FEFFER
GEOLOGICAL CONSULTING

December 22, 2023 File No. 3169-31

Robert Benun, Esq.
3914 Dauntless Drive
Rancho Palos Verdes, CA 90275

SUBJECT: **GEOLOGICAL REVIEW OF SITE CONDITIONS**
3914 Dauntless Drive, Rancho Palos Verdes, CA 90275

Dear Mr. Benun,

Pursuant to your request, Feffer Geological Consulting is providing this geological review report of site conditions at the referenced site in Rancho Palos Verdes. This report is based on a review of public records. Other documents reviewed as part of this geologic evaluation include readily available topographic, geologic, seismic, and fault maps. The purpose of this report is to summarize any previous work, known geologic conditions, and to provide our professional opinion on the stability of the site. This report is not based on any subsurface investigation, and the conclusions drawn are inherently limited in scope due to this reason.

If you have any questions, please feel free to give me a call.

Respectfully submitted,

Joshua R. Feffer
Principal Geologist

Background Information

The subject site is located on the south side of Dauntless Drive, in Rancho Palos Verdes Estates, California. The property site currently consists of a relatively level pad located above a slope that descends about 30 feet at an approximately 1.5:1 (horizontal to vertical) gradient to the southwest to the property below. Figure 1 is an aerial photo with a topographic overlay of the property and surrounding area.

Geology

A review of a geological maps[1] indicates that the material underlying the subject site consists of siltstone of the Altimira member of the Monterey Formation (Figure 2). The bedrock is generally described as white-weathering, thin-bedded siliceous and phosphatic shale with interbeds of limestone and siltstone to shale and mudstone that is gray in color and contains tuffaceous and dolomitic strata throughout. Structural measurements from regional geologic map shows that the bedding varies in the area around the subject site but generally dips to the northeast, which is favorable for slope stability at the site.

As can be seen on Figures 2, 4 and 5, nearby landslides include the Klondike Canyon Landslide, which is approximately 0.5 miles distance from the subject site. The Flying Triangle Landslide, which is approximately 0.5 miles from the subject site. The Portuguese Bend Landslide, which is approximately 1 mile from the subject site. Finally, the recent Pear Tree Lane Landslide, which is approximately 3 miles from the subject site and is not shown on any of the figures due to its distance. The subject property is not affected by any of these landslides.

Seismicity

The property is not located next to an earthquake fault zone and there is a very low potential for surface rupture on the subject site. The property is similar to all homes located within seismically active California and will likely be affected by significant ground shaking and possibly damage from an earthquake. However, most one and two-story homes generally only suffer only cosmetic damage during earthquake shaking.

Review of the San Pedro Quadrangle Seismic Hazard Zone map produced by the State of California indicates that the slope below the property is outside of an area designated as having a potential for earthquake-induced landsliding, and the site is not located in a potential liquefaction zone.

[1] Dibblee, T.W., 1999, Geologic Map of the Palos Verdes Peninsula and Vicinity, Redondo Beach, Torrance, and San Pedro Quadrangles, Los Angeles County, California, Dibblee Geologic Foundation Map DF-70.

Figure 1: Aerial view of the subject site with a topographic overlay

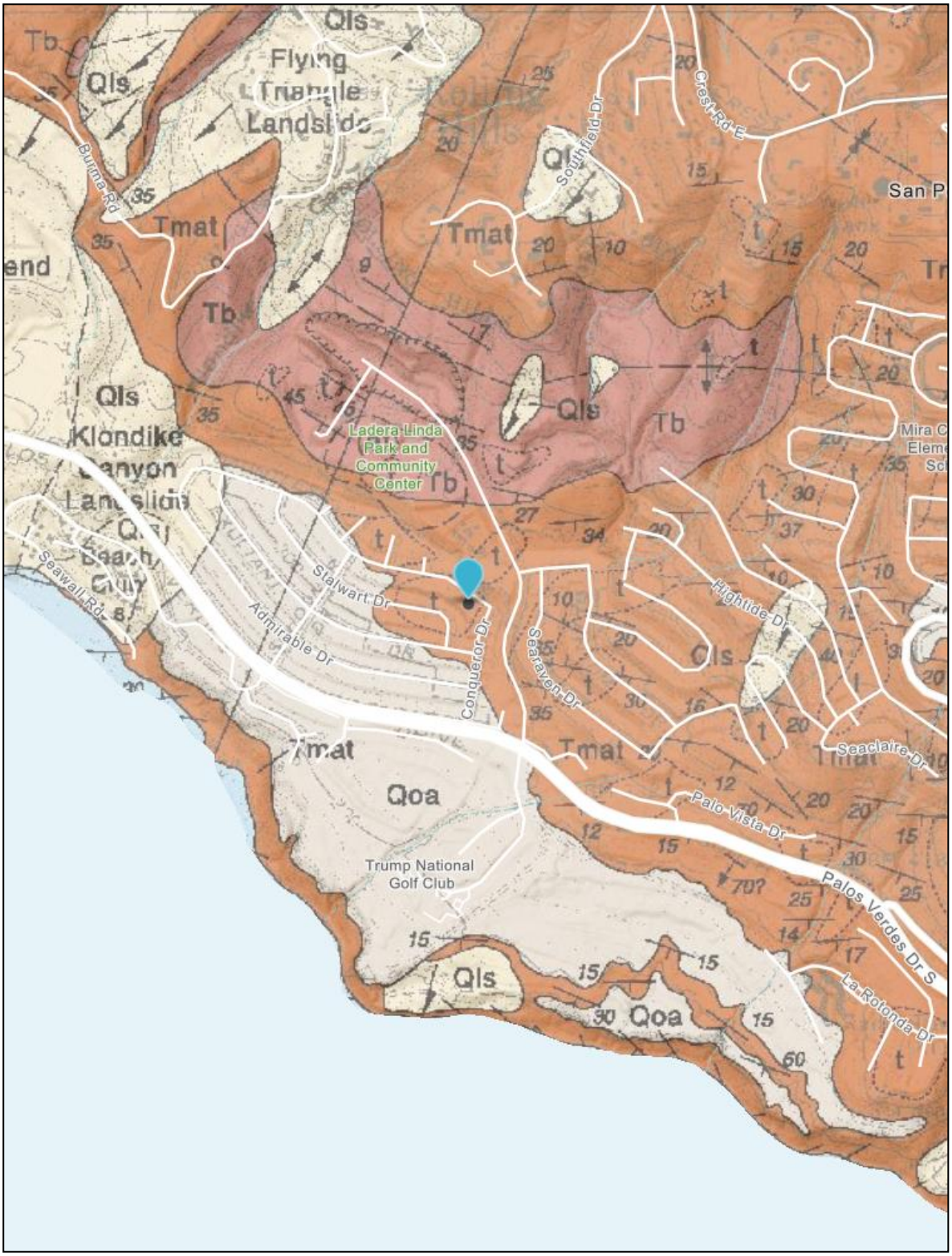

Figure 2: Portion of Dibblee, T.W., 1999, Geologic Map of the Palos Verdes Peninsula and Vicinity, Redondo Beach, Torrance, and San Pedro Quadrangles, Los Angeles County, California, Dibblee Geologic Foundation Map DF-70

Document Review

The City of Palos Verdes Estates Department of Building and Safety records were researched and the following reports and documents are from the Rancho Palos Verdes Build Department.

3914 Dauntless Drive – Subject Property

Grading Map for Tract 22387 & 22835, by The Donald R. Warren Company & HR. Lovette & Associates, dated January 15, 1956

Grading was done for tracts 22387 and 22835 in 1956. The subject property is located in tract 22387 and is designated as lot 110. The map shows that a portion of the southern end of the pad is underlain by compacted fill, with compaction test number 76 having been done in that area (Figure 3). The remaining portion of the pad and the descending slope don't show any fill compaction. The home that currently exists on the subject lot was constructed in 1960, with renovations done in 1962.

4271 Admirable Drive – Property to the West (Approximately 0.5 miles Closer to Nearest Landslide)

Limited Geotechnical Inspection for 4271 Admirable Drive, by Feffer Geological Consulting, dated October 10, 2006.

Summary:
The property at 4271 Admiral Drive is being included in this section as a reference property. 4271 Admiral Drive is 0.5 miles closer than the subject property at 3914 Dauntless Drive to the nearest mapped landslide, the Klondike Landslide. The Admiral Drive property is located along the northeast side of Admirable Drive on a flat pad located about 2 feet above the street grade; an approximately 15-foot high slope ascends from the back yard. The adjacent lots along Admirable Drive are essentially at the same elevation as the subject Dauntless Drive property. The current Admiral Drive home was constructed circa 1956. The referenced property at 4271 Admiral Drive is approximately 0.5 miles closer to the nearest landslide than the subject property at 3914 Dauntless Drive.

Grading plans and reports were found for the surrounding area at the City of Rancho Palos Verdes. A grading map produced by the Donald R. Warren Company on January 16, 1956 shows that a portion of the referenced 4271 Admiral Drive property is underlain by fill and that the rear of the lot and ascending slope are underlain by bedrock. The Rancho Palos Verdes Redevelopment Agency has designated several nearby areas as being within a "Landslide Moratorium". This means that homes located within the moratorium area are either underlain by or are very close to an existing landslide and have restrictions on development. The referenced 4271 Admiral Drive property is about 3 lots east of the edge of the moratorium established for the Klondike Landslide. The referenced 4271 Admiral Drive property is not affected by the Klondike Canyon landslide. The boundary of the moratorium is available at the Building and Safety Department. The approximate outline of the Klondike Landslide, as well as the location of the referenced 4271 Admiral Drive property and subject 3914 Dauntless Drive property are shown on Figure 4. The subject Dauntless Drive property is over 0.5 miles from this landslide and not affected by it, and is not within a landslide moratorium zone. Generally, in comparison to the referenced property at 4271 Admiral Drive, the risk of landslide induced failure is significantly lower at 3914 Dauntless Drive.

Figure 3: Portion of Grading Map for Tract 22387 & 22835, by The Donald R. Warren Company & HR. Lovette & Associates. The subject property is shown by a blue star.

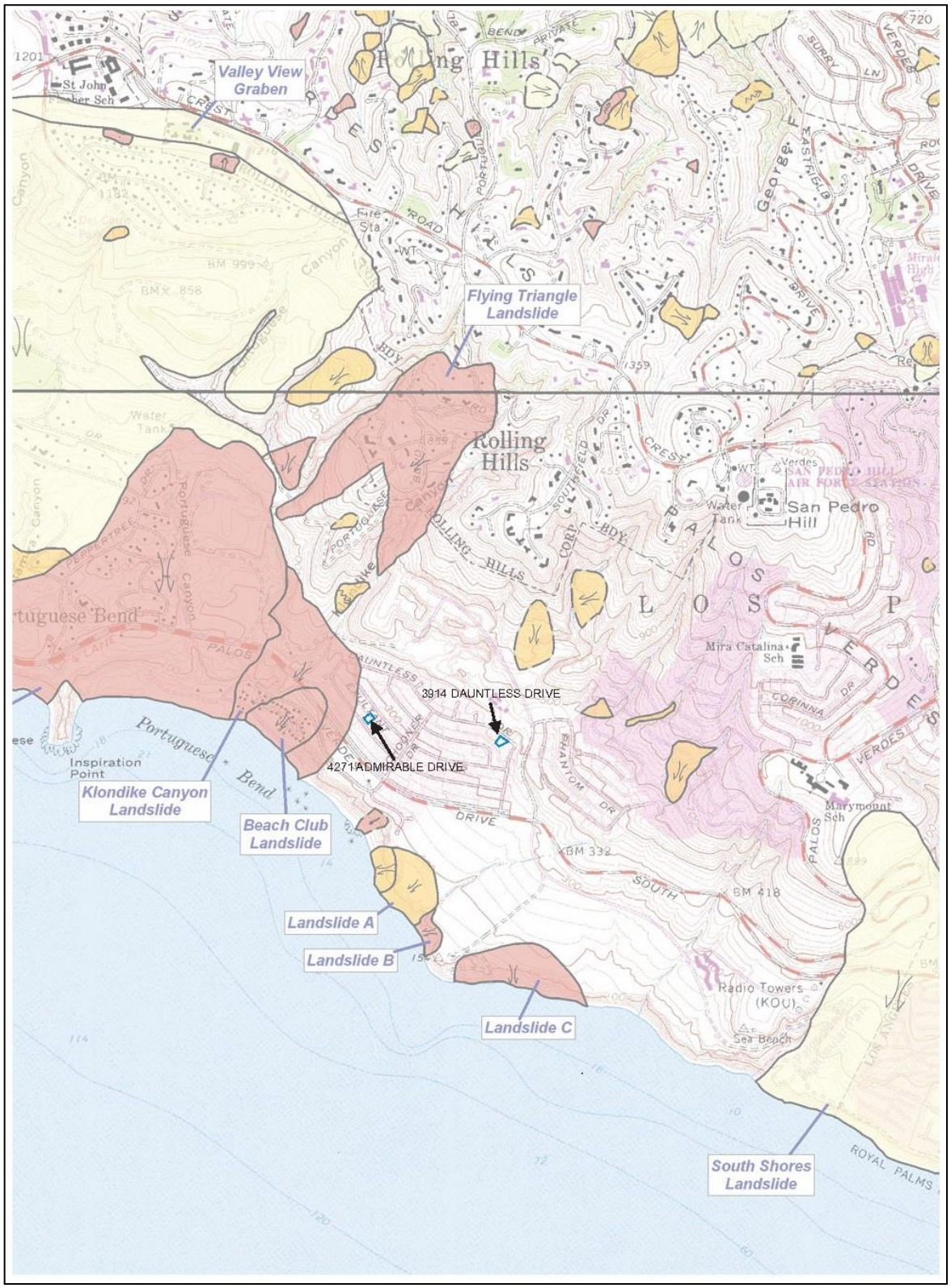

Figure 4: Portion of Landslide Inventory Map of the Palos Verdes Peninsula, Los Angeles County, California (2007). Subject and referenced sites are noted on the map.

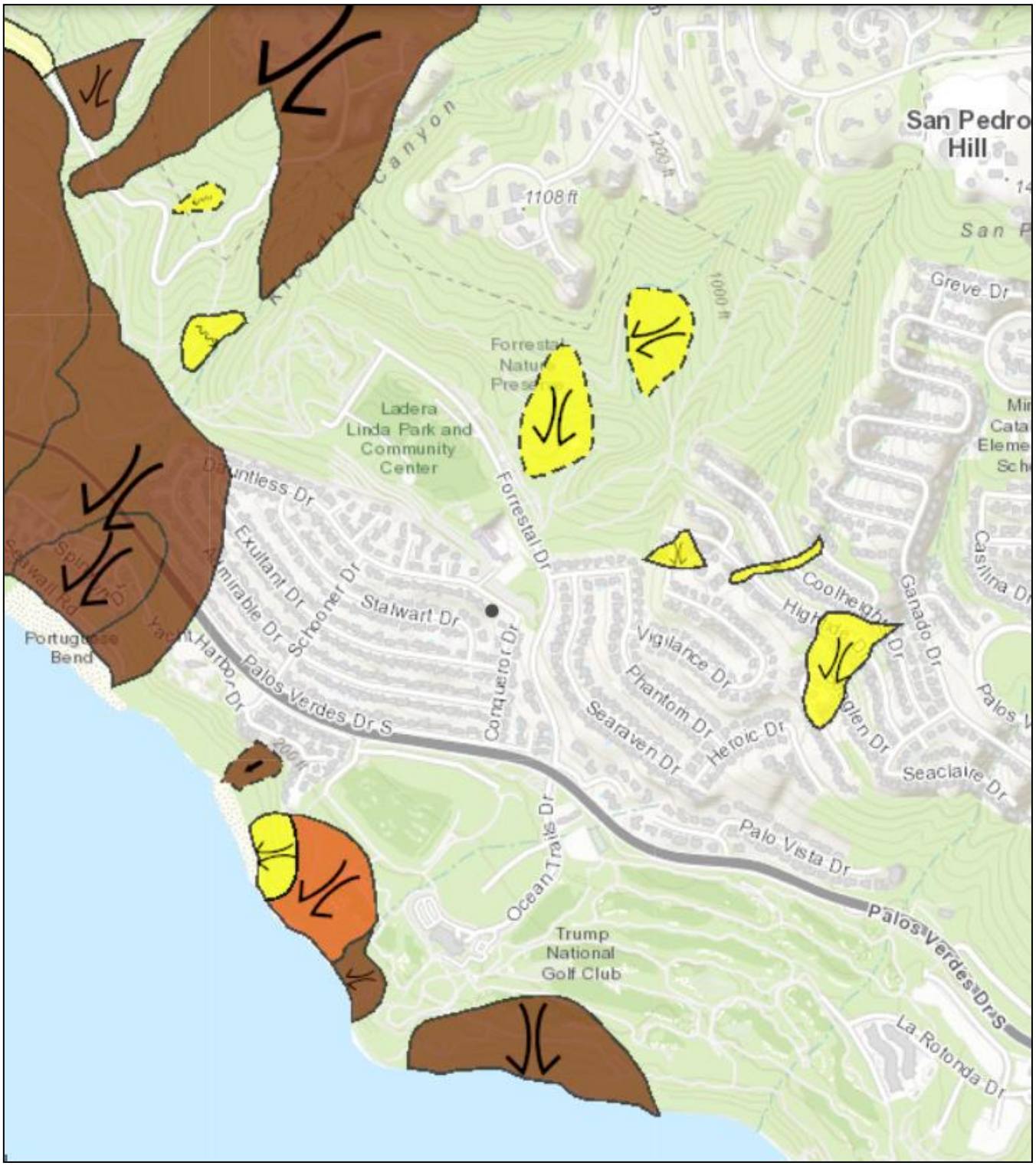

Figure 5: Portion of California Department of Conservation Landslide Inventory. Site is denoted by a black point.

Site Visit

We performed a site visit to view the property. The interior of the home exhibited some drywall separation and hairline cracking that may be attributed to flexural forces from differential settlement and expansive soil movement that occurs over time. The exterior of the home has minor cracking in the concrete, which is typical of most concrete of this vintage and type of construction. A small retaining wall was observed and aside from some minor cracking, appears to be performing well. The descending slope was observed and appears to be performing well and does not show any signs of distress.

Discussion

Based on our review of documents and performance of a site visit, we are providing the following discussion.

1) The home is in an area where landslides are a common occurrence, slides in natural materials as well as artificial fill have occurred over time for various reasons.
2) The home is not located above a large fill slope and is not susceptible to fill slope failures.
3) According to grading files, the home was constructed partly on artificial fill and partly on bedrock or natural soil.
4) The home exhibits some interior and exterior cracking of walls that are structurally insignificant and typical for the vintage and type of construction.
5) According to regional geologic maps and the State of California Department of Conservation (Figure 2 & 5) the property, while located in an area that has landslides is not located adjacent to them.

Conclusion

According to grading files for tract 22387, the subject home appears to have been constructed partially on engineered fill and partly on natural soil or bedrock. The artificial fill was likely placed to create a level building pad from the natural slope that existed prior to site development. A subsurface investigation would be required to determine the material on which the foundation of the home derives support from.

The interior and exterior areas of the home appear to show minor distress typical of the age of the home and from minor movement of expansive soils. Expansive soils are soils that are typically high in clay content and tend to experience swell and shrink cycles that are directly related to changes in water content. It is therefore favorable to reduce the potential for ponding of water on the pad and that proper drainage is achieved. Site drainage should be assessed by a licensed expert and directed to the street and away from the slope.

The home is not located next to any landslides and is underlain by stable bedrock. The home is distant from known slides and will not be affected by movement of them. Overall, the home itself appears to be performing well with minor cracking and settlement.

If you have any questions, or if any part of this report is unclear, please do not hesitate to contact our office.

Respectfully submitted,

Joshua R. Feffer
Principal Geologist
Certified Engineering Geologist, C.E.G. 2138
By the State of California Board of
Geologists and Geophysicists