

Explanation

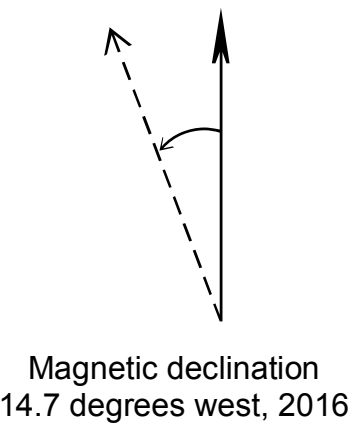
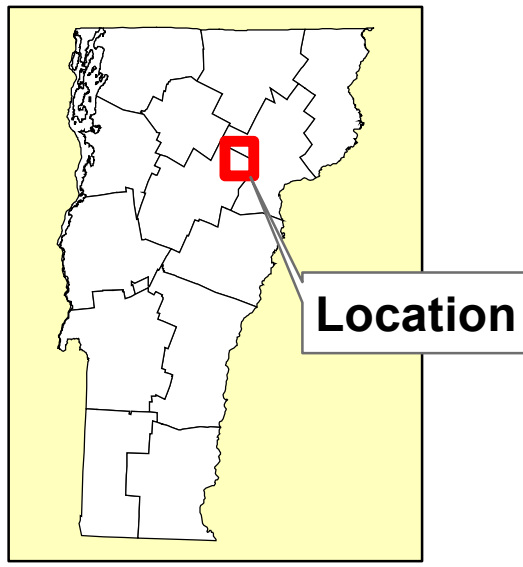
The purpose of the hydrogeologic classification is to rank how easily ground water can move through the surficial materials. The classification is made using water well logs and is based almost entirely on the coarseness of the surficial materials, with the assumption that ground water will be able to flow easier through coarser materials than through finer ones. Interpretations based on this data will be shown on other plates in this report.

Relatively thin, coarse-grained surface horizons that are less than about 20 feet thick are ignored in this classification as they are likely to be of little importance either as significant aquifers or as barriers to prevent or slow infiltration of ground water. In the classification below a "thick" surface horizon measures 20 feet or more.

Surficial deposits that are less than about 40 feet in **total** thickness are not considered to be good candidates for surficial aquifers. Even if such deposits can supply sufficient yields during dry seasons, they are quite likely to be at risk from contamination from surface waters.

Hydrogeologic Classification

- 0 Thick, coarse-grained, stratified deposits over till over coarse-grained stratified deposits.
- 1 Fine-grained stratified deposits over coarse-grained stratified deposits.
- 2 Fine-grained stratified deposits over coarse-grained stratified deposits over fine-grained stratified deposits or till.
- 3 Thick, coarse-grained, stratified deposits over fine-grained stratified deposits over coarse-grained stratified deposits.
- 4 Sand-matrix till over coarse-grained stratified deposits.
- 5 Silt-to-clay-matrix till over coarse-grained stratified deposits.
- 6 Thick, coarse-grained, stratified deposits.
- 7 Thick, coarse-grained, stratified deposits over fine-grained stratified deposits and/or till.
- 8 Thick section of sand-matrix till.
- 9 Thick section of silt-to-clay matrix till over fine-grained stratified deposits.
- 10 Thick section of fine-grained stratified deposits over silt-to-clay-matrix till or directly over bedrock.
- 11 Thick section of silt-to-clay-matrix till.
- 12 Thin surficial deposits or no surficial deposits overlying bedrock. Includes the very common case of thin till over bedrock. Generally less than 40 feet thick.
- 13 Other. Commonly, this is a thick section of surficial deposits with either no details of stratigraphy or highly variable stratigraphy.
- 999 Problem record. Usually due to location being suspect.



Base map from U.S. Geological Survey.
Coordinate System: Vermont State Plane, meters, NAD 83.
Geographic coordinates shown at topo corners are in NAD 83.

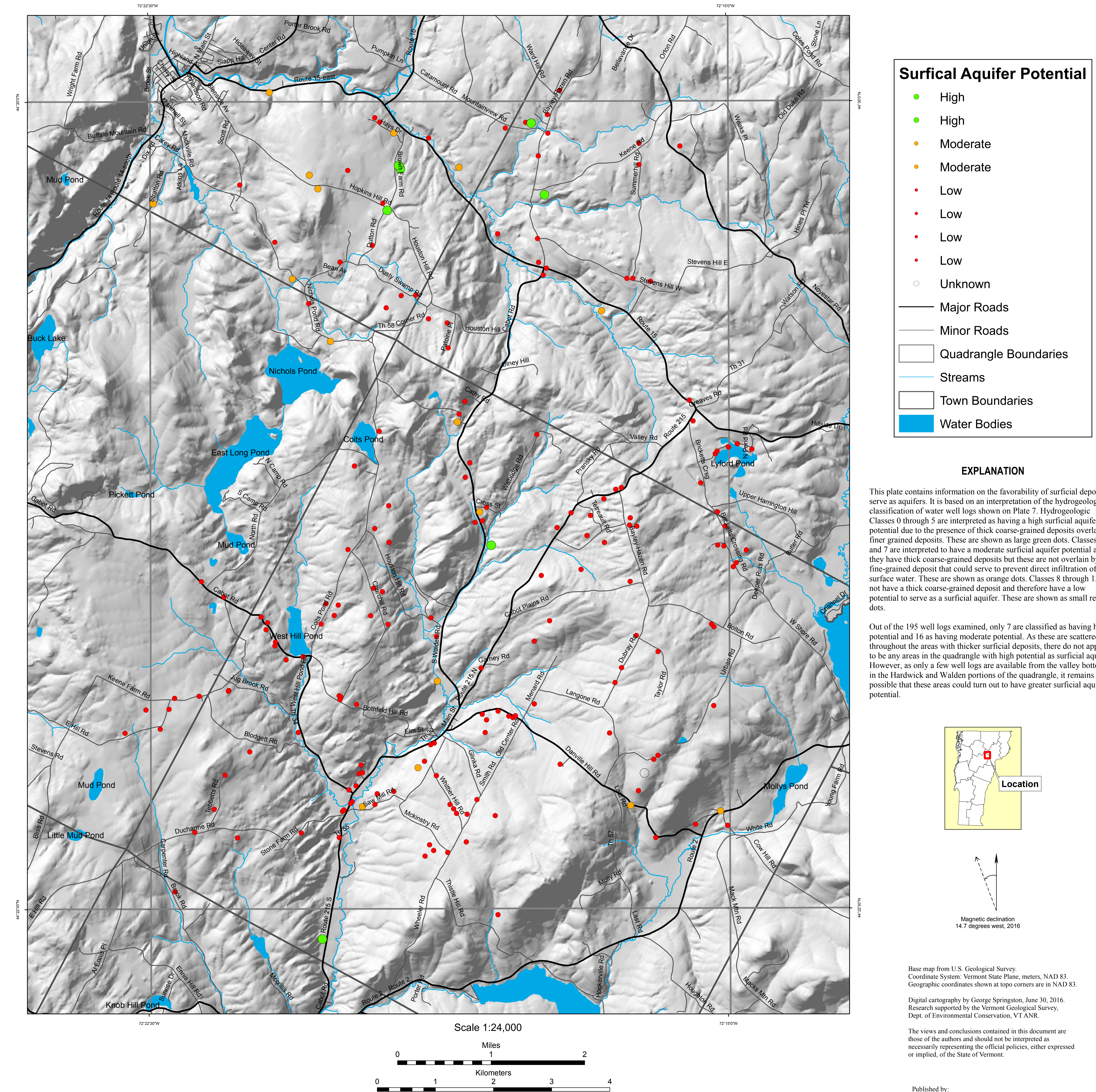
Digital cartography by George Springston, June 30, 2016.
Research supported by the Vermont Geological Survey,
Dept. of Environmental Conservation, VT ANR.

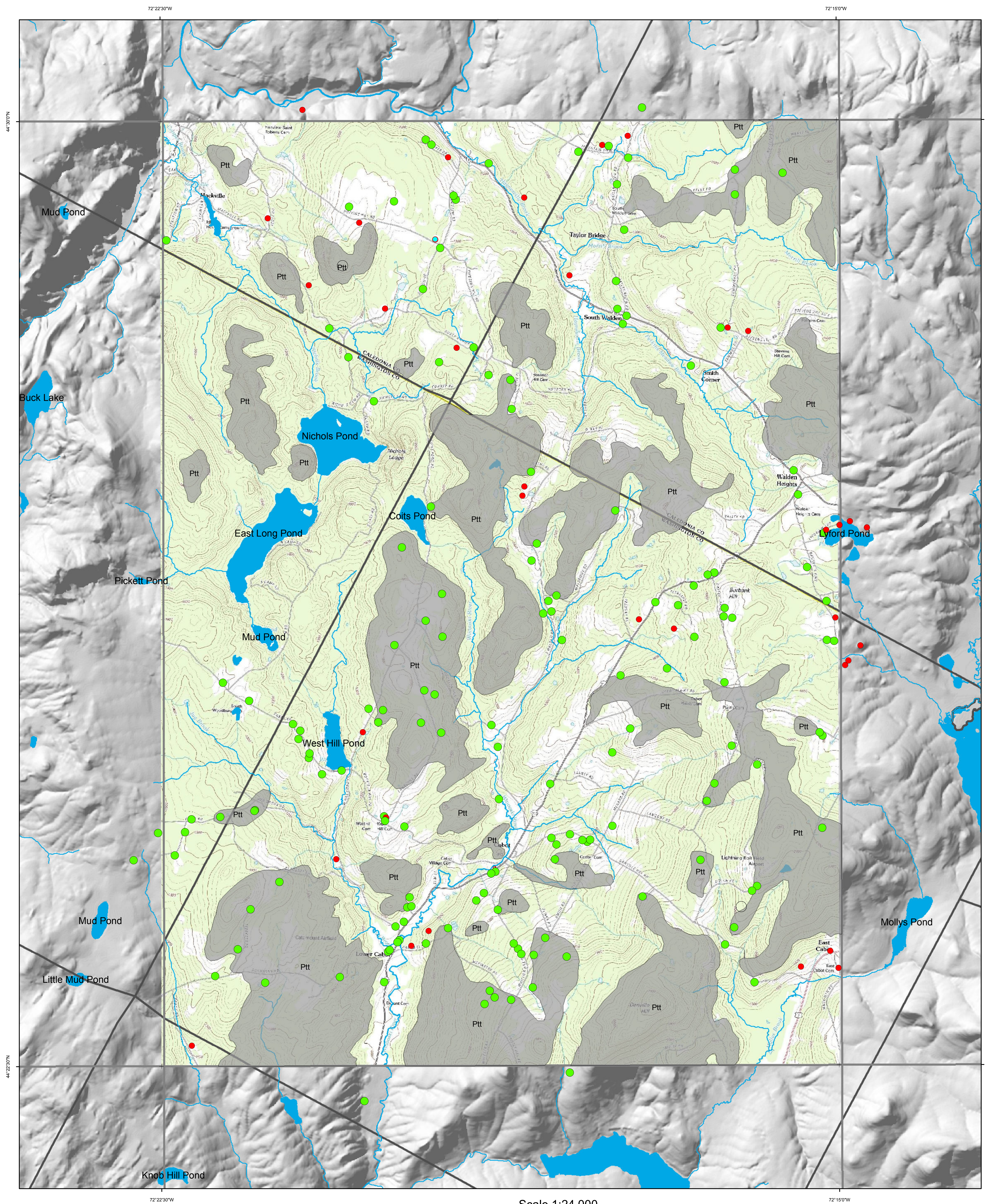
The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the State of Vermont.

Published by:
Vermont Geological Survey, Marjorie Gale, State Geologist
Department of Environmental Conservation
1 National Life Drive, Davis 2
Montpelier, VT 05620-3902
<http://dec.vermont.gov/geological-survey>



**Hydrogeologic Classification of Well Logs,
Cabot Quadrangle, Vermont**
by
George E. Springston
2016





Recharge To Bedrock

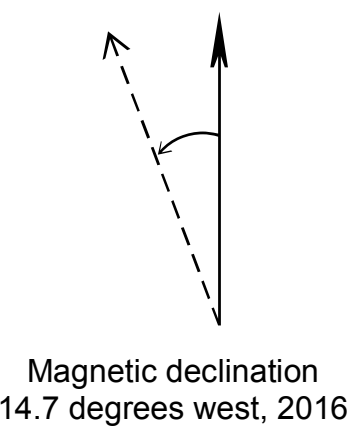
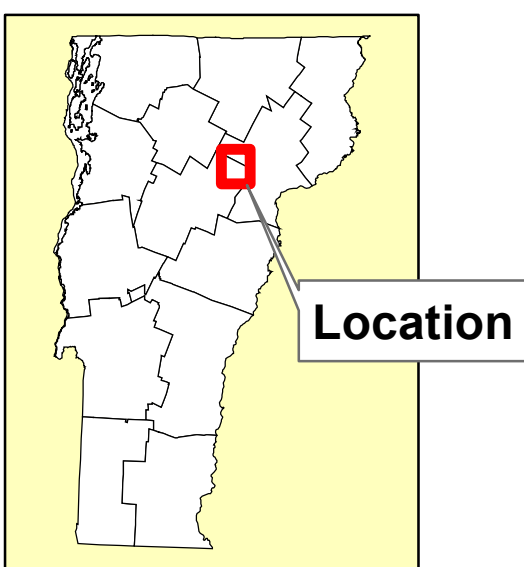
- High
- High
- High
- High
- Low
- Low
- Low
- Low
- Unknown
- Ptt Thin Till
- Quadrangle Boundaries
- Town Boundaries
- Streams
- Water Bodies

EXPLANATION

This plate contains information on the favorability of recharge to bedrock aquifers. It is based on an interpretation of the hydrogeologic classification of water well logs shown on Plate 7. Hydrogeologic Classes 0, 1, 3 through 6, and 12 are interpreted as having a high bedrock aquifer recharge potential due to the presence of either thick coarse-grained deposits at the base or else the presence of thin surficial deposits. These are shown as green dots. Classes 2, 7, and 8 are interpreted to have a low potential for bedrock aquifer recharge as there is a thick deposit of fine-grained materials at the base of the surficial deposits. These are shown as small red dots.

No significant areas with low aquifer recharge potential have been identified in the quadrangle. Only 35 out of the 195 wells are interpreted as having low aquifer recharge potential and these are scattered throughout that quadrangle. Considering the relatively thin surficial deposits throughout most of the quadrangle (see Plate 3), and the extensive areas mapped as thin till (medium gray polygons on Plate 1 and this plate), this suggests that there is ample opportunity for groundwater recharge over much of the quadrangle.

Actual groundwater recharge will depend heavily on the detailed stratigraphy of the surficial deposits, as well as the bedrock units present and the distribution, length, orientation, spacing, and openness of fractures in the bedrock. The bedrock characteristics are not considered here.



Base map from U.S. Geological Survey.
Coordinate System: Vermont State Plane, meters, NAD 83.
Geographic coordinates shown at topo corners are in NAD 83.

Digital cartography by George Springston, June 30, 2016.
Research supported by the Vermont Geological Survey,
Dept. of Environmental Conservation, VT ANR.

The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the State of Vermont.

Published by:
Vermont Geological Survey, Marjorie Gale, State Geologist
Department of Environmental Conservation
1 National Life Drive, Davis 2
Montpelier, VT 05620-3902
<http://dec.vermont.gov/geological-survey>

Potential Favorability for Recharge of Groundwater
to Bedrock, Cabot Quadrangle, Vermont
by
George E. Springston
2016

