



**STATEMENT OF JOHN E. HIDLE, P.E.
IN SUPPORT OF AN APPLICATION FOR A
CONSTRUCTION PERMIT TO SPECIFY CHANNEL 18
IN LIEU OF CHANNEL 13 IN THE DIGITAL
TELEVISION TABLE OF ALLOTMENTS
KHGI-TV - KEARNEY, NEBRASKA
DTV - CH. 18 - 630 kW - 338 m HAAT**

Prepared for: KHGI LICENSEE, LLC

I am a Consulting Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a Licensed Professional Engineer in the Commonwealth of Virginia, No. 7418, and in New York State, No. 63418.

GENERAL

This office has been authorized by KHGI LICENSEE, LLC, licensee of KHGI-TV, channel 13, licensed to Kearney, Nebraska, to prepare this statement, FCC Form 2100, Schedule A, its technical sections, and the associated exhibits in support of an application for a minor change application to specify channel 18 in lieu of channel 13 as ordered in the REPORT AND ORDER in MB Docket No. 21-55, DA 21-476.

The R&O authorization specifies a facility of 1000 kW Effective Radiated Power (ERP) at a Height Above Average Terrain (HAAT) of 338 meters. The applicant proposes to re-purpose a relatively new channel 18 antenna which was installed and licensed in July 2015 at WKEF, Dayton, Ohio before WKEF was repacked to channel 34 and licensed in May 2020. The applicant has determined that the re-purposed antenna will provide a facility which will serve all of the population currently served by KHGI-TV's channel 13 facility. A showing to that effect is included herein.

DIRECTIONAL ANTENNA

The applicant intends to install the former WKEF channel 18 antenna which is a Dielectric model TFU-20GTH/VP-R 6T140 elliptically polarized directional antenna. The antenna's center of radiation will be located at a height above ground of 345.1 meters, and a height above average terrain of 338 meters. The antenna's horizontal azimuth radiation pattern for its horizontally polarized component is shown in Exhibit 1 and tabulated in Exhibit 2. The horizontal azimuth radiation pattern for its vertically polarized component is shown in Exhibit 3 and tabulated in Exhibit 4. The antenna's vertical elevation pattern, showing its radiation characteristics above and below the horizontal plane is shown in Exhibits 5 and 6 and is tabulated in Exhibit 7.

PROPOSED CHANNEL 18 FACILITY

The re-purposed antenna is limited in its power handling capacity and can not reach the authorized ERP of 1000 kW. The applicant therefore proposes an ERP of 630 kW. The antenna height above ground of 345.1 meters, height above mean sea level of 934.8 meters and the HAAT of 338 meters are as authorized in the R&O. A comparison of predicted coverage was made between the licensed channel 13 facility and the channel 18 facility as proposed herein. Using the FCC's *tvstudy* Longley/Rice function the resulting exhibit shows that all population that is currently predicted to be served by KHGI-TV's channel 13 facility is predicted to also be served by the proposed channel 18 facility. The comparison therefore predicts no loss of currently served population as a result of the proposed reduction in ERP to 630 kW.

PREDICTED COVERAGE CONTOURS

The predicted coverage contours were calculated in accordance with the method described in Section 73.625(b) of the Rules, utilizing the appropriate F(50,90) propagation curves (47 CFR Section 73.699, Figure 9), proposed Effective Radiated Power, and antenna height above average terrain as determined for each profile radial. The average terrain on the eight cardinal radials from 3 kilometers to 16 kilometers from the site, was determined using the NED Three Second US Terrain Database as permitted in the FCC Rules. The antenna site elevation and coordinates were determined from FCC antenna registration data. The map exhibit shows the predicted Noise Limited (39.15 dBu) contour, and the principal community (48 dBu) contour which completely encompasses the principal community of license, Kearney, Nebraska.

ALLOCATION CONSIDERATIONS

Post-Transition DTV Considerations

A study was performed, using the FCC's application processing software, *tvstudy*, v. 2.2.5, to determine if the instant application for construction permit is predicted to cause new prohibited interference to post reassignment DTV stations, construction permits, DTV allotments or Class A DTV stations. The study results, shown in Appendix B, indicate that the instant application for construction permit is predicted to cause no new interference exceeding 0.5% to the populations served by any post reassignment DTV station, construction permit, allotment or Class A DTV stations. (See Appendix B)

International DTV Considerations

The KHGI-TV site is located greater than 900 kilometers from the nearest point on the US-Canadian border and more than 1100 kilometers from the nearest point on the US-Mexican border. Therefore no international coordination is required.

Class A Television Allocation Considerations

As required in Section 73.616(f) of the FCC's Rules, the study results in Appendix B shows no Class A station predicted to be affected by the re-allotment of KHGI-TV.

Land Mobile and FM radio Considerations

The *tvstudy* results found no Land Mobile violations for this site, and the site is deemed OK toward AM radio stations. .

BLANKETING AND INTERMODULATION INTERFERENCE

Other broadcast and non-broadcast facilities are either co-located with, or located within 10 kilometers of the KHGI-TV site. The applicant does recognize its responsibility to remedy complaints of interference that might result from this proposal in accordance with applicable Rules.

RADIO FREQUENCY IMPACT, SAFETY & STATEMENT OF COMPLIANCE

The licensee of KHGI-TV is committed to the protection of station personnel and/or tower contractors working in the vicinity of the KHGI-TV antenna and will reduce power or cease operation, when necessary, to ensure protection to personnel.

As shown in Appendix A the KHGI-TV channel 18 facility as proposed herein will operate with a maximum ERP of 630 kW from an elliptically polarized directional

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KHGI-TV - Kearney, Nebraska
PAGE 5

transmitting antenna with a centerline height of 345.1 meters above ground level (AGL). Considering the elevation pattern provided elsewhere in this submission, the vertical plane relative field factor is less than 0.100 at all depression angles greater than 14 degrees. The proposed KHGI-TV channel 18 facility is predicted to produce a worst-case power density at two meters above ground level, at 60.5 meters from the tower base, of $0.766 \mu\text{W}/\text{cm}^2$, which is 0.23% of the FCC guideline value of $331.33 \mu\text{W}/\text{cm}^2$ for an "uncontrolled" environment, and 0.046% of the FCC's guideline value for "controlled" environments. Therefore, pursuant to Section 1.1307(b)(3) of the FCC Rules, the proposed facility would not exceed 5% of the uncontrolled and controlled exposure limits, so the proposal's power density contribution is considered insignificant.

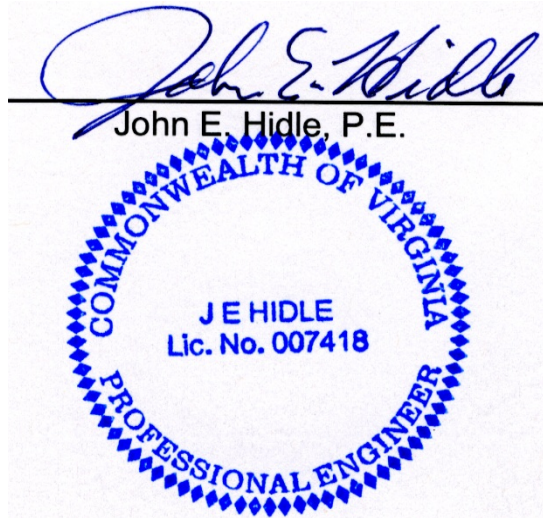
Further, the Applicant will continue to cooperate/coordinate with other site users and reduce power and/or cease operation during times of service or maintenance of the transmission systems as necessary to avoid potentially harmful exposure to personnel. In light of the above, the proposed facility should be categorically excluded from RF environmental processing under Section 1.1307(b) of the Commission's Rules.

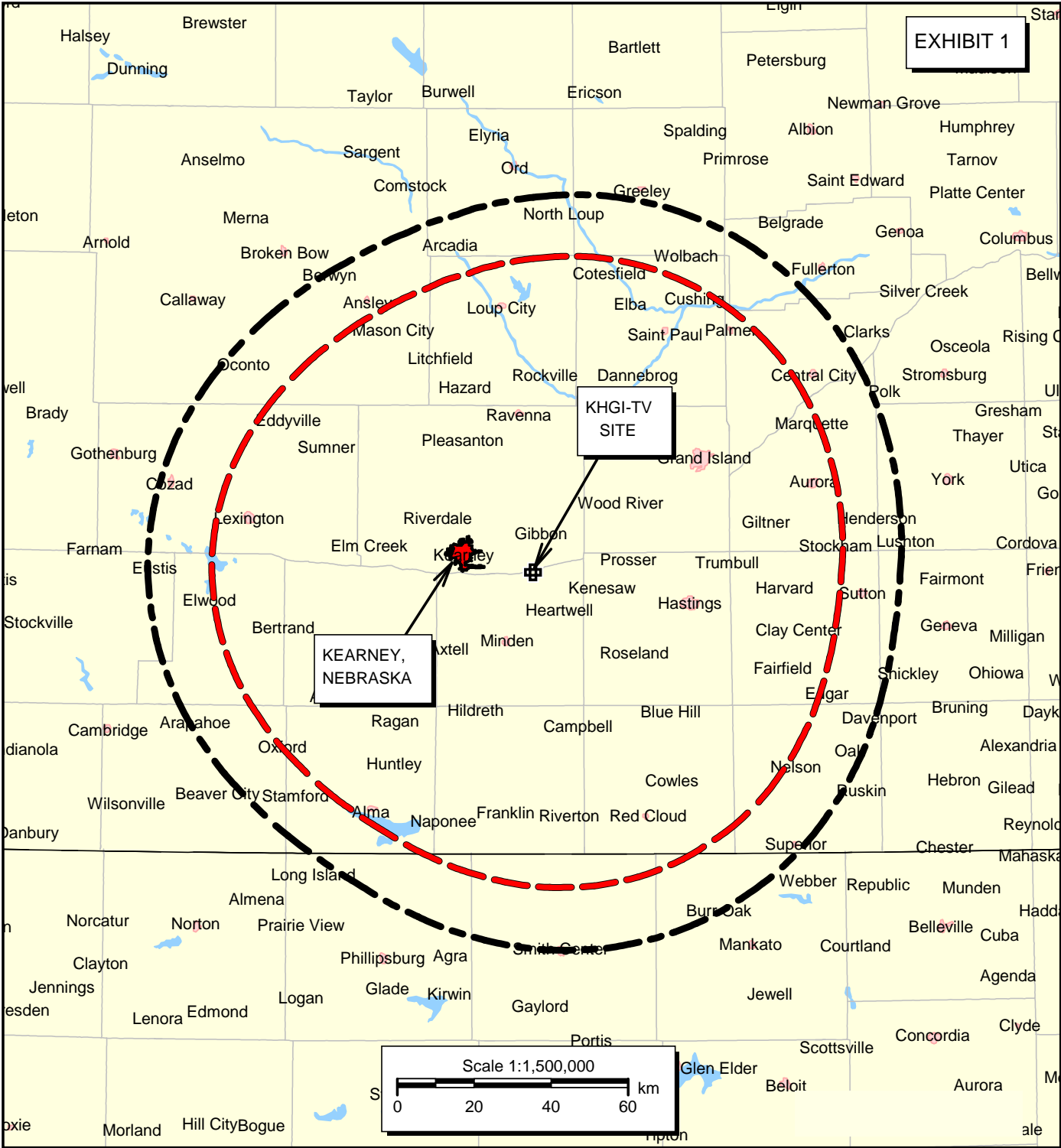
SUMMARY

It is submitted that the instant application for construction permit, which proposes the use of a re-purposed antenna and a reduction in ERP, as described herein, complies with the Rules, Regulations and relevant Policies of the Federal Communications Commission. This statement was prepared by me, or under my direct supervision, and its contents are believed to be true and correct to the best of my knowledge and belief.

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KHGI-TV - Kearney, Nebraska
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DATED: May 27, 2021





PREDICTED COVERAGE CONTOURS

KHGI-TV KEARNEY, NEBRASKA
DTV Channel 18 - 630 kW ERP - 338.0 M HAAT
MAY, 2021



Predicted Noise Limited 39.15 dBu
F(50,90) Coverage Contour



Predicted Principal Community 48 dBu
F(50,90) Coverage Contour





Proposal Number

C-06150

Exhibit 1

Date

20-May-14

Call Letters

WKEF

Channel

18

Location

Dayton, Ohio

Customer

Sinclair

Antenna Type

TFU-20GTH/VP-R 6T140

AZIMUTH PATTERN

Gain

1.40

(1.46 dB)

Frequency

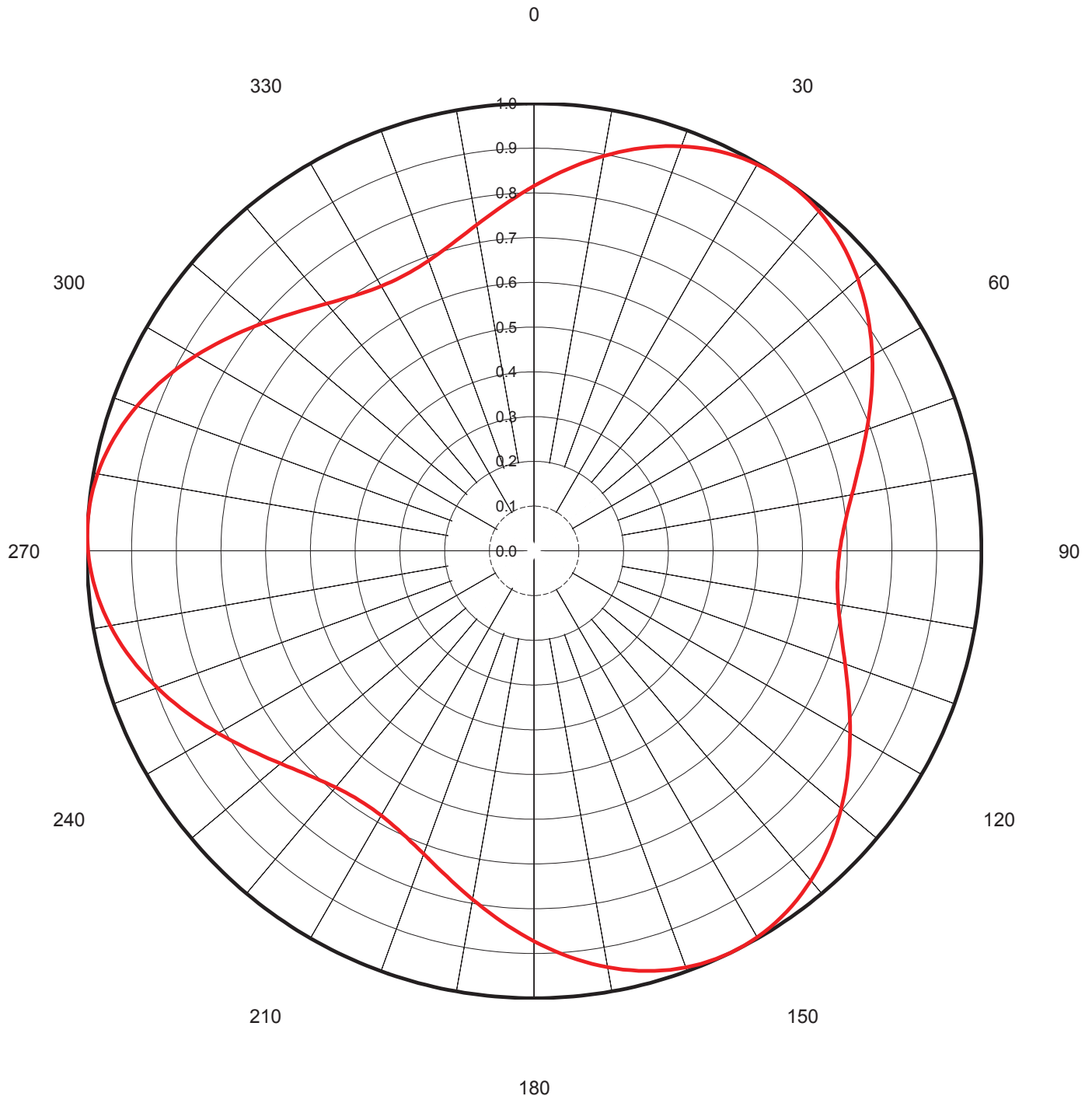
497.00 MHz

Calculated / Measured

Calculated

Drawing #

TFU-6T140





Proposal Number

C-06150**Exhibit 2**

Date

20-May-14

Call Letters

WKEF

Channel

18

Location

Dayton, Ohio

Customer

Sinclair

Antenna Type

TFU-20GTH/VP-R 6T140**TABULATION OF AZIMUTH PATTERN**Azimuth Pattern Drawing #: **TFU-6T140**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.816	45	0.972	90	0.683	135	0.932	180	0.873	225	0.711	270	0.997	315	0.754
1	0.824	46	0.968	91	0.682	136	0.939	181	0.865	226	0.716	271	0.998	316	0.747
2	0.832	47	0.962	92	0.681	137	0.945	182	0.857	227	0.721	272	1.000	317	0.740
3	0.840	48	0.957	93	0.681	138	0.951	183	0.848	228	0.727	273	1.000	318	0.733
4	0.848	49	0.951	94	0.680	139	0.957	184	0.840	229	0.733	274	1.000	319	0.727
5	0.856	50	0.945	95	0.681	140	0.962	185	0.832	230	0.740	275	0.999	320	0.721
6	0.865	51	0.939	96	0.682	141	0.967	186	0.824	231	0.747	276	0.999	321	0.716
7	0.873	52	0.932	97	0.683	142	0.972	187	0.816	232	0.754	277	0.997	322	0.710
8	0.881	53	0.925	98	0.685	143	0.977	188	0.807	233	0.761	278	0.996	323	0.706
9	0.888	54	0.918	99	0.688	144	0.981	189	0.799	234	0.768	279	0.993	324	0.701
10	0.896	55	0.911	100	0.690	145	0.984	190	0.791	235	0.776	280	0.991	325	0.697
11	0.904	56	0.904	101	0.694	146	0.988	191	0.784	236	0.783	281	0.988	326	0.693
12	0.911	57	0.896	102	0.697	147	0.991	192	0.776	237	0.791	282	0.985	327	0.690
13	0.918	58	0.888	103	0.701	148	0.994	193	0.768	238	0.799	283	0.981	328	0.687
14	0.925	59	0.881	104	0.706	149	0.995	194	0.761	239	0.807	284	0.977	329	0.685
15	0.932	60	0.873	105	0.711	150	0.997	195	0.754	240	0.816	285	0.972	330	0.683
16	0.939	61	0.865	106	0.716	151	0.998	196	0.747	241	0.824	286	0.968	331	0.682
17	0.945	62	0.857	107	0.721	152	1.000	197	0.740	242	0.832	287	0.962	332	0.681
18	0.951	63	0.848	108	0.727	153	1.000	198	0.733	243	0.840	288	0.957	333	0.681
19	0.957	64	0.840	109	0.733	154	1.000	199	0.727	244	0.848	289	0.951	334	0.680
20	0.962	65	0.832	110	0.740	155	0.999	200	0.721	245	0.856	290	0.945	335	0.681
21	0.967	66	0.824	111	0.747	156	0.999	201	0.716	246	0.865	291	0.939	336	0.682
22	0.972	67	0.816	112	0.754	157	0.997	202	0.710	247	0.873	292	0.932	337	0.683
23	0.977	68	0.807	113	0.761	158	0.996	203	0.706	248	0.881	293	0.925	338	0.685
24	0.981	69	0.799	114	0.768	159	0.993	204	0.701	249	0.888	294	0.918	339	0.688
25	0.984	70	0.791	115	0.776	160	0.991	205	0.697	250	0.896	295	0.911	340	0.690
26	0.988	71	0.784	116	0.783	161	0.988	206	0.693	251	0.904	296	0.904	341	0.694
27	0.991	72	0.776	117	0.791	162	0.985	207	0.690	252	0.911	297	0.896	342	0.697
28	0.994	73	0.768	118	0.799	163	0.981	208	0.687	253	0.918	298	0.888	343	0.701
29	0.995	74	0.761	119	0.807	164	0.977	209	0.685	254	0.925	299	0.881	344	0.706
30	0.997	75	0.754	120	0.816	165	0.972	210	0.683	255	0.932	300	0.873	345	0.711
31	0.998	76	0.747	121	0.824	166	0.968	211	0.682	256	0.939	301	0.865	346	0.716
32	1.000	77	0.740	122	0.832	167	0.962	212	0.681	257	0.945	302	0.857	347	0.721
33	1.000	78	0.733	123	0.840	168	0.957	213	0.681	258	0.951	303	0.848	348	0.727
34	1.000	79	0.727	124	0.848	169	0.951	214	0.680	259	0.957	304	0.840	349	0.733
35	0.999	80	0.721	125	0.856	170	0.945	215	0.681	260	0.962	305	0.832	350	0.740
36	0.999	81	0.716	126	0.865	171	0.939	216	0.682	261	0.967	306	0.824	351	0.747
37	0.997	82	0.710	127	0.873	172	0.932	217	0.683	262	0.972	307	0.816	352	0.754
38	0.996	83	0.706	128	0.881	173	0.925	218	0.685	263	0.977	308	0.807	353	0.761
39	0.993	84	0.701	129	0.888	174	0.918	219	0.688	264	0.981	309	0.799	354	0.768
40	0.991	85	0.697	130	0.896	175	0.911	220	0.690	265	0.984	310	0.791	355	0.776
41	0.988	86	0.693	131	0.904	176	0.904	221	0.694	266	0.988	311	0.784	356	0.783
42	0.985	87	0.690	132	0.911	177	0.896	222	0.697	267	0.991	312	0.776	357	0.791
43	0.981	88	0.687	133	0.918	178	0.888	223	0.701	268	0.994	313	0.768	358	0.799
44	0.977	89	0.685	134	0.925	179	0.881	224	0.706	269	0.995	314	0.761	359	0.807

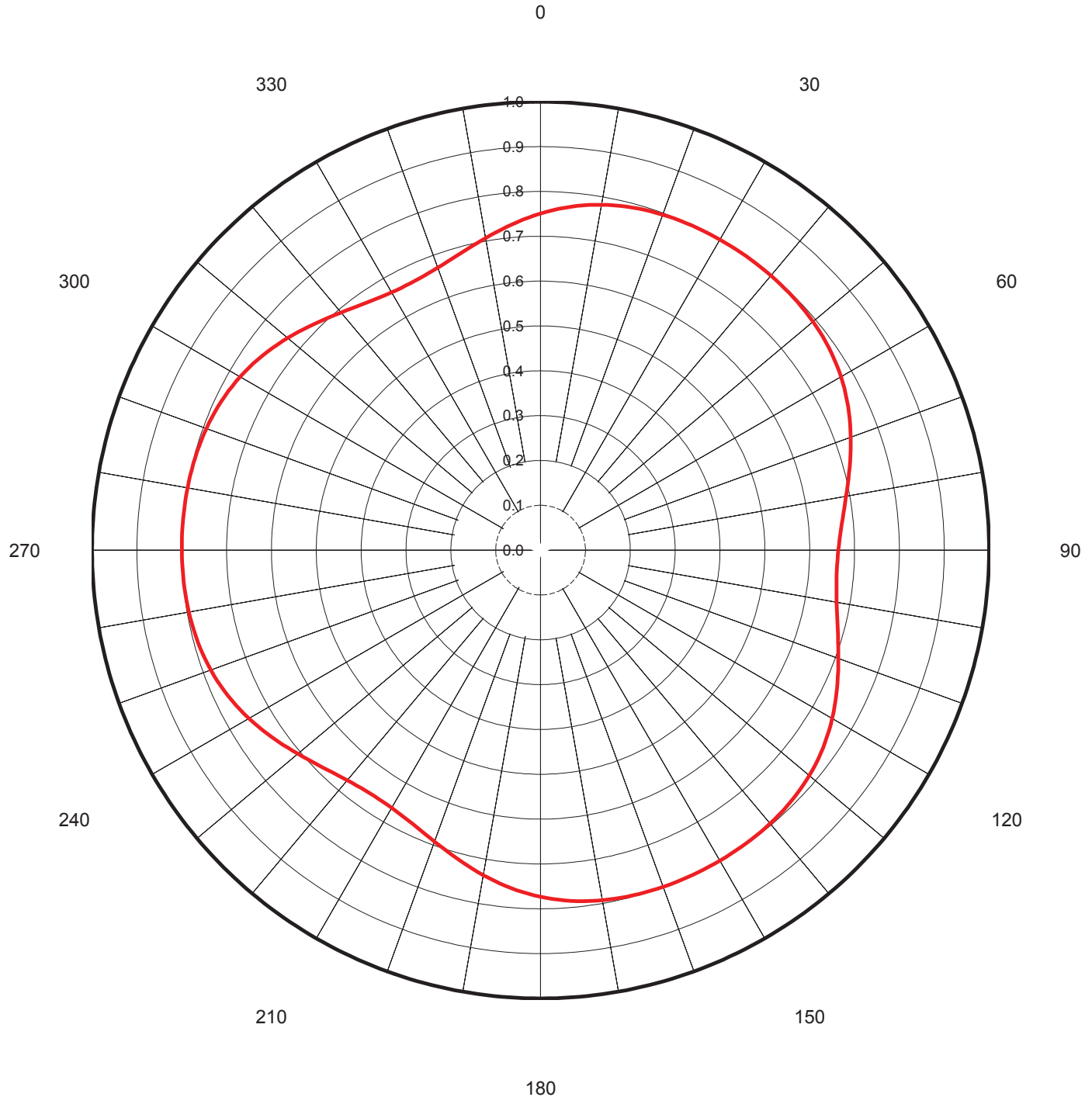
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Proposal Number	C-06150	Exhibit 3
Date	20-May-14	
Call Letters	WKEF	Channel 18
Location	Dayton, Ohio	
Customer	Sinclair	
Antenna Type	TFU-20GTH/VP-R 6T140	

AZIMUTH PATTERN/VERTICAL POLARIZATION

Gain	1.10	(0.41 dB)
Calculated / Measured		Calculated

Frequency	497.00 MHz
Drawing #	6T140-V





Proposal Number

C-06150**Exhibit 4**

Date

20-May-14

Call Letters

WKEF

Channel

18

Location

Dayton, Ohio

Customer

Sinclair

Antenna Type

TFU-20GTH/VP-R 6T140**TABULATION OF AZIMUTH PATTERN/VERTICAL POLARIZATION**Azimuth Pattern Drawing #: **6T140-V**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.751	45	0.797	90	0.664	135	0.791	180	0.773	225	0.686	270	0.800	315	0.713
1	0.755	46	0.797	91	0.663	136	0.792	181	0.770	226	0.690	271	0.800	316	0.709
2	0.759	47	0.796	92	0.662	137	0.794	182	0.767	227	0.694	272	0.800	317	0.704
3	0.762	48	0.795	93	0.662	138	0.795	183	0.764	228	0.698	273	0.800	318	0.700
4	0.766	49	0.794	94	0.662	139	0.795	184	0.760	229	0.702	274	0.800	319	0.696
5	0.769	50	0.793	95	0.663	140	0.796	185	0.757	230	0.707	275	0.800	320	0.692
6	0.772	51	0.792	96	0.663	141	0.797	186	0.753	231	0.711	276	0.800	321	0.688
7	0.775	52	0.790	97	0.665	142	0.798	187	0.749	232	0.716	277	0.800	322	0.684
8	0.777	53	0.789	98	0.666	143	0.798	188	0.745	233	0.720	278	0.800	323	0.681
9	0.780	54	0.787	99	0.668	144	0.798	189	0.740	234	0.725	279	0.799	324	0.677
10	0.782	55	0.785	100	0.670	145	0.799	190	0.736	235	0.729	280	0.799	325	0.674
11	0.784	56	0.783	101	0.673	146	0.799	191	0.732	236	0.734	281	0.799	326	0.672
12	0.786	57	0.781	102	0.676	147	0.799	192	0.727	237	0.738	282	0.799	327	0.669
13	0.788	58	0.779	103	0.679	148	0.800	193	0.723	238	0.743	283	0.798	328	0.667
14	0.790	59	0.776	104	0.682	149	0.800	194	0.718	239	0.747	284	0.798	329	0.665
15	0.791	60	0.773	105	0.686	150	0.800	195	0.713	240	0.751	285	0.797	330	0.664
16	0.792	61	0.770	106	0.690	151	0.800	196	0.709	241	0.755	286	0.797	331	0.663
17	0.794	62	0.767	107	0.694	152	0.800	197	0.704	242	0.759	287	0.796	332	0.662
18	0.795	63	0.764	108	0.698	153	0.800	198	0.700	243	0.762	288	0.795	333	0.662
19	0.795	64	0.760	109	0.702	154	0.800	199	0.696	244	0.766	289	0.794	334	0.662
20	0.796	65	0.757	110	0.707	155	0.800	200	0.692	245	0.769	290	0.793	335	0.663
21	0.797	66	0.753	111	0.711	156	0.800	201	0.688	246	0.772	291	0.792	336	0.663
22	0.798	67	0.749	112	0.716	157	0.800	202	0.684	247	0.775	292	0.790	337	0.665
23	0.798	68	0.745	113	0.720	158	0.800	203	0.681	248	0.777	293	0.789	338	0.666
24	0.798	69	0.740	114	0.725	159	0.799	204	0.677	249	0.780	294	0.787	339	0.668
25	0.799	70	0.736	115	0.729	160	0.799	205	0.674	250	0.782	295	0.785	340	0.670
26	0.799	71	0.732	116	0.734	161	0.799	206	0.672	251	0.784	296	0.783	341	0.673
27	0.799	72	0.727	117	0.738	162	0.799	207	0.669	252	0.786	297	0.781	342	0.676
28	0.800	73	0.723	118	0.743	163	0.798	208	0.667	253	0.788	298	0.779	343	0.679
29	0.800	74	0.718	119	0.747	164	0.798	209	0.665	254	0.790	299	0.776	344	0.682
30	0.800	75	0.713	120	0.751	165	0.797	210	0.664	255	0.791	300	0.773	345	0.686
31	0.800	76	0.709	121	0.755	166	0.797	211	0.663	256	0.792	301	0.770	346	0.690
32	0.800	77	0.704	122	0.759	167	0.796	212	0.662	257	0.794	302	0.767	347	0.694
33	0.800	78	0.700	123	0.762	168	0.795	213	0.662	258	0.795	303	0.764	348	0.698
34	0.800	79	0.696	124	0.766	169	0.794	214	0.662	259	0.795	304	0.760	349	0.702
35	0.800	80	0.692	125	0.769	170	0.793	215	0.663	260	0.796	305	0.757	350	0.707
36	0.800	81	0.688	126	0.772	171	0.792	216	0.663	261	0.797	306	0.753	351	0.711
37	0.800	82	0.684	127	0.775	172	0.790	217	0.665	262	0.798	307	0.749	352	0.716
38	0.800	83	0.681	128	0.777	173	0.789	218	0.666	263	0.798	308	0.745	353	0.720
39	0.799	84	0.677	129	0.780	174	0.787	219	0.668	264	0.798	309	0.740	354	0.725
40	0.799	85	0.674	130	0.782	175	0.785	220	0.670	265	0.799	310	0.736	355	0.729
41	0.799	86	0.672	131	0.784	176	0.783	221	0.673	266	0.799	311	0.732	356	0.734
42	0.799	87	0.669	132	0.786	177	0.781	222	0.676	267	0.799	312	0.727	357	0.738
43	0.798	88	0.667	133	0.788	178	0.779	223	0.679	268	0.800	313	0.723	358	0.743
44	0.798	89	0.665	134	0.790	179	0.776	224	0.682	269	0.800	314	0.718	359	0.747

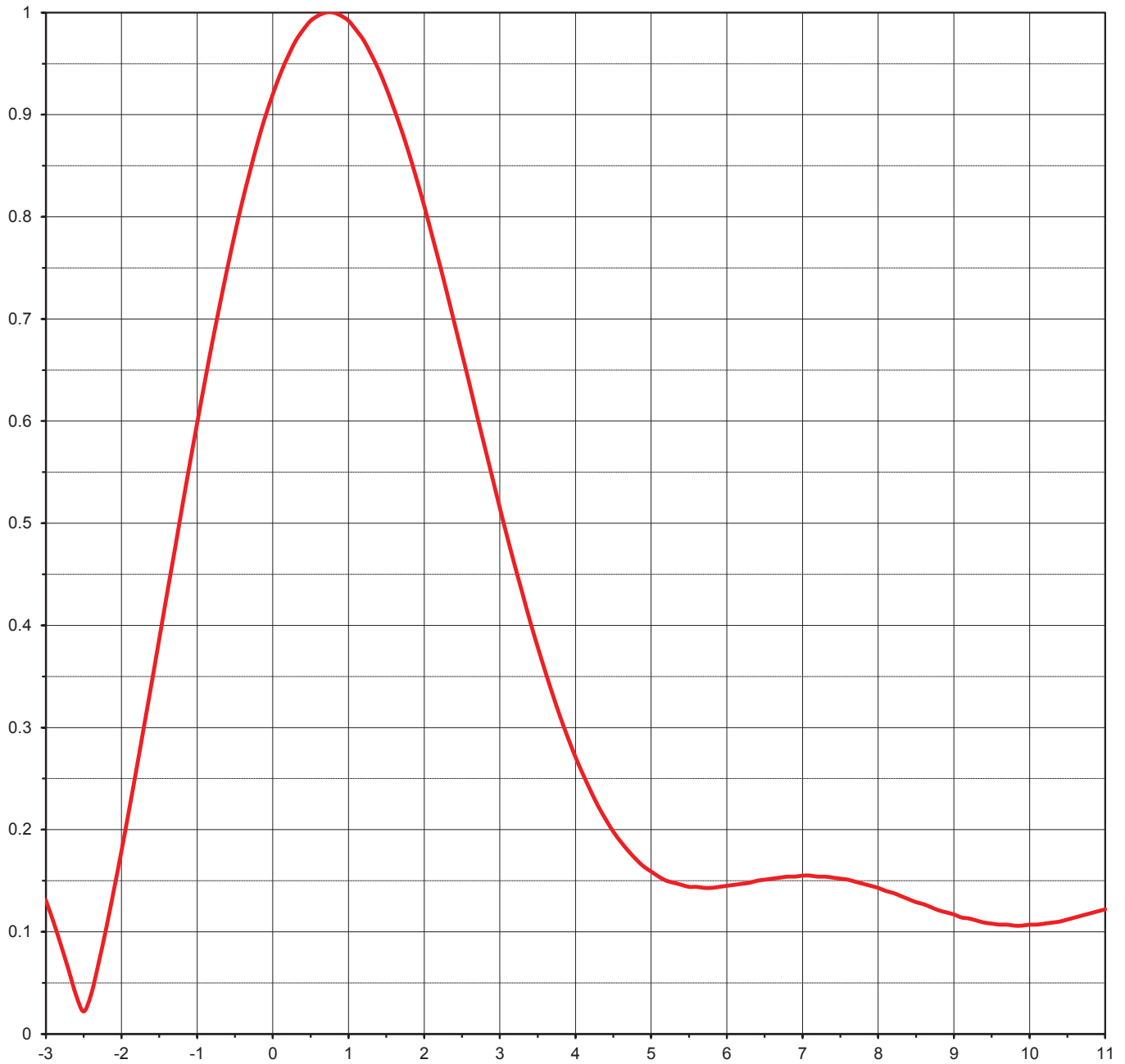
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Proposal Number	C-06150	Exhibit 5
Date	20-May-14	
Call Letters	WKEF	Channel 18
Location	Dayton, Ohio	
Customer	Sinclair	
Antenna Type	TFU-20GTH/VP-R 6T140	

ELEVATION PATTERN

RMS Gain at Main Lobe	18.0 (12.55 dB)	Beam Tilt	0.75 deg
RMS Gain at Horizontal	15.2 (11.82 dB)	Frequency	497.00 MHz
Calculated / Measured	Calculated	Drawing #	20G180075



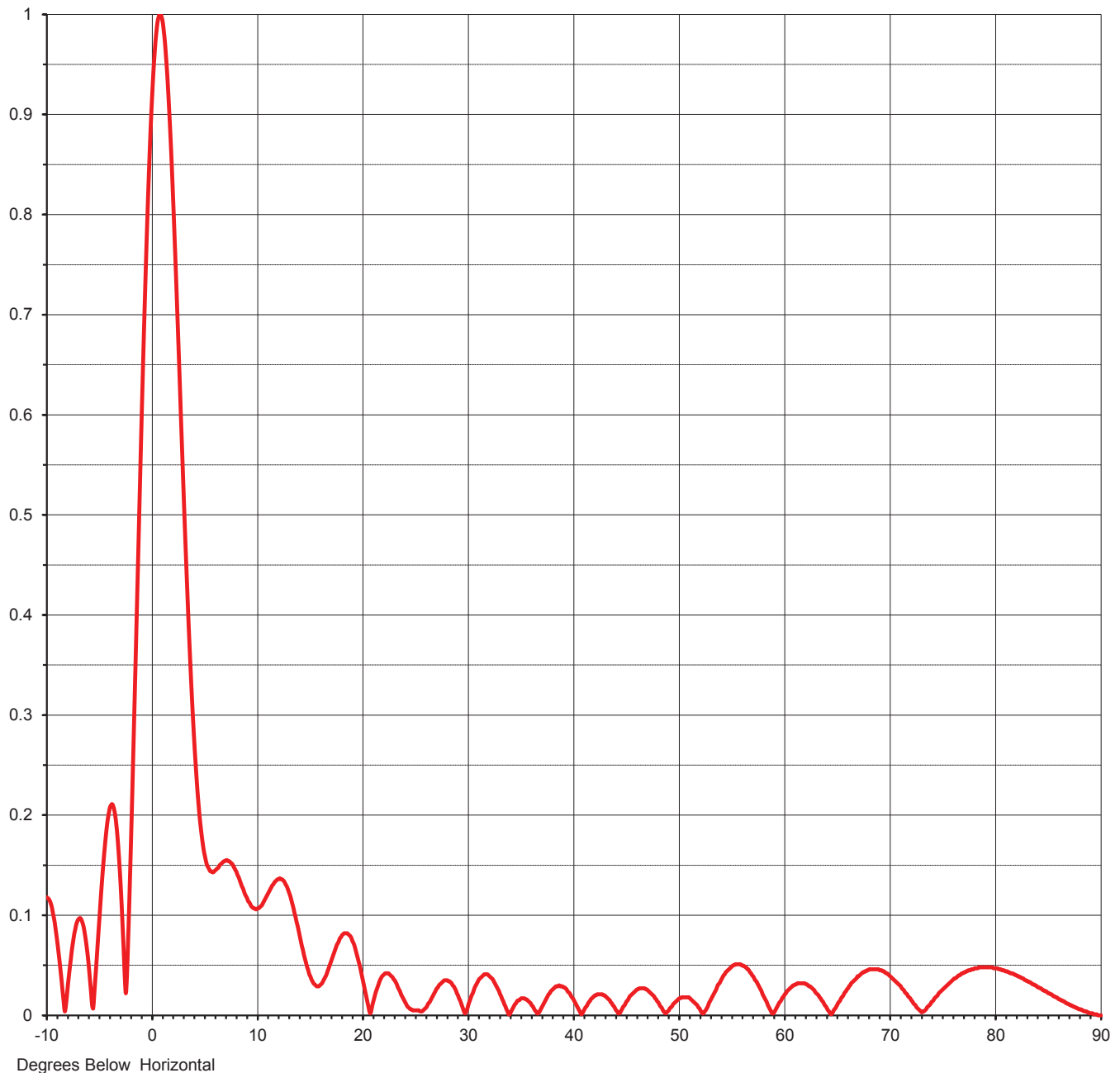
Degrees Below Horizontal



Proposal Number	C-06150	Exhibit 6
Date	20-May-14	
Call Letters	WKEF	Channel 18
Location	Dayton, Ohio	
Customer	Sinclair	
Antenna Type	TFU-20GTH/VP-R 6T140	

ELEVATION PATTERN

RMS Gain at Main Lobe	18.0 (12.55 dB)	Beam Tilt	0.75 deg
RMS Gain at Horizontal	15.2 (11.82 dB)	Frequency	497.00 MHz
Calculated / Measured	Calculated	Drawing #	20G180075-90





Proposal Number **C-06150** Exhibit **7**
Date **20-May-14**
Call Letters **WKEF** Channel **18**
Location **Dayton, Ohio**
Customer **Sinclair**
Antenna Type **TFU-20GTH/VP-R 6T140**

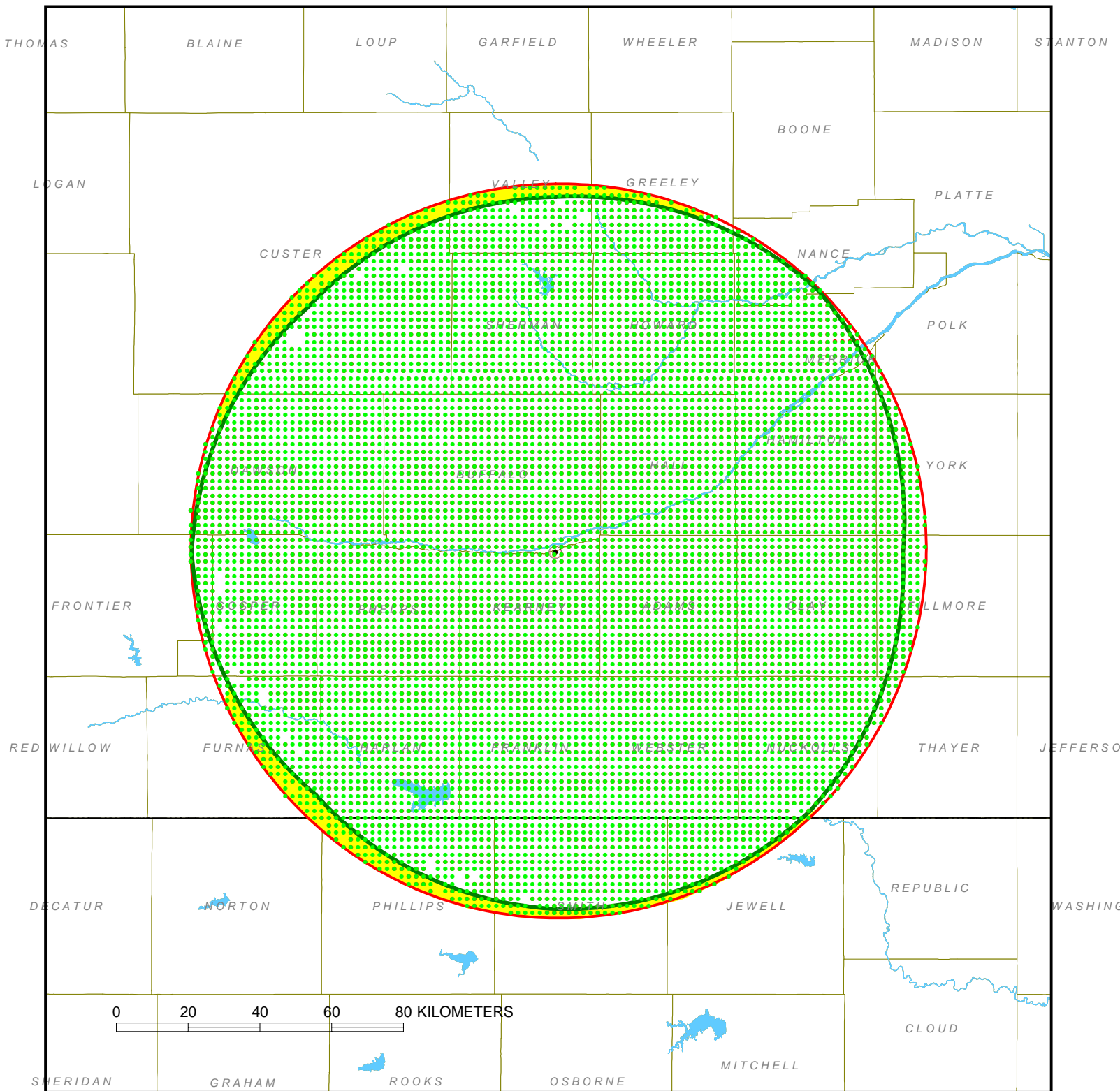
TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **20G180075-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.118	2.4	0.696	10.6	0.112	30.5	0.022	51.0	0.018	71.5	0.022
-9.5	0.107	2.6	0.636	10.8	0.116	31.0	0.034	51.5	0.013	72.0	0.015
-9.0	0.073	2.8	0.575	11.0	0.120	31.5	0.040	52.0	0.007	72.5	0.008
-8.5	0.024	3.0	0.515	11.5	0.130	32.0	0.040	52.5	0.004	73.0	0.003
-8.0	0.030	3.2	0.458	12.0	0.136	32.5	0.034	53.0	0.014	73.5	0.008
-7.5	0.074	3.4	0.404	12.5	0.135	33.0	0.024	53.5	0.024	74.0	0.014
-7.0	0.096	3.6	0.355	13.0	0.125	33.5	0.011	54.0	0.034	74.5	0.020
-6.5	0.088	3.8	0.310	13.5	0.107	34.0	0.001	54.5	0.043	75.0	0.026
-6.0	0.047	4.0	0.271	14.0	0.084	34.5	0.011	55.0	0.048	75.5	0.031
-5.5	0.021	4.2	0.238	14.5	0.060	35.0	0.016	55.5	0.051	76.0	0.036
-5.0	0.098	4.4	0.210	15.0	0.041	35.5	0.016	56.0	0.050	76.5	0.040
-4.5	0.168	4.6	0.188	15.5	0.031	36.0	0.012	56.5	0.047	77.0	0.043
-4.0	0.208	4.8	0.171	16.0	0.030	36.5	0.004	57.0	0.040	77.5	0.045
-3.5	0.199	5.0	0.159	16.5	0.038	37.0	0.007	57.5	0.032	78.0	0.047
-3.0	0.131	5.2	0.150	17.0	0.052	37.5	0.017	58.0	0.021	78.5	0.048
-2.8	0.087	5.4	0.146	17.5	0.067	38.0	0.025	58.5	0.010	79.0	0.048
-2.6	0.038	5.6	0.144	18.0	0.078	38.5	0.029	59.0	0.002	79.5	0.048
-2.4	0.039	5.8	0.143	18.5	0.082	39.0	0.029	59.5	0.011	80.0	0.047
-2.2	0.104	6.0	0.145	19.0	0.077	39.5	0.024	60.0	0.019	80.5	0.046
-2.0	0.179	6.2	0.147	19.5	0.061	40.0	0.017	60.5	0.026	81.0	0.044
-1.8	0.260	6.4	0.150	20.0	0.039	40.5	0.007	61.0	0.030	81.5	0.042
-1.6	0.344	6.6	0.152	20.5	0.014	41.0	0.004	61.5	0.032	82.0	0.040
-1.4	0.430	6.8	0.154	21.0	0.011	41.5	0.013	62.0	0.032	82.5	0.037
-1.2	0.515	7.0	0.155	21.5	0.029	42.0	0.019	62.5	0.029	83.0	0.034
-1.0	0.598	7.2	0.154	22.0	0.040	42.5	0.021	63.0	0.023	83.5	0.031
-0.8	0.677	7.4	0.153	22.5	0.042	43.0	0.020	63.5	0.017	84.0	0.028
-0.6	0.750	7.6	0.151	23.0	0.036	43.5	0.015	64.0	0.009	84.5	0.025
-0.4	0.816	7.8	0.147	23.5	0.026	44.0	0.007	64.5	0.002	85.0	0.022
-0.2	0.873	8.0	0.143	24.0	0.015	44.5	0.003	65.0	0.011	85.5	0.019
0.0	0.920	8.2	0.138	24.5	0.007	45.0	0.012	65.5	0.019	86.0	0.016
0.2	0.957	8.4	0.132	25.0	0.005	45.5	0.020	66.0	0.027	86.5	0.014
0.4	0.983	8.6	0.127	25.5	0.004	46.0	0.025	66.5	0.034	87.0	0.011
0.6	0.997	8.8	0.121	26.0	0.007	46.5	0.027	67.0	0.039	87.5	0.008
0.8	1.000	9.0	0.117	26.5	0.015	47.0	0.026	67.5	0.043	88.0	0.006
1.0	0.992	9.2	0.113	27.0	0.025	47.5	0.021	68.0	0.046	88.5	0.004
1.2	0.973	9.4	0.109	27.5	0.032	48.0	0.014	68.5	0.046	89.0	0.002
1.4	0.944	9.6	0.107	28.0	0.035	48.5	0.006	69.0	0.045	89.5	0.001
1.6	0.906	9.8	0.107	28.5	0.032	49.0	0.004	69.5	0.043	90.0	0.000
1.8	0.862	10.0	0.106	29.0	0.022	49.5	0.011	70.0	0.039		
2.0	0.811	10.2	0.107	29.5	0.009	50.0	0.016	70.5	0.034		
2.2	0.755	10.4	0.109	30.0	0.007	50.5	0.018	71.0	0.029		

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- KHGI-TV Proposed Noise Limited Contour
- KHGI-TV Present Noise Limited Contour
- KHGI-TV Proposed Terrain Limited Coverage (TVStudy Result Code 1 and 11)
- KHGI-TV Present Terrain Limited Coverage (TVStudy Result Code 1 and 11)



KHGI-TV
Channel 18 - Kearney NE
ERP = 630000.00 WATTS

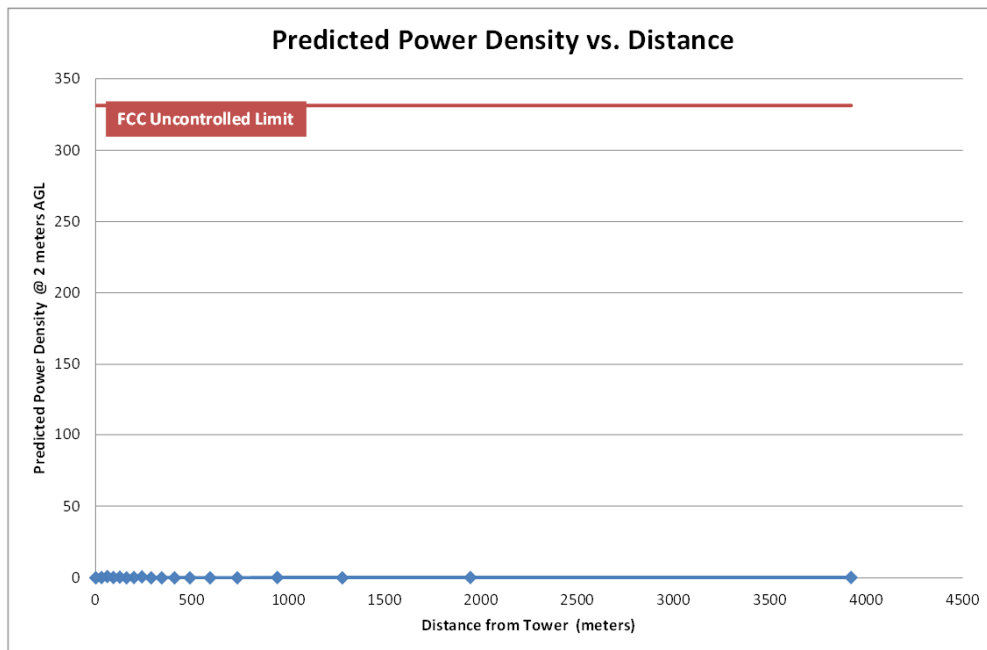
APPENDIX A

Maximum ERP 630 kW

Polarization ----- 2 Circular
 Antenna Height Above Ground -- 345.1 meters 1132.2 feet
 FCC Uncontrolled RFR Limit ---- 331.33 $\mu\text{W}/\text{cm}^2$

Maximum Computed Power Density 0.766 $\mu\text{W}/\text{cm}^2$
 0.23% of limit

Angle Below Horizontal (degrees)	<Point X> Horiz Distance from tower to 2 m AGL (meters)	Slant Distance from antenna to Point X (meters)	Vertical Pattern (REL. FIELD)	KHGI-TV ERP (kW)	KHGI-TV Calculated Power Density $\mu\text{W}/\text{cm}^2$	Percent Limit	Limit Exceeded?
0			1.000	630.0000			
5	3921.7	3936.6	0.159	15.9270	0.069	0.02%	No
10	1945.8	1975.8	0.106	7.0787	0.121	0.04%	No
15	1280.5	1325.6	0.041	1.0590	0.040	0.01%	No
20	942.7	1003.2	0.039	0.9582	0.064	0.02%	No
25	735.8	811.8	0.005	0.0158	0.002	0.00%	No
30	594.3	686.2	0.007	0.0309	0.004	0.00%	No
35	490.0	598.2	0.016	0.1613	0.030	0.01%	No
40	408.9	533.8	0.017	0.1821	0.043	0.01%	No
45	343.1	485.2	0.012	0.0907	0.026	0.01%	No
50	287.9	447.9	0.016	0.1613	0.054	0.02%	No
55	240.2	418.8	0.048	1.4515	0.553	0.17%	No
60	198.1	396.2	0.019	0.2274	0.097	0.03%	No
65	160.0	378.6	0.011	0.0762	0.036	0.01%	No
70	124.9	365.1	0.039	0.9582	0.480	0.14%	No
75	91.9	355.2	0.026	0.4259	0.225	0.07%	No
80	60.5	348.4	0.047	1.3917	0.766	0.23%	No
85	30.0	344.4	0.022	0.3049	0.172	0.05%	No
90	0.0	343.1	0.000	0.0000	0.000	0.00%	No





KHGI-TV - KEARNEY, NEBRASKA

MAY 2021

APPENDIX B

Longley-Rice Interference Analysis

tvstudy v2.2.5 (4uoc83)

Database: localhost, Study: KHGI-TV 18 w DIE6T140 630KW, Model: Longley-Rice
Start: 2021.05.27 12:21:39

Study created: 2021.05.27 12:21:39

Study build station data: LMS TV 2021-05-27

Proposal: KHGI-TV D18 DT APP KEARNEY, NE
File number: KHGI-TV 18 w DIE6T140 630KW
Facility ID: 21160
Station data: User record
Record ID: 512
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

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	KLBY	D17	DT	LIC	COLBY, KS	BLANK0000086337	263.1 km
No	KAAS-TV	D17	DT	CP	SALINA, KS	BLANK0000035657	213.9
No	KAAS-TV	D17	DT	LIC	SALINA, KS	BLCDT20021120AAP	213.9
No	KYNE-TV	D17	DT	LIC	OMAHA, NE	BLANK0000123806	249.2
No	KCPT	D18	DT	LIC	KANSAS CITY, MO	BLEDT20090821AAU	413.1
No	KWKS	D19	DT	LIC	COLBY, KS	BLEDT20070601ATA	264.3
No	KXNE-TV	D19	DT	CP	NORFOLK, NE	BLANK0000035898	219.9
No	KXNE-TV	D19	DT	LIC	NORFOLK, NE	BLEDT20090615ADS	219.9

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D18
Latitude: 40 39 27.90 N (NAD83)
Longitude: 98 52 5.00 W
Height AMSL: 974.8 m
HAAT: 338.0 m
Peak ERP: 630 kW
Antenna: DIE 6T140 0.0 deg
Elev Pattn: Generic
Elec Tilt: 1.05

39.1 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	419 kW	342.3 m	97.3 km
45.0	590	355.0	101.3
90.0	294	351.3	95.1

Appendix B - Interference Analysis
KHGI-TV - Kearney, Nebraska
Channel 18 -630 kW - Page 2

135.0	544	343.1	99.5
180.0	480	332.2	97.5
225.0	322	327.1	93.5
270.0	626	333.1	99.9
315.0	360	335.2	95.3

Database HAAT does not agree with computed HAAT
 Database HAAT: 338 m Computed HAAT: 340 m

Distance to Canadian border: 927.2 km

Distance to Mexican border: 1198.2 km

**Proposal is within coordination distance of FCC monitoring station
 Conditions at FCC monitoring station: Grand Island NE
 Bearing: 51.3 degrees Distance: 47.3 km
 ERP: 551 kW HAAT: 356.2 m Field strength: 75.5 dBu, 6.0 mV/m

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
 Bearing: 266.1 degrees Distance: 540.9 km

No land mobile station failures found

Study cell size: 2.00 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 proposal scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KHGI-TV	D18	DT	APP	KEARNEY, NE	KHGI-TV 18 w DIE6T140	
	Service area			Terrain-limited		IX-free	Percent IX
29807.7	230,466	29658.5		230,345	29658.5	230,345	0.00 0.00



RADIO FREQUENCY IMPACT, SAFETY & STATEMENT OF COMPLIANCE

The licensee of KHGI-TV is committed to the protection of station personnel and/or tower contractors working in the vicinity of the KHGI-TV antenna and will reduce power or cease operation, when necessary, to ensure protection to personnel.

As shown in Appendix A the KHGI-TV channel 18 facility as proposed herein will operate with a maximum ERP of 630 kW from an elliptically polarized directional transmitting antenna with a centerline height of 345.1 meters above ground level (AGL). Considering the elevation pattern provided elsewhere in this submission, the vertical plane relative field factor is less than 0.100 at all depression angles greater than 14 degrees. The proposed KHGI-TV channel 18 facility is predicted to produce a worst-case power density at two meters above ground level, at 60.5 meters from the tower base, of $0.766 \mu\text{W}/\text{cm}^2$, which is 0.23% of the FCC guideline value of $331.33 \mu\text{W}/\text{cm}^2$ for an "uncontrolled" environment, and 0.046% of the FCC's guideline value for "controlled" environments. Therefore, pursuant to Section 1.1307(b)(3) of the FCC Rules, the proposed facility would not exceed 5% of the uncontrolled and controlled exposure limits, so the proposal's power density contribution is considered insignificant.

Further, the Applicant will continue to cooperate/coordinate with other site users and reduce power and/or cease operation during times of service or maintenance of the transmission systems as necessary to avoid potentially harmful exposure to personnel. In light of the above, the proposed facility should be categorically excluded from RF environmental processing under Section 1.1307(b) of the Commission's Rules.

KHGI-TV
Channel 18 - Kearney NE
ERP = 630000.00 WATTS

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50	287.9	447.9	0.016	0.1613	0.054	0.02%	No
55	240.2	418.8	0.048	1.4515	0.553	0.17%	No
60	198.1	396.2	0.019	0.2274	0.097	0.03%	No
65	160.0	378.6	0.011	0.0762	0.036	0.01%	No
70	124.9	365.1	0.039	0.9582	0.480	0.14%	No
75	91.9	355.2	0.026	0.4259	0.225	0.07%	No
80	60.5	348.4	0.047	1.3917	0.766	0.23%	No
85	30.0	344.4	0.022	0.3049	0.172	0.05%	No
90	0.0	343.1	0.000	0.0000	0.000	0.00%	No

