UTAH GEOLOGICAL SURVEY
a division of
Utah Department of Natural Resources
in cooperation with
Bryce Canyon Association
and **National Park Service**

Plate 6
Utah Geological Survey Special Study 178
Bryce Canyon National Park Geologic-Hazard Study Area

LIQUEFACTION SUSCEPTIBILITY
BRYCE CANYON NATIONAL PARK AND VICINITY
GARFIELD AND KANE COUNTIES, UTAH

by

Tyler R. Knudsen

2026

EXPLANATION

VH — **Very High Susceptibility** – Very high liquefaction susceptibility includes highly susceptible geologic units consisting of well-sorted sand, silty sand, and gravel along modern stream drainages and young alluvial terraces where the depth to groundwater is less than or equal to 10 feet (≤ 3 m).

H — **High Susceptibility –** High liquefaction susceptibility includes highly susceptible geologic units consisting of well-sorted sand, silty sand, and gravel with sufficient evidence to indicate the depth to groundwater is less than or equal to 50 feet (≤ 15 m). Determining if a liquefaction hazard exists at a specific location in this zone requires acquiring site-specific information about soil texture and density, groundwater conditions, and the frequency and intensity of anticipated ground shaking.

M — **Moderate Susceptibility –** Moderate liquefaction susceptibility includes moderately susceptible geologic units consisting of moderately sorted sand, silty sand, and gravel where the depth to groundwater is likely less than or equal to 50 feet (≤ 15 m). Liquefaction hazard is considered moderate in these units because of their textural characteristics and/or degree of cementation.

L — **Low Susceptibility** – Low liquefaction susceptibility includes geologic units with low susceptibility consisting of moderately to poorly sorted sand and gravel where the depth to groundwater is likely less than or equal to 50 feet (≤ 15 m). Liquefaction hazard is considered low in these units because of their textural characteristics and/or degree of cementation.

VL — **Very Low Susceptibility –** Very low liquefaction susceptibility includes geologic units with low susceptibility consisting of poorly sorted sand and gravel where the depth to groundwater is greater than or equal to 50 feet (≥15 m). Liquefaction susceptibility in these units is considered very low because of their textural characteristics, age, and/or degree of cementation.

Bryce Canyon National Park boundary

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SCALE 1:24,000

1 0.5 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

APPROXIMATE MEAN DECLINATION, 2026

7.5' Quadrangle Index: Wilson Peak; Bryce Canyon; Tropic Canyon; Tropic Reservoir; Bryce Point; Cannonville; Podunk Creek; Rainbow Point; Bull Valley Gorge

Map Location

Base from USGS US Topo Bryce Canyon, Tropic Canyon, Tropic Reservoir, Bryce Point, Cannonville, Podunk Creek, and Rainbow Point 7.5' Quadrangles (2020)
Projection: UTM Zone 12
Datum: NAD 1983

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