coupee
New Roads
Jackson
East Baton Rouge
West Baton Rouge
Baton Rouge
Denham Springs
Livingston
Tangipahoa
Hammond
Ponchatoula
Amite
Covington
Mandeville
Iberville
Plaquemine
Gonzales
Ascension
St. John the Baptist
Donaldsonville
St. James
Laplace
Lutcher
Norco
Destrehan
Mimosa Park
St. Charles
Jefferson
Marrero
Belle
Schriever
Raceland
Mathews
Lockport
Houma
Larose
Gray
Terrebonne
Dulac
Pierre Part
Thibodaux
Iberia
St. Martin
Lake Charles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Radiofrequency Consulting Engineers
Digital Television and Radio
Figure 4A
Potential Loss Area Without Waiver
KLWB-DT New Iberia, LA
Facility ID 82476
Ch. 50 195 kW 303 m
prepared for
Wilderness Communications, LLC
March, 2008
Potential Loss Within Analog Grade B
Without Waiver of Freeze
Population: 231,735
Area: 1,350 sq. km
KLWB-DT at 96 kW
Maximum ERP Without Freeze Waiver
DTV Service Contour 41 dBµ F(50,90)
Licensed KLWB(TV) Analog Ch. 50
Grade B Contour 64 dBµ F(50,50)
Scale 1:1,250,000
km
0
15
30
45
Rapides
Vernon
Marksville
Avoyelles
Wilkinson
West Feliciana
Bunkie
Oakdale
Evangeline
Ville Platte
Mamou
Allen
Eunice
Church Point
Acadia
Jefferson Davis
Moss Bluff
Iowa
Welsh
Jennings
Crowley
Lake Arthur
Kaplan
Abbeville
Vermilion
Iberia
Carencro
Breaux Bridge
Lafayette
St. Martin
New Iberia
Jeanerette
Franklin
St. Mary
Morgan City
Pointe Coupee
New Roads
Jackson
Zachary
Baker
East Baton Rouge
West Baton Rouge
Baton Rouge
Denham Springs
Livingston
Tangipahoa
Amite
Hammond
Ponchatoula
Covington
Mandeville
Iberville
Plaquemine
Grosse Tete
Donaldsonville
St. John the Baptist
St. James
Lutcher
Laplace
Norco
Destrehan
Mimosa Park
Marrero
Belle
Pierre Part
Assumption
St. Martin
St. Charles
Des Allemands
Thibodaux
Schriever
Gray
Raceland
Mathews
Lockport
Houma
Larose
Terrebonne
Dulac

**SECTION III-D - DTV Engineering**

**Complete Questions 1-5, and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.**

**Pre-Transition Certification Checklist:** An application concerning a pre-transition channel must complete questions 1(a)-(c), and 2-5. A correct answer of "Yes" to all of the questions will ensure an expeditious grant of a construction permit application to change pre-transition facilities. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.

**Post-Transition Expedited Processing.** An application concerning a post-transition channel must complete questions 1(a), (d)-(e), and 2-5. A station applying for a construction permit to build its post-transition channel will receive expedited processing if its application (1) does not seek to expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B"); (2) specifies facilities that match or closely approximate those defined in the new DTV Table Appendix B facilities; and (3) is filed within 45 days of the effective date of Section 73.616 of the rules adopted in the Report and Order in the Third DTV Periodic Review proceeding, MB Docket No. 07-91.

| | | | |
|---|---|---|---|
| 1. | The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects: | | |
| | (a) | It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622. | (•) Yes ( ) No |
| | (b) | It will operate a pre-transition facility from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this station as established in 47 C.F.R. Section 73.622. | ( ) Yes ( ) No |
| | (c) | It will operate a pre-transition facility with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622. | ( ) Yes ( ) No |
| | (d) | It will operate at post-transition facilities that do not expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B"). | ( ) Yes (•) No ( ) N/A |
| | (e) | It will operate at post-transition facilities that match or reduce by no more than five percent with respect to predicted population from those defined in the new DTV Table Appendix B. | (•) Yes ( ) No ( ) N/A |
| 2. | The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307.<br>Applicant must **submit the Exhibit** called for in Item 13. | | (•) Yes ( ) No |
| 3. | Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community. | | (•) Yes ( ) No |
| 4. | The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable. | | (•) Yes ( ) No |
| 5. | The antenna structure to be used by this facility has been registered by the Commission and will not require registration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7. | | (•) Yes ( ) No |

**SECTION III-D - DTV Engineering**

**TECHNICAL SPECIFICATIONS**
Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

**TECH BOX**

| | | |
|---|---|---|
| 1. | Channel Number:<br><br>DTV 50 Analog TV, if any 50 | |
| 2. | Zone:<br>( ) I ( ) II (•) III | |
| 3. | Antenna Location Coordinates: (NAD 27)<br>Latitude:<br>Degrees 30 Minutes 20 Seconds 32 (•) North ( ) South<br><br>Longitude:<br>Degrees 91 Minutes 58 Seconds 32 (•) West ( ) East | |
| 4. | Antenna Structure Registration Number: 1240294<br>☐ Not Applicable ☐ Notification filed with FAA | |
| 5. | Antenna Location Site Elevation Above Mean Sea Level: | 7 meters |
| 6. | Overall Tower Height Above Ground Level: | 312.7 meters |
| 7. | Height of Radiation Center Above Ground Level: | 304.3 meters |
| 8. | Height of Radiation Center Above Average Terrain : | 303.1 meters |

9. Maximum Effective Radiated Power (average power): 195 kW

10. Antenna Specifications:

a. Manufacturer DIE Model TFU-31JTH 6T180

b. Electrical Beam Tilt:
0.75 degrees ☐ Not Applicable

c. Mechanical Beam Tilt:
degrees toward azimuth
degrees True ☑ Not Applicable
Attach as an Exhibit all data specified in 47 C.F.R. Section 73.625(c). [Exhibit 42]

d. Polorization:
◉ Horizontal ○ Circular ○ Elliptical

e. Directional Antenna Relative Field Values: ☐ Not applicable (Nondirectional)

[For a composite directional (not off-the-shelf) antenna, press the following button to fill in the relative field values subform.]
[Relative Field Values]

**10e. Directional Antenna Relative Field Values**

[Fill in this subform for a composite directional (not off-the-shelf) antenna, only.]

e. Directional Antenna Relative Field Values:

Rotation (Degrees): ☑ No Rotation

| Degrees | Value | Degrees | Value | Degrees | Value | Degrees | Value | Degrees | Value | Degrees | Value |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.587 | 10 | 0.501 | 20 | 0.473 | 30 | 0.501 | 40 | 0.578 | 50 | 0.718 |
| 60 | 0.856 | 70 | 0.961 | 80 | 1 | 90 | 0.961 | 100 | 0.856 | 110 | 0.718 |
| 120 | 0.587 | 130 | 0.501 | 140 | 0.473 | 150 | 0.501 | 160 | 0.587 | 170 | 0.718 |
| 180 | 0.856 | 190 | 0.961 | 200 | 1 | 210 | 0.961 | 220 | 0.856 | 230 | 0.718 |
| 240 | 0.587 | 250 | 0.501 | 260 | 0.473 | 270 | 0.501 | 280 | 0.587 | 290 | 0.718 |
| 300 | 0.856 | 310 | 0.961 | 320 | 1 | 330 | 0.961 | 340 | 0.856 | 350 | 0.718 |
| Additional Azimuths | | | | | | | | | | | |

Relative Field Polar Plot

If a directional antenna is proposed, the requirements of 47 C.F.R. Sections 73.625(c) must be satisfied. **Exhibit required.** [Exhibit 43]

11. Does the proposed facility satisfy the pre-transition interference protection provisions of 47 C.F.R. Section 73.623(a) (Applicable only if **Certification Checklist** Items 1(a), (b), or (c) are answered "No.") and/or the post-transition interference protection provisions of 47 C.F.R. Section 73.616? ◉ Yes ○ No

[Exhibit 44]

If "No," attach as an Exhibit justification therefor, including a summary of any related previously granted waivers.

12. If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefore. (Applicable only if **Certification Checklist** item 3 is answered "No.") [Exhibit 45]

13. **Environmental Protection Act. Submit in an Exhibit** the following: [Exhibit 46]

If **Certification Checklist** Item 2 is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.

By checking "Yes" to **Certification Checklist** Item 2, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

If **Certification Checklist** Item 2 is answered "No," an Environmental Assessment as required by 47 C.F.R Section 1.1311.

**PREPARERS CERTIFICATION ON SECTION III MUST BE COMPLETED AND SIGNED.**

## SECTION III - PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

| | | |
|---|---|---|
| Name<br>JOSEPH M. DAVIS, P.E. | Relationship to Applicant (e.g., Consulting Engineer)<br>CONSULTING ENGINEER | |
| Signature | Date<br>3/30/2008 | |
| Mailing Address<br>CHESAPEAKE RF CONSULTANTS, LLC<br>11993 KAHNS ROAD | | |
| City<br>MANASSAS | State or Country (if foreign address)<br>VA | Zip Code<br>20112 - |
| Telephone Number (include area code)<br>7036509600 | E-Mail Address (if available)<br>JOSEPH.DAVIS@RF-CONSULTANTS.COM | |

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

Any specified rotation has already been applied to the plotted pattern.
Field strength values shown on a rotated pattern may differ from the listed values because intermediate azimuths are interpolated between entered azimuths.