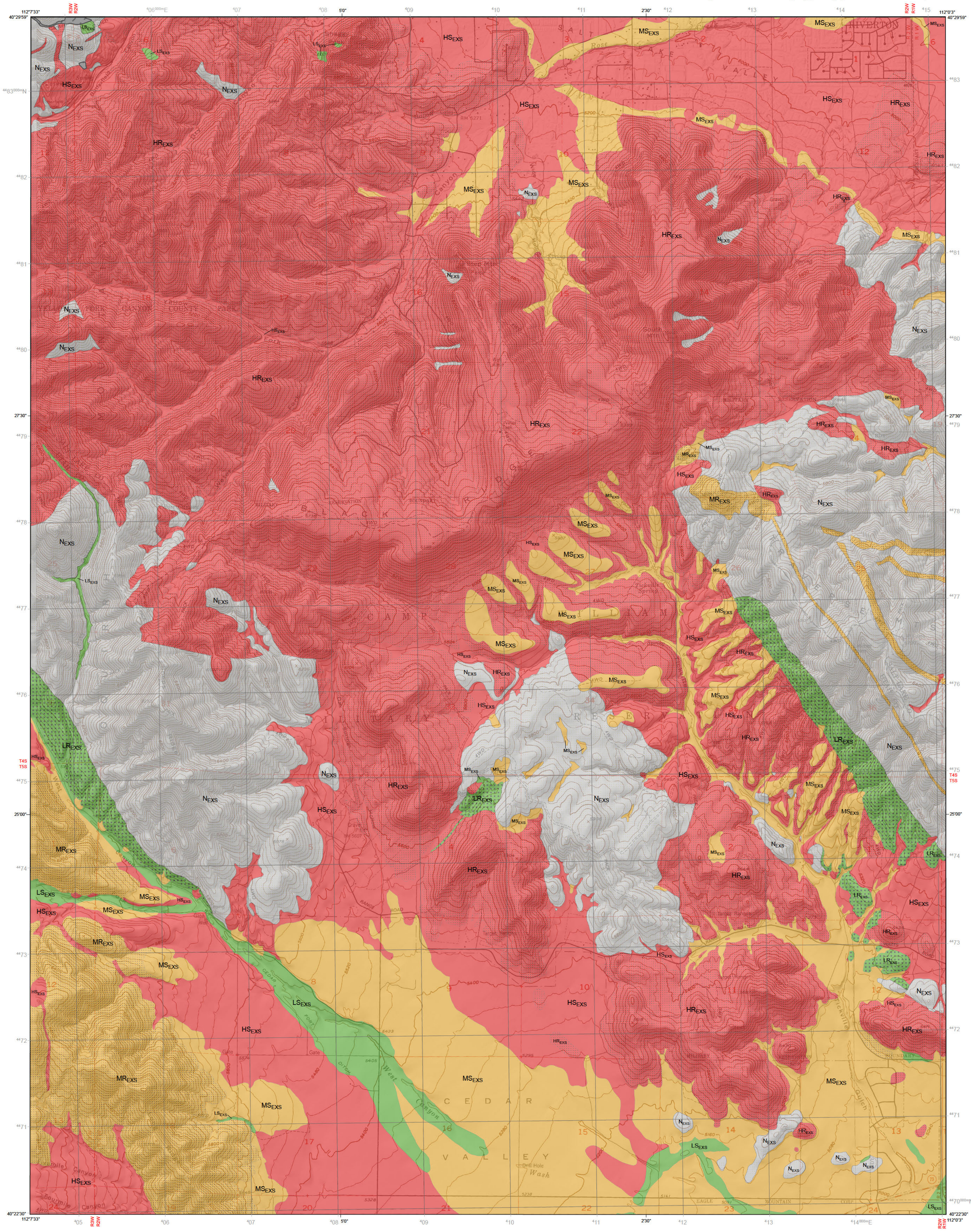
UTAH GEOLOGICAL SURVEY
a division of
Utah Department of Natural Resources



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SCALE 1:24,000

1 0.5 0 1 MILE

5000 2500 0 5000 FEET

1 0.5 0 1 KILOMETER

CONTOUR INTERVAL 40 FEET

Base from USGS Tickville Spring 7.5' quadrangle (1997).
The USGS topographic map published in 1997 conforms to the North American Datum of 1983 (NAD 83), however the boundary of the map conforms to the North American Datum of 1927 (NAD 27); therefore there is a slight offset in boundaries.
National Agriculture Imagery Program (NAIP, 2011)
Hillshade derived from 2-meter bare earth lidar (2006) data from the Utah Automated Geographic Reference Center State Geographic Information Database.
Projection: UTM Zone 12
Datum: NAD 1983
Spheroid: Clarke 1866

GIS and Cartography: Jessica J. Castleton and Sofia Agopian

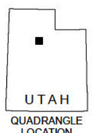
APPROXIMATE MEAN DECLINATION, 2018

EXPANSIVE SOIL AND ROCK SUSCEPTIBILITY MAP OF THE TICKVILLE SPRING QUADRANGLE, SALT LAKE AND UTAH COUNTIES, UTAH

by

Jessica J. Castleton, Ben A. Erickson, and Greg N. McDonald

2018



QUADRANGLE LOCATION

Utah Geological Survey
1594 West North Temple, Suite 3110
P.O. Box 146100, Salt Lake City, UT 84114-6100
(801) 537-3300
geology.utah.gov

1	2	3
4		5
6	7	8

1. Bingham Canyon
2. Copperton
3. Midvale
4. Lowe Peak
5. Jordan Narrows
6. Mercur
7. Cedar Fort
8. Saratoga Springs

ADJOINING 7.5' QUADRANGLE NAMES

9 781557 919502

EXPLANATION

Not Mapped – Area not mapped due to significant and ongoing human disturbance.

EXPANSIVE SOIL and ROCK SUSCEPTIBILITY

HSEXS HREXS — **Highly susceptible soil (HS) and rock (HR)** – Soil or rock classified by the U.S. Natural Resources Conservation Service (NRCS) as having a high potential for volumetric change (linear extensibility greater than 6%); includes geologic units mapped by Biek and others (2005) in which geotechnical testing indicates an abundance of expansive clay minerals (swell/collapse test [SCT] values greater than or equal to 3% and/or liquid limit [LL] values greater than or equal to 45, and plasticity index [PI] values greater than or equal to 20). Includes geologic bedrock units mapped by Biek and others (2005) that weather to clay.

MSEXS MREXS — **Moderately susceptible soil (MS) and rock (MR)** – Soil or rock classified by the NRCS as having moderate susceptibility for volumetric change (linear extensibility 3%–6%); includes interbedded Lake Bonneville deposits mapped by Biek and others (2005) in which geotechnical borehole logs indicate thick expansive clay layers are present. Typically, these units have SCT values of 2%–3% and/or an LL of 20–40 and a PI of 10–30. Includes geologic bedrock units mapped by Biek and others (2007) that weather to clay.

LSEXS LREXS — **Low suceptibility soil (LS) and rock (LR)** – Soil or rock classified by the NRCS as having low potential for volumetric change (linear extensibility 0%–3%); includes geologic units dominated by sand and gravel mapped by Biek and others (2005) in which geotechnical testing indicates a lack of expansive clay minerals (SCT values of 0%–2% and/or an LL of 0–30 and a PI of 0–15).

NEXS — Area with no expansive soil or rock.

USING THE MAP

This map shows the location of known or suspected expansive soil and rock in the Tickville Spring quadrangle. The presence and severity of expansive soil or rock along with other geologic hazards should be addressed in site-specific geotechnical/geologic-hazard investigations. This map is not intended for use at scales other than 1:24,000, and is designed for use in general planning to indicate the need for site-specific geotechnical/geologic-hazard investigations. Site-specific geotechnical/geologic-hazard investigations can resolve uncertainties inherent in generalized mapping and help ensure safety by identifying the need for special foundation designs, mitigation,and/or construction techniques.

For additional information about expansive soil and rock in the Tickville Spring quadrangle, refer to the accompanying report.