

20 September 2010  
Project No. 5601.02

Mr Steve Riojas  
HDR Architects  
560 Mission Street, Suite 900  
San Francisco, California 94105

Subject: Preliminary Evaluation of Environmental Conditions  
Vivarium Replacement Area  
Veterans Administration Medical Center  
San Francisco, California

Dear Mr Riojas:

Treadwell & Rollo, Inc. is pleased to present this preliminary evaluation of environmental conditions in the area planned for Vivarium replacement at the Veterans Affairs (VA) Medical Center located at 4150 Clement Street in San Francisco, California (Site)(Figure 1). It is our understanding that the VA will be replacing and expanding the current Vivarium located at the Site. This evaluation was performed for HDR Architects (Client) in accordance with our proposal dated 29 June 2010. The purpose of this evaluation was to assess whether soil and groundwater sampling and analysis would be warranted during the Vivarium replacement to facilitate design of appropriate handling and disposal protocols for management of soil to be excavated or graded during construction.

No observations or other direct evidence indicating the release of hazardous materials or petroleum hydrocarbons to the soil were identified during this evaluation. However, the presence of facilities that manage such material on and adjacent to the Site, along with the lack of documentation regarding the management of such materials, indicates the potential presence of hazardous materials and/or petroleum hydrocarbons in the soil at the Site. Because a significant quantity of soil will be excavated during Site redevelopment, we recommend that the Site soil be sampled in three locations to profile the soil for appropriate disposal.

The Site is roughly triangular in shape with plan dimensions of approximately 150 feet by 170 feet by 230 feet (Figure 2). The site slopes downward in the northeast, southeast and southerly directions. Currently, the site is occupied by Building 17, the current Vivarium; part of Building 21 (another animal research facility), an air-conditioning plant, a small storage shed, a fenced construction yard, a concrete pathway, and landscaping. The Site is bound:

- to the north by Building 14, used for administrative offices and research;
- to the northeast by Building 6, a library and research facility, and Building 26, a shipping container modified for hazardous waste storage;
- to the east by Fort Miley Circle and parking areas; to the south by Building 12, an animal research facility; and to the southwest by Building 205, the steam/power plant; and
- to the west by Building 28, a telecommunications equipment building, beyond which lie the water tank (Building 206), an emergency generator fuel tank (Building 34), and a diesel-storage day tank and fuel dispenser (Building E85).

We understand the current plans include constructing a new 11,800 square foot Vivarium on the footprint shown on Figure 2. The new Vivarium will be two stories in height and will have a finished floor elevation near the lowest existing site grade in the southern portion of the site. Because the site slopes up from the east and south, construction may include cuts of up to 12 feet at the high point of the site near

Building 28. The project may involve demolishing Building 17, constructing a covered walkway that will link the new Vivarium to Buildings 6 or 12, and the relocation of utilities.

To conduct the evaluation, Treadwell & Rollo reviewed past and present land use practices, site conditions, and nearby off-site land uses to evaluate the potential presence of hazardous substances and the potential for soil and/or groundwater contamination. Activities performed during the evaluation included:

- Reviewing relevant documents provided by the Client and readily available maps regarding local geologic and hydrogeologic conditions.
- Reviewing readily available historical land-use maps and topographic maps, as appropriate.
- Performing a reconnaissance survey of the site, interviewing the current site owner or representative, if available, and observing the neighboring properties, as accessible, to make visual observations of existing site conditions, activities, types of land use, and businesses within the search area.
- Obtaining and reviewing local, state, and federal government database information pertinent to environmental conditions at the Site.

## **INFORMATION SOURCES**

Information reviewed to assist in evaluating whether environmental conditions or potential environmental conditions are present at the Site included the following.

- The Client provided a preliminary topographic survey of the Site and a description of the current redevelopment plan.
- Treadwell & Rollo obtained a report listing the results of a search of public environmental databases from Environmental Data Resources, Inc. (EDR) providing information on the Site and nearby properties listed in federal, state, regional and local regulatory databases.
- Treadwell & Rollo obtained historical topographic maps from EDR for the Site area for the years 1897, 1947, 1950, 1954, 1956, 1968, 1973, 1978 and 1993. Treadwell & Rollo also ordered a search for Sanborn Historic Fire Insurance Maps for the Site, but no such maps were found available.
- Treadwell & Rollo performed an interview by telephone with Mr. Taylor Loudon, the Project Historian, regarding past use of the Site. Treadwell & Rollo attempted to perform interviews with engineers employed at the VA Medical Center, including Mr. John Bassignani and Mr. Travis Dilts. Neither engineer was available for interview during the course of performing the evaluation.
- Treadwell & Rollo advanced four soil borings at the Site to perform a geotechnical investigation.
- Treadwell & Rollo reviewed the United States Geological Survey (USGS) *Geology of the San Francisco North Quadrangle, California; Miscellaneous Geologic Investigation Map I-272*, by J. Schlocker, M.G. Bonilla and D.H. Radbruch, dated 1958.
- Grover Buhr of Treadwell & Rollo visited the Site on 3 August 2010 to observe conditions.

## **INFORMATION REVIEW**

Based on the geotechnical borings advanced by Treadwell & Rollo, the geologic map of the area, and observations made during the Site visit, the Site surface consists of buildings, concrete pavement, and soil supporting sparse cover vegetation and several trees. The Site is blanketed with two to four feet of soil overlying bedrock. The soil consists of silty sand and sandy clay with thin, discontinuous layers of sand and gravel. Bedrock was observed to be sandstone and shale of undifferentiated Jurassic Franciscan rocks. Serpentinite was not observed in the borings, but may be encountered during bedrock excavation, based on Schlocker and others (1958). Groundwater was not encountered in the borings, the deepest of which, B-3, was advanced to 18.3 feet below the ground surface.

Based on our review of historic maps and our interview with Mr Taylor Loudon, the Site was formerly part of Fort Miley, a coastal battery established in the 1890s. In the 1930s, a "Soldier's Hospital" and "Old Soldier's Home" were constructed in other parts of the Medical Center. On a 1954 topographic map, the Medical Center is shown in similar configurations to its current buildings, although with less buildings. During this period, the land use of the specific area of the Site was not determined while performing this evaluation.

The VA Medical Center was found to be listed in ten government environmental databases, primarily for activities and conditions in areas in other parts of the Medical Center from the Site. However, the facility was listed in the RCRA-LQG database as a "Large Quantity Generator" of hazardous waste, under the regulation of the federal Resource Conservation and Recovery Act (RCRA). This is based on the generation of 1,000 kilograms or more of hazardous waste during any calendar month. Facility hazardous wastes listed in the database include ignitable wastes, corrosive wastes, waste solvents, metals and various chemical wastes. We have noted above that the Site is adjacent to the Medical Center's hazardous waste storage area (Building 26). In addition, the Medical Center is permitted by the Bay Area Air Quality Management District for air emissions related to various sources, such as the fuel tanks to the west of the Site. Other database listings in the EDR report do not appear to be related to the area of the Site.

## **SITE OBSERVATIONS**

Treadwell & Rollo visited the Site to observe conditions on 3 August 2010. The Site and surrounding Medical Center areas were observed. The Site was covered by soil with assorted vegetation, concrete walkways in the southern and eastern parts of the Site, Buildings 17 and 21 occupying the northeastern and northern parts of the Site. A modular building for an air-conditioning plant and a small out-building were present west of Building 17, between Building 17 and Building 28. A fenced area was observed in the southeastern part of the Site enclosing what appeared to be a yard with construction equipment, although most of this area was inaccessible and blocked from view by the fence. None of the Site buildings were accessible. The grounds appeared poorly maintained, with sparse and dead vegetation in most of the central area.

No evidence of spillage or other release of hazardous materials or petroleum products was observed during the Site visit. However, several buildings associated with the management of such materials were observed, such as the Vivarium and air-conditioning plant. Building 26, the hazardous waste storage area, is located adjacent to the Site on the southeast. In addition, the fuel storage tank for an emergency generator (located in Building 205) and a separate day tank and diesel fuel dispenser are located west of the Site beyond the water tank. The day tank and fuel dispenser areas were surrounded by drain rock over a geotextile fabric, ostensibly to control spillage.

During this evaluation, Treadwell & Rollo was not able to question facility personnel about management of hazardous materials or petroleum hydrocarbons on or adjacent to the Site.

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## **FINDINGS**

The Site is in an area of possible serpentinitic bedrock, so naturally occurring asbestos (NOA) may be present in the soil.

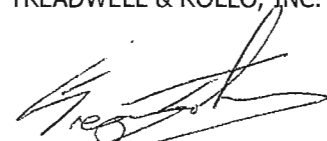
The Site is occupied by several buildings: two animal research facilities and several lesser buildings of unknown use. The animal research facilities presumably manage small quantities of hazardous and medical chemicals common to medical laboratories, but no information was obtained specifically about chemicals used. In addition, several nearby facilities manage hazardous materials and petroleum products, such as the hazardous waste storage facility, the steam/power plant, the emergency generator fuel tank, and the diesel day tank and fuel dispenser. No information was obtained during this evaluation regarding the management of such materials at these facilities or about spills or other possible releases of hazardous materials or petroleum products to the ground.

Although no observations or other direct evidence indicating the release of hazardous materials or petroleum hydrocarbons to the soil were identified during this evaluation, the presence of facilities that manage such material on and adjacent to the Site, along with the lack of documentation regarding the management of such materials, indicates the potential presence of hazardous materials and/or petroleum hydrocarbons in the soil at the Site.

Because a significant quantity of soil will be excavated during Site redevelopment, we recommend that the Site soil be sampled in three locations to profile the soil for appropriate disposal.

We appreciate the opportunity to assist the Client and the VA in this important project. If you have any questions, please call Grover Buhr at 510-874-4500 at extension 529.

Sincerely yours,  
TREADWELL & ROLLO, INC.



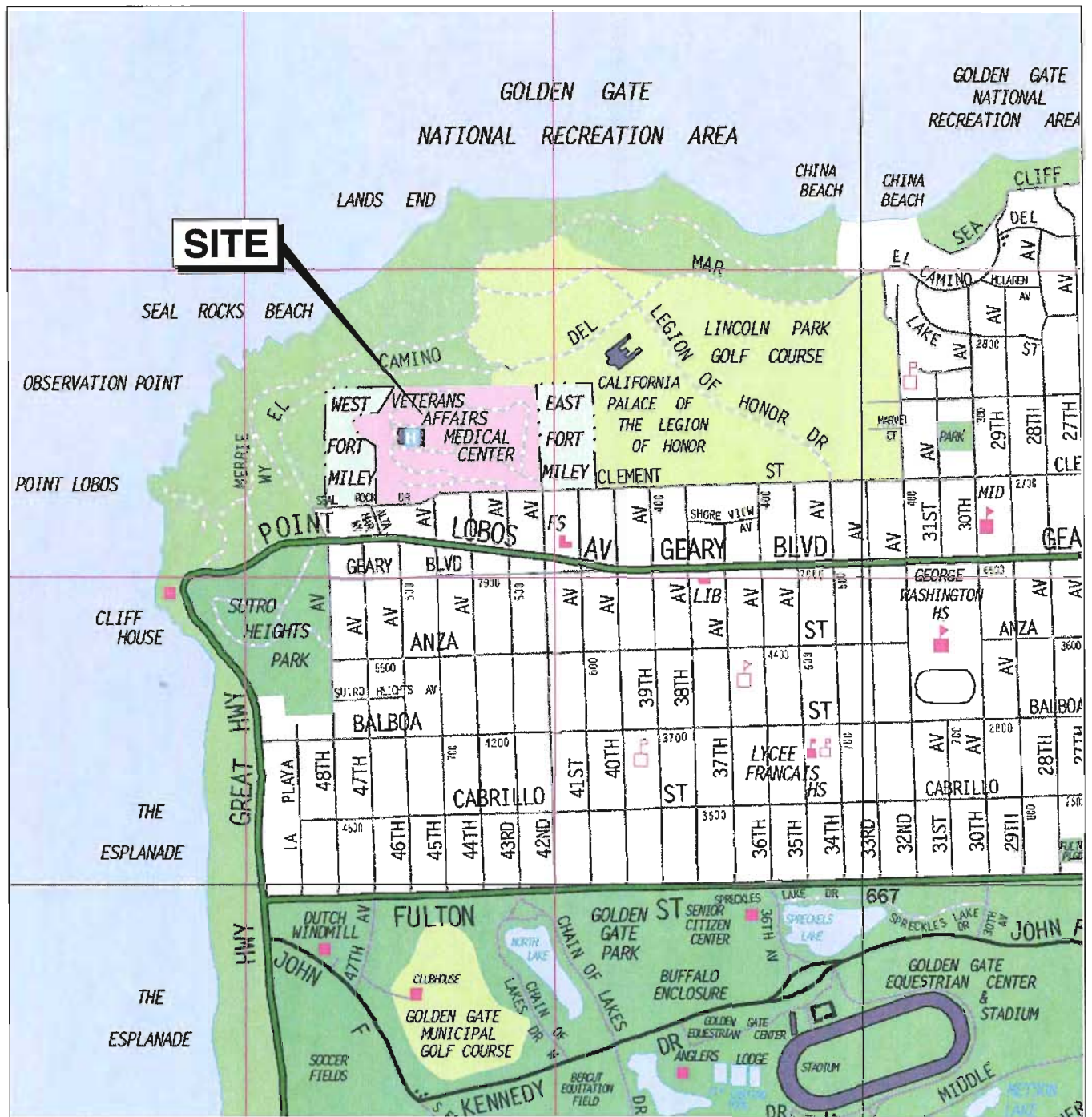
Greg Johnson, REA  
Senior Project Scientist

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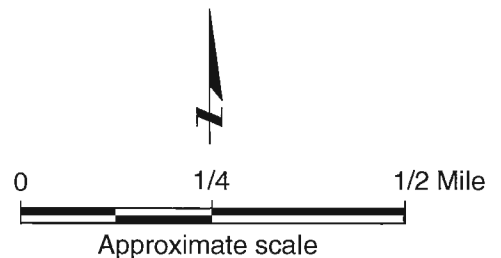
Attachments: Figure 1. Site Location Map  
Figure 2. Site Plan







Base map: Thomas Guide  
San Francisco County  
1999

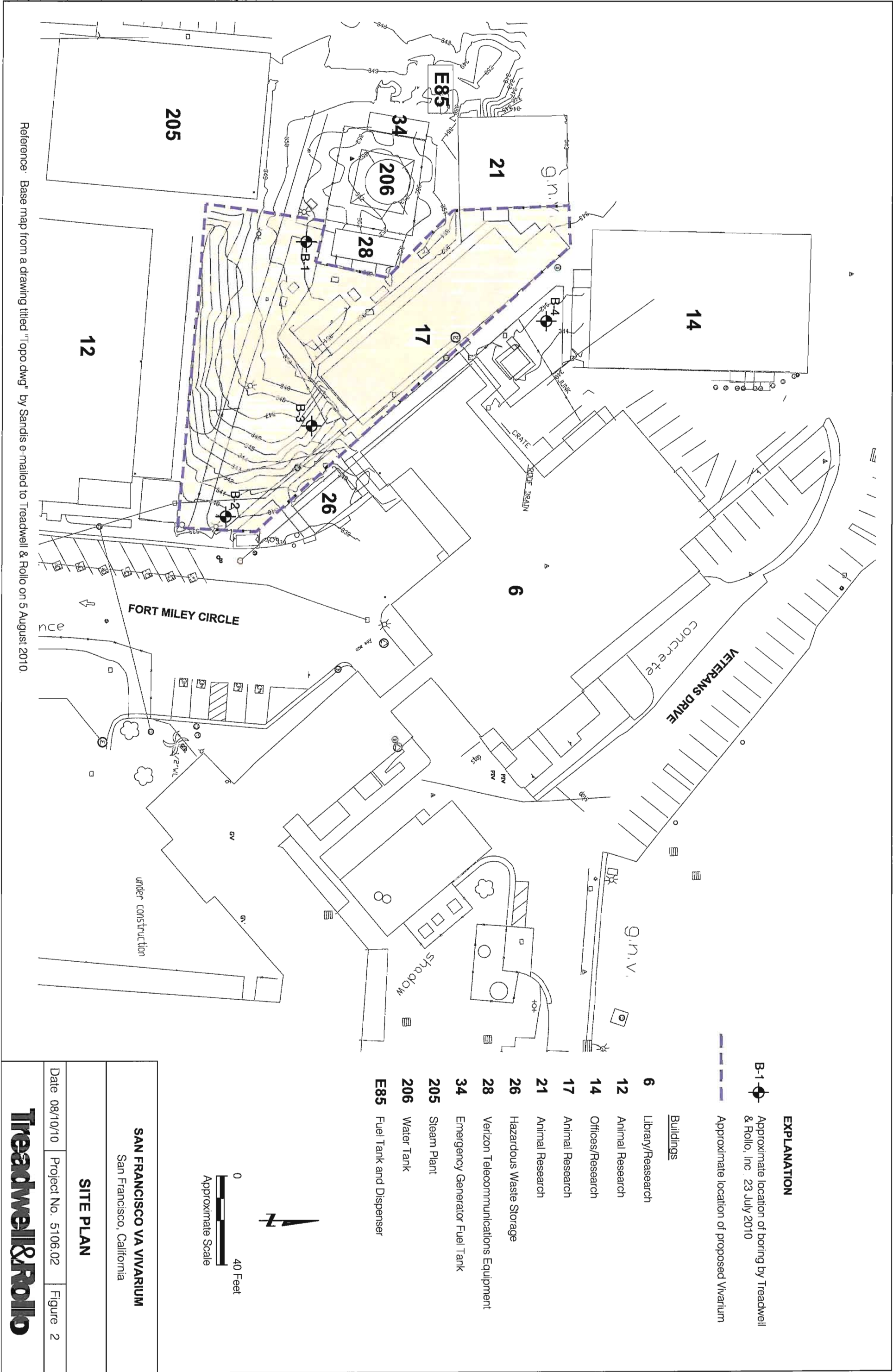


**SAN FRANCISCO VA VIVARIUM**  
San Francisco, California

## SITE LOCATION MAP

**Treadwell & Rollo**

Date 08/05/10 Project No. 5106.01 Figure 1



Reference: Base map from a drawing titled "Topo.dwg" by Sandis e-mailed to Treadwell & Rollo on 5 August 2010.