

**CONSOLIDATED ENGINEERING STATEMENT**

**PREPARED IN SUPPORT OF APPLICATION**

**FOR CONSTRUCTION PERMIT**

**CCR – ST. GEORGE IV, LLC**

**KUNF(AM) FCC ID #55398**

**0.231/10 kW ND-U 1210 kHz**

**WASHINGTON, UTAH**

**APRIL 2010**

**CONSOLIDATED ENGINEERING STATEMENT  
PREPARED IN SUPPORT OF APPLICATION  
FOR CONSTRUCTION PERMIT  
CCR – ST. GEORGE IV, LLC  
KUNF(AM) FCC ID #55398  
0.231/10 kW ND-U 1210 kHz  
WASHINGTON, UTAH**

**APRIL 2010**

**TABLE OF CONTENTS**

**FORMS:**

FCC Form 301, Section III-A - E-filing

**ENGINEERING STATEMENT**

**EXHIBITS:**

- I. Details of antenna system physical configuration.
- II. RSS night limit computations.

**FIGURES:**

- 1. 1210 kHz co-channel daytime allocation mapping.
- 2. First adjacent channel daytime allocation mapping.
- 3. Second adjacent channel daytime allocation mapping.
- 4. Predicted daytime 5, 2, and 0.5 mV/m service contours.
- 5. Predicted 1 V/m daytime contour.
- 6. Predicted 11.0 mV/m nighttime interference free contour.
- 7. Nighttime skywave mapping.

**CONSOLIDATED ENGINEERING STATEMENT  
PREPARED IN SUPPORT OF APPLICATION  
FOR CONSTRUCTION PERMIT  
CCR – ST. GEORGE IV, LLC  
KUNF(AM) FCC ID #55398  
0.231/10 kW ND-U 1210 kHz  
WASHINGTON, UTAH**

**APRIL 2010**

**SUMMARY**

The following consolidated engineering statement has been prepared in support of an Application for Construction Permit by **CCR - ST. GEORGE IV, LLC**, which proposes to construct modified, full-time, standard broadcast facilities for KUNF Radio, 1210 kHz at Washington, Utah, FCC ID # 55398. A duplex operation with co-owned standard broadcast station KDXU(AM), 890 kHz, St. George, Utah is proposed. KUNF(AM) was granted a construction permit for the essentially identical facilities proposed herein under BP-20050506ABL which expires on April 30, 2010. The only difference between the authorized duplex facilities and the proposed facilities is the tower in the KDXU three tower array that will employed for duplex operation. The KUNF CP specified the center tower which is employed by KDXU for daytime hours operation. The instant application proposes the easterly tower in the KDXU three tower directional array as that tower is unused during daytime hours. No change in the allocation or coverage is associated with the very minor change in coordinates. This application is complete with the Forms, Exhibits and Figures found in the Table of Contents and is believed to comply with all applicable FCC Rules, Regulations and Policies unless stated herein.

**FCC FORM 301, SECTION III-A**

FCC Form 301, Section III-A has been completed. Questions requiring a narrative response are addressed below:

Questions 4d, 5d, 6d	The proposed overall structure height exceeds 200' (61 meters). The structure is existing and carries FCC Tower Registration number 1043858. No modifications to the tower are proposed.
----------------------	--

Antenna system physical configuration data appears on Exhibit I. Critical hours operation is not proposed.

No clear channel facilities are located sufficiently close that detailed critical hours calculations are required for the power level proposed.

*Section 73.24(g)* compliance is achieved due to the rural nature of the site as depicted on Figure 5. Population in the proposed 1 V/m daytime contour is 102 persons. The applicant pledges to comply fully with *Rule Section 73.88*.

Question 8

Figure 4 depicts the proposed daytime 5 mV/m contour. The contour covers over 100% of the community of license of Washington, Utah. Figure 6 depicts the proposed nighttime 11 mV/m nighttime interference-free contour and relative population density. The proposed nighttime interference-free contour envelops in excess of 68% of the land area of the community of Washington, Utah and over 97% of the population.

The 1210 kHz 50% RSS night limit computation is found in Exhibit II.

Question 10(a)

Figures 1 – 3 depict the proposed daytime allocation. Neither the licensed or proposed facilities are involved in prohibited overlap. No third adjacent channel stations are close enough to be considered.

Question 10(b)

Exhibits II provides RSS calculations for all critical nighttime stations studied demonstrating that the proposed facility does not increase the RSS of any currently authorized facility in an impermissible manner.

RSS limitations to and from Class D stations were not considered due to their secondary nature.

1210 kHz, is a U.S. Clear Channel and the contours of WPHT 1210 kHz, Philadelphia, Pennsylvania and WOAI 1200 kHz, San Antonio, Texas are depicted on *Figure 7*. The proposed 0.025 mV/m 10% skywave contour provides full protection to WPHT while the 0.25 mV/m 10% skywave contour provides full protection to WOAI.

Question 11

*Supplement A, Edition 97-01 to OET Bulletin No. 65*, has been referenced concerning appropriate fencing distances.

The existing tower is protected by a locked fence. This fence will be replaced by a larger fence to accommodate the additional filtering and antenna tuning unit enclosures. The fence as constructed will be designed to meet OET-65 guidelines when RF radiation contribution from both KDXU and KUNF is considered. Power will be reduced or transmission ceased when workers are on or near the towers.

**DIPLEX OPERATION**

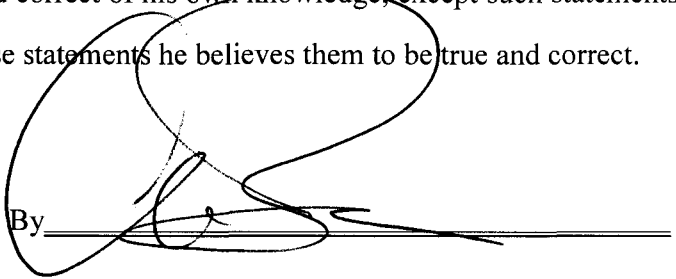
Diplex operation with KXDU(AM) 890 kHz is proposed. Extensive studies have been undertaken to confirm that wide bandwidth diplex operation is feasible while meeting all required FCC standards for spurious emission.

**MULTIPLE OWNERSHIP**

**CCR - ST. GEORGE IV, LLC** has other AM and FM media interests in the market. The slight modification in the KUNF 5 mV/m contour has no impact on multiple ownership compliance which is based on contour overlap. Based on the Arbitron 2010 Metro Map Washington County, and surrounding counties, continue to be un-rated.

**CONCLUSION**

The foregoing was prepared on behalf of **CCR - ST. GEORGE IV, LLC** by Clarence M. Beverage of *Communications Technologies, Inc.*, Marlton, New Jersey, whose qualifications are a matter of record with the Federal Communications Commission. The undersigned certifies, under penalty of perjury, that the statements herein are true and correct of his own knowledge, except such statements made on information and belief, and as to these statements he believes them to be true and correct.

By 

**Clarence M. Beverage**  
for Communications Technologies, Inc.  
Marlton, New Jersey

April 29, 2010

## **EXHIBIT I**

### **PHYSICAL DESCRIPTION OF ANTENNA SYSTEM CCR-ST.GEORGE IV, LLC KUNF(AM) 1210 kHz 0.231/10 kW ND-U WASHINGTON, UTAH**

**APRIL 2010**

TRANSMITTER SITE: (NAD27)	North Latitude: 37° 04' 06.0" West Longitude: 113° 31' 04.0"
TOWERS 1	Electrical 110.9° 76.4 meters above base - tower steel 78.1 meters AGL overall height – without lighting 78.6 meters AGL overall height – with lighting
RADIATOR TYPE:	Vertical, guyed, uniform cross section towers.
PATTERN ASSUMPTION:	Sinusoidal current distribution in all towers
GROUND SYSTEM:	The proposed tower is the east tower in a 3 tower array, FCC registration #1043858. The existing ground system consists of 120 equally spaced #10 soft drawn copper radials 85.4 meters in length except as truncated at points of common intersection. An additional 120 radials, 23 meters in length, are interspersed between the long radials.

## EXHIBIT II

### KUNF RSS CALCULATIONS

#### AM Allocation Study

Coordinates : 37-04-06.0 N 113-31-04.0 W PROPOSED KUNF  
 Frequency : 1210  
 Initial PWR: 0.231  
 Initial Inv Field: 153.44 mV/M

SITE INFO		CITY	ST DIST	CLASS	SLANT DIST	GEOMAG MID	AZIMUTH	GND RAD	MIN ELEV	MAX ELEV	MAX RAD	SWAVE FLD	LIMITATION	RSS LIMIT 50%	RSS LIMIT 25%
CALL	FRQ														
KGYN	1210 US	GUYMON	OK 1079.4	B	1097.8	45.6	276.0	1417.2	5.2	10.0	1413.2	0.038964	11.013	11.013	11.013
KEVT	1210 US	SAHUARITA	AZ 607.1	B	639.2	42.5	337.9	302.0	12.0	20.1	285.4	0.094847	5.415	0.000	12.272
KPRZ	1210 US	SAN MARCOS	CA 556.2	B	591.1	42.5	35.9	299.5	13.3	22.0	249.9	0.106420	5.319	0.000	13.375
KPRZ	1210 US	SAN MARCOS	CA 556.2	B	591.1	42.5	35.9	281.0	13.3	22.0	246.7	0.106420	5.250	0.000	14.368
KHAT	1210 US	LARAMIE	WY 829.2	B	852.9	47.5	238.4	404.6	8.0	14.2	397.9	0.057148	4.548	0.000	15.071
NEW	1210 US	COOLIDGE	AZ 490.0	B	529.3	42.9	338.8	186.2	15.3	24.9	154.5	0.124823	3.858	0.000	15.557
KEBR	1210 US	ROCKLIN	CA 686.6	B	715.1	44.9	100.7	249.3	10.3	17.6	243.5	0.078736	3.835	0.000	0.000
KQEQ	1210 US	FLOWER	CA 550.2	B	585.5	44.1	83.4	183.4	13.4	22.2	176.5	0.107225	3.785	0.000	0.000

#### AM Allocation Study

Coordinates : 36-39-37.0 N 119-41-01.0 W KQEQ  
 Frequency : 1210  
 Initial PWR: 0.370  
 Initial Inv Field: 183.35 mV/M

SITE INFO		CITY	ST DIST	CLASS	SLANT DIST	GEOMAG MID	AZIMUTH	GND RAD	MIN ELEV	MAX ELEV	MAX RAD	SWAVE FLD	LIMITATION	RSS LIMIT 50%	RSS LIMIT 25%
CALL	FRQ														
KEBR	1210 US	ROCKLIN	CA 271.4	B	337.2	44.2	147.5	213.4	27.3	40.7	181.7	0.234875	8.535	8.535	8.535
KGYN	1210 US	GUYMON	OK 1629.5	B	1641.8	45.2	275.4	1413.4	1.4	4.7	1413.2	0.019408	5.485	10.145	10.145
KPRZ	1210 US	SAN MARCOS	CA 459.3	B	501.0	41.8	331.1	201.1	16.4	26.4	175.2	0.135147	4.737	0.000	11.196
KUNF	1210 US	WASHINGTON	UT 552.2	B	587.3	44.1	266.3	155.3	13.4	22.1	148.8	0.106697	3.176	0.000	11.638
KUNF	1210 US	WASHINGTON	UT 550.2	B	585.5	44.1	267.1	153.5	13.4	22.2	146.3	0.107225	3.137	0.000	12.054
KHAT	1210 US	LARAMIE	WY 1322.4	B	1337.4	46.9	251.9	436.8	3.2	7.3	435.6	0.026747	2.330	0.000	0.000
KEVT	1210 US	SAHUARITA	AZ 952.2	B	972.9	41.9	305.1	199.3	6.4	11.9	196.1	0.050062	1.963	0.000	0.000
WPHT	1210 US	PHILADELPHIA	PA 3875.4	A	3880.6	50.3	279.2	2742.5	0.0	0.0	2742.5	0.002308	1.266	0.000	0.000

#### AM Allocation Study

Coordinates : 33-04-10.0 N 117-11-35.0 W KPRZ  
 Frequency : 1210  
 Initial PWR: 10.000  
 Initial Inv Field: 1051.00 mV/M

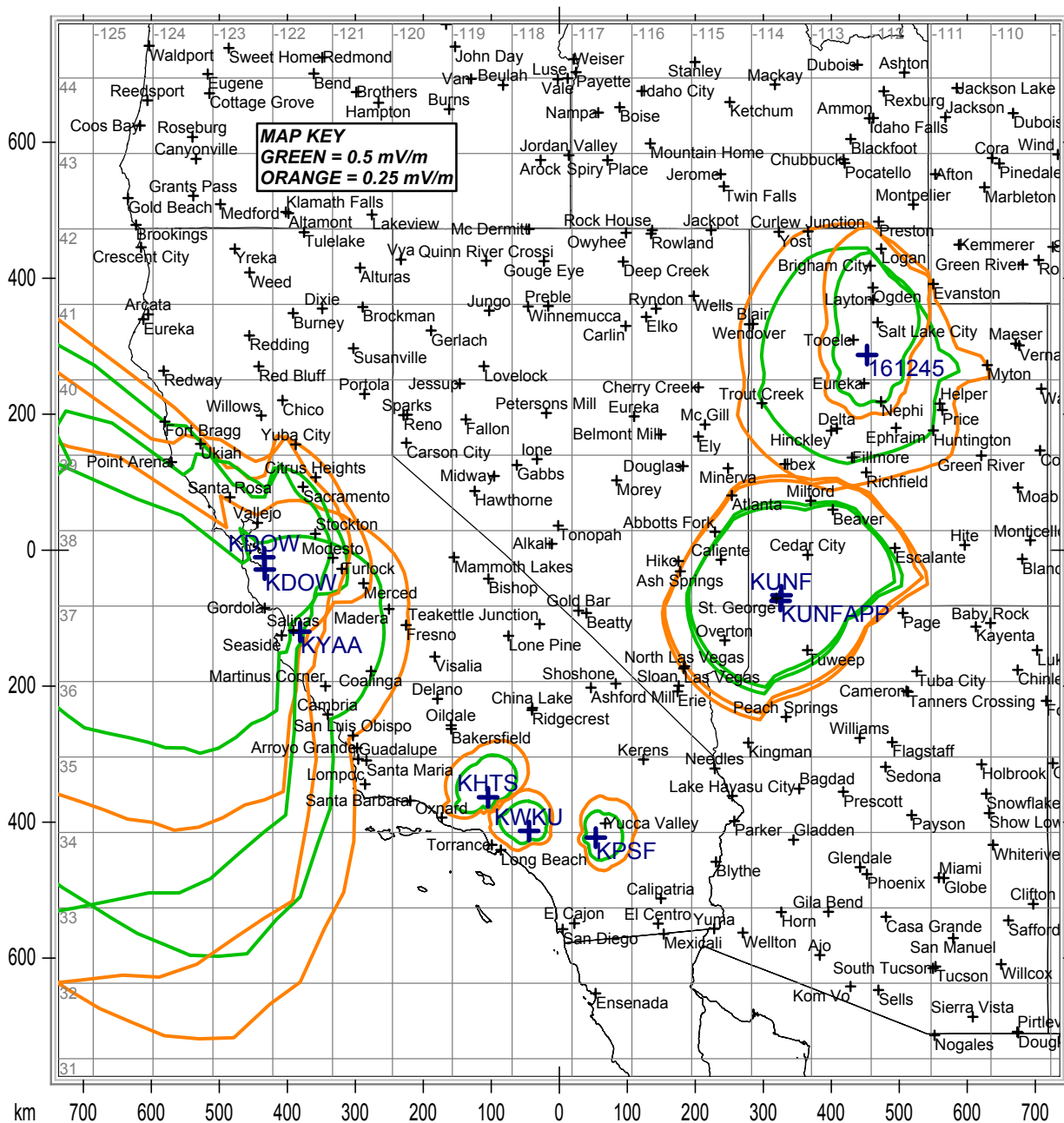
SITE INFO		CITY	ST DIST	CLASS	SLANT DIST	GEOMAG MID	AZIMUTH	GND RAD	MIN ELEV	MAX ELEV	MAX RAD	SWAVE FLD	LIMITATION	RSS LIMIT 50%	RSS LIMIT 25%
CALL	FRQ														
KGYN	1210 US	GUYMON	OK 1494.8	B	1508.1	43.5	259.1	1337.4	2.1	5.7	1336.9	0.023569	6.302	6.302	6.302
KQEQ	1210 US	FLOWER	CA 459.3	B	501.0	41.8	149.6	183.4	16.4	26.4	173.2	0.135147	4.682	7.851	7.851
KUNF	1210 US	WASHINGTON	UT 563.8	B	598.2	42.5	217.6	155.3	13.0	21.7	149.1	0.104561	3.119	0.000	8.448
KUNF	1210 US	WASHINGTON	UT 556.2	B	591.1	42.5	218.0	153.5	13.3	22.0	146.5	0.106420	3.118	0.000	9.005
KEBR	1210 US	ROCKLIN	CA 730.7	B	757.6	42.7	148.2	213.4	9.5	16.5	209.3	0.073396	3.072	0.000	9.515
KEVT	1210 US	SAHUARITA	AZ 596.6	B	629.2	40.3	282.8	136.5	12.2	20.5	132.2	0.097461	2.578	0.000	9.857
KHAT	1210 US	LARAMIE	WY 1373.4	B	1387.9	45.3	232.2	385.8	2.9	6.8	384.9	0.026188	2.016	0.000	0.000

**Note: First RSS contribution to KQEQ and KPRZ is KUNF license.**



 State Borders
  Lat/Lon Grid

## KUNF 1210 kHz 0.231/10 kW ND-U WASHINGTON, UTAH



Communications Technologies, Inc. Marlton, New Jersey

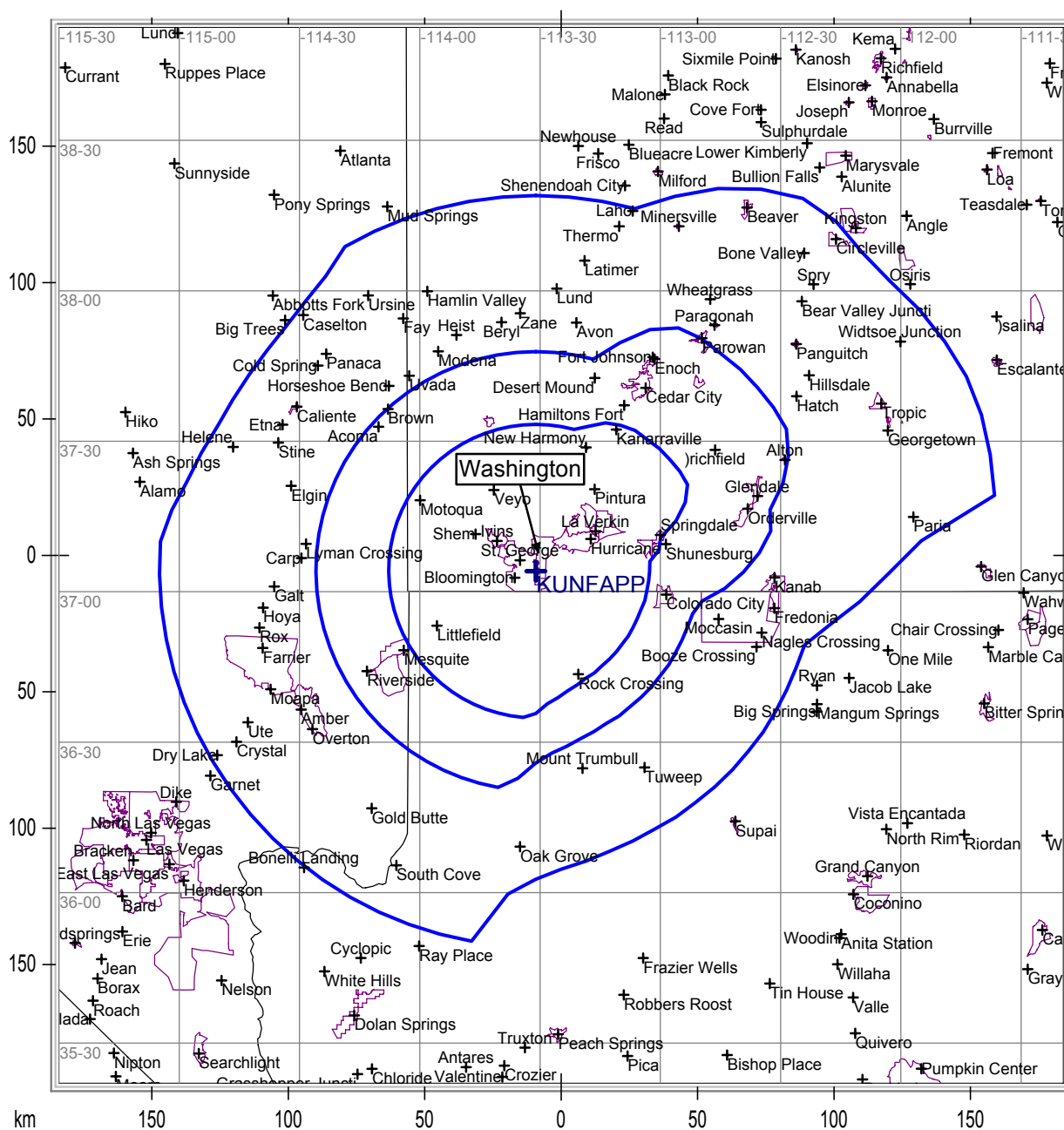
State Borders      Lat/Lon Grid

[illegible]

---

FIGURE 3

## KUNF 1210 kHz 0.231/10 kW ND-U WASHINGTON, UTAH



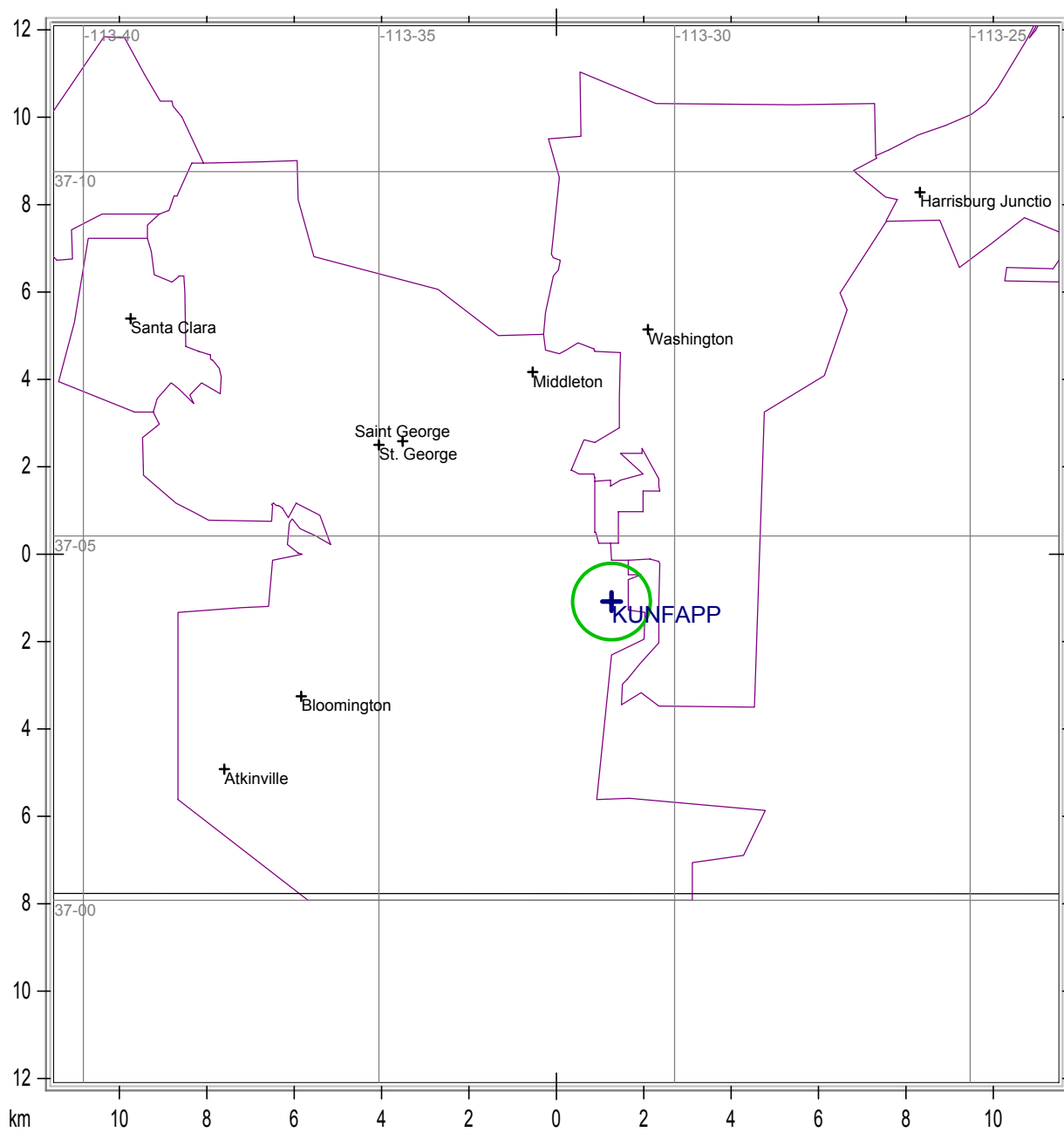
Communications Technologies, Inc. Marlton, New Jersey

State Borders      City Borders      Lat/Lon Grid

Map Scale: 1:2414066    1 cm = 24.14 km    V/H Size: 386.98 x 368.07 km

FIGURE 4

## KUNF 1210 kHz 0.231/10 kW ND-U WASHINGTON, UTAH



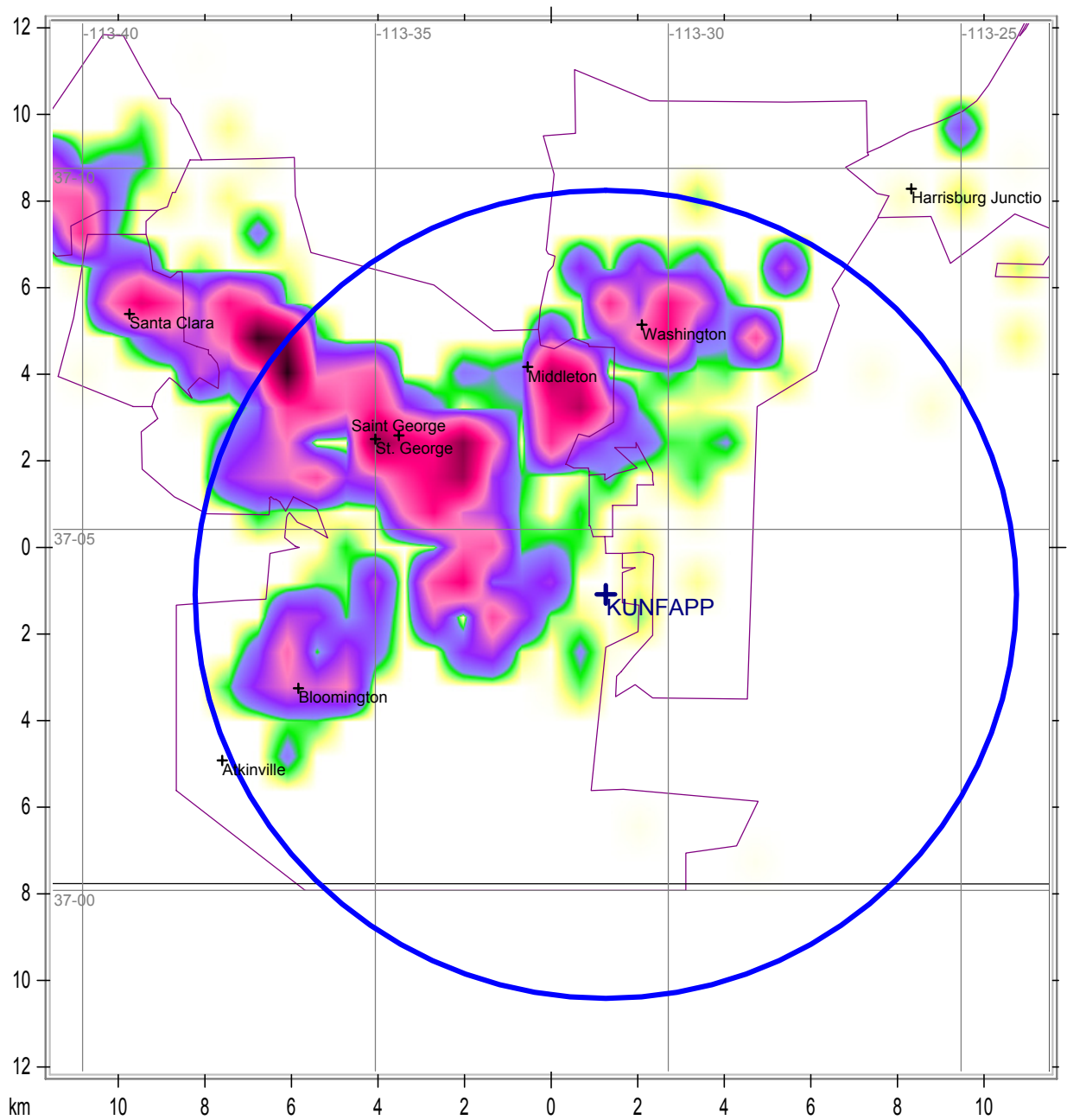
Communications Technologies, Inc. Marlton, New Jersey

State Borders    City Borders    Lat/Lon Grid

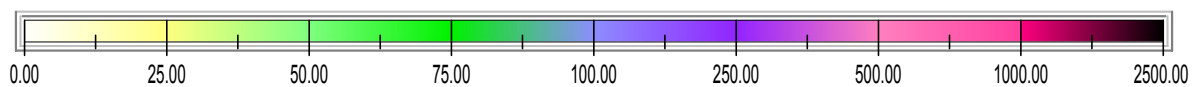
Map Scale: 1:150879    1 cm = 1.51 km    V/H Size: 24.19 x 23.00 km

FIGURE 5

## KUNF 1210 kHz 0.231/10 kW ND-U WASHINGTON, UTAH



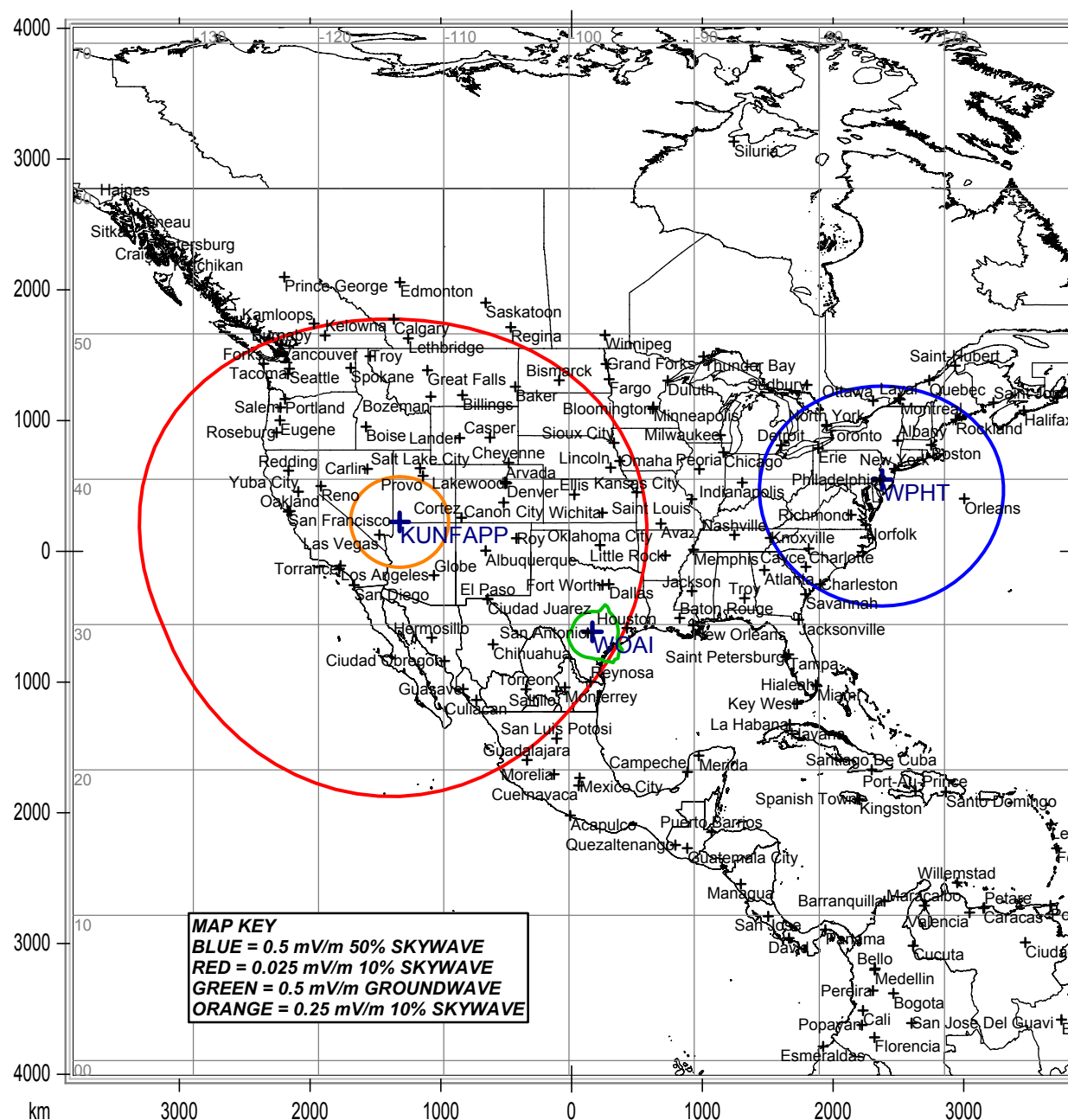
Communications Technologies, Inc. Marlton, New Jersey



State Borders    City Borders    Lat/Lon Grid



## KUNF 1210 kHz 0.231/10 kW ND-U WASHINGTON, UTAH



Communications Technologies, Inc. Marlton, New Jersey

— National Borders — Lat/Lon Grid