

# Exhibit D



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## **Santa Rosa Office**

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June 17, 2021 (Revised February 28, 2022)

Red Dirt Grapes, LLC.

Attention: John Cassil

[John.cassil@camgenpartners.com](mailto:John.cassil@camgenpartners.com)

Landslide Hazard Evaluation  
Red Dirt Grapes Landslide Hazard Evaluation  
APN 032-030-071 and 032-560-038  
St. Helena, California

Project Number: 7505.01.09.2

The purpose of this letter is to provide geologic information regarding the planned vineyard planting within portions of APN 032-030-071 and 032-560-038 in St. Helena, California. The project site plan has been prepared by Applied Civil Engineering, titled "Red Dirt Grapes LLC" and dated February 2022. 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:

Bezore, S.P., et al., 2005, Geologic Map of the Yountville 7.5' Quadrangle, Napa County, California, California Geological Survey, Scale 1:24,000.

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](http://opentopo.sdsc.edu).

Natural Resources Conservation Service, United States Department of Agriculture, accessed June 2021. Web Soil Survey, available online at <http://websoilsurvey.nrcs.usda.gov/>.

Based on our geologic review we compiled the image and table below indicating the soil types and depth of materials. 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>
176—Rock outcrop-Hambright complex, 50 to 75 percent slopes														
Rock outcrop	60		0-10	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—
Hambright	30	D	0-12	Very stony loam	CL, CL-ML	A-4, A-6	0-0-0	50-63-75	90-95-100	85-93-100	75-85-95	55-73-90	15-23-30	5-10-15
			12-22	Unweathered bedrock	—	—	0-0-0	—	—	—	—	—	—	—

On June 7, 2021, and February 22, 2022, we performed a geologic reconnaissance of the site and vicinity. We observed the vineyard blocks shown on the preliminary plans 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 grade and plant the subject vineyard slopes as planned. We did not identify any large-scale slope instabilities within the vineyard blocks 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. Please call if you have questions.

Very truly yours,  
RGH Consultants



Ryan E. Padgett  
Senior Engineering Geologist  
Project Manager



cc: Mike Muelrath  
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Jared J. Pratt  
Principal Engineering Geologist



REP:JJP:rep:brw

[https://rghgeo.sharepoint.com/sites/shared/shared documents/project files/7501-7750/7505/7505.01.09.2 nelson johnson property landslide hazard evaluation/7505.01.09.2 landslide hazard evaluation revised.docx](https://rghgeo.sharepoint.com/sites/shared/shared%20documents/project%20files/7501-7750/7505/7505.01.09.2%20nelson%20johnson%20property%20landslide%20hazard%20evaluation/7505.01.09.2%20landslide%20hazard%20evaluation%20revised.docx)



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June 17, 2022

Red Dirt Grapes LLC.,  
Attn: John Cassil  
[John.cassil@camgenpartners.com](mailto:John.cassil@camgenpartners.com)

Response to Comments  
Red Dirt Grapes LLC., Vineyard Conversion  
Agricultural Erosion Control Plan (ECPA) File # P22-00143-ECPA  
Terminus of Long Ranch Road: APN's 032-030-071 & 032-560-038  
Napa, California

Project Number: 7505.01.09.2

This letter presents our response to specific comments regarding the ECPA application for the Red Dirt Grapes LLC., Vineyard Conversion, presented in an Application Review Determination by Donald Barrella, dated June 1, 2022. RGH presented the results of our Landslide Hazard Evaluation for the project in a letter dated June 17, 2021, and revised February 28, 2022. Excerpts from comments are provided in italics with our responses below.

Item 1e comments relating to the RGH Landslide Hazard Evaluation:

*Landslide Hazard Evaluation: Please provide an addendum or update to the Landslide Hazard Evaluation prepared by RGH Consultants (February 2022) that includes the following information:*

- i The Effects on slope stability due to the proposed ECPA related to increased infiltration due to proposed ripping depths. The report should also provide ground preparation recommendations to maintain slope stability.*

The USDA Web Soil Survey indicated that the site is underlain by *Rock Outcrop-Hambright Complex 50 to 75% Slopes*. The depth to restrictive layer for water infiltration in this unit is identified at 0 feet. The restrictive layer for this unit would be bedrock. We reviewed the Soil Analysis and Recommendations for Vineyard Development report prepared by Vineyard Soil Technologies (VTS Project No. 21-119, March 2021). The VTS report recommended ripping depths should range from 30 to 36 inches, depending on the soil type encountered in that specific area. Based on our field observations and a review of soil profile logs from the VTS report we judge that bedrock will be encountered at the ground surface locally, to depths of about 3 feet, where rock structure becomes apparent.

According to the VTS report, vineyard preparation will include the removal of rock in volumetric concentration of between 10% and 45% in the upper 24 inches. This preparation will provide for water infiltration to the depths of preparation but will not affect the permeability/fracture density of the underlying bedrock. We did not identify any areas of slope instability in our Landslide Hazard Evaluation and



because infiltration into the underlying bedrock units should not be affected by the planned vineyard preparation, we judge that development of large-scale slope instability is unlikely at the site. Therefore, no increase in sediment delivery is expected due to landslides or global stability issues.

A soil loss analysis study was prepared by David Steiner, CPESC, CPSWQ, dated January 23, 2022, for this project utilizing the Universal Soil Loss Equation (USLE) protocol. This study concluded that, provided specified cover levels are maintained, that the predicted soil loss levels in the proposed new and replanted vineyard blocks will not exceed current levels or the USDA soil loss tolerance.

Grading for the vineyard blocks should follow the requirements detailed in the ECPA for the project and Best Management Practices pursuant to the Napa County Code.

- ii *The effects and any changes in sediment delivery amounts based on the project including changes in the amount of sediment delivered to drainageways as compared to existing conditions.*

The soil loss analysis for the project, utilizing (USLE) protocol concluded that provided specified cover levels are maintained, that the predicted soil loss levels in the proposed new and replanted vineyard blocks will not exceed current levels or the USDA soil loss tolerance. Additionally, we judge that development of large-scale slope instability is unlikely due to the preparation of the vineyards. Therefore, no increase in sediment delivery is expected due to landslides or global stability issues.

- iii *The effects and any potential impacts and threats to both on and off-site resources (i.e. aquatic resources and streams) as a result of the project as compared to existing conditions.*

Based on our assessment of slope stability following the vineyard development and the results of the soil loss analysis for the project and if the requirements presented in the ECPA for the project are followed, we judge that the threat to both on and off -site resources as a result of the project as compared to existing conditions is low.

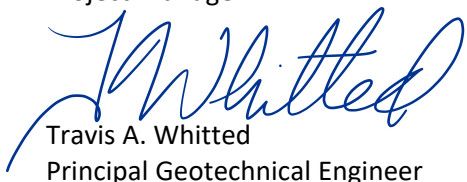
Very truly yours,  
RGH Consultants



Ryan E. Padgett  
Senior Engineering Geologist  
Project Manager



cc: Mike Muelrath  
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Travis A. Whitted  
Principal Geotechnical Engineer



REP:TAW:rep:brw