

TERRA DOLCE CONSULTANTS, INC.
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PORTLAND, OREGON 97218
503-502-5114

February 9, 2018
Project No. 711-001

Don Fuchs
34580 NE Wilsonville Road
Newberg, Oregon

GEOTECHNICAL EVALUATION OF RIVERBANK EROSION
FUCHS PROPERTY
34580 NE WILSONVILLE ROAD
NEWBERG, OREGON

Dear Don:

As requested, Terra Dolce Consultants, Inc. (TDC) has prepared this letter discussing the susceptibility to soil erosion of the riverbank long the Willamette River at the south end of your property. The riverbank is approximately 150 feet long and up to 15 feet high. The soils exposed along the bank consists of thinly fine-grained alluvial deposits from Willamette River. Pockets of dense vegetation protect parts of the riverbank from erosion.

Since you purchased the property in August 2014, you have noticed that the soil and the vegetation have been eroding during both in the winter and in the summer months. In the winter, the erosion is caused by the natural occurring high water levels and the faster currents. During the summer, the water levels drop and the currents tend to slow down so that the natural erosion tends to decrease. The increase of erosion, however, is caused the wake-boarding boats that outfitted with heavy ballast in the rear to create larger waves to wake board on. These larger waves have more energy than the smaller waves from regular water ski boat, and when they hit the exposed soil along the riverbanks, the waves cause more erosion.

The riverbank along your property consist of the fine-grained soils from the Willamette River. The deposits consist of silt and fine-grained sand that were deposited in unconsolidated beds and lenses. On May 5, 2016, TDC observed the drilling of one boring on the property to 40 feet below the ground surface (bgs). The boring was located adjacent to the riverbank on your property. From 0 to 30 feet bgs, the soils consisted of brown, loose to medium dense Silty Sand with little to no clay. From 30 to 40 feet bgs, the soil transitioned into a brown, medium-grained Sand, with little to no fines.

The soil exposed along the riverbank is fine-grained Silty Sand to Sand that has little to no clay. Due to the fact that these soils are unconsolidated and have little to no fines to bind the fine-grained Silt and Sand together, these soils are prone to erosion. The erosion typically occurs in the winter when the water levels are high, however, erosion has accelerated during the summer months because of the increased wave

action. As noted above, the increase wave action is attributed to the increase water traffic of the heavy-ballasted wake-board jet boards.

Geotechnical engineering is characterized by a certain degree of uncertainty. Professional judgments presented are based partly on our understanding of the property and partly on our general experience. Our engineering work and judgments rendered meet current professional standards; no other warranties, either expressed or implied are made. This report is subject to review and should not be relied upon after a period of 3 years.

It has been a pleasure providing you the geotechnical services for this project. If you have any questions, please call at 503.502.5114.

Sincerely,
Terra Dolce Consultants, Inc.



Cynthia L. Hovind, P.E., G.E.
Professional Geotechnical Engineer, OR-17857PE