VINITAS CONSULTANTS, LLC ALAN BUSACCA, PH.D.

CERTIFIED PROFESSIONAL SOIL SCIENTIST NO. 24928 WASHINGTON STATE LICENSED GEOLOGIST NO. 1112

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PROFESSIONAL POSITIONS:

2006-present	: Manager/Owner, Vinita	s Víneyard C	ionsultants, LLC, Bingen, WA	
2008-present	Co-Owner, Volcano Rídge Víneyard, The Dalles, OR			
2010-present	Manager/Owner, Heart	Manager/Owner, Heart Catcher Wines, Hood River, OR		
2013-April 2014 Director, Center for Enology & Viticulture, Walla Walla Community College			e	
2006-2013 Co-Owner, AlmaTerra Wines, LLC, Grandview & Bingen, WA				
2007-2008	Geologíst on Contract,	Geologist on Contract, Colorado Geological Survey, Denver, CO		
1982-2007 Professor of Soil Science & Adjunct Professor of Geology, Depts. of Crop & Soil Scie				op & Soil Sciences and
	Geology, Washington S			1
1977-1982	Masters & Doctoral Res	Masters & Doctoral Research Assoc., Dept. Land, Air, & Water Resources, Univ. Calif. Davis		
1974-1977	Assistant Field Geologis	Assistant Field Geologist, U.S. Geol. Survey, Menlo Park, CA; geol. mapping Yosemite Nat'l Park		
		EDU	ICATION:	
Ph.D.	Soil Science	1982	University of California, Davis	
M.S.	Soil Science	1979	University of California, Davis	
B.S.	Earth Science w/Honors	1973	University of California, Santa	a Cruz

SKILLS AND EXPERIENCE:

As owner and manager of Vinitas Consultants, I evaluate land for clients nationally and internationally to advise them on soil and site characteristics, including:

- Evaluating lands pre- or post-purchase to assess vineyard quality potential; prepare detailed vineyard soil surveys with proposed vineyard block layout; evaluate and monitor site climate; make specialized GPS surveys & GIS-based vineyard and AVA (American Viticultural Area) maps
- Preparing petitions to the U.S. TTB on behalf of grape growers for new AVAs. Petitions approved: Wahluke Slope, Lake Chelan, Lewis-Clark Valley. In review: Royal Slope (Frenchman Hills, WA).

Mapping & evaluating hydric soils to delineate protected wetlands & assist land owners to mitigate wetland damage

- With my business partner in Volcano Ridge Vineyard, 1 make weekly, annual, and long-range decisions on farming, financial management and marketing of the fruit from our 160-acre property with its 25-acre vinifera vineyard in the Columbia Gorge AVA. I took the lead in 2012 to meet international certification standards for our vineyard in the sustainable viticulture LIVE and Salmon Safe programs: our vineyard has been certified since the 2013 harvest
- > As owner of Heart Catcher Wines, I make small lots of premium Zinfandel and Merlot wines for commercial sale and to showcase my vineyard's fruit for winery clients
- As director of the 2-year degree program in Enology and Viticulture at Walla Walla C.C. I served also as General Manager of 3,000-case College Cellars, the program's bonded teaching winery
- With my business partner in AlmaTerra Wines, I shared strategic, financial, and winemaking decisions of our 1000-case boutique brand. I was solely responsible for branding and marketing of AlmaTerra & I designed, built, and managed our tasting room in Bingen, WA
- As a WSU research scientist and teacher for 25 years, I ran a research laboratory & an aggressive field research program on rates and processes of soil formation, agriculture, soil erosion control, and Northwest Ice-Age geologic history. At any one time I typically managed 2-4 research grants of up to several \$100,000s & up to 10 grad students & research techs

SELECTED CONSULTING PROJECTS:

- 2016-2017 Private Farming Client, Walla Walla Valley AVA: Viticultural land evaluation and parcel quality ratings for several thousand acres of potential vineyard/orchard land with abundant irrigation water
- 2016-2017 Kennewick Irrigation District, Benton City, WA: Site evaluation for vineyard development, parcels totaling 400 ac, Columbia Valley AVA American Viticultural Area (AVA))
- 2012, 2016-17 Acquest Dev. & Wm Huntress, Buffalo NY: Expert witness for defense of EPA/DOJ wetlands lawsuit



VINITAS CONSULTANTS

JANUARY 2017

2016	Fowler Family Vineyards, Lyle WA: Soils/site evaluation for ~20-ac premium wine grape vineyard		
2016	Martín Famíly Vineyards, Adrian OR: 50-acre soil/síte evaluation for premium wine-grape vineyard		
	(Snake Ríver Valley AVA)		
2015-2016	Royal Slope Winegrowers: Petition for American Viticultural Area (submitted 2-24-2017)		
2015	Epperson Associates, LLC, Salt Lake City, UT: Hydric soils determination for wetland delineation,		
	2400 ac site for new Utah State prison		
2015	Bavaro Farming, Inc., Waterford, CA: Land eval. for 245 ac orchard development		
2014-2016	Thomas Lumpkin, Lyle WA: Soils/site eval. of 125-ac ranch for ≈20-ac premium wine grape vineyard		
2014-2016	Idaho Wine Commission: Research on soils and climate, Snake River Valley AVA, Nampa, ID		
2014-2015	Three Monkeys, LLC, Bellevue WA: Soil and site quality evaluation for ultra premium vineyard		
	development, 280 acres, Red Mountain AVA, Benton City, WA		
2012, 2013	Ste. Michelle WIne Estates: Gave seminars for SMWE winemakers, viticulture field staff, & marketing		
	staff on site-specific terroir factors and vineyard quality in WA State		
2011-2013	Winegrowers of the Lewis-Clark Valley, ID-WA: Petition to US Dept of Treasury,		
	TTB to establish the Lewis-Clark Valley AVA. Adopted May 20, 2016. Also wrote & submitted petitions		
	for the Lake Chelan (2010) & Wahluke Slope (2006) AVAs		
2009-2011	Kennewick Irrigation District, Benton City, WA: Site evaluation of parcels totaling 800 ac for vineyard		
	development, Red Mountain AVA. Auction sale totaled over \$16 million		
2007-2008	Premier Pacific Vineyards, Napa, CA: Pre-purch. eval., 3900 acre ranch, Horse Heaven Hills AVA, WA		
2007-2008	Jon Staenberg, Seattle, WA: Eval. land & bus. plan for vyd dev., Uco Valley, Mendoza, Argentína		
2005-2006	Sevein Vineyard Partners: Walla Walla Valley AVA; site eval for 2000 ac vineyard development		

AT WASHINGTON STATE UNIVERSITY:

> Time in rank: Assistant Professor 1982-1987; Associate Professor 1988-1995; Full Prof. 1995-2007

- > Major Advisor of 10 Master's Degree, 5 Ph.D., and 7 post-Masters and post-Doctoral fellows
- Main courses taught: <u>Soils 360/Crops 360</u> World Agricultural Systems; <u>Soils 451</u> Pedology; <u>Soils 551</u> Advanced Pedology; <u>Hort 413/513</u> - Advanced Viticulture
- Senior author or co-author of 50 refereed journal articles, 6 book chapters, 1 book editorship, 7 serial pubs, 13 field trip guides, 8 symposium proceedings, 12 other publications, & 80 abstracts
- > Total dollar value of research grants >\$2,500,000 as Principal Investigator (PI) or Co-PI

VIDEO:

Wash. State: Get The Dirt on Wine. 2006. Movie on terroirs of WA State. Available from <u>amazon.com</u>. I consulted on script and am the host & guide of the film. As seen on NW Public TV

SELECTED PUBLICATIONS (more than 100 total):

- Wilkins, David, Alan Busacca, and Clyde Northrup. 2016. Investigation of Terroir Factors, Sunnyslope District, Snake River Valley AVA. Proceedings of the 11th International Terroir Congress 2016, July 10-14, McMinnville, Oregon (USA).
- McDonald, Eric V., Mark R. Sweeney, Alan J. Busacca. 2012. Glacial outburst floods and loess sedimentation documented during Oxygen Isotope Stage 4 on the Columbia Plateau, Washington State. Quaternary Science Reviews 45 (2012):18-30.
- Busacca, Alan J. and Lawrence D. Meinert. 2003. Wine and Geology The terroir of Washington State. pp. 69-85, In T.W. Swanson (ed), Western Cordillera and adjacent areas. Geological Soc. Am. Field Guide 4
- > Meinert, L.D., and A.J. Busacca. 2002. Geology and Wine 6: Terroir of the Red Mountain Appellation, Central Washington State, U.S.A. Geoscience Canada 29:149-168.
- Meinert, L. D., and A. J. Busacca. 2000. Geology and wine 3: Terroirs of the Walla Walla Valley Appellation, southeastern Wash. State, USA. Geosci. Canada 27(4): 149-171.
- Busacca, Alan J. 1991. Loess deposits and soils of the Palouse and vicinity. pp. 216-228, In Baker, V. R., and others. The Columbia Plateau, Ch.
 8, In Morrison, R. B. (ed.) Quaternary Non-Glacial Geology of the United States. Geological Society of America Geology of North America.
- McCool, D. K., and A. J. Busacca. 1999. Measuring and modeling soil erosion and erosion damages. pp. 23-56, In E. L. Michalson, R. I. Papendick, and J. E. Carlson (eds.), Conservation Farming in the United States. CRC Press, New York.
- > Boling, M., B. Frazier, and Alan Busacca. 1998. General Soil Map, Washington. USDA Natural Resources Conservation Service and Department of Crop and Soil Sci, WSU, Pullman. 1:750,000.