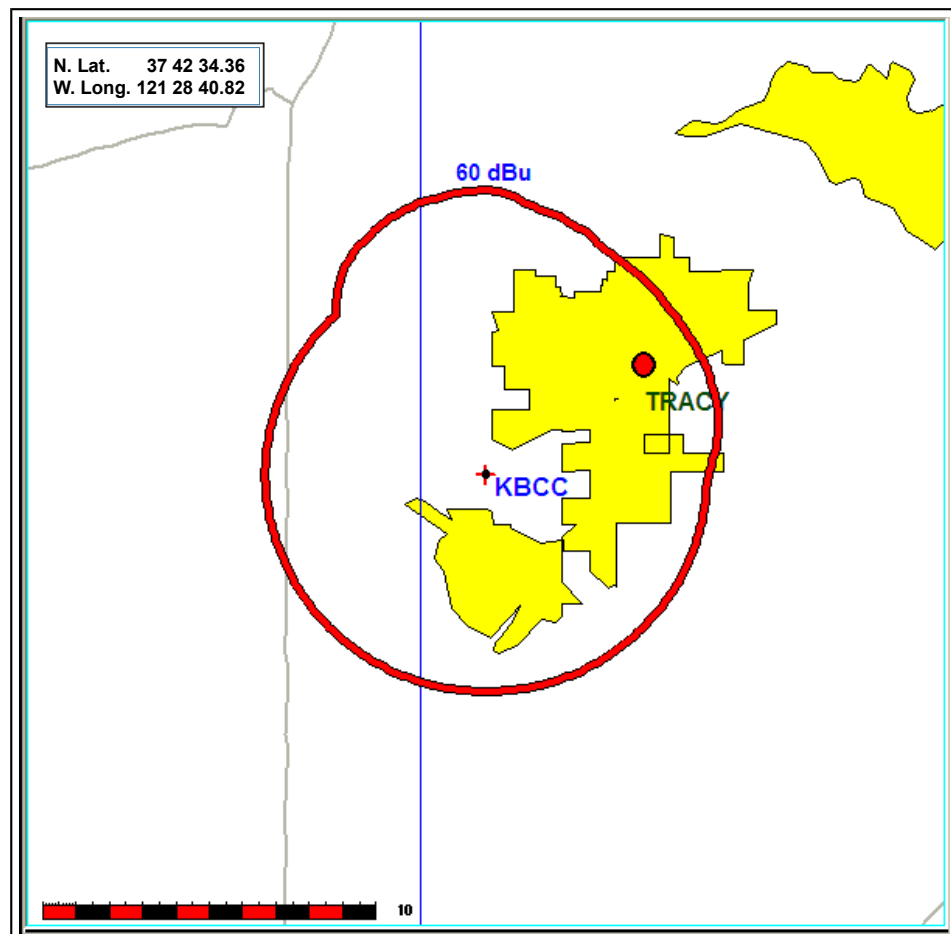


November 2019

Engineering Exhibit - Minor Modification

**KBCC FM – Tracy, CA
Facility ID# 176022**

Coordinates: 37 42 34.36 N, 121 28 40.82 W (NAD 83)
Site elevation: 43.1 meters
AGL: 11.4 meters
AMSL: 54.5 meters
HAAT: -65 meters
Power: 240 watts ERP
Antenna: Non-directional single bay



Reserved Band Contour Overlap Protection

Per §73.509, proposed modification complies with contour overlap requirements with reserved-band facilities using methodology outlined in §73.313(c).

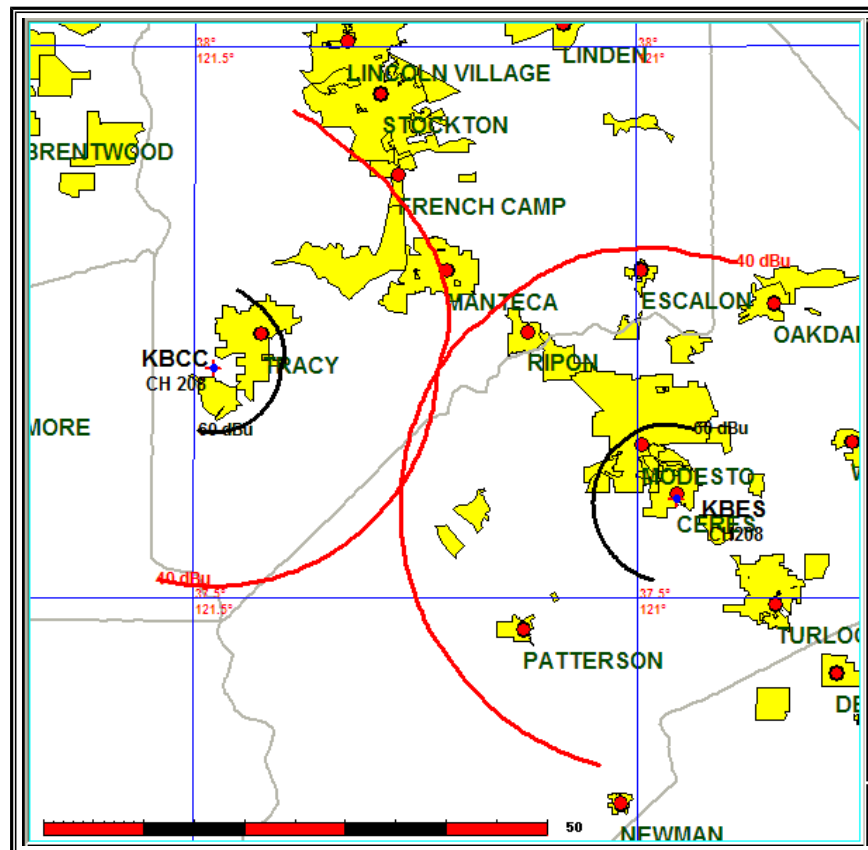
CHANNEL STUDY

<div> <div>REFERENCE</div> <div>CH# 208A - 89.5 MHz, Pwr= 0.24 kW, HAAT= -76.3 M, COR= 54.5 M</div> <div>DISPLAY DATES</div> </div>											
<div> <div>37 42 34.36 N.</div> <div>Average Protected F(50-50)= 7.0 km</div> <div>DATA 11-09-19</div> </div>											
<div> <div>121 28 40.82 W.</div> <div>Omni-directional</div> <div>SEARCH 11-25-19</div> </div>											
CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
208A Tracy	KBCC!	LIC	CA	188.5 8.5	4.00 BLED20130328AKC	37 40 27.30 121 29 07.50	0.100 -49	175	---	Reference---	
208A Tracy	KBCC!	CP	CA	0.0 270.0	0.00 0000085084	37 42 35.45 121 28 43.20	0.190 -63	57	---	Reference---	
06--- San Jose	KBKF-LP	CP	CN CA	236.0 55.8	41.85 BPTVL-20101014ACL	39 54 45.70 118 55 21.60	3.000	4.5 831	39.9	44.4R	-2.5M
211B Stockton	KYCC	LIC D	CA	31.8 211.9	32.52 BLED20080930ATZ	37 57 29.70 121 16 58.80	41.000 107	3.1 116	31.5	21.5	-0.1<
209B Lodi	KLRS	LIC D	CA	357.8 177.8	62.49 BLED20081103AAE	38 16 17.70 121 30 21.80	2.500 487	53.3 489	34.4	0.2	15.5
207B1 Linden	KCAI	LIC D	CA	55.2 235.7	80.25 BLED20160318ABS	38 07 09.70 120 43 30.80	0.450 587	61.6 945	40.9	11.0	28.4
205B Sacramento	KXPR	LIC D	CA	358.0 178.0	62.70 BLED19950926KB	38 16 24.70 121 30 14.80	50.000 150	5.7 152	50.6	48.1	11.1
211D Livermore	K211EZ!	LIC D	CA	231.8 51.7	20.63 BLFT20050718AAV	37 35 41.70 121 39 45.80	0.010 107	0.0 612	0.9	13.6	18.6
208A Ceres	KBES	LIC	CA	106.1 286.5	47.80 BLED20100901ACT	37 35 20.80 120 57 26.80	0.150 40	27.2 72	8.2	13.6	16.1
06 -- San Jose	KBKF-LP«	CP	D N CA	206.0 25.8	74.02 BDFCDVL-20140213AA	39 54 45.70 118 55 21.60	2.000	4.6 1184	54.1	58.6R	15.4M
209B1 Los Altos	KFJC	LIC	CA	233.7 53.3	72.80 BMLD19961105KB	37 19 13.70 122 08 32.80	0.110 562	46.4 820	29.8	19.4	33.0
207A Fremont	KOHL	LIC D	CA	243.0 62.8	42.16 BLED19930503KA	37 32 13.70 121 54 17.80	0.145 124	15.2 329	10.7	19.9	21.4
208A Moraga	KSMC	LIC D	CA	284.8 104.4	57.43 BLED19840702CA	37 50 24.70 122 06 39.80	0.800 24	12.7 205	4.0	37.7	30.0
208A San Francisco	KPOO	LIC D	CA	276.6 96.1	82.86 BLED19800304AC	37 47 32.70 122 24 55.80	0.270 165	45.5 188	13.8	30.4	45.5
261A Stockton	KQOD«	LIC	CA	36.9 217.0	39.88 BLH20110118ABO	37 59 47.50 121 12 19.70	6.000 100	38.4 115	11.3	9.5R	30.4M
206B1 Livingston	KCJH	LIC D	CA	104.4 284.8	57.40 BLED20190628AAS	37 34 45.80 120 50 51.70	13.000 95	2.0 129	21.7	48.4	34.6
06--- San Jose	KBKF-LP«	LI	D N CA	206.0 25.8	74.02 BLTVL-20100818AAH	39 54 45.70 118 55 21.60	0.600	4.5 1184	31.1	35.7R	38.4M
205B Sacramento	KXPR	APP	CA	12.6 192.7	89.16 BPED20180910AAG	38 29 32.30 121 15 18.80	50.000 97	5.1 131	46.3	75.5	41.8
207A San Jose	KMTG	LIC D	CA	211.1 30.8	65.89 BLED20040803ABX	37 12 05.80 121 51 45.80	0.300 -95	14.4 185	10.3	44.5	45.6
207D Concord	K207EP!	LIC D	CA	307.9 127.6	58.13 BLFT20091105ABZ	38 01 48.50 122 00 08.00	0.010 163	4.1 213	2.9	47.1	45.2
210D Hayward	KCRH!	LIC	CA	262.1 81.8	55.70 BMLD20030916AAP	37 38 22.70 122 06 19.80	0.018 -41	1.6 41	3.6	47.1	51.0
06 -- Ceres	K06QL-D«	CP	DCN CA	83.5 264.0	84.77 0000022114	39 54 45.70 118 55 21.60	3.000	4.7 417	24.3	29.0R	55.8M

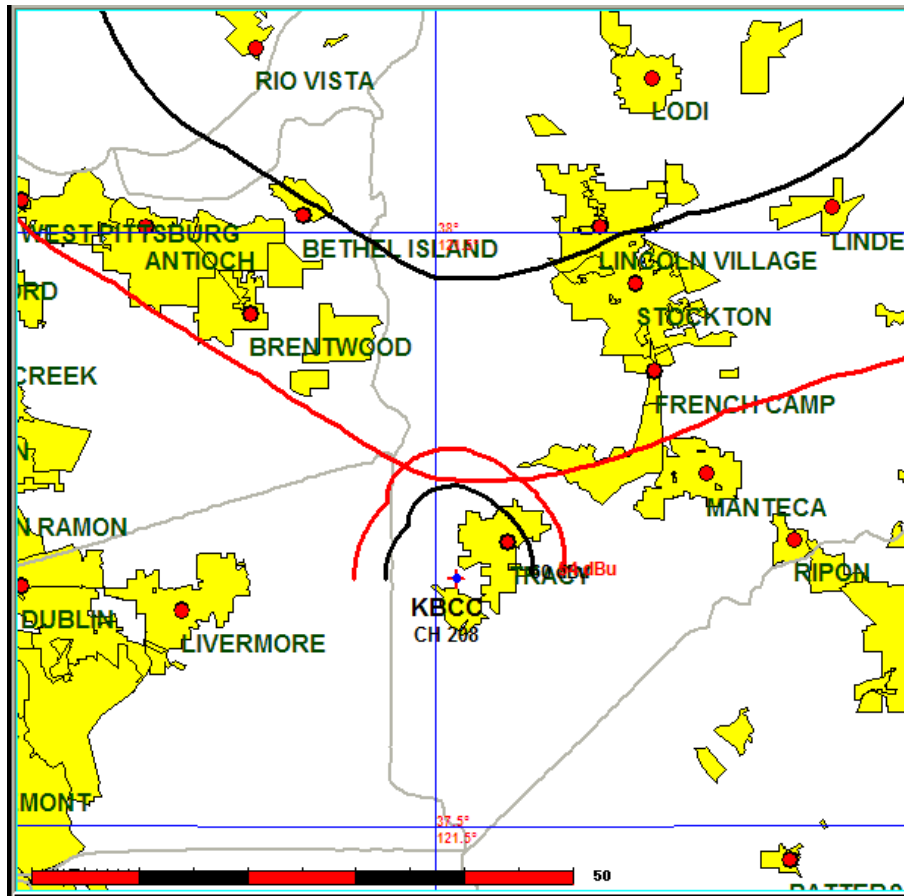
Page # 2										
CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)
06Z--	KEFM-LP«	CP	CN	0.1	110.95	39 54 45.70	3.000	5.8	24.0	29.8R 81.2M
Sacramento			CA	180.1	0000075405	118 55 21.60		132		
06 --	KFMY-LD«	CP	DHN	284.4	100.33	39 54 45.70	2.000	4.6	2.4	7.0R 93.4M
Petaluma			CA	103.7	0000074716	118 55 21.60		770		
06 --	KEFM-LD«	CP	D N	350.0	168.93	39 54 45.70	3.000	5.8	51.3	57.1R 111.8M
Sacramento			CA	169.7	BDCCDVL-20110708AB	118 55 21.60		694		
06Z--	KEFM-LP«	LI	D N	350.0	168.95	39 54 45.70	3.000	5.7	50.9	56.6R 112.3M
Sacramento			CA	169.7	BLTVL-20120410AEA	118 55 21.60		687		
06 --	KFMY-LD«	LI	DHN	305.6	119.82	39 54 45.70	0.100	4.6	0.7	5.3R 114.6M
Petaluma			CA	124.9	0000011162	118 55 21.60		589		

Terrain database is NGDC 30 SEC, R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM
 Contour distances are on direct line to and from reference station. Reference Zone= - Zone 1A, Co to 3rd adjacent.
 All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.
 Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
 "*"affixed to 'IN' or 'OUT' values = site inside restricted contour.
 « = Station meets FCC minimum distance spacing for its class.
 < = Contour overlap

KBCC to KBES - Cochannel



KBCC to KLRS – First Adjacent Channel



11-25-2019

Terrain Data: NGDC 30 SEC

FMOver Analysis

KBCC.C

KLRS BLED20081103AAE

Channel = 208A
Max ERP = 0.24 kw
RCAMSL = 54.5 m
N. Lat. 37 42 35.45
W. Lng. 121 28 43.21
Protected
60 dBu

Channel = 209B
Max ERP = 2.5 kw
RCAMSL = 489 m
N. Lat. 38 16 17.70
W. Lng. 121 30 21.80
Interfering
54 dBu

Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
298.0	000.2400	-0035.8	007.0	183.7	000.4585	0489.0	059.3	51.22	
299.0	000.2400	-0030.2	007.0	183.6	000.4593	0489.0	059.2	51.27	
300.0	000.2400	-0024.7	007.0	183.6	000.4601	0489.0	059.1	51.32	
301.0	000.2400	-0019.2	007.0	183.5	000.4610	0489.0	059.0	51.37	
302.0	000.2400	-0013.9	007.0	183.5	000.4618	0489.0	058.8	51.41	
303.0	000.2400	-0009.7	007.0	183.4	000.4628	0489.0	058.7	51.46	
304.0	000.2400	-0006.5	007.0	183.3	000.4637	0489.0	058.6	51.51	
305.0	000.2400	-0004.2	007.0	183.3	000.4647	0489.0	058.5	51.55	
306.0	000.2400	-0002.1	007.0	183.2	000.4657	0489.0	058.4	51.60	
307.0	000.2400	0000.3	007.0	183.1	000.4667	0489.0	058.3	51.65	
308.0	000.2400	0003.3	007.0	183.1	000.4678	0489.0	058.2	51.69	
309.0	000.2400	0006.8	007.0	183.0	000.4689	0489.0	058.1	51.74	
310.0	000.2400	0010.5	007.0	182.9	000.4700	0489.0	058.0	51.79	
311.0	000.2400	0013.9	007.0	182.9	000.4712	0489.0	057.9	51.83	
312.0	000.2400	0016.9	007.0	182.8	000.4724	0489.0	057.8	51.88	
313.0	000.2400	0019.7	007.0	182.7	000.4736	0489.0	057.7	51.92	
314.0	000.2400	0022.0	007.0	182.6	000.4749	0489.0	057.6	51.97	
315.0	000.2400	0024.1	007.0	182.5	000.4762	0489.0	057.6	52.01	
316.0	000.2400	0025.9	007.0	182.5	000.4775	0489.0	057.5	52.06	
317.0	000.2400	0027.4	007.0	182.4	000.4789	0489.0	057.4	52.10	
318.0	000.2400	0028.8	007.0	182.3	000.4803	0489.0	057.3	52.15	

319.0	000.2400	0030.0	007.0	182.2	000.4816	0489.0	057.2	52.19
320.0	000.2400	0031.3	007.1	182.2	000.4817	0489.0	057.0	52.26
321.0	000.2400	0032.5	007.3	182.2	000.4819	0489.0	056.8	52.32
322.0	000.2400	0033.8	007.4	182.2	000.4822	0489.0	056.7	52.39
323.0	000.2400	0034.9	007.5	182.1	000.4826	0489.0	056.5	52.46
324.0	000.2400	0036.0	007.6	182.1	000.4830	0489.0	056.3	52.53
325.0	000.2400	0037.0	007.7	182.1	000.4837	0489.0	056.2	52.59
326.0	000.2400	0037.7	007.8	182.0	000.4847	0489.0	056.0	52.65
327.0	000.2400	0038.4	007.9	181.9	000.4858	0489.0	055.9	52.72
328.0	000.2400	0039.2	008.0	181.9	000.4870	0489.0	055.7	52.78
329.0	000.2400	0039.8	008.1	181.8	000.4882	0489.0	055.6	52.84
330.0	000.2400	0040.5	008.1	181.7	000.4896	0489.0	055.4	52.90
331.0	000.2400	0040.9	008.2	181.6	000.4911	0489.0	055.3	52.96
332.0	000.2400	0041.3	008.2	181.5	000.4928	0489.0	055.2	53.02
333.0	000.2400	0041.7	008.3	181.4	000.4946	0489.0	055.1	53.07
334.0	000.2400	0042.1	008.3	181.3	000.4964	0489.0	055.0	53.13
335.0	000.2400	0042.6	008.4	181.2	000.4982	0489.0	054.9	53.18
336.0	000.2400	0043.1	008.4	181.1	000.5000	0489.0	054.8	53.24
337.0	000.2400	0043.6	008.5	181.0	000.5019	0489.0	054.7	53.30
338.0	000.2400	0044.1	008.5	180.8	000.5039	0489.0	054.5	53.36
339.0	000.2400	0044.5	008.6	180.7	000.5059	0489.0	054.4	53.41
340.0	000.2400	0044.9	008.6	180.6	000.5081	0489.0	054.4	53.46
341.0	000.2400	0045.1	008.6	180.4	000.5104	0489.0	054.3	53.51
342.0	000.2400	0045.3	008.7	180.3	000.5128	0489.0	054.2	53.56
343.0	000.2400	0045.6	008.7	180.1	000.5151	0489.0	054.1	53.61
344.0	000.2400	0045.9	008.7	180.0	000.5175	0489.0	054.1	53.65
345.0	000.2400	0046.2	008.8	179.9	000.5181	0489.0	054.0	53.69
346.0	000.2400	0046.4	008.8	179.7	000.5187	0489.0	053.9	53.71
347.0	000.2400	0046.6	008.8	179.5	000.5193	0489.0	053.9	53.74
348.0	000.2400	0046.7	008.8	179.4	000.5199	0489.0	053.8	53.76
349.0	000.2400	0046.8	008.8	179.2	000.5205	0489.0	053.8	53.78
350.0	000.2400	0047.0	008.9	179.1	000.5212	0489.0	053.7	53.80
351.0	000.2400	0047.1	008.9	178.9	000.5218	0489.0	053.7	53.82
352.0	000.2400	0047.2	008.9	178.8	000.5224	0489.0	053.7	53.84
353.0	000.2400	0047.4	008.9	178.6	000.5230	0489.0	053.6	53.85
354.0	000.2400	0047.5	008.9	178.4	000.5237	0489.0	053.6	53.87
355.0	000.2400	0047.6	008.9	178.3	000.5243	0489.0	053.6	53.88
356.0	000.2400	0047.7	008.9	178.1	000.5250	0489.0	053.6	53.89
357.0	000.2400	0047.8	008.9	177.9	000.5256	0489.0	053.6	53.90
358.0	000.2400	0047.8	008.9	177.8	000.5263	0489.0	053.6	53.91
359.0	000.2400	0047.8	008.9	177.6	000.5269	0489.0	053.6	53.91
000.0	000.2400	0047.8	008.9	177.4	000.5276	0489.0	053.6	53.92
001.0	000.2400	0047.8	008.9	177.3	000.5282	0489.0	053.6	53.92
002.0	000.2400	0047.8	008.9	177.1	000.5289	0489.0	053.6	53.92
003.0	000.2400	0047.6	008.9	176.9	000.5295	0489.0	053.6	53.91
004.0	000.2400	0047.4	008.9	176.8	000.5301	0489.0	053.7	53.90
005.0	000.2400	0047.2	008.9	176.6	000.5308	0489.0	053.7	53.89
006.0	000.2400	0046.7	008.8	176.5	000.5314	0489.0	053.8	53.87
007.0	000.2400	0046.0	008.8	176.3	000.5320	0489.0	053.9	53.84
008.0	000.2400	0045.4	008.7	176.2	000.5325	0489.0	054.0	53.81
009.0	000.2400	0044.9	008.6	176.0	000.5331	0489.0	054.1	53.78
010.0	000.2400	0044.6	008.6	175.9	000.5337	0489.0	054.1	53.76
011.0	000.2400	0044.3	008.6	175.7	000.5342	0489.0	054.2	53.74
012.0	000.2400	0044.0	008.5	175.6	000.5348	0489.0	054.3	53.72
013.0	000.2400	0043.8	008.5	175.4	000.5353	0489.0	054.3	53.70
014.0	000.2400	0043.6	008.5	175.3	000.5359	0489.0	054.4	53.68
015.0	000.2400	0043.5	008.5	175.2	000.5365	0489.0	054.5	53.66
016.0	000.2400	0043.3	008.4	175.0	000.5370	0489.0	054.5	53.64
017.0	000.2400	0043.0	008.4	174.9	000.5375	0489.0	054.6	53.61
018.0	000.2400	0042.5	008.4	174.8	000.5380	0489.0	054.7	53.57
019.0	000.2400	0042.2	008.3	174.6	000.5385	0489.0	054.8	53.54
020.0	000.2400	0042.0	008.3	174.5	000.5390	0489.0	054.9	53.52
021.0	000.2400	0041.9	008.3	174.4	000.5395	0489.0	055.0	53.50
022.0	000.2400	0041.7	008.3	174.3	000.5400	0489.0	055.1	53.47
023.0	000.2400	0041.3	008.2	174.2	000.5404	0489.0	055.2	53.43
024.0	000.2400	0040.8	008.2	174.1	000.5408	0489.0	055.3	53.39
025.0	000.2400	0040.3	008.1	174.0	000.5412	0489.0	055.4	53.35
026.0	000.2400	0039.8	008.0	173.9	000.5415	0489.0	055.5	53.31
027.0	000.2400	0039.4	008.0	173.8	000.5419	0489.0	055.7	53.27
028.0	000.2400	0039.2	008.0	173.7	000.5423	0489.0	055.8	53.23
029.0	000.2400	0038.9	008.0	173.6	000.5428	0489.0	055.9	53.20
030.0	000.2400	0038.8	007.9	173.5	000.5432	0489.0	055.9	53.17
031.0	000.2400	0038.7	007.9	173.4	000.5436	0489.0	056.0	53.14
032.0	000.2400	0038.5	007.9	173.3	000.5440	0489.0	056.1	53.11
033.0	000.2400	0038.2	007.9	173.2	000.5443	0489.0	056.2	53.07
034.0	000.2400	0038.1	007.9	173.1	000.5447	0489.0	056.3	53.04
035.0	000.2400	0038.1	007.9	173.0	000.5451	0489.0	056.4	53.00
036.0	000.2400	0038.0	007.9	172.9	000.5455	0489.0	056.5	52.97
037.0	000.2400	0037.9	007.8	172.8	000.5459	0489.0	056.6	52.94
038.0	000.2400	0037.8	007.8	172.7	000.5463	0489.0	056.7	52.90
039.0	000.2400	0037.8	007.8	172.6	000.5466	0489.0	056.8	52.87
040.0	000.2400	0037.8	007.8	172.5	000.5470	0489.0	056.9	52.84
041.0	000.2400	0037.7	007.8	172.4	000.5473	0489.0	057.1	52.80
042.0	000.2400	0037.6	007.8	172.3	000.5476	0489.0	057.2	52.76

043.0	000.2400	0037.4	007.8	172.3	000.5480	0489.0	057.3	52.72
044.0	000.2400	0037.3	007.8	172.2	000.5482	0489.0	057.4	52.68
045.0	000.2400	0037.0	007.7	172.1	000.5485	0489.0	057.5	52.64
046.0	000.2400	0036.7	007.7	172.1	000.5487	0489.0	057.6	52.59
047.0	000.2400	0036.6	007.7	172.0	000.5490	0489.0	057.8	52.55
048.0	000.2400	0036.6	007.7	171.9	000.5492	0489.0	057.9	52.52
049.0	000.2400	0036.6	007.7	171.9	000.5495	0489.0	058.0	52.48
050.0	000.2400	0036.4	007.7	171.8	000.5498	0489.0	058.1	52.44
051.0	000.2400	0036.3	007.7	171.7	000.5500	0489.0	058.2	52.39
052.0	000.2400	0036.1	007.6	171.7	000.5502	0489.0	058.4	52.35
053.0	000.2400	0035.9	007.6	171.6	000.5504	0489.0	058.5	52.31
054.0	000.2400	0035.9	007.6	171.6	000.5506	0489.0	058.6	52.26
055.0	000.2400	0035.9	007.6	171.5	000.5508	0489.0	058.7	52.22
056.0	000.2400	0035.9	007.6	171.5	000.5511	0489.0	058.8	52.18
057.0	000.2400	0035.8	007.6	171.4	000.5512	0489.0	059.0	52.14

11-25-2019 Terrain Data: NGDC 30 SEC FMOVer Analysis

KLRS BLED20081103AAE

KBCC.C

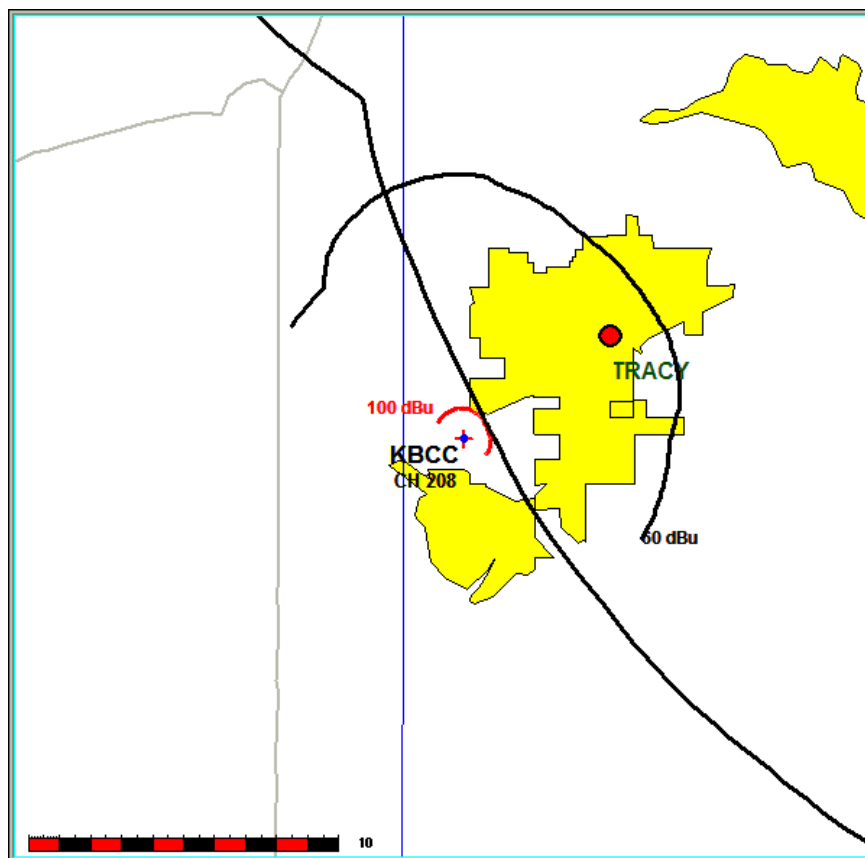
Channel = 209B
Max ERP = 2.5 kw
RCAMSL = 489 m
N. Lat. 38 16 17.70
W. Lng. 121 30 21.80
Protected
60 dBu

Channel = 208A
Max ERP = 0.24 kw
RCAMSL = 54.5 m
N. Lat. 37 42 35.45
W. Lng. 121 28 43.21
Interfering
54 dBu

Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
118.0	001.9501	0484.4	045.4	042.5	000.2400	0037.5	055.8	29.58	
119.0	001.8862	0484.4	045.1	042.4	000.2400	0037.5	055.0	29.78	
120.0	001.8233	0484.5	044.8	042.3	000.2400	0037.5	054.1	29.99	
121.0	001.7493	0484.7	044.5	042.1	000.2400	0037.6	053.3	30.20	
122.0	001.6769	0484.9	044.1	041.9	000.2400	0037.6	052.5	30.41	
123.0	001.6060	0485.1	043.7	041.6	000.2400	0037.6	051.6	30.62	
124.0	001.5366	0485.3	043.3	041.3	000.2400	0037.7	050.8	30.82	
125.0	001.4688	0485.5	043.0	040.9	000.2400	0037.7	050.0	31.03	
126.0	001.4025	0485.7	042.6	040.6	000.2400	0037.7	049.3	31.23	
127.0	001.3377	0485.8	042.2	040.1	000.2400	0037.8	048.5	31.42	
128.0	001.2745	0485.9	041.7	039.7	000.2400	0037.8	047.8	31.61	
129.0	001.2128	0486.0	041.3	039.2	000.2400	0037.8	047.0	31.80	
130.0	001.1526	0486.0	040.9	038.6	000.2400	0037.8	046.3	32.00	
131.0	001.1056	0486.1	040.5	038.2	000.2400	0037.8	045.6	32.19	
132.0	001.0595	0486.2	040.2	037.7	000.2400	0037.9	044.9	32.38	
133.0	001.0144	0486.2	039.8	037.1	000.2400	0037.9	044.3	32.58	
134.0	000.9703	0486.3	039.4	036.5	000.2400	0038.0	043.6	32.78	
135.0	000.9272	0486.4	039.0	035.9	000.2400	0038.0	043.0	32.98	
136.0	000.8851	0486.6	038.7	035.2	000.2400	0038.1	042.4	33.17	
137.0	000.8439	0486.8	038.3	034.5	000.2400	0038.1	041.8	33.36	
138.0	000.8037	0487.1	037.9	033.8	000.2400	0038.1	041.3	33.54	
139.0	000.7645	0487.3	037.5	033.0	000.2400	0038.2	040.7	33.74	
140.0	000.7263	0487.4	037.0	032.1	000.2400	0038.4	040.2	33.94	
141.0	000.7094	0487.5	036.8	031.6	000.2400	0038.6	039.7	34.15	
142.0	000.6927	0487.7	036.7	031.0	000.2400	0038.7	039.2	34.36	
143.0	000.6763	0487.8	036.5	030.4	000.2400	0038.7	038.6	34.55	
144.0	000.6600	0488.0	036.3	029.7	000.2400	0038.8	038.1	34.75	
145.0	000.6439	0488.2	036.1	029.1	000.2400	0038.9	037.6	34.94	
146.0	000.6280	0488.4	035.9	028.4	000.2400	0039.1	037.2	35.14	
147.0	000.6123	0488.7	035.7	027.6	000.2400	0039.2	036.7	35.34	
148.0	000.5968	0488.9	035.5	026.9	000.2400	0039.4	036.3	35.54	
149.0	000.5815	0489.0	035.3	026.1	000.2400	0039.7	035.9	35.75	
150.0	000.5664	0489.0	035.0	025.2	000.2400	0040.1	035.5	35.98	
151.0	000.5655	0489.0	035.0	024.6	000.2400	0040.5	035.0	36.23	
152.0	000.5645	0489.0	035.0	024.0	000.2400	0040.8	034.5	36.49	
153.0	000.5636	0489.0	035.0	023.3	000.2400	0041.2	034.1	36.74	
154.0	000.5626	0489.0	035.0	022.6	000.2400	0041.5	033.6	36.98	
155.0	000.5617	0489.0	035.0	021.9	000.2400	0041.7	033.2	37.21	
156.0	000.5607	0489.0	035.0	021.2	000.2400	0041.9	032.7	37.41	
157.0	000.5598	0489.0	034.9	020.4	000.2400	0041.9	032.3	37.60	
158.0	000.5588	0489.0	034.9	019.6	000.2400	0042.0	031.9	37.79	
159.0	000.5579	0489.0	034.9	018.7	000.2400	0042.2	031.5	38.00	
160.0	000.5570	0489.0	034.9	017.8	000.2400	0042.6	031.2	38.24	
161.0	000.5570	0489.0	034.9	016.9	000.2400	0043.0	030.8	38.50	
162.0	000.5570	0489.0	034.9	016.0	000.2400	0043.3	030.4	38.72	
163.0	000.5570	0489.0	034.9	015.0	000.2400	0043.5	030.1	38.92	
164.0	000.5570	0489.0	034.9	014.0	000.2400	0043.6	029.8	39.10	
165.0	000.5570	0489.0	034.9	013.0	000.2400	0043.8	029.5	39.30	
166.0	000.5570	0489.0	034.9	011.9	000.2400	0044.0	029.2	39.50	

167.0	000.5570	0489.0	034.9	010.8	000.2400	0044.3	029.0	39.69
168.0	000.5570	0489.0	034.9	009.7	000.2400	0044.6	028.7	39.89
169.0	000.5570	0489.0	034.9	008.6	000.2400	0045.1	028.5	40.11
170.0	000.5570	0489.0	034.9	007.4	000.2400	0045.8	028.3	40.35
171.0	000.5530	0489.0	034.8	006.2	000.2400	0046.5	028.2	40.56
172.0	000.5490	0489.0	034.8	005.0	000.2400	0047.2	028.1	40.73
173.0	000.5450	0489.0	034.7	003.7	000.2400	0047.4	028.1	40.83
174.0	000.5410	0489.0	034.7	002.5	000.2400	0047.7	028.0	40.90
175.0	000.5371	0489.0	034.6	001.3	000.2400	0047.8	028.0	40.92
176.0	000.5331	0489.0	034.5	000.0	000.2400	0047.8	028.0	40.92
177.0	000.5292	0489.0	034.5	358.8	000.2400	0047.8	028.0	40.90
178.0	000.5253	0489.0	034.4	357.6	000.2400	0047.8	028.1	40.87
179.0	000.5214	0489.0	034.4	356.3	000.2400	0047.8	028.2	40.82
180.0	000.5176	0489.0	034.3	355.1	000.2400	0047.7	028.3	40.74
181.0	000.5011	0489.0	034.0	354.0	000.2400	0047.5	028.6	40.52
182.0	000.4849	0489.0	033.8	352.9	000.2400	0047.4	028.9	40.30
183.0	000.4689	0489.0	033.5	351.9	000.2400	0047.2	029.3	40.06
184.0	000.4533	0489.0	033.2	350.9	000.2400	0047.1	029.7	39.82
185.0	000.4379	0489.0	032.9	349.9	000.2400	0046.9	030.1	39.57
186.0	000.4227	0489.0	032.6	349.0	000.2400	0046.8	030.6	39.33
187.0	000.4078	0489.0	032.3	348.2	000.2400	0046.8	031.0	39.10
188.0	000.3932	0489.0	032.0	347.4	000.2400	0046.7	031.5	38.86
189.0	000.3789	0489.0	031.7	346.7	000.2400	0046.6	032.0	38.63
190.0	000.3648	0489.0	031.4	346.0	000.2400	0046.4	032.5	38.39
191.0	000.3570	0489.0	031.3	345.3	000.2400	0046.3	032.9	38.20
192.0	000.3493	0488.9	031.1	344.5	000.2400	0046.1	033.3	38.00
193.0	000.3417	0488.8	030.9	343.9	000.2400	0045.9	033.7	37.80
194.0	000.3342	0488.8	030.7	343.2	000.2400	0045.7	034.1	37.59
195.0	000.3267	0488.7	030.6	342.6	000.2400	0045.5	034.5	37.39
196.0	000.3193	0488.6	030.4	342.1	000.2400	0045.4	035.0	37.19
197.0	000.3121	0488.6	030.2	341.5	000.2400	0045.2	035.4	36.98
198.0	000.3049	0488.5	030.0	341.0	000.2400	0045.1	035.9	36.79
199.0	000.2977	0488.5	029.9	340.5	000.2400	0045.0	036.3	36.59
200.0	000.2907	0488.5	029.7	340.0	000.2400	0044.9	036.8	36.39
201.0	000.2883	0488.5	029.6	339.5	000.2400	0044.7	037.2	36.21
202.0	000.2859	0488.6	029.6	339.0	000.2400	0044.5	037.6	36.03
203.0	000.2836	0488.6	029.5	338.5	000.2400	0044.3	038.0	35.85
204.0	000.2812	0488.6	029.4	338.0	000.2400	0044.1	038.4	35.66
205.0	000.2789	0488.6	029.4	337.5	000.2400	0043.9	038.8	35.47
206.0	000.2766	0488.6	029.3	337.1	000.2400	0043.7	039.2	35.28
207.0	000.2742	0488.6	029.3	336.7	000.2400	0043.5	039.6	35.09
208.0	000.2719	0488.7	029.2	336.3	000.2400	0043.3	040.1	34.90
209.0	000.2696	0488.7	029.1	335.9	000.2400	0043.1	040.5	34.71
210.0	000.2673	0488.7	029.1	335.6	000.2400	0042.9	040.9	34.53
211.0	000.2676	0488.6	029.1	335.2	000.2400	0042.7	041.4	34.35
212.0	000.2680	0488.5	029.1	334.8	000.2400	0042.5	041.8	34.18
213.0	000.2683	0488.5	029.1	334.4	000.2400	0042.3	042.2	34.01
214.0	000.2686	0488.5	029.1	334.0	000.2400	0042.1	042.6	33.84
215.0	000.2690	0488.5	029.1	333.7	000.2400	0042.0	043.1	33.67
216.0	000.2693	0488.5	029.1	333.4	000.2400	0041.8	043.5	33.51
217.0	000.2696	0488.5	029.1	333.0	000.2400	0041.7	044.0	33.35
218.0	000.2699	0488.6	029.1	332.8	000.2400	0041.6	044.4	33.19
219.0	000.2703	0488.7	029.2	332.5	000.2400	0041.5	044.9	33.04
220.0	000.2706	0488.9	029.2	332.2	000.2400	0041.4	045.3	32.88
221.0	000.2757	0489.0	029.3	331.8	000.2400	0041.3	045.8	32.74
222.0	000.2809	0489.0	029.4	331.4	000.2400	0041.1	046.2	32.59
223.0	000.2861	0489.0	029.6	331.1	000.2400	0041.0	046.7	32.44
224.0	000.2914	0489.0	029.7	330.7	000.2400	0040.8	047.1	32.29
225.0	000.2967	0489.0	029.8	330.4	000.2400	0040.7	047.6	32.14
226.0	000.3021	0489.0	030.0	330.1	000.2400	0040.5	048.0	31.99
227.0	000.3075	0489.0	030.1	329.8	000.2400	0040.3	048.5	31.84
228.0	000.3129	0488.9	030.2	329.5	000.2400	0040.2	049.0	31.69
229.0	000.3184	0488.9	030.4	329.2	000.2400	0040.0	049.5	31.54
230.0	000.3240	0488.8	030.5	329.0	000.2400	0039.8	050.0	31.38
231.0	000.3269	0488.8	030.6	328.8	000.2400	0039.7	050.5	31.23
232.0	000.3298	0488.7	030.6	328.7	000.2400	0039.6	051.0	31.08
233.0	000.3327	0488.7	030.7	328.5	000.2400	0039.5	051.6	30.93
234.0	000.3356	0488.7	030.8	328.4	000.2400	0039.5	052.1	30.79
235.0	000.3386	0488.7	030.8	328.3	000.2400	0039.4	052.6	30.64
236.0	000.3415	0488.7	030.9	328.2	000.2400	0039.3	053.2	30.49
237.0	000.3445	0488.8	031.0	328.1	000.2400	0039.2	053.7	30.35

KBCC to KYCC – Third Adjacent Channel



11-25-2019 Terrain Data: NGDC 30 SEC FMOVer Analysis

KBCC.C

KYCC BLED20080930ATZ

Channel = 208A
 Max ERP = 0.24 kw
 RCAMSL = 54.5 m
 N. Lat. 37 42 35.45
 W. Lng. 121 28 43.21
 Protected
 60 dBu

Channel = 211B
 Max ERP = 41 kw
 RCAMSL = 116 m
 N. Lat. 37 57 29.70
 W. Lng. 121 16 58.80
 Interfering
 100 dBu

Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
332.0	000.2400	0041.3	007.8	225.3	004.3018	0113.5	029.4	60.26	
333.0	000.2400	0041.7	007.9	225.2	004.3035	0113.5	029.2	60.35	
334.0	000.2400	0042.1	007.9	225.2	004.3045	0113.5	029.1	60.44	
335.0	000.2400	0042.6	008.0	225.2	004.3044	0113.5	028.9	60.52	
336.0	000.2400	0043.1	008.0	225.2	004.3039	0113.5	028.8	60.61	
337.0	000.2400	0043.6	008.1	225.2	004.3034	0113.5	028.6	60.70	
338.0	000.2400	0044.1	008.1	225.2	004.3054	0113.5	028.5	60.80	
339.0	000.2400	0044.5	008.2	225.2	004.3106	0113.5	028.3	60.89	
340.0	000.2400	0044.9	008.2	225.2	004.3205	0113.5	028.2	60.99	
341.0	000.2400	0045.1	008.2	225.1	004.3354	0113.5	028.1	61.09	
342.0	000.2400	0045.3	008.3	225.0	004.3521	0113.4	027.9	61.19	
343.0	000.2400	0045.6	008.3	224.9	004.3685	0113.4	027.8	61.29	
344.0	000.2400	0045.9	008.3	224.8	004.3854	0113.4	027.6	61.40	
345.0	000.2400	0046.2	008.3	224.7	004.4042	0113.3	027.5	61.50	
346.0	000.2400	0046.4	008.4	224.6	004.4263	0113.3	027.4	61.61	
347.0	000.2400	0046.6	008.4	224.5	004.4518	0113.2	027.2	61.72	
348.0	000.2400	0046.7	008.4	224.3	004.4807	0113.2	027.1	61.83	
349.0	000.2400	0046.8	008.4	224.2	004.5117	0113.1	027.0	61.93	
350.0	000.2400	0047.0	008.4	224.0	004.5435	0113.1	026.8	62.04	

351.0	000.2400	0047.1	008.4	223.9	004.5758	0113.0	026.7	62.15
352.0	000.2400	0047.2	008.5	223.7	004.6095	0113.0	026.6	62.27
353.0	000.2400	0047.4	008.5	223.5	004.6449	0112.9	026.5	62.38
354.0	000.2400	0047.5	008.5	223.3	004.6820	0112.9	026.3	62.49
355.0	000.2400	0047.6	008.5	223.1	004.7212	0112.8	026.2	62.60
356.0	000.2400	0047.7	008.5	222.9	004.7631	0112.8	026.1	62.71
357.0	000.2400	0047.8	008.5	222.7	004.8082	0112.7	026.0	62.82
358.0	000.2400	0047.8	008.5	222.5	004.8555	0112.6	025.9	62.93
359.0	000.2400	0047.8	008.5	222.3	004.9044	0112.5	025.8	63.04
000.0	000.2400	0047.8	008.5	222.0	004.9549	0112.5	025.7	63.15
001.0	000.2400	0047.8	008.5	221.8	005.0071	0112.4	025.6	63.25
002.0	000.2400	0047.8	008.5	221.5	005.0612	0112.3	025.5	63.36
003.0	000.2400	0047.6	008.5	221.2	005.1214	0112.2	025.4	63.45
004.0	000.2400	0047.4	008.5	220.9	005.1880	0112.1	025.3	63.55
005.0	000.2400	0047.2	008.4	220.6	005.2697	0112.0	025.3	63.66
006.0	000.2400	0046.7	008.4	220.3	005.3622	0111.8	025.2	63.75
007.0	000.2400	0046.0	008.3	219.9	005.4603	0111.7	025.2	63.84
008.0	000.2400	0045.4	008.3	219.6	005.5596	0111.6	025.2	63.92
009.0	000.2400	0044.9	008.2	219.2	005.6552	0111.4	025.2	64.00
010.0	000.2400	0044.6	008.2	218.9	005.7483	0111.3	025.1	64.09
011.0	000.2400	0044.3	008.1	218.6	005.8394	0111.2	025.1	64.17
012.0	000.2400	0044.0	008.1	218.3	005.9292	0111.0	025.0	64.26
013.0	000.2400	0043.8	008.1	217.9	006.0201	0110.9	025.0	64.34
014.0	000.2400	0043.6	008.1	217.6	006.1122	0110.8	025.0	64.42
015.0	000.2400	0043.5	008.0	217.3	006.2027	0110.7	024.9	64.51
016.0	000.2400	0043.3	008.0	217.0	006.2955	0110.5	024.9	64.58
017.0	000.2400	0043.0	008.0	216.7	006.3932	0110.4	024.9	64.65
018.0	000.2400	0042.5	007.9	216.3	006.4948	0110.3	024.9	64.71
019.0	000.2400	0042.2	007.9	216.0	006.5944	0110.2	024.9	64.78
020.0	000.2400	0042.0	007.9	215.7	006.6908	0110.2	024.9	64.85
021.0	000.2400	0041.9	007.9	215.4	006.7863	0110.1	024.8	64.92
022.0	000.2400	0041.7	007.9	215.0	006.8844	0110.1	024.8	64.99
023.0	000.2400	0041.3	007.8	214.7	006.9861	0110.0	024.8	65.05
024.0	000.2400	0040.8	007.8	214.4	007.0897	0110.0	024.9	65.09
025.0	000.2400	0040.3	007.7	214.1	007.1934	0110.0	024.9	65.13
026.0	000.2400	0039.8	007.7	213.7	007.2957	0110.0	024.9	65.17
027.0	000.2400	0039.4	007.6	213.4	007.3962	0110.0	024.9	65.21
028.0	000.2400	0039.2	007.6	213.1	007.4957	0110.0	025.0	65.26
029.0	000.2400	0038.9	007.6	212.8	007.5951	0110.0	025.0	65.31
030.0	000.2400	0038.8	007.6	212.5	007.6943	0110.0	025.0	65.36
031.0	000.2400	0038.7	007.5	212.2	007.7936	0110.0	025.0	65.41
032.0	000.2400	0038.5	007.5	211.9	007.8932	0110.0	025.0	65.45
033.0	000.2400	0038.2	007.5	211.6	007.9926	0110.0	025.0	65.48
034.0	000.2400	0038.1	007.5	211.3	008.0921	0110.0	025.0	65.52
035.0	000.2400	0038.1	007.5	211.0	008.1922	0110.0	025.1	65.57
036.0	000.2400	0038.0	007.5	210.7	008.3177	0110.0	025.1	65.63
037.0	000.2400	0037.9	007.5	210.4	008.4429	0110.0	025.1	65.67
038.0	000.2400	0037.8	007.5	210.1	008.5687	0110.0	025.1	65.72
039.0	000.2400	0037.8	007.5	209.8	008.6955	0110.0	025.1	65.77
040.0	000.2400	0037.8	007.5	209.5	008.8221	0110.0	025.2	65.82
041.0	000.2400	0037.7	007.4	209.2	008.9476	0110.0	025.2	65.85
042.0	000.2400	0037.6	007.4	209.0	009.0723	0110.0	025.2	65.88
043.0	000.2400	0037.4	007.4	208.7	009.1968	0110.0	025.3	65.92
044.0	000.2400	0037.3	007.4	208.4	009.3187	0110.0	025.3	65.94
045.0	000.2400	0037.0	007.4	208.2	009.4374	0110.0	025.4	65.95
046.0	000.2400	0036.7	007.4	207.9	009.5551	0110.0	025.5	65.96
047.0	000.2400	0036.6	007.3	207.6	009.6757	0110.0	025.5	65.98
048.0	000.2400	0036.6	007.3	207.4	009.7989	0110.0	025.6	66.00
049.0	000.2400	0036.6	007.3	207.1	009.9212	0110.0	025.6	66.02
050.0	000.2400	0036.4	007.3	206.8	010.0397	0110.0	025.7	66.03
051.0	000.2400	0036.3	007.3	206.6	010.1542	0110.0	025.7	66.03
052.0	000.2400	0036.1	007.3	206.4	010.2664	0110.0	025.8	66.03
053.0	000.2400	0035.9	007.3	206.1	010.3802	0110.0	025.9	66.04
054.0	000.2400	0035.9	007.3	205.9	010.4969	0110.0	025.9	66.04
055.0	000.2400	0035.9	007.3	205.6	010.6138	0110.0	026.0	66.05
056.0	000.2400	0035.9	007.3	205.4	010.7286	0110.0	026.1	66.05
057.0	000.2400	0035.8	007.3	205.2	010.8406	0110.0	026.1	66.05
058.0	000.2400	0035.8	007.3	204.9	010.9512	0110.0	026.2	66.04
059.0	000.2400	0035.7	007.3	204.7	011.0601	0110.0	026.3	66.04
060.0	000.2400	0035.7	007.3	204.5	011.1706	0110.0	026.4	66.03
061.0	000.2400	0035.7	007.3	204.3	011.2811	0110.0	026.4	66.02
062.0	000.2400	0035.7	007.3	204.0	011.3904	0110.0	026.5	66.01
063.0	000.2400	0035.7	007.3	203.8	011.4970	0110.0	026.6	66.00
064.0	000.2400	0035.7	007.2	203.6	011.5962	0110.0	026.7	65.98
065.0	000.2400	0035.5	007.2	203.4	011.6880	0110.0	026.8	65.95
066.0	000.2400	0035.3	007.2	203.3	011.7723	0110.0	026.9	65.92
067.0	000.2400	0035.0	007.2	203.1	011.8543	0110.0	027.0	65.88
068.0	000.2400	0034.9	007.2	202.9	011.9378	0110.0	027.1	65.85
069.0	000.2400	0034.8	007.2	202.8	012.0238	0110.0	027.2	65.82
070.0	000.2400	0034.7	007.2	202.6	012.1071	0110.0	027.3	65.78
071.0	000.2400	0034.5	007.1	202.5	012.1833	0110.0	027.4	65.74
072.0	000.2400	0034.3	007.1	202.3	012.2562	0110.0	027.5	65.70
073.0	000.2400	0034.1	007.1	202.2	012.3269	0110.0	027.6	65.66
074.0	000.2400	0034.0	007.1	202.1	012.3982	0110.0	027.7	65.62

075.0	000.2400	0033.9	007.1	201.9	012.4664	0110.0	027.8	65.57
076.0	000.2400	0033.6	007.0	201.8	012.5232	0110.0	027.9	65.52
077.0	000.2400	0033.3	007.0	201.7	012.5727	0110.0	028.0	65.46
078.0	000.2400	0033.0	007.0	201.6	012.6171	0110.0	028.1	65.41
079.0	000.2400	0032.7	007.0	201.5	012.6616	0110.0	028.3	65.35
080.0	000.2400	0032.4	006.9	201.5	012.7112	0110.0	028.4	65.29
081.0	000.2400	0032.2	006.9	201.4	012.7542	0110.0	028.5	65.24
082.0	000.2400	0031.9	006.9	201.3	012.7907	0110.0	028.6	65.18
083.0	000.2400	0031.4	006.8	201.3	012.8109	0110.0	028.7	65.11
084.0	000.2400	0030.9	006.8	201.2	012.8207	0110.0	028.9	65.03
085.0	000.2400	0030.3	006.7	201.2	012.8288	0110.0	029.0	64.96
086.0	000.2400	0029.8	006.7	201.2	012.8526	0110.0	029.1	64.90
087.0	000.2400	0029.4	006.7	201.1	012.9031	0110.0	029.2	64.85
088.0	000.2400	0029.1	006.7	201.0	012.9517	0110.0	029.3	64.81
089.0	000.2400	0028.7	006.7	200.9	013.0102	0110.0	029.4	64.76
090.0	000.2400	0028.4	006.7	200.8	013.0658	0110.0	029.5	64.72
091.0	000.2400	0028.1	006.7	200.7	013.1186	0110.0	029.7	64.67

11-25-2019 Terrain Data: NGDC 30 SEC FMOVer Analysis

KYCC BLED20080930ATZ

KBCC.C

Channel = 211B
Max ERP = 41 kw
RCAMSL = 116 m
N. Lat. 37 57 29.70
W. Lng. 121 16 58.80
Protected
60 dBu

Channel = 208A
Max ERP = 0.24 kw
RCAMSL = 54.5 m
N. Lat. 37 42 35.45
W. Lng. 121 28 43.21
Interfering
100 dBu

Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
152.0	041.0000	0107.2	044.3	106.7	000.2400	0021.5	039.7	31.63	
153.0	041.0000	0107.4	044.3	107.5	000.2400	0020.9	039.2	31.81	
154.0	041.0000	0107.5	044.3	108.4	000.2400	0020.5	038.6	31.98	
155.0	041.0000	0107.7	044.4	109.2	000.2400	0020.1	038.1	32.16	
156.0	041.0000	0107.8	044.4	110.0	000.2400	0019.7	037.6	32.34	
157.0	041.0000	0107.8	044.4	110.9	000.2400	0019.3	037.0	32.53	
158.0	041.0000	0107.8	044.4	111.7	000.2400	0019.0	036.5	32.72	
159.0	041.0000	0107.8	044.4	112.6	000.2400	0018.7	035.9	32.92	
160.0	041.0000	0107.8	044.4	113.4	000.2400	0018.2	035.3	33.13	
161.0	041.0000	0107.7	044.4	114.3	000.2400	0017.5	034.8	33.33	
162.0	041.0000	0107.7	044.4	115.2	000.2400	0016.6	034.2	33.54	
163.0	041.0000	0107.8	044.4	116.1	000.2400	0015.4	033.6	33.75	
164.0	041.0000	0107.9	044.4	117.0	000.2400	0014.2	033.1	33.96	
165.0	041.0000	0108.0	044.4	117.9	000.2400	0012.8	032.5	34.17	
166.0	041.0000	0108.0	044.4	118.9	000.2400	0011.4	032.0	34.39	
167.0	041.0000	0108.1	044.4	119.9	000.2400	0010.0	031.4	34.62	
168.0	041.0000	0108.3	044.5	120.9	000.2400	0008.5	030.9	34.86	
169.0	041.0000	0108.5	044.5	121.9	000.2400	0006.8	030.3	35.11	
170.0	041.0000	0108.7	044.5	123.0	000.2400	0005.2	029.8	35.37	
171.0	041.0000	0108.8	044.5	124.0	000.2400	0003.7	029.2	35.66	
172.0	040.1111	0109.0	044.4	124.8	000.2400	0002.6	028.5	36.02	
173.0	039.2319	0109.2	044.2	125.7	000.2400	0001.4	027.9	36.39	
174.0	038.3624	0109.5	044.1	126.6	000.2400	0000.2	027.2	36.78	
175.0	037.5027	0109.6	043.9	127.4	000.2400	-0001.2	026.5	37.19	
176.0	036.6528	0109.8	043.7	128.2	000.2400	-0002.8	025.8	37.62	
177.0	035.8126	0109.9	043.6	129.1	000.2400	-0004.6	025.2	38.07	
178.0	034.9821	0110.0	043.4	130.0	000.2400	-0006.4	024.5	38.53	
179.0	034.1614	0110.0	043.2	130.8	000.2400	-0008.4	023.8	39.01	
180.0	033.3504	0110.0	043.0	131.7	000.2400	-0010.5	023.1	39.51	
181.0	032.5491	0110.0	042.8	132.6	000.2400	-0012.9	022.4	40.01	
182.0	031.2258	0110.0	042.5	133.2	000.2400	-0014.7	021.6	40.60	
183.0	029.9300	0110.0	042.1	133.8	000.2400	-0016.5	020.8	41.21	
184.0	028.6616	0110.0	041.8	134.4	000.2400	-0018.4	020.0	41.82	
185.0	027.4207	0110.0	041.4	135.0	000.2400	-0020.3	019.3	42.45	
186.0	026.2072	0110.0	041.0	135.5	000.2400	-0022.2	018.5	43.10	
187.0	025.0212	0110.0	040.7	136.0	000.2400	-0024.0	017.7	43.75	
188.0	023.8627	0110.0	040.3	136.5	000.2400	-0025.7	016.9	44.41	
189.0	022.7316	0110.0	039.9	136.9	000.2400	-0027.3	016.1	45.08	
190.0	021.6280	0110.0	039.5	137.3	000.2400	-0028.7	015.3	45.76	
191.0	020.5518	0110.0	039.1	137.7	000.2400	-0030.0	014.5	46.57	
192.0	019.7129	0110.0	038.7	138.2	000.2400	-0032.2	013.8	47.50	
193.0	018.8915	0110.0	038.4	138.8	000.2400	-0034.4	013.0	48.50	
194.0	018.0876	0110.0	038.1	139.2	000.2400	-0036.5	012.3	49.57	
195.0	017.3012	0110.0	037.7	139.7	000.2400	-0038.7	011.5	50.71	
196.0	016.5322	0110.0	037.3	140.1	000.2400	-0040.5	010.8	51.92	
197.0	015.7807	0110.0	037.0	140.4	000.2400	-0042.1	010.1	53.18	
198.0	015.0467	0110.0	036.6	140.6	000.2400	-0043.2	009.3	54.51	

199.0	014.3302	0110.0	036.2	140.7	000.2400	-0043.7	008.6	55.89
200.0	013.6312	0110.0	035.8	140.6	000.2400	-0043.3	007.8	57.33
201.0	012.9496	0110.0	035.4	140.3	000.2400	-0041.7	007.1	59.02
202.0	012.4251	0110.0	035.1	140.4	000.2400	-0042.3	006.4	60.81
203.0	011.9114	0110.0	034.8	140.3	000.2400	-0042.0	005.7	62.80
204.0	011.4085	0110.0	034.4	140.0	000.2400	-0040.3	005.0	65.00
205.0	010.9165	0110.0	034.1	139.3	000.2400	-0036.7	004.3	67.43
206.0	010.4353	0110.0	033.7	138.0	000.2400	-0031.1	003.6	70.47
207.0	009.9650	0110.0	033.4	135.6	000.2400	-0022.5	003.0	74.07
208.0	009.5055	0110.0	033.0	131.3	000.2400	-0009.5	002.3	78.82
209.0	009.0569	0110.0	032.6	122.9	000.2400	0005.3	001.7	84.26
210.0	008.6191	0110.0	032.2	104.8	000.2400	0022.6	001.1	98.76
211.0	008.1922	0110.0	031.8	068.1	000.2400	0034.9	000.9	100.96* 0.10
212.0	007.8584	0110.0	031.5	030.2	000.2400	0038.8	001.0	99.67
213.0	007.5316	0110.0	031.2	008.8	000.2400	0045.0	001.5	96.60
214.0	007.2118	0110.0	030.9	358.5	000.2400	0047.8	002.0	85.53
215.0	006.8988	0110.1	030.5	353.0	000.2400	0047.4	002.6	80.71
216.0	006.5928	0110.2	030.3	349.5	000.2400	0046.9	003.2	76.83
217.0	006.2938	0110.5	030.0	347.2	000.2400	0046.6	003.8	73.90
218.0	006.0017	0110.9	029.7	345.6	000.2400	0046.4	004.3	71.33
219.0	005.7165	0111.3	029.4	344.6	000.2400	0046.1	004.9	69.14
220.0	005.4383	0111.7	029.1	344.0	000.2400	0045.9	005.5	67.13
221.0	005.1670	0112.1	028.8	343.6	000.2400	0045.8	006.1	65.26
222.0	004.9567	0112.5	028.6	343.0	000.2400	0045.6	006.6	63.69
223.0	004.7508	0112.8	028.4	342.6	000.2400	0045.5	007.2	62.29
224.0	004.5492	0113.1	028.1	342.4	000.2400	0045.4	007.7	61.05
225.0	004.3520	0113.4	027.9	342.3	000.2400	0045.4	008.3	59.97
226.0	004.1591	0113.9	027.7	342.2	000.2400	0045.4	008.8	58.97
227.0	003.9707	0114.4	027.4	342.2	000.2400	0045.4	009.3	57.99
228.0	003.7866	0114.7	027.2	342.4	000.2400	0045.4	009.9	57.04
229.0	003.6068	0114.9	026.9	342.7	000.2400	0045.5	010.4	56.12
230.0	003.4315	0114.9	026.6	343.1	000.2400	0045.7	011.0	55.23
231.0	003.2605	0115.0	026.3	343.6	000.2400	0045.8	011.5	54.38
232.0	003.3396	0115.0	026.4	342.1	000.2400	0045.4	011.9	53.71
233.0	003.4196	0115.1	026.6	340.7	000.2400	0045.1	012.3	53.05
234.0	003.5006	0115.1	026.7	339.5	000.2400	0044.7	012.7	52.38
235.0	003.5826	0115.1	026.9	338.4	000.2400	0044.3	013.1	51.69
236.0	003.6654	0115.2	027.0	337.4	000.2400	0043.8	013.5	51.01
237.0	003.7493	0115.2	027.2	336.4	000.2400	0043.3	014.0	50.34
238.0	003.8341	0115.2	027.3	335.6	000.2400	0042.9	014.4	49.69
239.0	003.9198	0115.2	027.4	334.8	000.2400	0042.5	014.9	49.07
240.0	004.0065	0115.3	027.6	334.2	000.2400	0042.2	015.3	48.71
241.0	004.0941	0115.3	027.7	333.5	000.2400	0041.9	015.8	48.23
242.0	004.3093	0115.3	028.0	332.4	000.2400	0041.5	016.3	47.72
243.0	004.5301	0115.3	028.3	331.3	000.2400	0041.1	016.8	47.20
244.0	004.7563	0115.3	028.7	330.3	000.2400	0040.6	017.3	46.66
245.0	004.9881	0115.4	029.0	329.4	000.2400	0040.1	017.8	46.10
246.0	005.2254	0115.4	029.3	328.6	000.2400	0039.6	018.4	45.52
247.0	005.4682	0115.4	029.6	327.9	000.2400	0039.1	018.9	44.95
248.0	005.7165	0115.4	029.9	327.3	000.2400	0038.6	019.5	44.38
249.0	005.9704	0115.4	030.2	326.7	000.2400	0038.2	020.0	43.82
250.0	006.2297	0115.4	030.5	326.2	000.2400	0037.9	020.6	43.28
251.0	006.4946	0115.5	030.8	325.8	000.2400	0037.6	021.2	42.73
252.0	006.8351	0115.5	031.2	325.2	000.2400	0037.1	021.8	42.15
253.0	007.1843	0115.5	031.5	324.7	000.2400	0036.7	022.5	41.58
254.0	007.5422	0115.5	031.9	324.3	000.2400	0036.3	023.1	41.00
255.0	007.9088	0115.5	032.3	323.9	000.2400	0035.9	023.8	40.44
256.0	008.2841	0115.5	032.6	323.6	000.2400	0035.6	024.4	39.89
257.0	008.6681	0115.5	033.0	323.3	000.2400	0035.3	025.1	39.37
258.0	009.0608	0115.5	033.4	323.2	000.2400	0035.1	025.8	38.87
259.0	009.4622	0115.5	033.7	323.0	000.2400	0035.0	026.5	38.40
260.0	009.8722	0115.5	034.0	322.9	000.2400	0034.9	027.1	37.96
261.0	010.2910	0115.5	034.4	322.9	000.2400	0034.8	027.8	37.54
262.0	010.8320	0115.5	034.8	322.8	000.2400	0034.7	028.5	37.10
263.0	011.3869	0115.5	035.2	322.7	000.2400	0034.6	029.3	36.68
264.0	011.9556	0115.5	035.5	322.7	000.2400	0034.5	030.0	36.30
265.0	012.5382	0115.5	035.9	322.7	000.2400	0034.6	030.7	35.95
266.0	013.1346	0115.6	036.3	322.7	000.2400	0034.6	031.4	35.64
267.0	013.7449	0115.6	036.6	322.8	000.2400	0034.7	032.2	35.36
268.0	014.3690	0115.6	037.0	323.0	000.2400	0034.9	032.9	35.11
269.0	015.0070	0115.6	037.3	323.1	000.2400	0035.1	033.6	34.86
270.0	015.6589	0115.6	037.7	323.3	000.2400	0035.3	034.4	34.63
271.0	016.3246	0115.6	038.0	323.5	000.2400	0035.5	035.1	34.40

Environmental Protection Act / NIER Analysis

Modification of FM facility proposes a single-bay circular-polarized antenna at 11.4 meters above ground level operating at 240 watts ERP. Using the FM Model application with the "EPA Type 1" setting to approximate worst-case exposure, FM Model predicted a maximum peak of 108.36 $\mu\text{W}/\text{cm}^2$, at 3.3 meters below center of radiation. This represents 54.18 % of the FCC Maximum Permissible Exposure (MPE) of 200 $\mu\text{W}/\text{cm}^2$ for uncontrolled environments. At 13.3 meters this level falls to 55.4 $\mu\text{W}/\text{cm}^2$, or 27.7 % of MPE, and continues dissipating further from the tower.

The area is an undeveloped portion of property near remote grazing land, and is not accessible to the public or other unauthorized persons. The antenna will be mounted on a pole and only accessible using a tall extension ladder.

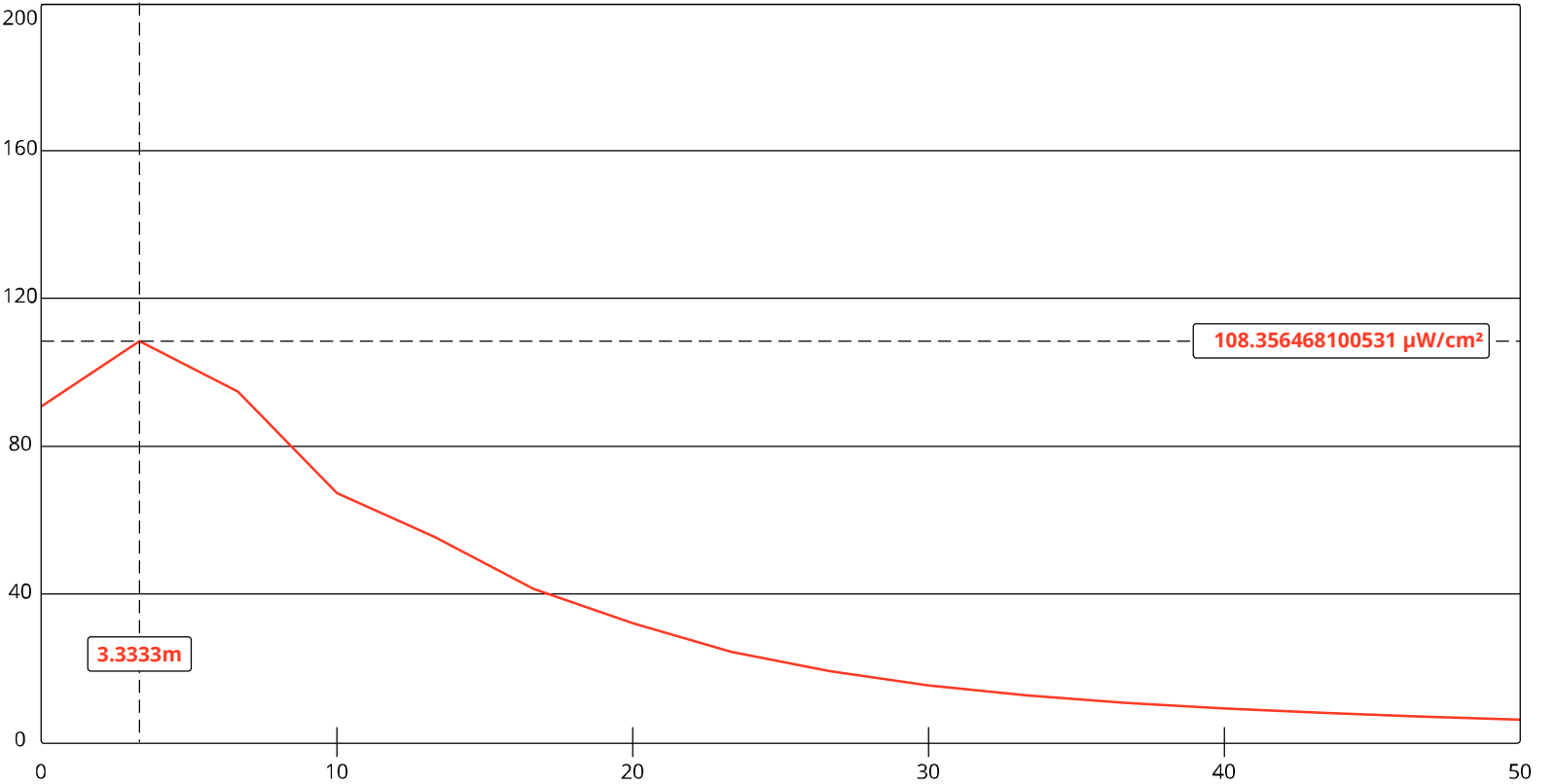
In an abundance of caution, a sign will be posted indicating potential RF exposure hazards. Facility will be powered down before any work is performed.

Exhibits:

- FM Model RF calculations
- NADCON NAD 27 -> NAD 83 conversion
- TOWAIR FAA clearance
- HAAT calculations

FM Model

The FM Model calculator determines the potential exposure from radiofrequency (RF) electromagnetic fields produced by FM broadcast station antennas at ground level. The FM Model software was originally developed by the FCC in 1997 as a standalone executable program and this improved version provides more precise predictions and runs via a JavaScript enabled web browser. The FM Model is originally based on measured data [published in 1985 by the EPA](#) (<http://nepis.epa.gov/Exe/ZyNET.exe/2000ED2W.TXT?ZyActionD=ZyDocument&Client=EPA&Index=1981+Thru+1985&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A\zyfiles\Index%20Data\81thru85\Txt\00000003\2000ED2W.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h|-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=p|f&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL>).
 [▼ Show More....](#)



Channel Selection	Channel 208 (89.5 MHz)		
Antenna Type +	EPA Type 1: Ring-and-Stub or "Other"		
Height (m)	11.4	Distance (m)	50
ERP-H (W)	240	ERP-V (W)	240
Num of Elements	1	Element Spacing (λ)	0
Num of Points	15	Apply	

Hide Tabular Results -

Distance (m)	Power Density (μW/cm²)
0	90.7
3.3333	108.4
6.6667	94.8
10	67.3
13.3333	55.4
16.6667	41.4
20	32.1
23.3333	24.4
26.6667	19.1
30	15.3
33.3333	12.5
36.6667	10.5
40	9.0
43.3333	7.8
46.6667	6.8
50	6.0

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Bureau/Office:

[Engineering & Technology \(https://www.fcc.gov/engineering-technology\)](https://www.fcc.gov/engineering-technology)

Updated:

Friday, June 8, 2018

Output from NADCON for station

North American Datum Conversion

NAD 83 to NAD 27

NADCON Program Version 2.11

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Transformation #: 1 Region: Conus

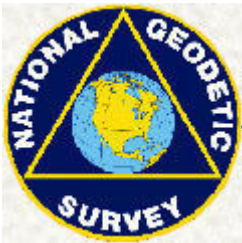
	Latitude	Longitude
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NAD 27 datum values:	37 42 34.61293	121 28 37.01626
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NAD 83 datum values:	37 42 34.36000	121 28 40.82000
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NAD 27 - NAD 83 shift values:	0.25293	-3.80374 (secs.)
	7.798	-93.168 (meters)

Magnitude of total shift:	93.494 (meters)
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Antenna Structure Registration

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TOWAIR Determination Results

? **HELP**

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A routine check of the coordinates, heights, and structure type you provided indicates that this structure does not require registration.

***** NOTICE *****

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

DETERMINATION Results							
PASS SLOPE(100:1)NO FAA REQ - 3360.0 Meters (11023.4 Feet)away & below slope by 27.0 Meters (88.5799 Feet)							
Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	37-41-26.00N	121-26-54.00W	TRACY MUNI	SAN JOAQUIN TRACY, CA	52.6	1219.5
PASS SLOPE(100:1)NO FAA REQ - 3360.0 Meters (11023.4 Feet)away & below slope by 27.0 Meters (88.5799 Feet)							
Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	37-41-26.00N	121-26-54.00W	TRACY MUNI	SAN JOAQUIN TRACY, CA	52.6	1219.5
PASS SLOPE(100:1)NO FAA REQ - 3478.0 Meters (11410.6 Feet)away & below slope by 28.0 Meters (91.8599 Feet)							
Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	37-41-28.00N	121-26-46.00W	TRACY MUNI	SAN JOAQUIN TRACY, CA	52.6	1219.5
PASS SLOPE(100:1)NO FAA REQ - 3478.0 Meters (11410.6 Feet)away & below slope by 28.0 Meters (91.8599 Feet)							
Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	37-41-28.00N	121-26-46.00W	TRACY MUNI	SAN JOAQUIN TRACY, CA	52.6	1219.5
Your Specifications							
NAD83 Coordinates							
Latitude						37-42-34.4 north	
Longitude						121-28-40.8 west	
Measurements (Meters)							
Overall Structure Height (AGL)						16	
Support Structure Height (AGL)						0	
Site Elevation (AMSL)						43.1	
Structure Type							
POLE - Any type of Pole							

Antenna Height Above Average Terrain Calculations -- Results

Input Data

Latitude **37° 42' 34.61"** North

Longitude **121° 28' 37.02"** West (NAD 27)

These coordinates convert to NAD 83 coordinates of
37° 42' 34.36", North, 121° 28' 40.82" West (NAD 83).

Height of antenna radiation center above mean sea level: **54.5 meters** AMSL

Number of Evenly Spaced Radials = **8** 0° is referenced to True North

Results

Calculated HAAT = **-65 meters**

Antenna Height Above Average Terrain calculated
using 1 km [GLOBE terrain data](#)

Individual "Radial HAAT" Values, in meters

0°	57.7 m
45°	51.4 m
90°	35.1 m
135°	-8.1 m
180°	-217.1 m
225°	-321.1 m
270°	-146.5 m
315°	29.2 m

Print Results?

New Calculation?