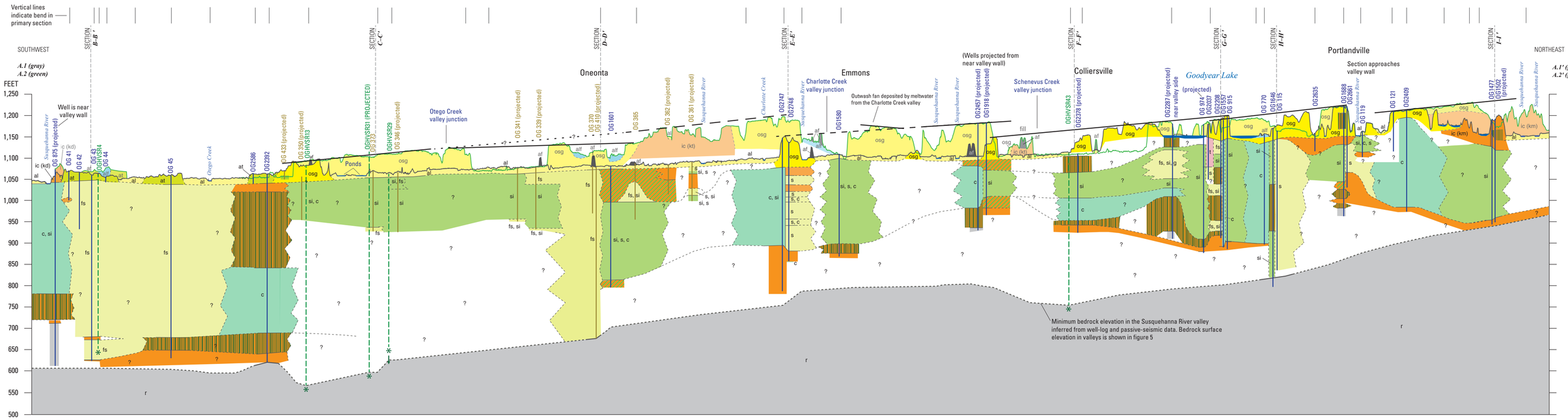
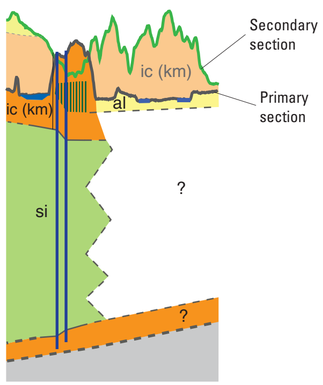


VERTICAL EXAGGERATION ×25
DATUM IS NAVD 88
SCALE IS DIFFERENT FROM PLATE 1

0 5,000 10,000 FEET
0 1,250 2,500 METERS

Primary and secondary sections—A single section along the Susquehanna River valley cannot show both a continuous floodplain and glacial deposits of interest along the valley walls. To capture more valley features, two parallel longitudinal section lines were incorporated in this figure: (1) a primary standard hydrogeologic section, indicated by the dark gray land-surface line and more intense geologic unit colors; and (2) a secondary section with a green land-surface line and muted geologic unit colors (corresponding to the same geologic units as used in the primary section). The geologic units along the secondary section are shown only when they are at a higher elevation than (and are therefore not obscured by) the units along the primary section. The well logs in the section are associated with the primary section only. The secondary section is partial in that it only shows geologic units where they are higher in elevation (above) the primary section



EXPLANATION

Subsurface units

[Based on well-log descriptions. The units are indicated by color only. Sediment labels for fine-grained units are placed adjacent to the wells from which the description originated, as descriptions within a unit are not always uniform. Geologic-unit colors for surficial units along section lines *A*.1–*A*.1' are brighter than those along section *A*.2–*A*.2' to help distinguish the units on each section. See the note, "Primary and secondary sections" for this section only. Queried where uncertain]

Fine-grained sediment—Typically interpreted as glaciolacustrine in origin

- Fine sand (fs)—May also be noted in drillers' logs as quicksand or sand (s). Other sediments may include silt (si), clay (c), or gravel (g), as indicated by additional letter symbols, as listed in drillers' logs
- Silt (si)—May also include fine sand (fs), sand (s), or clay (c) in drillers' logs, as indicated by additional letter symbols, in the order listed
- Clay (c)—May also include silt (si), as indicated by additional letter symbol

Coarse-grained sediment—Ranges from well-sorted gravels and sands to gravels with nearly equal amounts of silt or clay

- Gravel and sand—Gravel and sand beneath lacustrine fines are interpreted as ice-contact deposits; shallower gravel and sand may be of ice-contact, outwash, or early alluvial origin
- Gravel and silt—As described in drillers' logs. Saturated, well-sorted intervals may constitute productive aquifers. Common in glacial ice-contact or outwash deposits and in postglacial floodplain-alluvium or alluvial-fan deposits. May also be infill material in dead-ice sinks (Fleisher, 1986a)
- Gravel and clay—As described in drillers' logs. May represent ice-proximal mix of poorly sorted ice-contact deposits and resedimented till (for example, flow till) or infill material from ice meltout in dead-ice sinks (Fleisher, 1986a)

Other

- r — Bedrock—Typically shale with minor siltstone north of the Susquehanna and Schenevus Creek valleys; to the south, shale and sandstone

Surficial units

[Units generally correspond to those at the land surface on plate 1, except for till (not classified as either till or thin till on this cross section) and filled land (not mapped on plate 1). Geologic-unit colors for surficial units along section lines *A*.1–*A*.1' are brighter than those along section *A*.2–*A*.2' to help distinguish the units on each section. See the note, "Primary and secondary sections" for this section only. Queried where uncertain]

Postglacial deposits

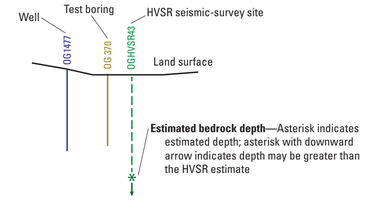
- al — Alluvium—Mix of fine sand, silt, and clay with typically more gravel near the base. Deposited in postglacial floodplains
- at — Alluvial terrace—Consists of old alluvium (gravel, fine sand, and silt) subsequently incised by the local stream or river. Deposited generally more than 15 to 20 feet above current river level
- alf — Alluvial fan—Fan-shaped accumulations of stratified silty sand and gravel. Deposited where tributary streams enter large valleys
- af — Artificial fill—A wide range of local sediments (from cut areas or borrow pits) and rock, excluding organic material. Primarily serves as road and railroad embankments that overlie original surficial deposits

Glacial deposits

- osg — Outwash—Stratified, generally well sorted sand and gravel. Permeable, although thin saturated thicknesses are a limiting factor for water resources. Deposited by glacial meltwater streams as outwash terraces, topset beds of deltas near the receding ice front, and valley-train outwash originally spanning the width of the valley away from the ice front. Typically at grade with ice-contact deposits, ic (kt) or ic (km)
- ic (kt) / ic (km) / ic (kd) — Ice-contact deposit—Stratified sand, gravel, and silt. Till may be intermixed with some deposits because of localized slumping or mass movement from melting ice. Highly variable sorting and chaotic bedding result in highly variable permeability. Deposited by meltwater in a variety of environments within and adjacent to glacial ice. Deposits on valley walls are largely unsaturated but can act as conduits for recharge to confined valley-bottom ice-contact deposits (subaqueous fans, eskers) that are the most widespread sand-and-gravel aquifers in the study area. Ice-contact landforms are indicated in parentheses: kt, kame terrace, which consists of poorly to well-stratified gravel, sand, and silt and formed when meltwater deposited sediment between the ice and the valley wall; km, kame moraine, which consists of poorly sorted and stratified sand, gravel, and silt deposited by meltwater and intermixed with till on or adjacent to glacial ice; kd, kame delta, deposited where meltwater exited the ice into a proglacial lake. Kame deltas consist of outwash topset beds with sand and gravel foreset beds beneath
- t — Till—Unsorted, unstratified mixture of clay, silt, sand, gravel, and boulders. Thickness ranges from a veneer to at least 170 feet. Deposited beneath glacial ice as lodgment till during a glacial advance or at the edge of the ice sheet by melting ice as ablation till during retreat of the ice front

Inferred surface profile line of former outwash or kame terrace deposits—Upgradient end marks approximate ice-margin position in valley. Dashed where less certain

Note: Where "(projected)" is notated above a well ID number, the well does not fall directly on the section line and has been projected perpendicular to the valley orientation to the section line. The projected well elevation and bedrock depth may be different from that at the section line and therefore the well may plot above or below land-surface on the section-line; bedrock typically plots higher than at the section line



Estimated bedrock depth—Asterisk indicates estimated depth; asterisk with downward arrow indicates depth may be greater than the HVSR estimate

Geologic contact—Dashed where inferred, queried where uncertain

- Contact between bedrock and unconsolidated deposits
- Contact between different unconsolidated deposits

Figure 4*A*. Primary longitudinal hydrogeologic section *A*.1–*A*.1' (gray surface line) and secondary longitudinal hydrogeologic section *A*.2–*A*.2' (green surface line) along the Susquehanna River valley, Otsego County, New York. Sections *B*–*B*' through *M*–*M*' are within the main report file, available at https://doi.org/10.3133/sir20225069. HVSR, horizontal-to-vertical spectral ratio.