



T R U N O R T H

C.Landslide Hazard Evaluation



Santa Rosa Office
3501 Industrial Drive, Suite A
Santa Rosa, CA 95403
707-544-1072

Napa Office
1041 Jefferson St, Suite 4
Napa, CA 94559
707-252-8105

December 26, 2024 (Revised May 28, 2025)

Misty Mountain Properties, LLC
C/O: Isaac Fehrenbach
isaac@goblue.one

Landslide Hazard Evaluation
The Shire Vineyard
APN: 022-140-054
St. Helena, California

Project Number: 7989.002.09.2

The purpose of this letter is to provide geologic information regarding the planned vineyard development at Assessor's Parcel Number (APN) 022-140-054 in St. Helena, California. This letter is being prepared with the intent to comply with Napa County Code Section 18.108.027 (F).

Our geologic publication research included reviewing the following information:

J.B. Durham and H.E. Huffman, 1979, Geologic Map, St. Helena Quadrangle, State of California, The Resource Agency, Department of Forestry, Region 1 Geology Group,

Dwyer, M.J., Noguchi, N., and O'Rourke, J., 1976, Reconnaissance Photo-Interpretation Map of Landslides in 24 Selected 7.5-Minute Quadrangles in Lake, Napa, Solano, and Sonoma Counties, California: U.S. Geological Survey OFR 76-74, 25 Plates, Scale 1:24,000.

National Center for Airborne Laser Mapping (NCALM), 2003, LiDAR, Napa Watershed, California, Opentopo.sdsc.edu.

Natural Resources Conservation Service, United States Department of Agriculture, accessed December 2024. Web Soil Survey, available online at <http://websoilsurvey.nrcs.usda.gov/>.

Based on our geologic review we compiled the images and tables below indicating the soil types and depth of materials for the planned vineyard block. This information was collected from the NRCS Web Soil Survey listed above.



Napa County, California														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
109—Boomer gravelly loam, volcanic bedrock, 14 to 60 percent slopes, MLRA 15														
Boomer	85	C	0-2	Slightly decomposed plant material	PT	A-8	0- 0- 0	0- 0- 0	—	—	—	—	—	—
			2-6	Gravelly loam	SM	A-7-6	0- 0- 0	0- 0- 0	100-100-100	66-66- 73	52-56- 67	38-41- 51	32-42 -49	9-14-18
			6-13	Gravelly clay loam, gravelly loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	68-75- 75	57-65- 68	45-51- 54	38-40 -45	16-17-21
			13-24	Gravelly clay loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	68-75- 75	59-66- 71	47-53- 58	37-39 -46	19-20-25
			24-36	Gravelly clay loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	70-76- 76	59-67- 71	47-54- 58	37-40 -45	19-21-25
			36-46	Gravelly clay loam	SC	A-6	0- 0- 0	0- 0- 0	76-85- 89	52-70- 76	45-61- 73	36-49- 59	36-37 -44	18-19-25
			46-58	Cemented bedrock	—	—	—	—	—	—	—	—	—	—
151—Hambright-Rock outcrop complex, 2 to 30 percent slopes														
Hambright	50	D	0-12	Very stony loam	CL-ML, CL	A-4, A-6	0- 0- 0	50-63- 75	90-95-100	85-93-100	75-85- 95	55-73- 90	34-44 -53	13-16-18
			12-22	Bedrock	—	—	0- 0- 0	—	—	—	—	—	—	—
Rock outcrop	35		0-10	Bedrock	—	—	—	—	—	—	—	—	—	—

On December 13, 2024, we performed a geologic reconnaissance of the site and vicinity. We observed the areas within and surrounding the vineyard block and various access roads. We paid particular interest to drainages and steeper sloping areas.

Based on our geologic review and reconnaissance, we judge that it is geologically feasible to plant the subject vineyard slopes as planned. We did not identify any large-scale slope instabilities within the vineyard block during our publication review and did not observe any slope failures or landslides at the project site during our reconnaissance.

We judge the risk of global slope instability, both currently and after vineyard development, to be low. As such, erosion of the site surface soils should be considered the primary slope condition of concern. If erosion control measures are installed and maintained in accordance with County of Napa Regulations, we judge the risk of erosional failure at the site to be low.

We trust this provides the information you require at this time. If you have questions please contact the undersign.

Very truly yours,
RGH Consultants



Ryan E. Padgett
Senior Engineering Geologist
Project Manager



cc: TruNorth
Attn: Daniel Byrne
dan@trunorth.co



Jared J. Pratt
Principal Engineering Geologist



REP:JJP:rep:nvd
Electronically Submitted

https://rghgeo.sharepoint.com/sites/shared/shared_documents/project_files/7501-7999/7989/7989.002.09.2_fehrenbach_landslide_hazard_evaluation/.01_-_7989.002.09.2_landslide_hazard_evaluation_the_shire_revised.docx