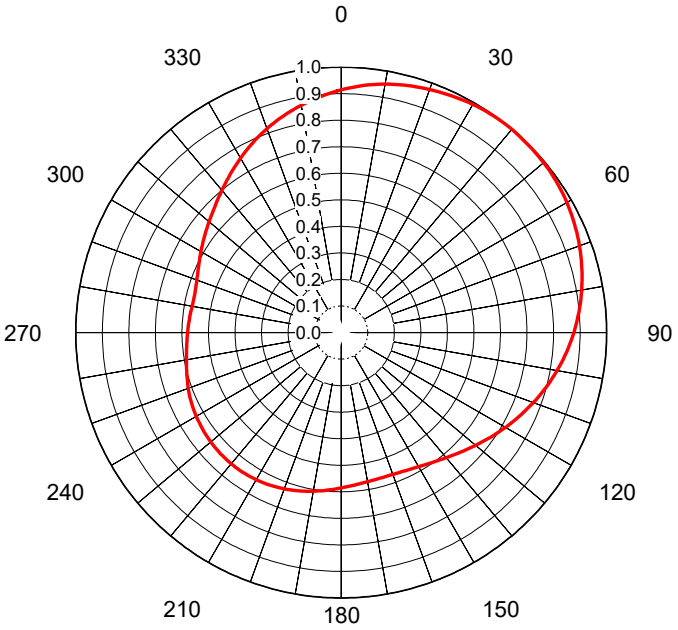
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Radiofrequency Consulting Engineers
Digital Television and Radio

Displacement Application

LPTV or Translator Facility:	K46LO-D Deadwood, SD Facility ID 186050 Authorized Ch. 46 File# BNPDTL-20100505AJG
Nature of Displacement:	Within 600 MHz wireless spectrum
Proposed Facility:	Ch. 29 15 kW ERP Directional Azimuth pattern in Figure 1
Modification Compliance:	10.7 km from authorized site Contour comparison in Figure 2 TVStudy Analysis report in Table 1 Satisfies 121 km geographic restriction of DA 09-1487
RF Exposure:	The calculated signal density near the tower at two meters above ground level attributable to the proposed facility is 0.5 percent of the general population/uncontrolled maximum permitted exposure limit. Calculations conducted pursuant to FCC OET Bulletin Number 65 and incorporate 25 percent relative field at downward angles (from antenna elevation pattern data). 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.

Chesapeake RF Consultants, LLC
Joseph M. Davis, P.E. August 19, 2021
207 Old Dominion Road Yorktown, VA 23692 703-650-9600

Dielectric®



AZIMUTH PATTERN
Horizontal Polarization

Proposal No.	**20210819jmd**
Date	**19-Aug-21**
Call Letters	**LPTV Ch29**
Channel	**29**
Frequency	**563 MHz**
Antenna Type	**TLP-8B/VP-R**
Gain	**1.76 (2.45dB)**
	Calculated
Pattern Number	**TLP-B-29 Hpol**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.914	36	0.999	72	0.949	108	0.782	144	0.601	180	0.586	216	0.644	252	0.609	288	0.575	324	0.722
1	0.919	37	0.999	73	0.946	109	0.776	145	0.597	181	0.588	217	0.645	253	0.607	289	0.577	325	0.728
2	0.923	38	0.999	74	0.942	110	0.771	146	0.594	182	0.590	218	0.645	254	0.605	290	0.579	326	0.734
3	0.927	39	1.000	75	0.939	111	0.765	147	0.591	183	0.592	219	0.645	255	0.602	291	0.581	327	0.740
4	0.930	40	1.000	76	0.935	112	0.759	148	0.589	184	0.594	220	0.645	256	0.600	292	0.584	328	0.747
5	0.934	41	1.000	77	0.932	113	0.754	149	0.586	185	0.596	221	0.645	257	0.598	293	0.587	329	0.753
6	0.938	42	0.999	78	0.928	114	0.748	150	0.583	186	0.598	222	0.645	258	0.596	294	0.590	330	0.759
7	0.941	43	0.999	79	0.924	115	0.742	151	0.581	187	0.600	223	0.645	259	0.594	295	0.593	331	0.765
8	0.944	44	0.999	80	0.920	116	0.737	152	0.579	188	0.603	224	0.645	260	0.592	296	0.596	332	0.771
9	0.948	45	0.998	81	0.916	117	0.731	153	0.577	189	0.605	225	0.644	261	0.590	297	0.600	333	0.777
10	0.951	46	0.998	82	0.912	118	0.726	154	0.575	190	0.607	226	0.644	262	0.589	298	0.603	334	0.783
11	0.954	47	0.998	83	0.908	119	0.720	155	0.574	191	0.609	227	0.643	263	0.587	299	0.607	335	0.789
12	0.956	48	0.997	84	0.904	120	0.714	156	0.573	192	0.611	228	0.643	264	0.586	300	0.610	336	0.795
13	0.959	49	0.996	85	0.899	121	0.709	157	0.571	193	0.614	229	0.642	265	0.584	301	0.614	337	0.801
14	0.962	50	0.996	86	0.895	122	0.703	158	0.570	194	0.616	230	0.641	266	0.583	302	0.618	338	0.806
15	0.964	51	0.995	87	0.890	123	0.698	159	0.569	195	0.618	231	0.640	267	0.582	303	0.622	339	0.812
16	0.966	52	0.994	88	0.886	124	0.692	160	0.569	196	0.619	232	0.640	268	0.581	304	0.625	340	0.817
17	0.968	53	0.993	89	0.881	125	0.687	161	0.568	197	0.621	233	0.639	269	0.580	305	0.629	341	0.823
18	0.971	54	0.992	90	0.876	126	0.682	162	0.568	198	0.623	234	0.638	270	0.579	306	0.633	342	0.828
19	0.973	55	0.990	91	0.872	127	0.676	163	0.568	199	0.625	235	0.637	271	0.578	307	0.637	343	0.834
20	0.975	56	0.989	92	0.867	128	0.671	164	0.568	200	0.627	236	0.636	272	0.577	308	0.641	344	0.839
21	0.977	57	0.987	93	0.862	129	0.666	165	0.568	201	0.628	237	0.634	273	0.576	309	0.646	345	0.844
22	0.979	58	0.985	94	0.857	130	0.661	166	0.568	202	0.630	238	0.633	274	0.575	310	0.650	346	0.849
23	0.980	59	0.983	95	0.852	131	0.656	167	0.569	203	0.632	239	0.632	275	0.574	311	0.654	347	0.854
24	0.982	60	0.981	96	0.847	132	0.651	168	0.569	204	0.633	240	0.631	276	0.573	312	0.659	348	0.859
25	0.984	61	0.979	97	0.842	133	0.646	169	0.570	205	0.634	241	0.629	277	0.572	313	0.663	349	0.864
26	0.986	62	0.977	98	0.836	134	0.641	170	0.571	206	0.636	242	0.628	278	0.572	314	0.668	350	0.869
27	0.988	63	0.975	99	0.831	135	0.637	171	0.572	207	0.637	243	0.626	279	0.571	315	0.673	351	0.874
28	0.990	64	0.972	100	0.826	136	0.632	172	0.573	208	0.638	244	0.625	280	0.570	316	0.678	352	0.879
29	0.991	65	0.970	101	0.820	137	0.628	173	0.574	209	0.639	245	0.623	281	0.570	317	0.683	353	0.883
30	0.993	66	0.967	102	0.815	138	0.624	174	0.575	210	0.640	246	0.621	282	0.570	318	0.688	354	0.888
31	0.994	67	0.964	103	0.810	139	0.619	175	0.577	211	0.641	247	0.619	283	0.570	319	0.694	355	0.893
32	0.995	68	0.961	104	0.804	140	0.615	176	0.578	212	0.642	248	0.618	284	0.570	320	0.699	356	0.897
33	0.996	69	0.958	105	0.799	141	0.612	177	0.580	213	0.643	249	0.616	285	0.571	321	0.705	357	0.902
34	0.997	70	0.955	106	0.793	142	0.608	178	0.582	214	0.643	250	0.613	286	0.572	322	0.711	358	0.906
35	0.998	71	0.952	107	0.787	143	0.604	179	0.584	215	0.644	251	0.611	287	0.573	323	0.716	359	0.910

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Figure 1
Antenna Azimuthal Pattern
K46LO-D Deadwood, SD
Facility ID 186050
Ch. 29 15 kW Directional

prepared for
Gray Television Licensee, LLC

August, 2021

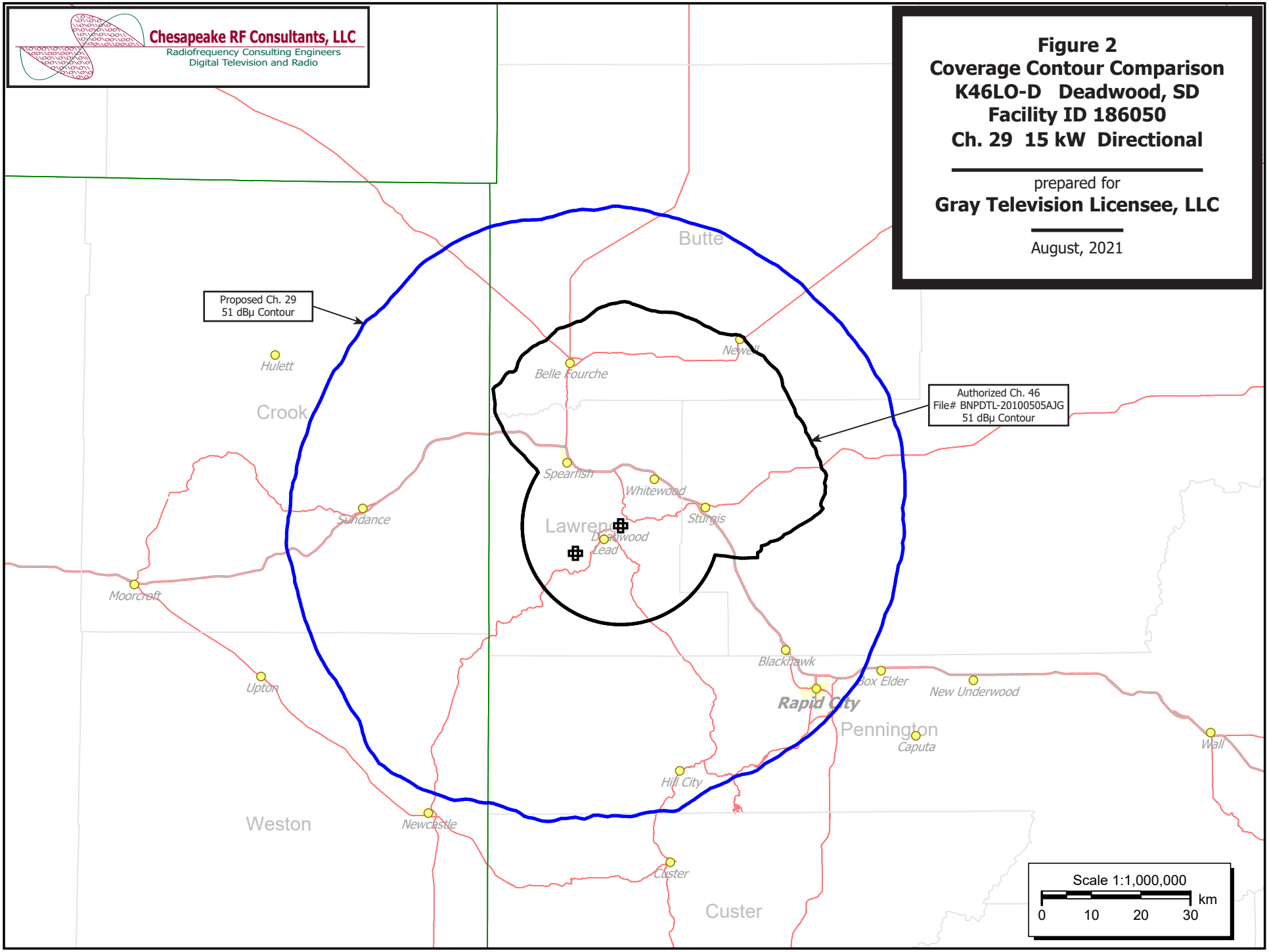

Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
Figure 2
Coverage Contour Comparison
K46LO-D Deadwood, SD
Facility ID 186050
Ch. 29 15 kW Directional
prepared for
Gray Television Licensee, LLC
August, 2021
Proposed Ch. 29
51 dBµ Contour
Authorized Ch. 46
File# BNPDTL-20100505AJG
51 dBµ Contour
Butte
Hulett
Crook
Belle Fourche
Newell
Spearfish
Whitewood
Sturgis
Sundance
Lawrence
Deadwood
Lead
Moorcroft
Upton
Blackhawk
Box Elder
New Underwood
Rapid City
Pennington
Caputa
Wall
Hill City
Weston
Newcastle
Custer
Custer
Scale 1:1,000,000
km
0
10
20
30

Table 1 K46LO-D TVStudy Analysis of Proposal


```
tvstudy v2.2.5 (4uoc83)
Database: localhost,  Study: K46LO-D prop Ch29,  Model: Longley-Rice
Start: 2021.08.19 14:45:30

Study created: 2021.08.19 14:45:30

Study build station data: LMS TV 2021-08-19

    Proposal: K46LO-D D29 LD APP DEADWOOD, SD
 File number: K46LO-D prop Ch29
 Facility ID: 186050
Station data: User record
   Record ID: 3822
     Country: U.S.

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

Search options:
Baseline record excluded if station has CP

Stations potentially affected by proposal:

IX   Call      Chan       Svc Status  City, State              File Number             Distance
No   K22AD     N22        TX  LIC     GILLETTE, WY             BLTTL19940224JS         132.2 km
No   KWBH-LP   N27        TX  LIC     RAPID CITY, SD           BLTTL19970801JA          53.6
No   K28NI-D   D28        LD  CP      WASTA, SD                BNPDTL20100510AHL       120.4
No   K28KM-D   D28        LD  LIC     CLARETON, WY             BLDTL20091106ABM        122.7
No   KDEN-TV   D29        DT  LIC     LONGMONT, CO             BLCDT20100317AAM        477.9
No   KSTF      D29        DT  CP      SCOTTSBLUFF, NE          BLANK0000036040         259.0
Yes  KSTF      D29        DT  LIC     SCOTTSBLUFF, NE          BLANK0000001046         259.0
No   KPLO-TV   D29        LD  LIC     RELIANCE, SD             BLCDT20130116AAF        277.8
No   K29JO-D   D29        LD  LIC     DOUGLAS, WY              BLANK0000135895         213.9
Yes  DDKSWY-LP D29        LD  APP     SHERIDAN, WY             BLANK0000071563         247.3
Yes  DDKSWY-LP N29        TX  APP     SHERIDAN, WY             BLTTL20100422ADU        247.1
No   K30MX-D   D30        LD  LIC     WYODAK, WY               BLDTT20120614ABG        130.5

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:  44 19 36.00 N (NAD83)
  Longitude: 103 50 14.00 W
Height AMSL: 2280.9 m
       HAAT: 0.0 m
   Peak ERP: 15.0 kW
    Antenna: DIE TLP-B 40.0 deg
Elev Pattrn: Generic
  Elec Tilt: 1.00

50.2 dBu contour:
Azimuth      ERP       HAAT   Distance
  0.0 deg   12.5 kW   725.4 m   70.4 km
 45.0       14.9      732.5     71.7
 90.0       11.5      605.9     67.0
135.0        6.11     464.9     58.9
180.0        5.15     365.6     54.0
225.0        6.20     451.3     58.5
270.0        5.03     506.7     59.0
315.0        6.82     594.7     63.2

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m   Computed HAAT: 556 m

Distance to Canadian border: 519.4 km

Distance to Mexican border: 1413.7 km

Conditions at FCC monitoring station: Grand Island NE
```

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Bearing: 128.7 degrees Distance: 581.9 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 194.3 degrees Distance: 477.8 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 BLANK0000001046 LIC scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KSTF	D29	DT	LIC	SCOTTSBLUFF, NE	BLANK0000001046	
Undesireds:	K46LO-D	D29	LD	APP	DEADWOOD, SD	K46LO-D prop Ch29	259.0 km
	KDEN-TV	D29	DT	LIC	LONGMONT, CO	BLCDT20100317AAM	234.8

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
8285.7	51,327	7699.3	51,109	7620.8	51,102	7619.8	51,102	0.01	0.00

Undesired	Total IX	Unique IX, before		Unique IX, after	
K46LO-D D29 LD APP	1.0	0		1.0	0
KDEN-TV D29 DT LIC	78.5	7	78.5	7	78.5	7

Interference to BLANK0000071563 APP scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	DDKSWY-LP	D29	LD	APP	SHERIDAN, WY	BLANK0000071563	
Undesireds:	K46LO-D	D29	LD	APP	DEADWOOD, SD	K46LO-D prop Ch29	247.3 km
	K28ON-D	D28	LD	LIC	CASTLE ROCK, ETC., MT	BLANK0000062952	137.6

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
8583.5	36,625	7672.5	35,917	7671.5	35,917	7667.5	35,917	0.05	0.00

Undesired	Total IX	Unique IX, before		Unique IX, after	
K46LO-D D29 LD APP	4.0	0		4.0	0
K28ON-D D28 LD LIC	1.0	0	1.0	0	1.0	0

Interference to BLTTL20100422ADU APP scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	DDKSWY-LP	N29	TX	APP	SHERIDAN, WY	BLTTL20100422ADU	
Undesireds:	K46LO-D	D29	LD	APP	DEADWOOD, SD	K46LO-D prop Ch29	247.1 km

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
1156.6	25,270	1043.8	24,468	1043.8	24,468	1041.8	24,468	0.19	0.00

Undesired	Total IX	Unique IX, before		Unique IX, after	
K46LO-D D29 LD APP	2.0	0		2.0	0

Interference to proposal scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	K46LO-D	D29	LD	APP	DEADWOOD, SD	K46LO-D prop Ch29	
Undesireds:	KSTF	D29	DT	CP	SCOTTSBLUFF, NE	BLANK0000036040	259.0 km
	K29JO-D	D29	LD	LIC	DOUGLAS, WY	BLANK0000135895	213.9
	DDKSWY-LP	D29	LD	APP	SHERIDAN, WY	BLANK0000071563	247.3

Service area		Terrain-limited		IX-free		Percent IX	
12478.5	142,468	10600.6	89,044	10567.4	89,028	0.31	0.02

Table 1 K46LO-D TVStudy Analysis of Proposal
(page 3 of 3)

Undesired		Total IX		Unique IX		Prcnt Unique IX	
K29JO-D D29 LD LIC	4.0	0	4.0	0	0.04	0.00
DDKSWY-LP D29 LD APP	29.2	16	29.2	16	0.28	0.02

Interference to proposal scenario 2

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	K46LO-D	D29	LD	APP	DEADWOOD, SD	K46LO-D prop Ch29	
Undesireds:	KSTF	D29	DT	CP	SCOTTSBLUFF, NE	BLANK0000036040	259.0 km
	K29JO-D	D29	LD	LIC	DOUGLAS, WY	BLANK0000135895	213.9

Service area		Terrain-limited		IX-free		Percent IX	
12478.5	142,468	10600.6	89,044	10596.6	89,044	0.04	0.00

Undesired		Total IX		Unique IX		Prcnt Unique IX	
K29JO-D D29 LD LIC	4.0	0	4.0	0	0.04	0.00