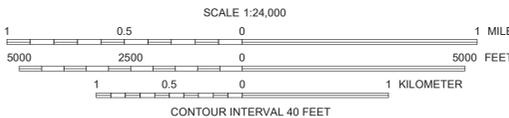


Although this product represents the work of professional scientists, the Utah Department of Natural Resources, Utah Geological Survey, makes no warranty, expressed or implied, regarding its suitability for a particular use. The Utah Department of Natural Resources, Utah Geological Survey, shall not be liable under any circumstances for any direct, indirect, special, incidental, or consequential damages with respect to claims by users of this product.



Base from USGS Moab 7.5' quadrangle (1985), slopes derived from the USGS 10-meter National Elevation Dataset (NED) (2009), and aerial photography from the National Agriculture Imagery Program (NAIP, 2011).
Projection: UTM Zone 12
Datum: NAD 1983
GIS and Cartography: Jessica J. Castleton and Ben A. Erickson
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

SOLUBLE SOIL AND ROCK SUSCEPTIBILITY MAP OF THE MOAB QUADRANGLE, GRAND COUNTY, UTAH

by

Jessica J. Castleton, Ben A. Erickson, and Emily J. Kleber 2018



| | | | |
|---|---|---|--------------------------|
| 1 | 2 | 3 | 1. Merrimac Butte |
| 4 | 5 | 6 | 2. The Windows Section |
| 7 | 8 | 7 | 3. Big Bend |
| | | 8 | 4. Gold Bar Canyon |
| | | | 5. Hill Creek |
| | | | 6. Shafer Basin |
| | | | 7. Trough Springs Canyon |
| | | | 8. Kane Springs |

ADJOINING 7.5' QUADRANGLE NAMES



EXPLANATION

- Not Mapped – Area not mapped due to significant and ongoing human disturbance.
- Soluble Soil and Rock Categories**
- HSR** **Highly Soluble Rock** – Bedrock units that contain massive gypsum horizons. These units and the soils derived from them are associated with dissolution and collapse features such as caves, sinkholes, and subsidence.
- HSS** **Highly Soluble Soil** – Soil units that contain massive gypsum horizons. These units are associated with dissolution and collapse features such as caves, sinkholes, and subsidence.
- GRA** **Gypsiferous Rock A** – Bedrock units that contain abundant gypsum, often in laterally continuous horizons as much as several feet thick. These units and the soils derived from them are commonly associated with dissolution and collapse features.
- GRB** **Gypsiferous Rock B** – Bedrock units that contain thin to medium beds and veins of gypsum. These units and the soils derived from them may contain sufficient gypsum locally to cause subsidence.
- GRC** **Gypsiferous Rock C** – Buried or embedded gypsiferous rock, areas where talus, colluvium, alluvium, or pediment/mantle deposits make up a thin layer above HSR, HSS, GRA, or GRB units. Surficial cover over these units may be thin and care should be taken to not remove the overlying units during development and not allow water to percolate down which could contribute to dissolution at depth that can propagate to the surface.
- GS** **Gypsiferous Soil** – Gypsum-bearing soils as mapped by the Natural Resources Conservation Service (NRCS). The gypsum in these soils is largely pedogenic (formed by dissolution and re-precipitation at depth during the soil formation process) and its presence may not be apparent at the ground surface.
- LRA** **Limestone Rock A** – Bedrock units that contain calcium carbonate. These units and the soils derived from them are commonly associated with dissolution and collapse features.
- Limited to no potential for soluble soil or rock.

USING THE MAP

This map shows the location of known and possible soluble soil and rock in the Moab quadrangle. The map is intended for general planning purposes to indicate where gypsiferous rock or soil, or limestone rock may be present and where site-specific geotechnical/geologic-hazard investigations may be required. The UGS recommends a site-specific geotechnical/geologic-hazard investigation for development at all locations in the Moab quadrangle. Site-specific geotechnical/geologic-hazard investigations can resolve uncertainties inherent in generalized hazard mapping and help ensure safety by identifying the need for special engineering design, mitigation, and/or construction techniques. These investigations are particularly important for areas within the Moab quadrangle because local areas of shallow perched groundwater too small to show at the map scale (1:24,000) may be present anywhere within the quadrangle. This map is intended for use at a scale of 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 may require installing and monitoring observation wells through more than one season and/or examining sediments exposed in test pits for evidence of soluble soil and rock.

For additional information about soluble soil and rock in the Moab quadrangle, refer to the accompanying report.