RFR Measurements at Eagle's Nest Radio Site
(Revised August 20, 2001)

The Eagles Nest radio site in Eagle River, a community within the borders of Anchorage, is host to a variety of telecommunications and broadcast facilities. More information including pictures of the site grounds, structures, presently installed antennas, and features of the surrounding area are available at http://www.ubik.com/eaglesnest

On July 3, 2001, at about 9 PM, Wolfgang Kurtz, and Aaron Wallender, both of Ubik Corporation, and Jeremy Lansman of Fireweed Communications Corporation met at this site in order to take radio energy exposure measurements. Mr. Lansman has over 40 years experience in broadcasting, having obtained an FCC First Class Radiotelephone license before 1960. He has constructed, been a consultant for, and has assisted many broadcast stations, AM, FM and TV. He is a principal in the licensee of KYES-(TV) which broadcasts from this site.

A Holaday Meter, Model No. HI-3012, Serial Number 81297, rented from Electro Rents was used for the readings. A sticker indicated calibration was performed on April 4, 2001. The meter was used in accord with the included instruction manual and FCC OET Bulletin 65.

Power of each VHF radio transmitter with more than 100 Watts at the site was logged. The several UHF 1 kW TV transmitters were not logged, but were observed to be operating normally.

Power output meters indicated the following; KQEZ (92.1 MHz), 5.75 kW; KFAT (92.9 MHz) 6.45kW; KRPM (96.3 MHz, 6.3 kW, KNIK-FM (105.7 MHz) 7.0 kW, KYES (Channel 5), varied around 4.2 kW. Two low power FM stations on the site are a translator station for KATB, K206AO indicated 90 Watts, and KRUA (88.1 MHz) indicated 55%. The KRUA nominal TPO is about 80 Watts.

The meter antenna used was an MSE E field antenna. Full scale readings used were the most sensitive, 0.265 mW/cm^2 (lo scale) or the next most sensitive at 2.65 mw/cm^2 (hi scale). Indications were squared field strength, allowing linear interpolation of the meter readings. Thus, uncontrolled exposure of 0.2 mW/cm^2 equaled 0.76 full scale reading on the lo scale, and occupational exposure of 1.0 mW/cm^2 equaled a reading of 0.37 on the hi scale.

Readings were taken from several locations in each room inside the building, except for that used by AT&T wireless, which was not accessible. The highest indication inside the building was 0.5 (or 0.13mw/cm2) on the most sensitive scale. Outside the building measurements were taken around the fence perimeter, near the tower, and at various other spots. We looked for a hot spot 20 cm or more from metal. The highest reading found was 0.25 (or 0.66mw/cm2) near the north west leg of the tower using hi scale. All readings were well within permissible occupational exposure limits and most were within permissible uncontrolled area exposure limits.

We walked the outer perimeter of the fence and nearby grounds looking for any readings that might exceed permissible uncontrolled exposure. The highest reading found was 0.25 (or 0.07mw/cm2) West of the tower on the road leading away from the site, again, well below permissible uncontrolled exposure limits.

Ubik Corporation
907 East Dowling Rd. #24, Anchorage, Alaska 99518
Phone: (907) 562-8119 Fax: (907) 562-8117 E-mail: aaronw@ubik.com

Fireweed Communications Corp.
3700 Woodland Drive, Suite 800, Anchorage, Alaska 99517
Phone: (907) 248-5937 Fax: (907) 243-0572 E-mail: jeremydl@kyes.com

A few "hotter" spots were checked to determine the contribution of KNIK to over-all exposure. Outdoors near the tower and throughout the area, turning KNIK off and on had little or no observable effect on readings. This was true while equipment testing for KNIK at 14kW ERP and at 30kW ERP. To reiterate this finding: we found no discernable difference in exposure readings with KNIK at either output power.

We noted that as we got closer to the KNIK transmitter turning KNIK on and off began to make a very small difference. It appears some leakage from the transmitter is a significant component of exposure near and inside the building. . For example, near the front door of the building, where readings were well within limits, KNIK at 14kW ERP was 0.25 (or 0.07mw/cm^2), KNIK at 30kW ERP was 0.3 (or 0.08mw/cm^2), while with KNIK off readings were 0.21 (or 0.06mw/cm^2). However, in this limited case, where KNIK was a measurable contributor, exposure was below uncontrolled exposure limits and far short of allowed occupational exposure.

As no measurements were near the permissible exposure limits, we did not attempt to segregate out the UHF TV readings. This was expected as the UHF antenna is high gain, near the top of the tower, thus less likely to contribute to RF exposure at any location. A scan was performed near the transmitters. No significant UHF signal leaks were detected.

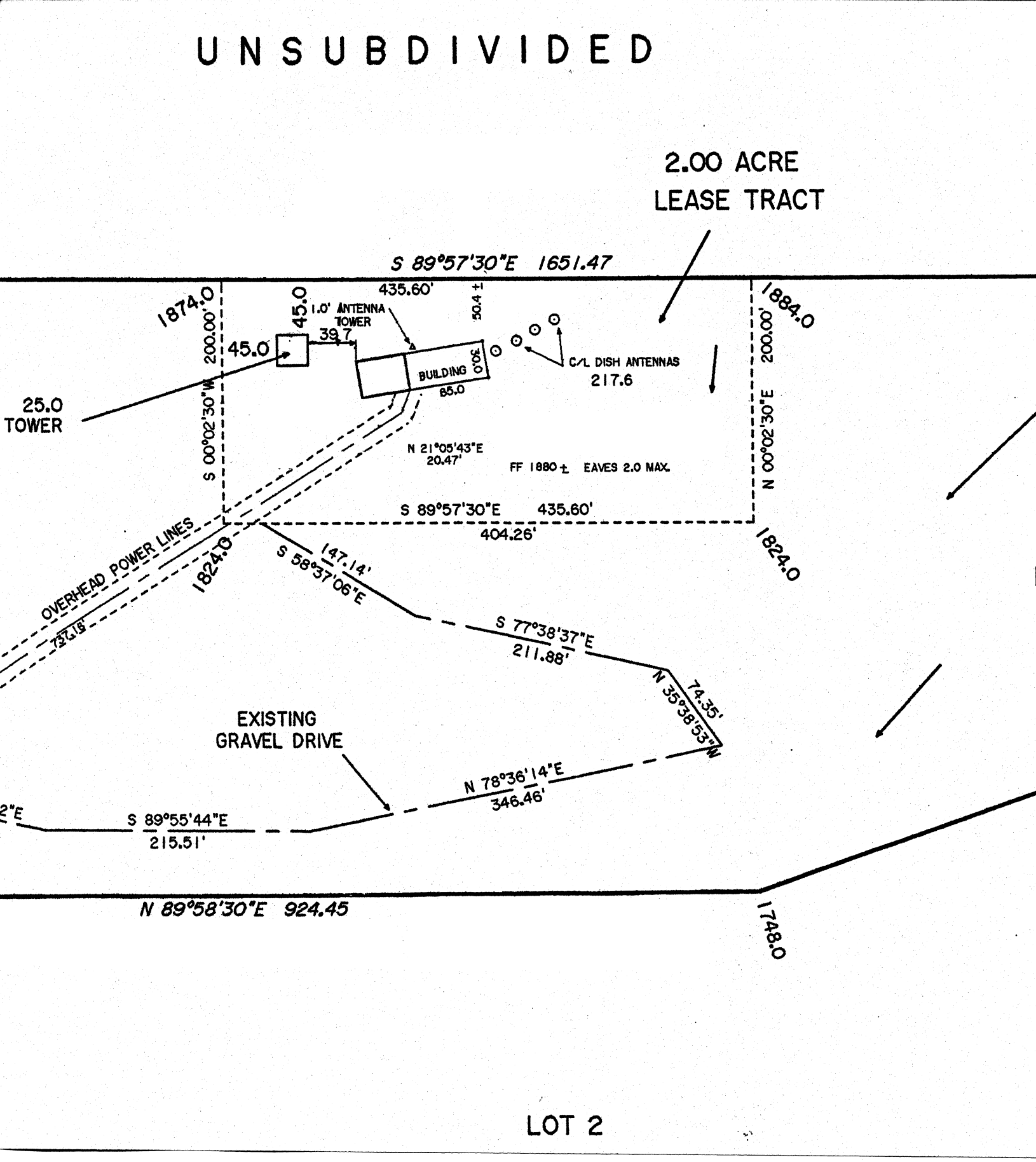
In conclusion, readings indicated considerable safety margin between exposure limits and actual exposure. They also indicated that KNIK will be a marginal contributor to ground level radio frequency radiation in the area, at 14kW ERP, 30kW ERP, or 51kW ERP. No reading inside the equipment shelter or outside the perimeter fence exceeded limits for uncontrolled exposure, and readings directly under the tower were well within limits for occupational exposure. Therefore, according to our measurements, operating KNIK at 51 kW ERP will not approach, meet or exceed the standards for either uncontrolled area exposure or controlled area exposure, as applicable.

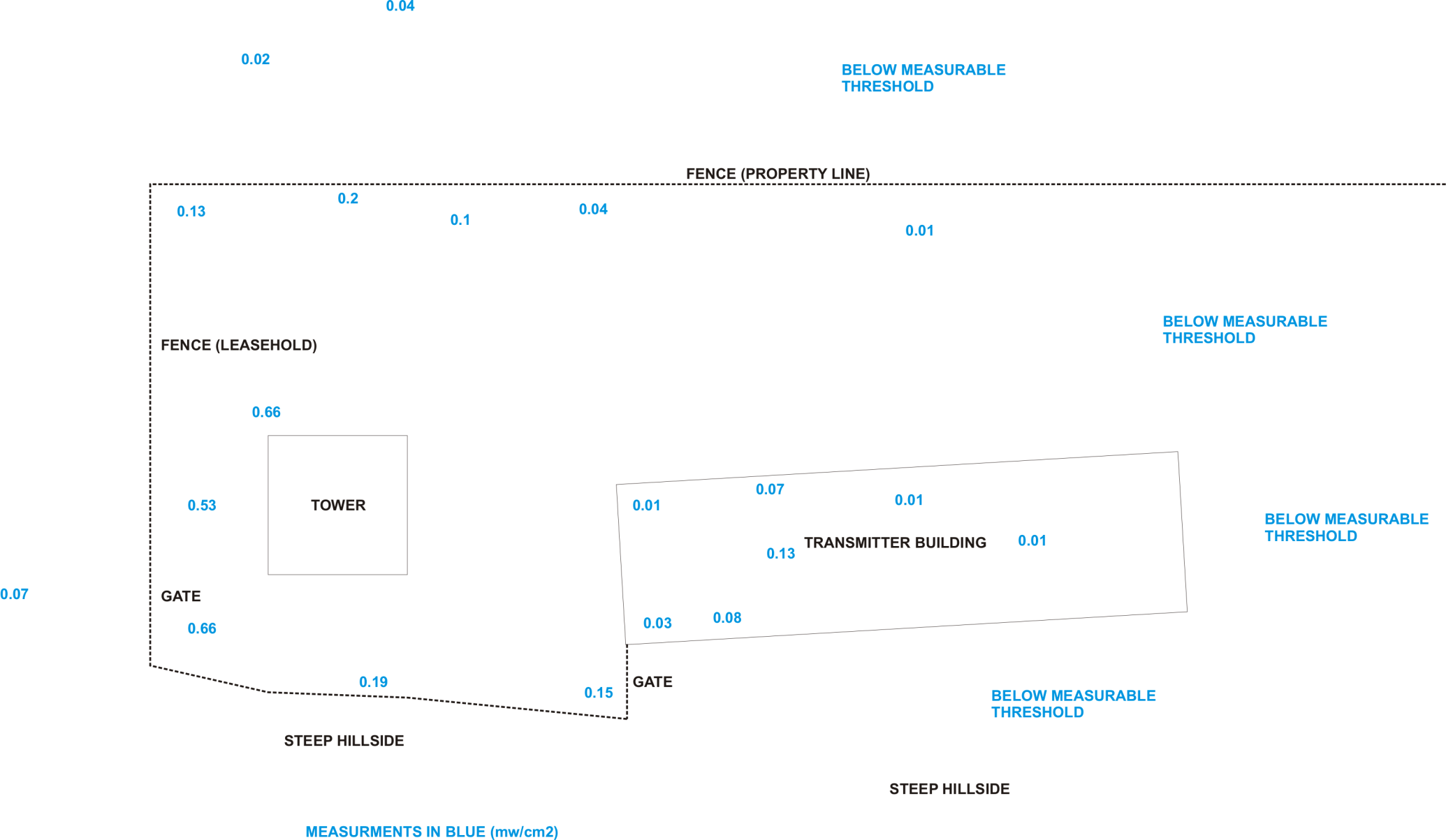
Signed

Wolfgang Kurtz
Aaron D. Wallender
Jeremy Lansman
July 5, 2001
(August 20, 2001)

Ubik Corporation
907 East Dowling Rd. #24, Anchorage, Alaska 99518
Phone: (907) 562-8119 Fax: (907) 562-8117 E-mail: aaronw@ubik.com

Fireweed Communications Corp.
3700 Woodland Drive, Suite 800, Anchorage, Alaska 99517
Phone: (907) 248-5937 Fax: (907) 243-0572 E-mail: jeremydl@kyes.com


UNSUBDIVIDED
2.00 ACRE
LEASE TRACT
S 89°57'30"E 1651.47
1874.0
200.00'
S 00°02'30"W
45.0
435.60'
45.0
1.0' ANTENNA TOWER
39.7
30.4 ±
BUILDING
30.0
85.0
C/L DISH ANTENNAS
217.6
1884.0
200.00'
N 00°02'30"E
25.0
TOWER
N 21°05'43"E
20.47'
FF 1880 ± EAVES 2.0 MAX.
S 89°57'30"E 435.60'
404.26'
1824.0
1824.0
OVERHEAD POWER LINES
737.18'
S 58°37'06"E
147.14'
S 77°38'37"E
211.88'
N 35°38'53"W
74.35'
EXISTING
GRAVEL DRIVE
N 78°36'14"E
346.46'
S 89°55'44"E
215.51'
N 89°58'30"E 924.45
1748.0
LOT 2


0.04
0.02
BELOW MEASURABLE THRESHOLD
FENCE (PROPERTY LINE)
0.13
0.2
0.1
0.04
0.01
BELOW MEASURABLE THRESHOLD
FENCE (LEASEHOLD)
0.66
0.53
TOWER
0.01
0.07
0.01
TRANSMITTER BUILDING
0.13
0.01
BELOW MEASURABLE THRESHOLD
0.07
GATE
0.66
0.03
0.08
0.19
0.15
GATE
BELOW MEASURABLE THRESHOLD
STEEP HILLSIDE
STEEP HILLSIDE
MEASURMENTS IN BLUE (mw/cm2)