

2000 Census data selected  
TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 08-20-2009 Time: 20:15:04

Record Selected for Analysis

NEW BSFDTL -20200820AAQ DULUTH MN US  
Channel 21 ERP 00001 kW HAAT 00102 m RCAMSL 00406 m  
Latitude 046-47-16 Longitude 092 -7 -2  
Status APP Zone 0 Border Offset  
Dir Antenna Make CDB Model 00000000020049 Beam tilt N Ref Azimuth 000  
Last update 00000000 Cutoff date 00000000 Docket  
Comments  
Applicant MAKO COMMUNICATIONS, LLC

Cell Size for Service Analysis 1.0 km/side

Distance Increments for Longley-Rice Analysis 1.00 km

Not full service station

Facility meets maximum power limit

| Azimuth<br>(Deg) | ERP<br>(kW) | HAAT<br>(m) | 51.0 dBu F(50,90)<br>(km) |
|------------------|-------------|-------------|---------------------------|
| 0.0              | 1.000       | 33.0        | 17.4                      |
| 45.0             | 0.870       | 98.1        | 28.1                      |
| 90.0             | 1.000       | 223.0       | 37.1                      |
| 135.0            | 0.870       | 223.0       | 36.3                      |
| 180.0            | 1.000       | 209.0       | 36.3                      |
| 225.0            | 0.870       | 80.3        | 25.9                      |
| 270.0            | 1.000       | 33.0        | 17.4                      |
| 315.0            | 0.870       | 33.0        | 16.7                      |

Contour Overlap to Proposed Station

Contour Overlap Evaluation to Proposed Station Complete

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quite zone

Proposed facility OK toward Table Mountain

Proposed facility is within the Canadian coordination distance  
Distance to border = 146.8km

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

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Start of Interference Analysis

| Channel | Proposed Station<br>Call | City/State | ARN    |             |
|---------|--------------------------|------------|--------|-------------|
| 21      | NEW                      | DULUTH MN  | BSFDTL | 20200820AAQ |

Stations Potentially Affected by Proposed Station

| Chan | Call    | City/State       | Dist(km) | Status | Application | Ref. No.     |
|------|---------|------------------|----------|--------|-------------|--------------|
| 21   | K21GN   | ALEXANDRIA MN    | 272.5    | LIC    | BLTTL       | -20041229ABH |
| 21   | K21HX-D | WALKER MN        | 189.9    | CP MOD | BMPDTL      | -20080903ABG |
| 21   | WFTC    | MINNEAPOLIS MN   | 207.4    | LIC    | BLCDDT      | -20011009ADF |
| 21   | WDAY-DT | FARGO ND         | 386.8    | LIC    | BLCDDT      | -20061222ABH |
| 21   | NEW     | GRANITE FALLS MN | 347.2    | CP     | BDCCDTL     | -20061019ABD |
| 21   | K21AK   | APPLETON MN      | 348.8    | LIC    | BLTTL       | -19980909JB  |
| 21   | K21DG   | ST. JAMES MN     | 355.2    | CP     | BPTTL       | -20080602AHI |
| 21   | K21DG   | ST. JAMES MN     | 355.1    | LIC    | BLDDT       | -20090813AAJ |
| 23   | NEW     | DULUTH MN        | 0.4      | CP     | BNPTTL      | -20000831AMX |
| 24   | NEW     | DULUTH MN        | 5.8      | CP     | BNPTTL      | -20000830BTS |
| 25   | K65DT   | WALKER MN        | 189.9    | LIC    | BLTTL       | -20070316ACH |
| 25   | NEW     | DULUTH MN        | 5.8      | CP     | BNPTTL      | -20000830BBV |
| 25   | WAST-LP | ASHLAND WI       | 92.9     | LIC    | BLTTL       | -20050906AAS |
| 29   | K29EB   | GRAND RAPIDS MN  | 114.6    | LIC    | BLTT        | -20021011AAW |
| 29   | K29EB   | GRAND RAPIDS MN  | 114.6    | LIC    | BLTT        | -20021011AAW |

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Analysis of Interference to Affected Station 1

Analysis of current record

| Channel | Call  | City/State    | Application | Ref. No.     |
|---------|-------|---------------|-------------|--------------|
| 21      | K21GN | ALEXANDRIA MN | BLTTL       | -20041229ABH |

Stations Potentially Affecting This Station

| Chan | Call    | City/State     | Dist(km) | Status | Application | Ref. No.     |
|------|---------|----------------|----------|--------|-------------|--------------|
| 19   | KVRR-DT | FARGO ND       | 101.9    | CP     | BPCDDT      | -20080317AII |
| 21   | WFTC    | MINNEAPOLIS MN | 205.4    | LIC    | BLCDDT      | -20011009ADF |
| 21   | KTSD-DT | PIERRE SD      | 393.0    | LIC    | BLEDT       | -20060206AAU |
| 21   | WDAY-DT | FARGO ND       | 179.7    | LIC    | BLCDDT      | -20061222ABH |
| 28   | KAWB-DT | BRAINERD MN    | 93.3     | LIC    | BLEDT       | -20030429AAJ |
| 36   | KSAX-TV | ALEXANDRIA MN  | 33.4     | LIC    | BPRM        | -20010423AFQ |
| 21   | NEW     | DULUTH MN      | 272.5    | APP    | BSFDTL      | -20200820AAQ |

Proposal causes no interference

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Analysis of Interference to Affected Station 2

Analysis of current record

| Channel | Call    | City/State | Application Ref. No. |
|---------|---------|------------|----------------------|
| 21      | K21HX-D | WALKER MN  | BMPDTL -20080903ABG  |

Stations Potentially Affecting This Station

| Chan | Call    | City/State     | Dist(km) | Status | Application Ref. No. |
|------|---------|----------------|----------|--------|----------------------|
| 18   | KAWB-DT | BEMIDJI MN     | 67.9     | LIC    | BLEDT -20040120AEA   |
| 19   | KVRR-DT | FARGO ND       | 133.6    | CP     | BPCDT -20080317AII   |
| 21   | WFTC    | MINNEAPOLIS MN | 252.5    | LIC    | BLCDDT -20011009ADF  |
| 21   | WDAY-DT | FARGO ND       | 198.7    | LIC    | BLCDDT -20061222ABH  |
| 28   | KAWB-DT | BRAINERD MN    | 75.1     | LIC    | BLEDT -20030429AAJ   |
| 21   | NEW     | DULUTH MN      | 189.9    | APP    | BSFDTL -20200820AAQ  |

Proposal causes no interference

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Analysis of Interference to Affected Station 3

Analysis of current record

| Channel | Call | City/State     | Application Ref. No. |
|---------|------|----------------|----------------------|
| 21      | WFTC | MINNEAPOLIS MN | BLCDDT -20011009ADF  |

Stations Potentially Affecting This Station

| Chan | Call    | City/State     | Dist(km) | Status | Application Ref. No. |
|------|---------|----------------|----------|--------|----------------------|
| 20   | KSMQ-DT | AUSTIN MN      | 164.4    | CP MOD | BMPEDT -20081114AAX  |
| 21   | WIWB-DT | SURING WI      | 414.1    | CP MOD | BMPCDDT -20090601AQN |
| 21   | WDAY-DT | FARGO ND       | 381.9    | LIC    | BLCDDT -20061222ABH  |
| 21   | WIWB-DT | SURING WI      | 414.1    | LIC    | BLCDDT -20040521ADD  |
| 22   | KMWB-DT | MINNEAPOLIS MN | 1.3      | CP     | BPCDDT -19991027ADG  |
| 21   | NEW     | DULUTH MN      | 207.4    | APP    | BSFDTL -20200820AAQ  |

Proposal causes no interference

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Analysis of Interference to Affected Station 4

Analysis of current record

| Channel | Call    | City/State | Application Ref. No. |
|---------|---------|------------|----------------------|
| 21      | WDAY-DT | FARGO ND   | BLCDDT -20061222ABH  |

Stations Potentially Affecting This Station

| Chan | Call    | City/State     | Dist(km) | Status | Application Ref. No. |
|------|---------|----------------|----------|--------|----------------------|
| 20   | KJRE-DT | ELLENDAL E ND  | 149.5    | LIC    | BLEDT -20041109AAB   |
| 21   | WFTC    | MINNEAPOLIS MN | 381.9    | LIC    | BLCDDT -20011009ADF  |
| 21   | KTSD-DT | PIERRE SD      | 386.3    | LIC    | BLEDT -20060206AAU   |
| 21   | NEW     | DULUTH MN      | 386.8    | APP    | BSFDTL -20200820AAQ  |

Proposal causes no interference

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Analysis of Interference to Affected Station 5

Analysis of current record

| Channel | Call | City/State       | Application | Ref. No.     |
|---------|------|------------------|-------------|--------------|
| 21      | NEW  | GRANITE FALLS MN | BDCCDTL     | -20061019ABD |

Stations Potentially Affecting This Station

| Chan | Call    | City/State       | Dist(km) | Status | Application | Ref. No.     |
|------|---------|------------------|----------|--------|-------------|--------------|
| 18   | KESD-DT | BROOKINGS SD     | 140.4    | LIC    | BLEDT       | -20051208ADT |
| 21   | WFTC    | MINNEAPOLIS MN   | 195.3    | LIC    | BLCDDT      | -20011009ADF |
| 21   | KTSD-DT | PIERRE SD        | 332.5    | LIC    | BLEDT       | -20060206AAU |
| 21   | WDAY-DT | FARGO ND         | 275.1    | LIC    | BLCDDT      | -20061222ABH |
| 21   | K21AK   | APPLETON MN      | 53.0     | LIC    | BLTTTL      | -19980909JB  |
| 21   | K21DG   | ST. JAMES MN     | 110.1    | LIC    | BLDDTT      | -20090813AAJ |
| 22   | K22DO   | GRANITE FALLS MN | 0.0      | LIC    | BLTTTL      | -19910227KB  |
| 36   | KSAX-TV | ALEXANDRIA MN    | 104.4    | LIC    | BPRM        | -20010423AFQ |
| 21   | NEW     | DULUTH MN        | 347.2    | APP    | BSFDTL      | -20200820AAQ |

Proposal causes no interference

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Analysis of Interference to Affected Station 6

Analysis of current record

| Channel | Call  | City/State  | Application | Ref. No.    |
|---------|-------|-------------|-------------|-------------|
| 21      | K21AK | APPLETON MN | BLTTTL      | -19980909JB |

Stations Potentially Affecting This Station

| Chan | Call    | City/State       | Dist(km) | Status | Application | Ref. No.     |
|------|---------|------------------|----------|--------|-------------|--------------|
| 17   | KDSD-DT | ABERDEEN SD      | 135.8    | LIC    | BLEDT       | -20040831AAE |
| 17   | KDSD-DT | ABERDEEN SD      | 135.8    | CP     | BPEDT       | -20080618ACL |
| 18   | KESD-DT | BROOKINGS SD     | 135.0    | LIC    | BLEDT       | -20051208ADT |
| 21   | WFTC    | MINNEAPOLIS MN   | 225.7    | LIC    | BLCDDT      | -20011009ADF |
| 21   | KTSD-DT | PIERRE SD        | 315.6    | LIC    | BLEDT       | -20060206AAU |
| 21   | WDAY-DT | FARGO ND         | 223.3    | LIC    | BLCDDT      | -20061222ABH |
| 21   | NEW     | GRANITE FALLS MN | 53.0     | CP     | BDCCDTL     | -20061019ABD |
| 36   | KSAX-TV | ALEXANDRIA MN    | 86.2     | LIC    | BPRM        | -20010423AFQ |
| 21   | NEW     | DULUTH MN        | 348.8    | APP    | BSFDTL      | -20200820AAQ |

Proposal causes no interference

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Analysis of Interference to Affected Station 7

Analysis of current record

| Channel | Call  | City/State   | Application | Ref. No.     |
|---------|-------|--------------|-------------|--------------|
| 21      | K21DG | ST. JAMES MN | BPTTL       | -20080602AHI |

# Stations Potentially Affecting This Station

| Chan | Call    | City/State     | Dist(km) | Status | Application | Ref. No.     |
|------|---------|----------------|----------|--------|-------------|--------------|
| 21   | WFTC    | MINNEAPOLIS MN | 157.4    | LIC    | BLCDDT      | -20011009ADF |
| 21   | WDAY-DT | FARGO ND       | 380.6    | LIC    | BLCDDT      | -20061222ABH |
| 25   | KTIN-DT | FORT DODGE IA  | 144.2    | LIC    | BLEDDT      | -20070822ACB |
| 21   | NEW     | DULUTH MN      | 355.2    | APP    | BSFDDTL     | -20200820AAQ |

Proposal causes no interference

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## Analysis of Interference to Affected Station 8

### Analysis of current record

| Channel | Call  | City/State   | Application | Ref. No.     |
|---------|-------|--------------|-------------|--------------|
| 21      | K21DG | ST. JAMES MN | BLDDT       | -20090813AAJ |

# Stations Potentially Affecting This Station

| Chan | Call    | City/State     | Dist(km) | Status | Application | Ref. No.     |
|------|---------|----------------|----------|--------|-------------|--------------|
| 21   | WFTC    | MINNEAPOLIS MN | 157.3    | LIC    | BLCDDT      | -20011009ADF |
| 21   | WDAY-DT | FARGO ND       | 380.8    | LIC    | BLCDDT      | -20061222ABH |
| 25   | KTIN-DT | FORT DODGE IA  | 144.1    | LIC    | BLEDDT      | -20070822ACB |
| 21   | NEW     | DULUTH MN      | 355.1    | APP    | BSFDDTL     | -20200820AAQ |

Proposal causes no interference

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## Analysis of Interference to Affected Station 9

### Analysis of current record

| Channel | Call | City/State | Application | Ref. No.     |
|---------|------|------------|-------------|--------------|
| 23      | NEW  | DULUTH MN  | BNPDTL      | -20000831AMX |

# Stations Potentially Affecting This Station

| Chan | Call    | City/State  | Dist(km) | Status | Application | Ref. No.     |
|------|---------|-------------|----------|--------|-------------|--------------|
| 19   | KBJR-DT | SUPERIOR WI | 0.6      | LIC    | BLCDDT      | -20071113AJS |
| 23   | KFME-DT | FARGO ND    | 386.1    | LIC    | BLEDDT      | -20020909AAY |
| 23   | KTCI-TV | ST. PAUL MN | 207.0    | CP     | BPDDT       | -20090716ACS |
| 24   | NEW     | DULUTH MN   | 5.6      | CP     | BNPDTL      | -20000830BTS |
| 27   | KCWV-DT | DULUTH MN   | 0.7      | CP MOD | BMPCDDT     | -20080221ACC |
| 31   | WRPT-DT | HIBBING MN  | 91.5     | CP MOD | BMPEDDT     | -20080611AAD |
| 31   | NEW     | HIBBING MN  | 91.5     | LIC    | BPRM        | -20000717AEU |
| 38   | WDSE-DT | DULUTH MN   | 0.7      | LIC    | BLEDDT      | -20060630ACS |
| 21   | NEW     | DULUTH MN   | 0.4      | APP    | BSFDDTL     | -20200820AAQ |

Proposal causes no interference

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## Analysis of Interference to Affected Station 10

Analysis of current record

| Channel | Call | City/State | Application Ref. No. |
|---------|------|------------|----------------------|
| 24      | NEW  | DULUTH MN  | BNPTTL -20000830BTS  |

Stations Potentially Affecting This Station

| Chan | Call    | City/State | Dist(km) | Status | Application Ref. No. |
|------|---------|------------|----------|--------|----------------------|
| 17   | KQDS-DT | DULUTH MN  | 6.5      | CP     | BPCDT -19991028ABI   |
| 23   | NEW     | DULUTH MN  | 5.6      | CP     | BNPTTL -20000831AMX  |
| 24   | WHRM-DT | WAUSAU WI  | 275.8    | LIC    | BLEDT -20051014AAW   |
| 25   | NEW     | DULUTH MN  | 0.0      | CP     | BNPTTL -20000830BBV  |
| 27   | KCWV-DT | DULUTH MN  | 6.3      | CP MOD | BMPCDT -20080221ACC  |
| 31   | WRPT-DT | HIBBING MN | 95.6     | CP MOD | BMPEDT -20080611AAD  |
| 31   | NEW     | HIBBING MN | 95.6     | LIC    | BPRM -20000717AEU    |
| 38   | WDSE-DT | DULUTH MN  | 6.3      | LIC    | BLEDT -20060630ACS   |
| 21   | NEW     | DULUTH MN  | 5.8      | APP    | BSFDTL -20200820AAQ  |

Proposal causes no interference

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Analysis of Interference to Affected Station 11

Analysis of current record

| Channel | Call  | City/State | Application Ref. No. |
|---------|-------|------------|----------------------|
| 25      | K65DT | WALKER MN  | BLTTL -20070316ACH   |

Stations Potentially Affecting This Station

| Chan | Call    | City/State     | Dist(km) | Status | Application Ref. No. |
|------|---------|----------------|----------|--------|----------------------|
| 18   | KAWB-DT | BEMIDJI MN     | 67.9     | LIC    | BLEDT -20040120AEA   |
| 25   | KMDE-DT | DEVILS LAKE ND | 372.5    | LIC    | BLEDT -20060207ABL   |
| 26   | KFTC    | BEMIDJI MN     | 54.0     | CP     | BPCDT -20080310ADP   |
| 28   | KAWB-DT | BRAINERD MN    | 75.1     | LIC    | BLEDT -20030429AAJ   |
| 21   | NEW     | DULUTH MN      | 189.9    | APP    | BSFDTL -20200820AAQ  |

Proposed station is beyond the site to nearest cell evaluation distance

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Analysis of Interference to Affected Station 12

Analysis of current record

| Channel | Call | City/State | Application Ref. No. |
|---------|------|------------|----------------------|
| 25      | NEW  | DULUTH MN  | BNPTTL -20000830BBV  |

Stations Potentially Affecting This Station

| Chan | Call    | City/State | Dist(km) | Status | Application Ref. No. |
|------|---------|------------|----------|--------|----------------------|
| 17   | KQDS-DT | DULUTH MN  | 6.5      | CP     | BPCDT -19991028ABI   |
| 24   | NEW     | DULUTH MN  | 0.0      | CP     | BNPTTL -20000830BTS  |

|    |         |            |      |        |        |              |
|----|---------|------------|------|--------|--------|--------------|
| 25 | WAST-LP | ASHLAND WI | 92.7 | LIC    | BLTTL  | -20050906AAS |
| 27 | KCWV-DT | DULUTH MN  | 6.3  | CP MOD | BMPCDT | -20080221ACC |
| 33 | KDLH-DT | DULUTH MN  | 6.0  | LIC    | BLCDT  | -20071113AJQ |
| 21 | NEW     | DULUTH MN  | 5.8  | APP    | BSFDTL | -20200820AAQ |

Proposal causes no interference

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# Analysis of Interference to Affected Station 13

## Analysis of current record

| Channel | Call    | City/State | Application Ref. No. |
|---------|---------|------------|----------------------|
| 25      | WAST-LP | ASHLAND WI | BLTTL -20050906AAS   |

## Stations Potentially Affecting This Station

| Chan | Call    | City/State | Dist(km) | Status | Application Ref. No. |
|------|---------|------------|----------|--------|----------------------|
| 17   | KQDS-DT | DULUTH MN  | 93.0     | CP     | BPCDT -19991028ABI   |
| 25   | NEW     | DULUTH MN  | 92.7     | CP     | BNPTTL -20000830BBV  |
| 27   | KCWV-DT | DULUTH MN  | 93.3     | CP MOD | BMPCDT -20080221ACC  |
| 33   | KDLH-DT | DULUTH MN  | 92.7     | LIC    | BLCDT -20071113AJQ   |
| 21   | NEW     | DULUTH MN  | 92.9     | APP    | BSFDTL -20200820AAQ  |

Proposed station is beyond the site to  
nearest cell evaluation distance

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# Analysis of Interference to Affected Station 14

## Analysis of current record

| Channel | Call  | City/State      | Application Ref. No. |
|---------|-------|-----------------|----------------------|
| 29      | K29EB | GRAND RAPIDS MN | BLTT -20021011AAW    |

## Stations Potentially Affecting This Station

| Chan | Call    | City/State     | Dist(km) | Status | Application Ref. No. |
|------|---------|----------------|----------|--------|----------------------|
| 26   | KFTC    | BEMIDJI MN     | 108.3    | CP     | BPCDT -20080310ADP   |
| 27   | KCWV-DT | DULUTH MN      | 114.1    | CP MOD | BMPCDT -20080221ACC  |
| 28   | KAWB-DT | BRAINERD MN    | 130.1    | LIC    | BLEDT -20030429AAJ   |
| 29   | WFTC-DT | MINNEAPOLIS MN | 254.4    | CP MOD | BMPCDT -20080311ABZ  |
| 31   | WRPT-DT | HIBBING MN     | 33.6     | CP MOD | BMPEDT -20080611AAD  |
| 31   | NEW     | HIBBING MN     | 33.6     | LIC    | BPRM -20000717AEU    |
| 33   | KDLH-DT | DULUTH MN      | 114.8    | LIC    | BLCDT -20071113AJQ   |
| 21   | NEW     | DULUTH MN      | 114.6    | APP    | BSFDTL -20200820AAQ  |

Proposed station is beyond the site to  
nearest cell evaluation distance

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# Analysis of Interference to Affected Station 15

Analysis of current record

|         |       |                 |             |              |
|---------|-------|-----------------|-------------|--------------|
| Channel | Call  | City/State      | Application | Ref. No.     |
| 29      | K29EB | GRAND RAPIDS MN | BLTT        | -20021011AAW |

Stations Potentially Affecting This Station

| Chan | Call    | City/State     | Dist(km) | Status | Application | Ref. No.     |
|------|---------|----------------|----------|--------|-------------|--------------|
| 26   | KFTC    | BEMIDJI MN     | 108.3    | CP     | BPCDT       | -20080310ADP |
| 27   | KCWV-DT | DULUTH MN      | 114.1    | CP MOD | BMPCDT      | -20080221ACC |
| 28   | KAWB-DT | BRAINERD MN    | 130.1    | LIC    | BLEDT       | -20030429AAJ |
| 29   | WFTC-DT | MINNEAPOLIS MN | 254.4    | CP MOD | BMPCDT      | -20080311ABZ |
| 31   | WRPT-DT | HIBBING MN     | 33.6     | CP MOD | BMPEDT      | -20080611AAD |
| 31   | NEW     | HIBBING MN     | 33.6     | LIC    | BPRM        | -20000717AEU |
| 33   | KDLH-DT | DULUTH MN      | 114.8    | LIC    | BLCDDT      | -20071113AJQ |
| 21   | NEW     | DULUTH MN      | 114.6    | APP    | BSFDTL      | -20200820AAQ |

Proposed station is beyond the site to  
nearest cell evaluation distance

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Analysis of Interference to Affected Station 16

Analysis of current record

|         |      |            |             |              |
|---------|------|------------|-------------|--------------|
| Channel | Call | City/State | Application | Ref. No.     |
| 21      | NEW  | DULUTH MN  | BSFDTL      | -20200820AAQ |

Stations Potentially Affecting This Station

| Chan | Call    | City/State     | Dist(km) | Status | Application | Ref. No.     |
|------|---------|----------------|----------|--------|-------------|--------------|
| 19   | KBJR-DT | SUPERIOR WI    | 0.3      | LIC    | BLCDDT      | -20071113AJS |
| 21   | WFTC    | MINNEAPOLIS MN | 207.4    | LIC    | BLCDDT      | -20011009ADF |
| 21   | WDAY-DT | FARGO ND       | 386.8    | LIC    | BLCDDT      | -20061222ABH |

Total scenarios = 1

Result key: 1  
Scenario 1 Affected station 16  
Before Analysis

Results for: 21A MN DULUTH BSFDTL 20200820AAQ APP  
HAAT 102.0 m, ATV ERP 1.0 kW

|                                | POPULATION | AREA (sq km) |
|--------------------------------|------------|--------------|
| within Noise Limited Contour   | 150946     | 2640.3       |
| not affected by terrain losses | 150667     | 2630.5       |
| lost to NTSC IX                | 0          | 0.0          |
| lost to additional IX by ATV   | 1983       | 73.7         |
| lost to ATV IX only            | 1983       | 73.7         |
| lost to all IX                 | 1983       | 73.7         |

Potential Interfering Stations Included in above Scenario 1



21A MN MINNEAPOLIS                    BLCDT            20011009ADF   LIC

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FINISHED FINISHED FINISHED FINISHED FINISHED FINISHED