EXHIBIT A - ANALYSIS OF ENVIRONMENTAL IMPACT

RF NON-IONIZING RADIATION ANALYSIS:

A DETAILED RF NON-IONIZING RADIATION HAZARD ANALYSIS WAS CONDUCTED AND IS ATTACHED AS EXHIBIT C.

USING THE ASSUMPTION THAT ALL AVAILABLE TRANSMITTER POWER IS APPLIED TO THE IFL INPUT, HARMFUL LEVELS OF RADIATION WILL NOT EXIST IN REGIONS NORMALLY OCCUPIED BY PERSONNEL AS DEFINED BY ANSI CRITERIA (ANSI SPECIFICATIONS REQUIRE THAT PERSONNEL NOT BE EXPOSED TO LEVELS OF NON-IONIZING RADIATION EXCEEDING 5 mW / cm2.)

ANTENNA SIZE AND DESCRIPTION OF SURROUNDING AREA:

THE EARTH STATION IS LESS THAN 31’ IN DIAMETER AND IS LOCATED IN A RURAL ENVIRONMENT ON A 100+ ACRE PARCEL. THE ANTENNAS ARE IN A DIP AND BARELY VIEWABLE FROM THE DIRT COUNTY ROAD.

ADDITIONAL PRECAUTIONARY SAFETY MEASURES:

PROTECTIVE FENCING WILL BE INSTALLED AND APPROPRIATE WARNING SIGNS WILL BE POSTED.

PREPARED AND SUBMITTED BY:

BASIL F. PINZONE, JR. 5/19/2010
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EXHIBIT B - ANALYSIS OF NON-IONIZING RADIATION

HARMFUL LEVELS OF RADIATION WILL NOT EXIST IN REGIONS NORMALLY OCCUPIED BY PERSONNEL.

CRITERIA: ANSI SPECIFICATIONS REQUIRE THAT PERSONNEL NOT BE EXPOSED TO LEVELS OF NON-IONIZING RADIATION EXCEEDING 5 mW / cm2.

THE FOLLOWING ANALYSES SUPPORT THIS DETERMINATION:

FAR FIELD ANALYSIS:

EFFICIENCY = $\eta = G/(\pi*D/\lambda)^2 = 0.610$
ANTENNA GAIN = 60.7 dBi (lin 1,174,898)
ANTENNA DIAMETER = 9.3 Meters
LAMBDA = $3*10^8$ Meters / $14.25*10^9$ Hz = 0.0210526
POWER MAX AT FLANGE = 1350 Watts (31.3 dBW)
DISTANCE TO FAR FIELD = $2*D^2/\lambda$
= 172.98 / 0.0210526
= 8217 Meters
ON-AXIS POWER DENSITY = G*P/4*π*Far Field Distance^2
= 1,174,898 * 1350 / 12.56637 * 67,519,089
= 1.869 W/m^2
= 0.187 mW/cm^2
LEVEL IS LESS THAN THE 5 mW/cm^2 MAXIMUM ANSI LEVEL PERMITTED

NEAR FIELD ANALYSIS (Parallel Beam Region & Transition Region):

PARALLEL BEAM REGION ANALYSIS:
DISTANCE TO END OF PARALLEL BEAM (CYLINDER) REGION:
= DIAMETER^2 / 2.5 * λ
= 86.49 / 0.0526315
= 1643 Meters
POWER DENSITY AT END OF PARALLEL BEAM REGION
= P / CYLINDRICAL PARALLEL BEAM AREA
= 1350 / 67.929
= 19.87 W / m^2
= 1.99 mW / cm^2
LEVEL IS LESS THAN THE 5 mW/m2 MAXIMUM ANSI LEVEL PERMITTED

TRANSITION REGION ANALYSIS:
THIS REGION WILL DECREASE INVERSELY WITH DISTANCE BEGINNING AT THE END OF THE PARALLEL BEAM REGION AND WILL NOT EXCEED 1.99 mW / cm^2
LEVEL IS LESS THAN THE 5 mW/m2 MAXIMUM ANSI LEVEL PERMITTED

ADDITIONAL PRECAUTION: Personnel will not be permitted within 1 meter of the front aperture cylinder during normal operations.

MAIN REFLECTOR ANALYSIS:

= P / REFLECTOR AREA
= 1350 / 67.929
= 19.87 W / m^2
= 1.99 mW / cm^2

LEVEL IS LESS THAN THE 5 mW/m2 MAXIMUM ANSI LEVEL PERMITTED

ADDITIONAL PRECAUTION: Personnel will not be permitted within 1 meter of the front aperture cylinder during normal operations.

FEED TO SUB-REFLECTOR / REFLECTOR ANALYSIS:

POWER DENSITY AT FEED FLANGE = P / FEED AREA
= 1350 / 0.159
= 8490 W/m^2
= 849 mW/cm^2

! POTENTIAL HAZARD FROM FEED TO SUB-REFLECTOR TO REFLECTOR !

RF POWER WILL BE TURNED OFF DURING ANTENNA MAINTENANCE REQUIRING PERSONNEL TO OCCUPY THE HAZARDOUS CONICAL REGION BETWEEN THE FEED HORN, SUB-REFLECTOR, AND REFLECTOR.

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