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RADIO FREQUENCY ELECTROMAGNETIC FIELDS EXPOSURE REPORT

Prepared for County of San Diego

Site: County of San Diego Regional Park at Guajome

Located at:

3000 Guajome Lake Road
Oceanside, CA 92057
Latitude: 33.2454 / Longitude: -117.2724

Report Date: 10/3/2011

EXECUTIVE SUMMARY

Dtech Communications, LLC ("Dtech") has been retained by the County of San Diego to determine whether its wireless communications facility complies with the Federal Communications Commission ("FCC") Radio Frequency ("RF") Safety Guidelines. This report contains an on-site, measurement analysis of the Electromagnetic Fields ("EMF") exposure resulting from the facility. The table below summarizes the results at a glance:

Table 1: EMF Facility Summary

Site Address	3000 Guajome Lake Road Oceanside, CA 92057
Access to Antennas Locked	NA
Max EMF Level on Ground	1.2% General Population
FCC Compliant	Yes
Conclusion	Since the antennas are mounted on tall, monotree towers and therefore not accessible to the general public, safety compliance actions are not required. The site although, has four carriers operating on two separate faux trees, will not provide any emission hazards to park employees, agents, guests, campers nor to any of the surrounding neighbors and businesses.

Table 2: EMF Carrier Summary of Existing Conditions

Wireless Carrier	FCC Compliant	*RF Sign(s)*
AT&T	Yes	Caution
Sprint-Nextel	Yes	Notice
Verizon	Yes	None

BACKGROUND

Dtech uses the FCC's guidelines described in detail in the Office of Engineering & Technology, Bulletin No. 65 ("OET-65") "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Radiation". Table 3 below summarizes the current Maximum Permissible Exposure ("MPE") safety limits classified into two groups: General population and Occupational.

Table 3: FCC MPE Limits (from OET-65)

Frequency (MHz)	**General Population/ Uncontrolled MPE** (mW/cm^2)	**Averaging Time** (minutes)	**Occupational/ Controlled MPE** (mW/cm^2)	**Averaging Time** (minutes)
30-300	.2	30	1.0	6
300-1500	Frequency (MHz)/1500 (0.2 – 1.0)	30	Frequency (MHz)/300 (1.0 – 5.0)	6
1500-100,000	1.0	30	5.0	6

General population/uncontrolled limits apply in situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment, and may not be fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public always fall under this category when exposure is not employment-related.

Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment, and those persons have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

It is important to understand that the FCC guidelines specify *exposure* limits not *emission* limits. For a transmitting facility to be out of compliance with the FCC's RF safety guidelines an area or areas where levels exceed the MPE limits must, first of all, be in some way *accessible* to the public or to workers. When accessibility to an area where excessive levels is appropriately restricted, the facility or operation can certify that it complies with the FCC requirements.

SITE DESCRIPTION

The wireless telecommunication facility is located in a public park. The antennas are mounted on two monotree towers and connected to the equipment via coaxial cables. Technical specifications provided below are gathered from physical field surveys where possible, provided drawings and/or other documents provided by our clients, site/building managers and other licensees at this facility. "Generic", "Others", "Unknown" and conservative estimates are used where information are not available.

AT&T, Sprint-Nextel and Verizon are co-located at this facility.

Table 4: Site Technical Specifications

Operator	Sector	Antenna Model	Type	Quantity	Freq *(Mhz)*	Orientation (°T)	Height AGL (ft)
AT&T	A	MB72RR80VDPALQ	Panel	3	850/1900	0	46
AT&T	B	MB72RR80VDPALQ	Panel	3	850/1900	120	46
AT&T	C	MB72RR80VDPALQ	Panel	3	850/1900	240	46
Sprint	A(1-2)	RR65-12-05DBL	Panel	2	1900	30	36
Sprint-Nextel	A3	06516-XDM	Panel	1	800	70	36
Sprint	B(1-2)	RR65-12-05DBL	Panel	2	1900	150	36
Sprint-Nextel	B3	06516-XDM	Panel	1	800	225	36
Sprint	C(1-2)	RR65-12-05DBL	Panel	2	1900	270	36
Sprint-Nextel	C3	06516-XDM	Panel	1	800	325	36
Verizon	A	Unknown	Panel	4	850/1900	60	46
Verizon	B	Unknown	Panel	4	850/1900	180	46
Verizon	C	Unknown	Panel	4	850/1900	300	46

Figure 1: Site map

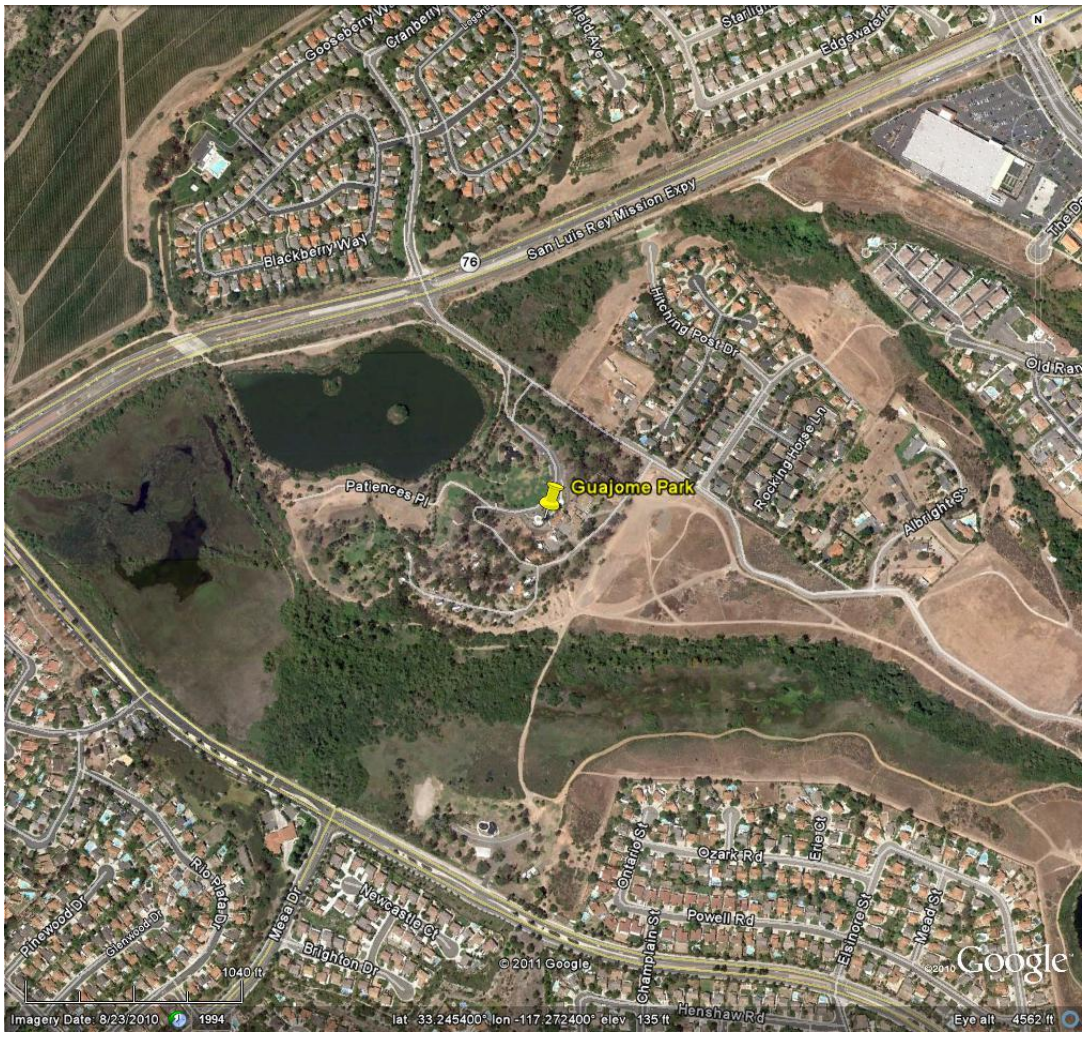


Figure 2: Site photographs

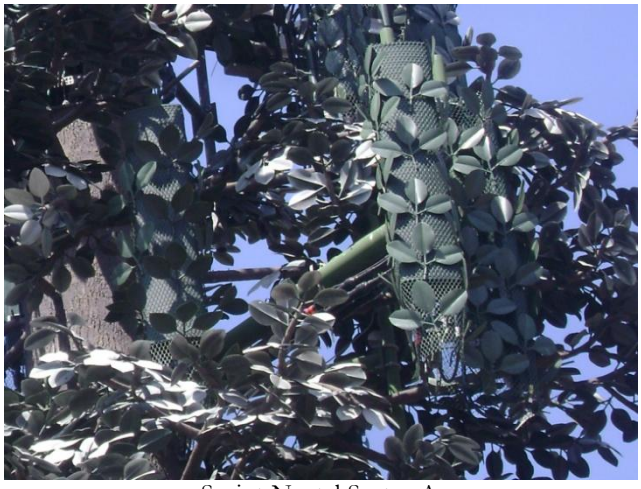
General site view

AT&T/Sprint Monotree

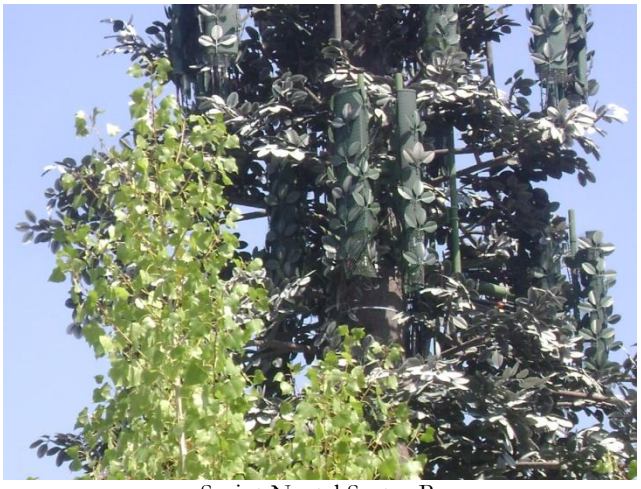
AT&T Sector A (top tier)

AT&T Sector B

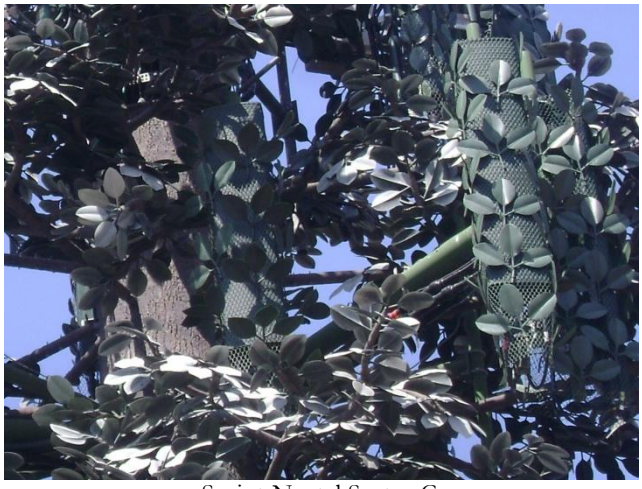
AT&T Sector C



Sprint-Nextel Sector A



Sprint-Nextel Sector B



Sprint-Nextel Sector C

RF signs: Sprint-Notice, AT&T-Caution

Verizon Monotree

Verizon Sector A

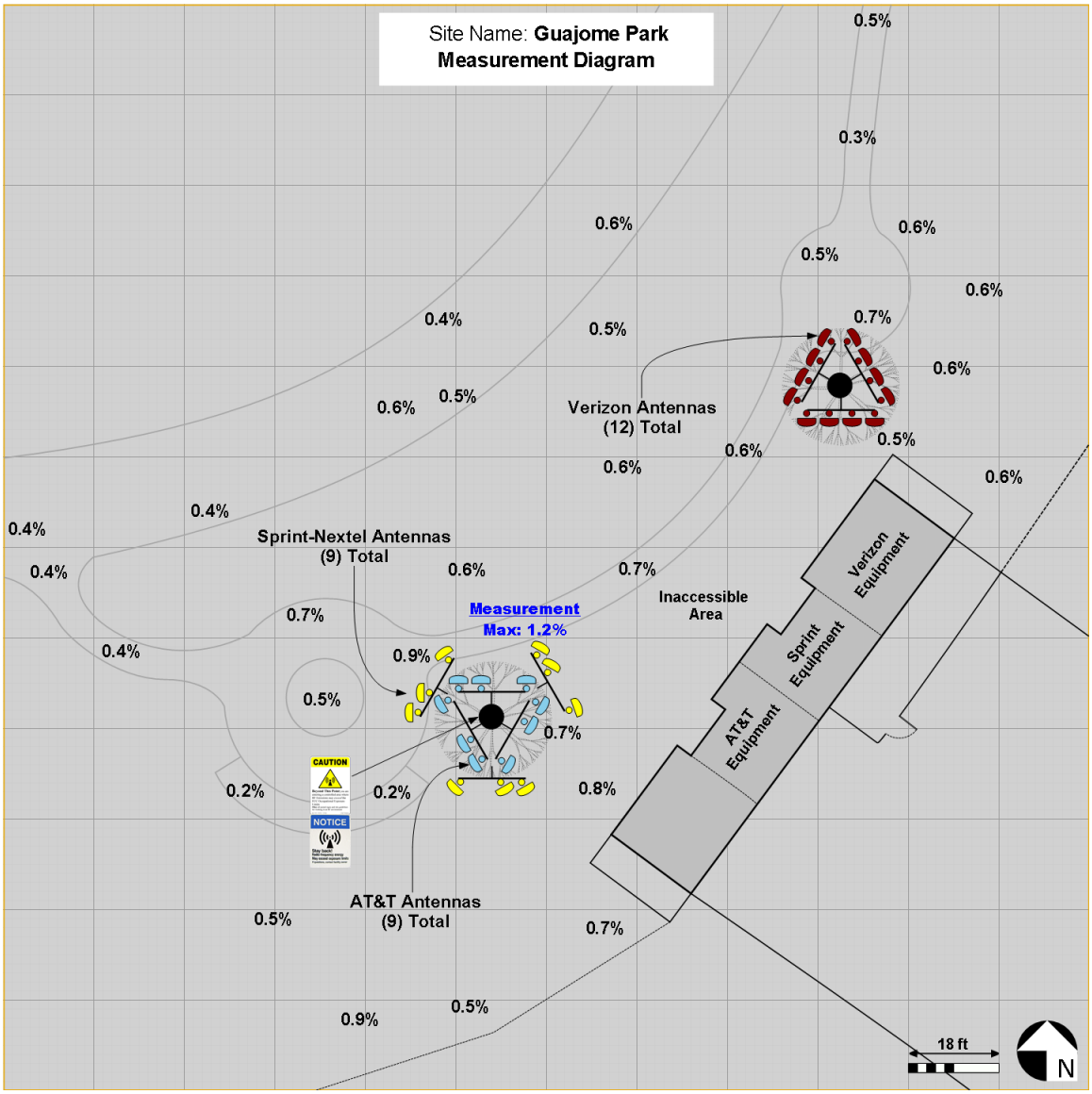
Verizon Sector B

Verizon Sector C

AT&T, Sprint, Verizon Equipment (tiled building behind monotrees)

RESULTS

Figure 2: Results- The top (bird's eye) view of the resulting MPE (Maximum Permissible Exposure) map surrounding the facility. The results are in percentages of FCC's General Population MPE Limits. A result greater than 100% is out of compliance.



RECOMMENDATION(S)

Measurements at this wireless communication facility resulted in exposure levels below the FCC's General Population MPE Limits. Since the antennas are mounted on tall, monotree towers and therefore not accessible by the general public, compliance actions are not required. It is presumed that the wireless carrier employees and contractors are aware of the transmitting antennas and will take appropriate precautions when working near them.

CONCLUSION

Field measurements were conducted at the subject site on 9/20/2011 1:15 PM by Darang Tech, P.E. and Avideh Haghighi, Dtech Compliance Analyst. Weather conditions can be best described as sunny, no wind.

The Narda meter, model NBM-550 with EA 5091 Probe was used to conduct the measurements (Serial Nos. A-0162 and 1008, respectively). The meter and probe were last calibrated on 10/2/2010 by the manufacturer and were under current recommended calibration interval of 24 months. This device is designed to measure frequencies between 300kHz and 50Ghz, well within the SMR, Cellular, and PCS frequency ranges (most major wireless operators). Therefore, the measured level is a cumulative RF energy resulting from all transmitters within the frequency ranges of the probe. The probe itself is frequency shaped and can automatically weigh each field contribution based on frequency. The output is given in percentage of the FCC's Occupational MPE Limit.

Based on the above results, analysis and recommendation(s), it is the undersigned's professional opinion that this wireless communication facility complies with the FCC's RF Safety Guidelines. The worse-case exposure levels in publicly accessible areas are below the FCC's General Population MPE Limits.

CERTIFICATION

This report has been prepared by or under the direction of the following Registered Professional Engineer: Darang Tech, holding California registration number 16000, with renewal date of 06/30/13.

Darang Tech, P.E.

Appendix A: Measurement Methods

Spatial averaging measurement technique is used. An area between 2 and 6 feet, approximately the size of an average human, is scanned in single passes from top to bottom in multiple planes. When possible, measurements were made at very close proximity to the antennas and inside the main beam where most of the energy is emitted. The spatial averaged values were recorded.

Appendix B: Limitations

Dtech performed this analysis based on data provided by our clients that Dtech believes to be true and correct. Estimates where noted, are based on common industry practices and our best interpretation of available information. As mobile technologies continuously change, these data and results may also change. Therefore, Dtech disclaims all other warranties either expressed or implied. Any use of this document constitutes an agreement to hold Dtech and its employees harmless and indemnify it for any and all liability, claims, demands, litigation expenses and attorneys fees arising from such use. This is a technical document and may contain minor grammatical and/or spelling errors.