

## Environmental Protection

There are two main factors that need to be addressed in order to make sure that the environment around a proposed facility is protected.

### **1) Significant affects to the environment.**

The proposed facility will be built at an existing communications facility. This site is not an "Historic Place" as described in section 1.1307(a) (4). Therefore, this application is excluded from the preparation of an "Environmental Assessment" pursuant to Section 1.1306 Note 1.

### **2) Human exposure to excess levels of radiofrequency radiation.**

The proposed facility is to be built using a 1-bay circularly polarized full-wave spaced antenna.

According to OET 65, "Applicants and licensees should be able to calculate, based on considerations of frequency, power and antenna characteristics the distance from their transmitter where their signal produces an RF field equal to, or greater than, the 5% threshold limit. The applicant or licensee then shares responsibility for compliance in any accessible area or areas within this 5% "contour" where the appropriate limits are found to be exceeded."

As can be seen in Exhibit 22A, the proposed facility's maximum contribution to RF on the site is  $2.3441 \mu\text{W}/\text{cm}^2$  at a distance of 13 meters from the tower, which is 1.17% of the uncontrolled (public) exposure limit.

Therefore, because the proposed facility will not cause an RF field that is equal to or greater than 5% of the  $200 \mu\text{W}/\text{cm}^2$  limit for uncontrolled exposure at any point, the proposed facility complies with the requirements of OET 65.

BFTC will fully cooperate with other site users to temporarily reduce power or cease broadcasting, as necessary, to protect workers and others having access to the site from excessive levels of RF Radiation.

Exhibit 22-A

RF Analysis: KNNU.P 202A Newton, IA

**KNNU.P**

**Site type:** proposed

**Channel:** 202

**Class:** A

**ERP:** 0.14 kw

**Antenna:** RFS CPF500

Ring stub

1-bay

full wave

**COR AGL:** 49 m

**Polarization:** Circular

Distance From Tower (m)	KNNU.P Facility	Total RF (uW/cm2)	Percent of 200uW/cm2
0	1.9481	1.95	0.97
1	1.9743	1.97	0.99
2	1.9989	2.00	1.00
3	2.0220	2.02	1.01
4	2.0435	2.04	1.02
5	2.0932	2.09	1.05
6	2.1536	2.15	1.08
7	2.2124	2.21	1.11
8	2.2695	2.27	1.13
9	2.3097	2.31	1.15
10	2.3213	2.32	1.16
11	2.3309	2.33	1.17
12	2.3385	2.34	1.17
<b>13</b>	<b>2.3441</b>	<b>2.34</b>	<b>1.17</b>
14	2.3435	2.34	1.17
15	2.3405	2.34	1.17
16	2.3356	2.34	1.17
17	2.3291	2.33	1.16
18	2.3230	2.32	1.16
19	2.3261	2.33	1.16
20	2.3272	2.33	1.16
21	2.3264	2.33	1.16
22	2.3238	2.32	1.16
23	2.3165	2.32	1.16
24	2.2917	2.29	1.15
25	2.2660	2.27	1.13
26	2.2396	2.24	1.12
27	2.2126	2.21	1.11
28	2.1851	2.19	1.09
29	2.1638	2.16	1.08
30	2.1444	2.14	1.07
31	2.1242	2.12	1.06
32	2.1033	2.10	1.05
33	2.0816	2.08	1.04
34	2.0593	2.06	1.03
35	2.0251	2.03	1.01
36	1.9862	1.99	0.99
37	1.9476	1.95	0.97
38	1.9097	1.91	0.95
39	1.8722	1.87	0.94
40	1.8353	1.84	0.92
41	1.7990	1.80	0.90
42	1.7657	1.77	0.88
43	1.7331	1.73	0.87
44	1.7011	1.70	0.85
45	1.6696	1.67	0.83

Distance From Tower (m)	KNNU.P Facility	Total RF (uW/cm2)	Percent of 200uW/cm2
46	1.6386	1.64	0.82
47	1.6081	1.61	0.80
48	1.5781	1.58	0.79
49	1.5487	1.55	0.77
50	1.5147	1.51	0.76
51	1.4816	1.48	0.74
52	1.4494	1.45	0.72
53	1.4182	1.42	0.71
54	1.3878	1.39	0.69
55	1.3582	1.36	0.68
56	1.3294	1.33	0.66
57	1.3015	1.30	0.65
58	1.2743	1.27	0.64
59	1.2609	1.26	0.63
60	1.2558	1.26	0.63
61	1.2503	1.25	0.63
62	1.2444	1.24	0.62
63	1.2381	1.24	0.62
64	1.2314	1.23	0.62
65	1.2244	1.22	0.61
66	1.2172	1.22	0.61
67	1.2096	1.21	0.60
68	1.2018	1.20	0.60
69	1.1937	1.19	0.60
70	1.1852	1.19	0.59
71	1.1642	1.16	0.58
72	1.1436	1.14	0.57
73	1.1235	1.12	0.56
74	1.1038	1.10	0.55
75	1.0845	1.08	0.54
76	1.0657	1.07	0.53
77	1.0473	1.05	0.52
78	1.0292	1.03	0.51
79	1.0116	1.01	0.51
80	0.9944	0.99	0.50
81	0.9775	0.98	0.49
82	0.9610	0.96	0.48
83	0.9449	0.94	0.47
84	0.9291	0.93	0.46
85	0.9138	0.91	0.46
86	0.8999	0.90	0.45
87	0.8864	0.89	0.44
88	0.8730	0.87	0.44
89	0.8600	0.86	0.43
90	0.8472	0.85	0.42
91	0.8347	0.83	0.42
92	0.8224	0.82	0.41
93	0.8103	0.81	0.41
94	0.7985	0.80	0.40
95	0.7869	0.79	0.39
96	0.7756	0.78	0.39
97	0.7644	0.76	0.38
98	0.7535	0.75	0.38
99	0.7428	0.74	0.37
100	0.7323	0.73	0.37