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May 30, 2018 10212

Mr. Ken Wagner
Terra-Gen Development Company, LLC
12671 High Bluff Drive, Suite 150
San Diego, CA 92130

Subject: Biological Resources Memorandum Meteorological Testing Facilities
Project Name: Terra-Gen Meteorological Testing Facilities
Project Address: Boulevard, California within the Boulevard portion of the Mountain Empire Subregional Planning Area

Dear Mr. Wagner:

This memorandum summarizes the field work and review by Dudek of the existing information related to biological resources effects of the proposed Meteorological Towers (MET towers) and Sonic Detection and Ranging Units (SoDAR), collectively, MET facilities.

1. INTRODUCTION

This evaluation has been undertaken in support of an Administrative Permit application by Terra-Gen Development Company, LLC (TDC) for proposed MET facilities at the subject property to collect wind resource data to ascertain if the site has viable energy resources to support a future wind energy facility. The MET facilities included as part of the permit application include erection of three Tilt-Up towers (1, 2A, and 3A) and placement of two SoDAR units (2B and 3B). The private property where these MET facilities would be placed is in the area of southeastern San Diego County near the communities of Manzanita and Boulevard north of Interstate 8 (I-8) (Figures 1 and 2).

2. PROJECT DESCRIPTION

The MET facilities would include three Tilt-Up MET towers and two SoDAR systems that would be used to measure the wind profile of the lower layer of the atmosphere (see Figure 3 for locations). Once the necessary data have been collected, the MET facilities would be decommissioned, disassembled, removed and transported off site.

This memorandum has been prepared to evaluate the covered activities included in Form 346SS (i.e. project description) of the Administrative Permit application submitted by TDC. Please refer to the project description included in the Administrative Permit for further information regarding the MET facilities.

3. Methods

Dudek conducted reconnaissance-level biological evaluations of the proposed MET facility locations on February 17, 2018, to assess the existing site conditions. While on site, Dudek evaluated an approximately 200-foot (60.9 meters) radius surrounding each proposed MET facility. The 200-foot radius surrounding each proposed MET facility is defined as the "study area" for purposes of this memorandum. Dudek noted the vegetation communities at each site and evaluated the sites for the presence of jurisdictional wetlands and waters of the U.S./State. Incidental observations of botanical and wildlife resources were also documented during the site evaluation.

Documentation Reviewed

Prior to visiting the proposed sites, Dudek evaluated soils maps (Bowman 1973), 7.5-minute U.S. Geological Survey (USGS) topographic quadrangles maps for the area, the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2018), California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2018), the San Diego County Bird Atlas (Unitt 2004), *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), and Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008).

3.2 Existing Conditions

Jurisdictional Wetlands and Waters

The proposed locations of the MET facilities tend to be on elevated terrain where there is unfettered exposure to the wind. Consequently, within the study areas evaluated for the MET facilities, there are no drainages or water features present.

Vegetation Communities

The study area supports predominantly scrub and chaparral in a mosaic of granitic northern mixed chaparral, upper Sonoran subshrub scrub, and semi-desert chaparral. Disturbed habitat also occurs within the study area. Characteristics of the vegetation communities are described below.

Granitic Northern mixed chaparral (Element Code 37131)

Granitic Northern mixed chaparral is a broad-leafed vegetation community consisting of granitic soils and is dominated by chamise (*Adenostoma fasciculatum*), desert ceanothus (*Ceanothus perplexans*), chaparral whitethorn (*Ceanothus leucodermis*) and oak (*Quercus*) species. Within the study area, granitic northern mixed chaparral recently burned; therefore, this community is less dense then typical northern mixed chaparral communities. The granitic northern mixed chaparral in the survey area also intergrades with semi-desert chaparral and contains small sections of scattered interior California buckwheat (*Eriogonum fasciculatum* var. *polifolium*).

Semi-Desert Chaparral (Element Code 37400)

Semi-desert chaparral is an open to moderately dense assemblage of chamise, scrub oak species, ceanothus species, buckwheat species, cane cholla (*Cylindropuntia californica*) and birchleaf mountain mahogany (*Cercocarpus betuloides*). This community often intergrades with Mojavean Pinyon-juniper Woodlands (Oberbauer et al. 2008). Within the study area, semi-desert chaparral occurs on slopes, often intergrading with chamise chaparral and granitic northern mixed chaparral.

Upper Sonoran Subshrub Scrub (Element Code 39000)

Upper Sonoran subshrub scrub is low, fairly penetrable scrub of soft-wooded, summer-dormant, drought-tolerant shrubs. Dominance varies among sites, but usually includes buckwheat species, narrowleaf goldenbush (*Ericameria linearifolia*), interior California

buckwheat and Mormon tea (*Ephedra californica*), with many annuals filling the spaces between the shrubs (Oberbauer et al. 2008). Within the study area, upper Sonoran subshrub scrub occurs on slopes, often intergrading with chamise chaparral and semi-desert chaparral. The dominant shrub is California buckwheat, with narrowleaf goldenbush, yerba santa (*Eriodictyon trichocalyx*), cane cholla and Mormon tea as common associates.

Disturbed Habitat (Element Code 11300)

Disturbed habitat refers to areas with soil substrates that are not developed yet lack vegetation and are generally the result of severe or repeated mechanical disturbance (Oberbauer et al. 2008). Within the study area, disturbed habitat consists of the existing dirt access roads and trails.

Special-Status Plant and Wildlife Species

Sensitive biological resources are those defined as follows: (1) species that have been given special recognition by federal, state, or local conservation agencies and organizations due to limited, declining, or threatened population sizes; (2) species and habitat types recognized by local and regional resource agencies as sensitive; (3) habitat areas or vegetation communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; and (4) wildlife corridors and habitat linkages. The species presented in Table 1 and Table 2 are documented in the CNDDB for the Project area and a 3-mile buffer surrounding the study area.

Table 1: Plants (common name, scientific name, status)

Name [Common (*scientific*)]	**California Rare Plant Rank (CRPR)**	**County List**
Delicate clarkia (*Clarkia delicata*)	1B.2	A
Desert beauty (*Linanthus bellus*)	2.3	B
Higgin's barberry (*Berberis higginsiae*)	3.2	-
Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*)	1B.2	A
Mountain springs bush lupine (*Lupinus excubitus* var. *medius*)	1B.3	A
Payson's jewelflower (*Caulanthus simulans*)	4.2	D
Pygmy lotus (*Acmispon haydonii*)	1B.3	A
San Diego sunflower (*Hulsea californica*)	1B.3	A
Sticky geraea (*Geraea viscida*)	2.3	B
Tecate tarplant (*Deinandra floribunda*)	1B.2	A

Table 2: Wildlife (common name, scientific name, status)

Name [Common (*scientific*)]	**California Status**	**County Group**
California glossy snake (*Arizona elegans occidentalis*)	California Species of Special Concern	-
Coast horned lizard (*Phrynosoma blainvillii*)	California Species of Special Concern	1
Dulzura (California) pocket mouse (*Chaetodipus californicus femoralis*)	California Species of Special Concern	2
Prairie falcon (*Falco mexicanus*)	California Watch List Species	1
San Diego desert woodrat (*Neotoma lepida intermedia*)	California Species of Special Concern	2
Southern grasshopper mouse (*Onychomys torridus ramona*)	California Species of Special Concern	2

4 Summary of Findings

4.1 MET Tower 1

The proposed location for MET tower 1 (see Figure 3) is on a gentle ridgeline that supports primarily upper Sonoran subshrub scrub, with semi-desert chaparral slightly downslope to the south. The proposed tower location would be established within an opening in upper Sonoran subshrub scrub because the area is dominated by shrub species that are low growing, and therefore, would not require extensive vegetation removal to construct the tower. Access to the tower location would be through the use of vehicles on an existing dirt road to the closest point to the tower location, and then overland on foot or small all-terrain vehicle through Sonoran subshrub scrub and semi-desert chaparral vegetation for a distance of approximately 800 feet (243.8 meters). Prior to construction, a biologist would determine and stake the best route to the tower location to minimize disturbance. There are some existing single-track motorcycle trails that would be used for portions of the access route, as feasible. Some vegetation cutting/clearing would be necessary to gain access and to construct the tower. However, no grading would be required and only minimal vegetation removal would be necessary to establish the tower at this location. No jurisdictional wetlands or Waters of the U.S./State are within the area evaluated for MET tower 1 and no special-status wildlife or plant species were observed.

Photos 1 and 2 depict the conditions at the proposed site. Figure 2 includes photo locations.

Photo 1: View of the proposed access route for MET tower 1 Tilt-Up Tower

Photo 2: View of the proposed location for MET tower 1 Tilt-Up Tower looking west.

4.2 MET Facility tower 2A

The location for proposed MET tower 2A (see Figure 3) is on a gentle slope that supports upper Sonoran subshrub scrub and granitic northern mixed chaparral. The proposed tower location would be established within an opening in the vegetation. Access to the tower

location would be through the use of vehicles on an existing dirt road to the closest point to the tower location, and then overland across Sonoran subshrub scrub vegetation for a distance of approximately 50 feet (15.2 meters). Prior to construction, a biologist would determine and stake the best route to the tower location to minimize disturbance. No grading would be required and minimal vegetation removal would be necessary to establish the tower at this location. No jurisdictional wetlands or Waters of the U.S./State are within the area evaluated for the MET tower 2A and no special-status wildlife or plant species were observed. Photos 3 and 4 depict the conditions at the proposed site.

Photo 3: View of the terrain and vegetation surrounding MET tower 2A tower looking southeast.

Photo 4: View of the terrain and vegetation surrounding MET tower 2A looking northwest.

4.3 MET Facility 2B SoDAR

The location proposed for MET Facility 2B SoDAR (see Figure 3) is on a gentle slope that supports Granitic northern mixed chaparral. The proposed SoDAR location and sound wall would be established within an opening in the vegetation. Access to the SoDAR location would be with vehicles on an existing dirt road to the closest point to the facility location, and then overland across granitic northern mixed chaparral vegetation for a distance of approximately 50 feet (15.2 meters). Prior to construction, a biologist would determine and stake the best route to the tower location to minimize disturbance. The site recently burned and consists of openings that allow for access besides the dirt roads and motorcycle paths. No jurisdictional wetlands or Waters of the U.S./State are within the area evaluated for the MET Facility 2B SoDAR and no special-status wildlife or plant species were observed. Photos 5 and 6 depict the conditions at the proposed site.

Photo 5: View of the terrain and vegetation surrounding MET Facility 2B SoDAR looking west.

Photo 6: View of the terrain and vegetation surrounding MET Facility 2B SoDAR looking south.

4.4 MET Facility Tower 3A

The location proposed for MET tower 3A is on a gentle slope that supports both upper Sonoran subshrub scrub and semi desert chaparral. The proposed MET tower 3A location would be established within an opening in the vegetation. Access to the tower location would be through the use of vehicles on an existing dirt road to the closest point to the tower location, and then overland on foot or small all-terrain vehicle through Sonoran subshrub scrub and semi-desert chaparral vegetation for a distance of approximately 800 feet (243.8 meters). Prior to construction, a biologist would determine and stake the best route to the tower location to minimize disturbance. There are some existing single-track motorcycle trails that would be used for portions of the access route, as feasible. No grading would be required and minimal vegetation removal would be necessary to place MET tower 3A. No jurisdictional wetlands or Waters of the U.S./State are within the area evaluated for the MET tower 3A and no special-status wildlife or plant species were observed. Photo 7 below depicts the conditions at the proposed site.

Photo 7: View of the terrain and vegetation surrounding MET tower 3A looking west.

4.5 MET Facility SoDAR 3B

The location proposed for MET Facility 3B SoDAR is on a gentle slope that supports semi desert chaparral and Sonoran subshrub scrub. The proposed SoDAR location and sound wall would be established within an opening in the vegetation. Access to the SoDAR location would be through the use of vehicles on an existing dirt road to the closest point to the tower location, and then overland on foot or small all-terrain vehicle through Sonoran subshrub scrub and semi-desert chaparral vegetation for a distance of approximately 800 feet (243.8 meters). Prior to construction, a biologist would determine and stake the best route to the tower location to minimize disturbance. There are some existing single-track motorcycle trails that would be used for portions of the access route, as feasible. No jurisdictional wetlands or Waters of the U.S./State are within the area evaluated for the MET facility and no special-status wildlife or plant species were observed. Photo 8 depicts the conditions at the proposed site.

Photo 8: View of the terrain and vegetation surrounding MET Facility 3B SoDAR looking west.

5 Conclusion

Dudek completed a review of field conditions and available material. Dudek reviewed the locations of the MET facilities as shown in Figure 3. The MET facilities locations have been carefully considered and positioned to avoid impacts to sensitive vegetation communities and jurisdictional wetlands or Waters of the U.S./State. Special-status plant and wildlife species were not observed and are not expected to occur within the areas of disturbance. Prior to construction, a biologist would determine and stake the best route to each facility location to minimize disturbance. With the proposed construction techniques included in the MET facility administrative permit application submitted by TDC no serious or major disturbance to biological resources would result.

Please call me at 760.479.4254 or email at bortega@dudek.com if you have any questions.

Sincerely,

Brock Ortega, Senior Biologist

Att: Figures: 1-3

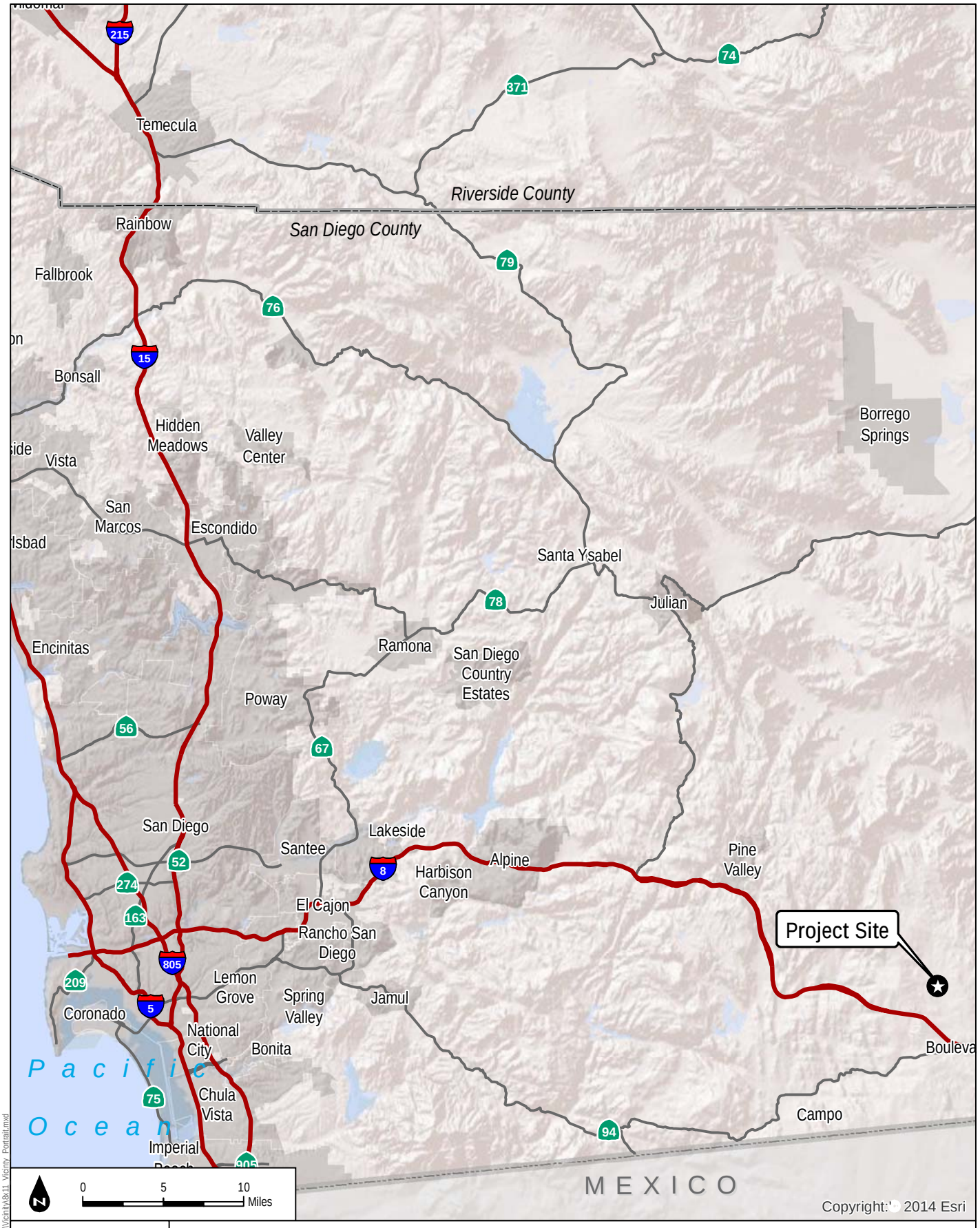

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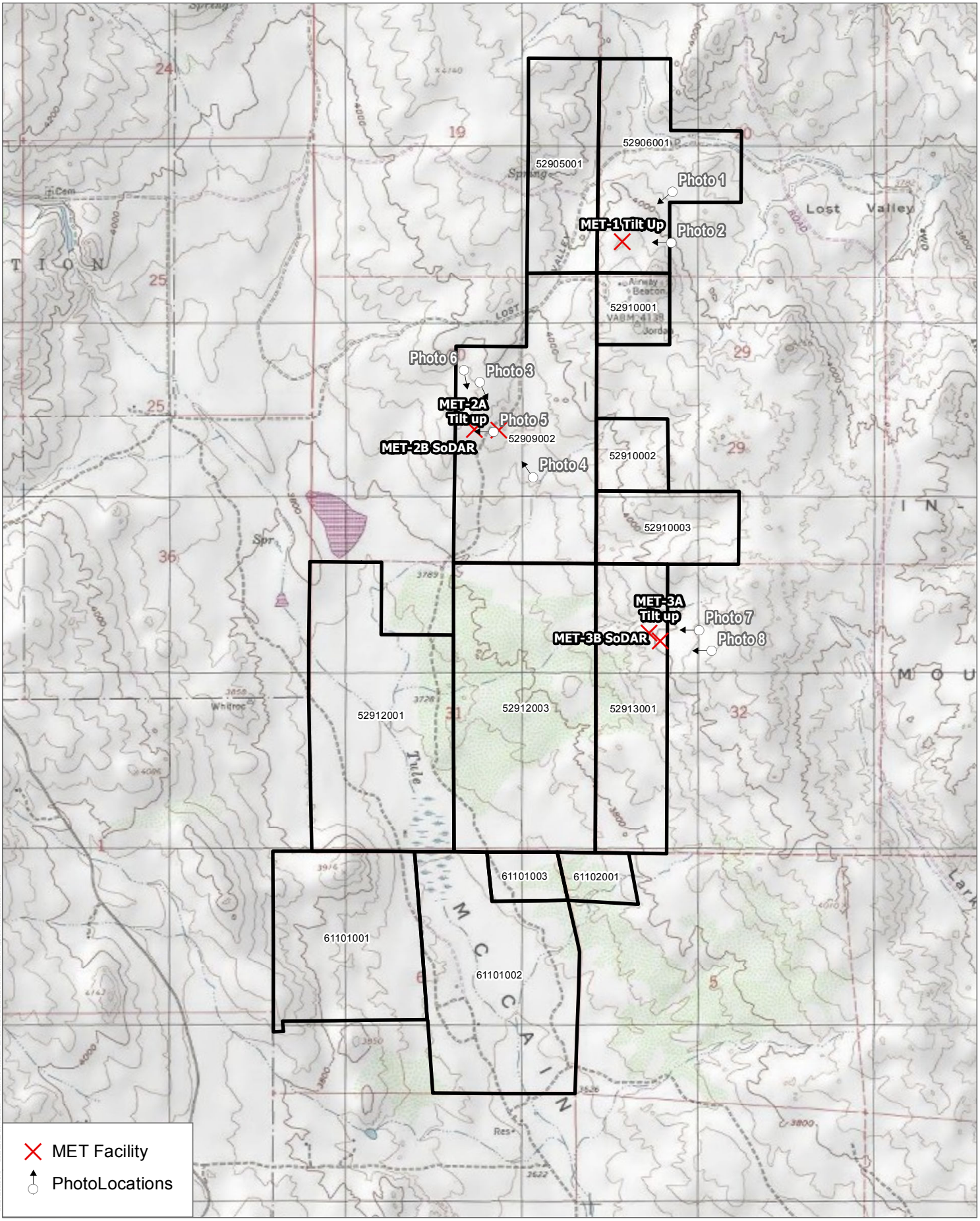
FIGURE 1
Regional Map

Z:\Templates\ArcmapCurrent\Vicinity\8x11 Vicinity Portrait.mxd



SOURCE: SOURCE: USGS 7.5-Minute Series Sombrero Peak and Live Oak Springs Quadrangles

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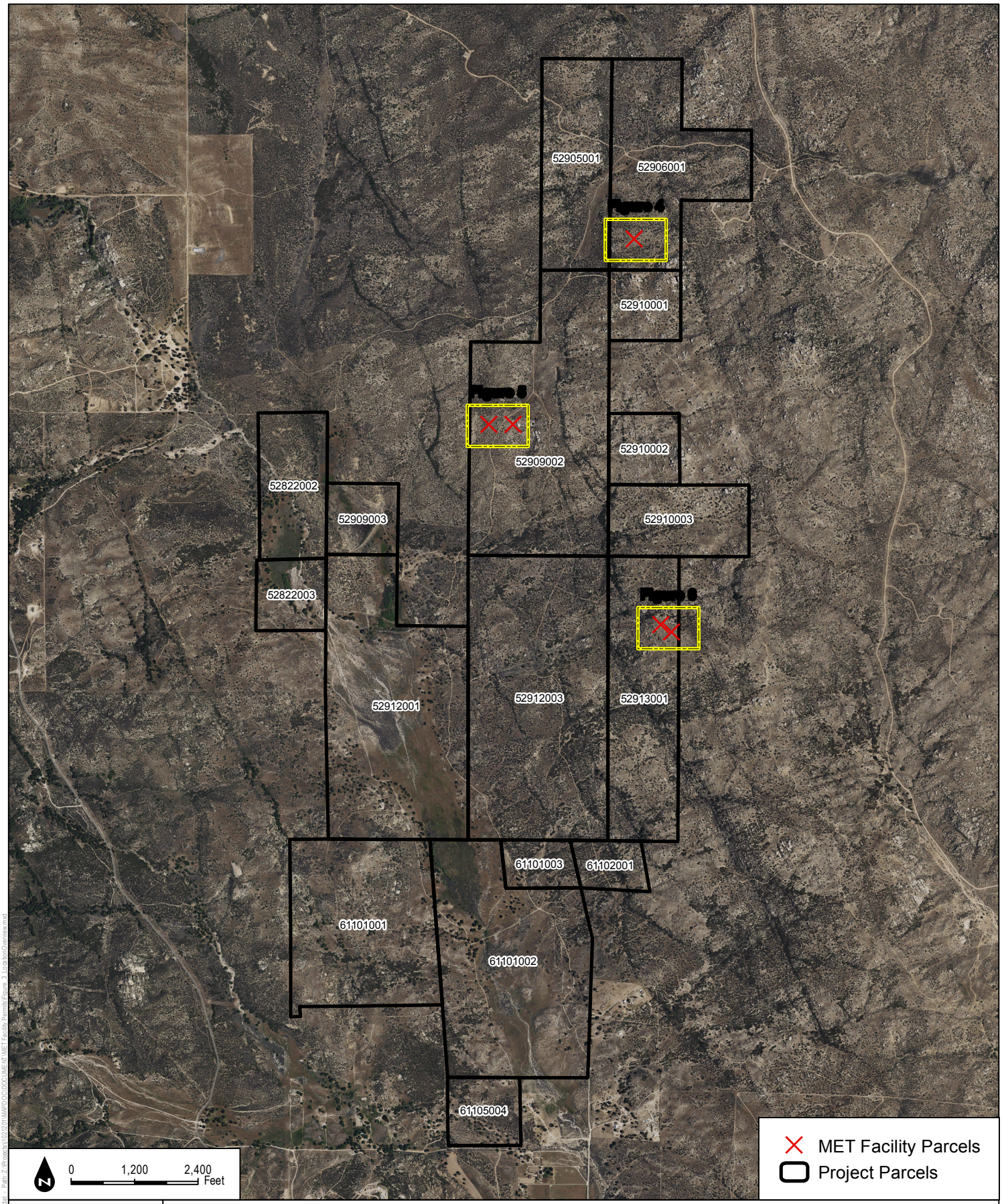
0 1,000 2,000 Feet

FIGURE 2

Vicinity Map and Photo Locations



SOURCE: ESRI

FIGURE 3
MET Facilities Location Overview

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