

Surficial Geology of the Davenport East (Iowa) 7.5' Quadrangle

SURFICIAL GEOLOGY OF THE DAVENPORT EAST 7.5' QUADRANGLE, SCOTT COUNTY, IOWA

Iowa Geological Survey
Open File Map OFM-09-07
June 2009

prepared by

Stephanie Tassier-Surine, Deborah Quade, E. Arthur Bettis, III, Robert McKay,
Huaibao Liu and James Gagliano,

Iowa Geological Survey, Iowa City, Iowa



Iowa Department of Natural Resources, Richard A. Leopold, Director
Iowa Geological Survey, Robert D. Libra, State Geologist

Supported in part by the U.S. Geological Survey
Cooperative Agreement Number 08HQAG0082
National Cooperative Geologic Mapping Program (STATEMAP)

ACKNOWLEDGMENTS

Recognized for contributions to map's production: Andy Asell, Chris Kahle, Ray Anderson, Brian Witzke, Mary Pat Heitman, and Lois Bair. Drilling was provided under contract with Aquadrill of Swisher, Iowa; a special thanks to drilling crew members who worked at times in challenging drilling conditions. New subsurface geologic data was generated by the University of Iowa students Sarah Byrum and Kyle Brackets who produced descriptive logs of water well drill samples. Murray Perdue (IGS) prepared well samples for stratigraphic logging. Dan Murray, Bob Rowden and Tom Marshall provided field assistance during drilling. A special thanks to all landowners who graciously allowed access to their land for drilling: Dean Arps, Leonard Hamann, John Kundell, Kevin Kundell, Dave Moeller, Leroy Paustian, Fred Peeters, William Storjohann, and Kris-Del Farms. Many thanks to the City of Davenport Parks and Recreation Department, and the Scott County Engineer's Office.

LEGEND

CENOZOIC

QUATERNARY SYSTEM

HUDSON EPISODE

- Qal** - **Alluvium** (DeForest Formation—Undifferentiated) Variable thickness of less than 1 to 5 m (3-16 ft) of very dark gray to brown, noncalcareous to calcareous, stratified silty clay loam, clay loam, loam to sandy loam alluvium and colluvium in stream valleys, on hill slopes and in closed depressions. May overlie Glasford Formation glacial till or Noah Creek Formation. Associated with low-relief modern floodplain, closed depressions, modern drainageways or toe slope positions on the landscape. Seasonal high water table and potential for frequent flooding.
- Qaf** - **Alluvial fan** (Corrington Mbr.) Variable thickness of 2 to 5 m (7-16 ft) of dark brown to yellowish brown, noncalcareous, silt loam to loam with interbedded lenses of fine sand and silts. A pebble lag is commonly found at or near the fan surface. Overlies sand and gravel of the Henry Formation. Steep angled fans at the base of low order drainages and colluvial slopes along the northern margin of the Mississippi River Valley.

WISCONSIN EPISODE

- Qpt** - **Loess Mantled Terrace** (Peoria Formation—silt and/or sand facies) 2 to 7 m (7-23 ft) of yellowish brown to gray, massive, jointed, calcareous or noncalcareous, silt loam and intercalated fine to medium, well sorted, sand. May grade downward to poorly to moderately well sorted, moderately to well stratified, coarse to fine feldspathic quartz sand, loam, or silt loam alluvium (Late Phase High Terrace) or may overlie a Farmdale Geosol developed in Rosama Silt which in turn overlies a well-exposed Sangamon Geosol developed in poorly to moderately well sorted, moderately to well stratified, coarse to fine sand, loam, or silt loam alluvium (Early Phase High Terrace).
- Qhm** - **Outwash Sand and Pebbly Sand** (Henry Formation, Muscatine Mbr.) coarse to fine sand and pebbly sand mantled with up to 1.5 m (5 ft) of eolian sand, Kingston Terrace complex in the Mississippi Valley.
- Qpsb-gla** - **Thick Loess** (Peoria Formation—silt facies) Generally 5 to 15 m (16-49 ft) of yellowish to grayish brown, massive, jointed calcareous or noncalcareous silt loam to silty clay loam. Overlies massive, fractured, clay loam glacial till of the Glasford Formation with or without intervening clayey Farmdale Geosol. This mapping unit encompasses upland divides, ridgetops and convex sideslopes. Well to somewhat poorly drained landscape.
- Qps1b-gla** - **Thick Loess and Intercalated Eolian Sand** (Peoria Formation—silt facies) 5 to 15 m (16-49 ft) of yellowish brown to gray, massive, noncalcareous grading downward to calcareous silt loam and intercalated fine to medium, well sorted, sand. Minimum thickness of 5 m (16 ft) on uplands. Maximum thickness of 2-7 m (7-23 ft) of loess occurs on adjacent slopes. Overlies massive, fractured, loamy glacial till of the Illinoian Glasford Formation with or without intervening clayey Farmdale-Sangamon Geosol.

ILLINOIS EPISODE

- Qgla** - **Till** (Glasford Formation) Generally 10 to 35 m (33-115 ft) of very dense, massive, fractured, loamy glacial till of the Illinoian Glasford Formation with or without a thin loess mantle (Peoria Formation—less than 2 m) and intervening clayey Farmdale-Sangamon Geosol. Uppermost till may be reworked (associated with the Iowan Surface). This mapping unit encompasses narrowly dissected interfluvial and side slopes, and side valley slopes. Drainage is variable from well drained to poorly drained.

PRE-ILLINOIS EPISODE

- Qwa3** - **Till** (Wolf Creek or Albarnett Formations) Generally 10 to 35 m (33-115 ft) of very dense, massive, fractured, loamy glacial till of the Wolf Creek or Albarnett formations with or without a thin loess mantle (Peoria Formation—less than 2 m) and intervening clayey Farmdale-Sangamon Geosol. This mapping unit encompasses narrowly dissected interfluvial and side slopes, and side valley slopes. Drainage is variable from well drained to poorly drained. This unit is shown only in the cross section.

PALEOZOIC

- Su-Du-Pu** - Undifferentiated Silurian, Devonian and Pennsylvanian bedrock. Primarily shale, dolomite and limestone.

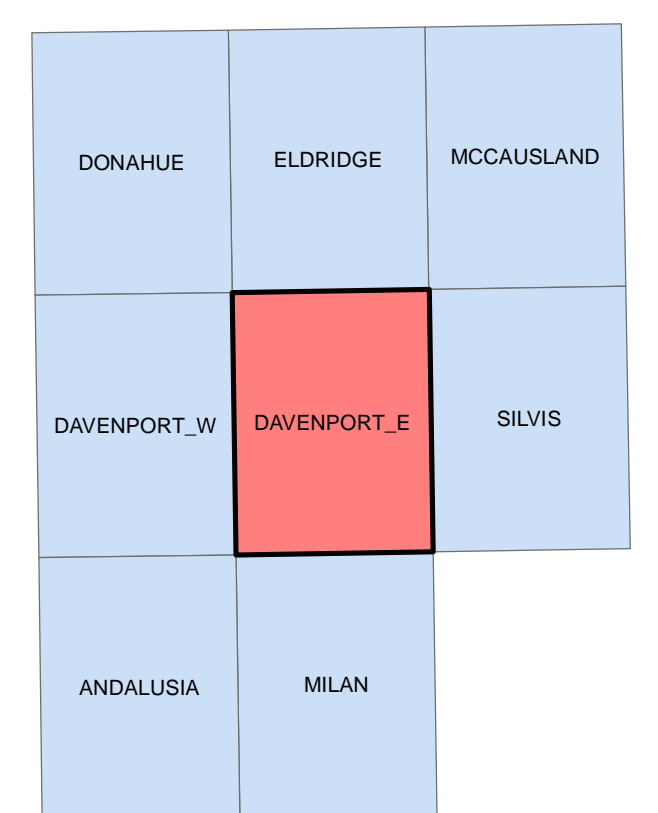
- **Drill Holes**
- D **Bedrock Outcrops**

Base map from USGS Davenport East 7.5' Digital Raster Graphic (IGS GIS file DRGB42.TIF) which was scanned from the Davenport East 7.5' Topographic Quadrangle map, published by US Geological Survey in 1991. Topographic contours and land features based on 1986 aerial photography, field checked in 1988. Land elevation contours (10' interval) based on NAD83.

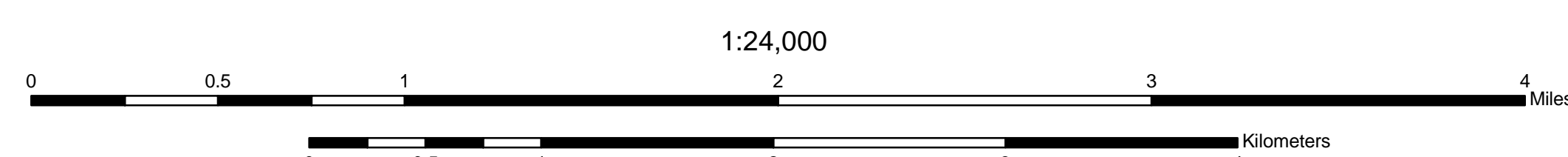
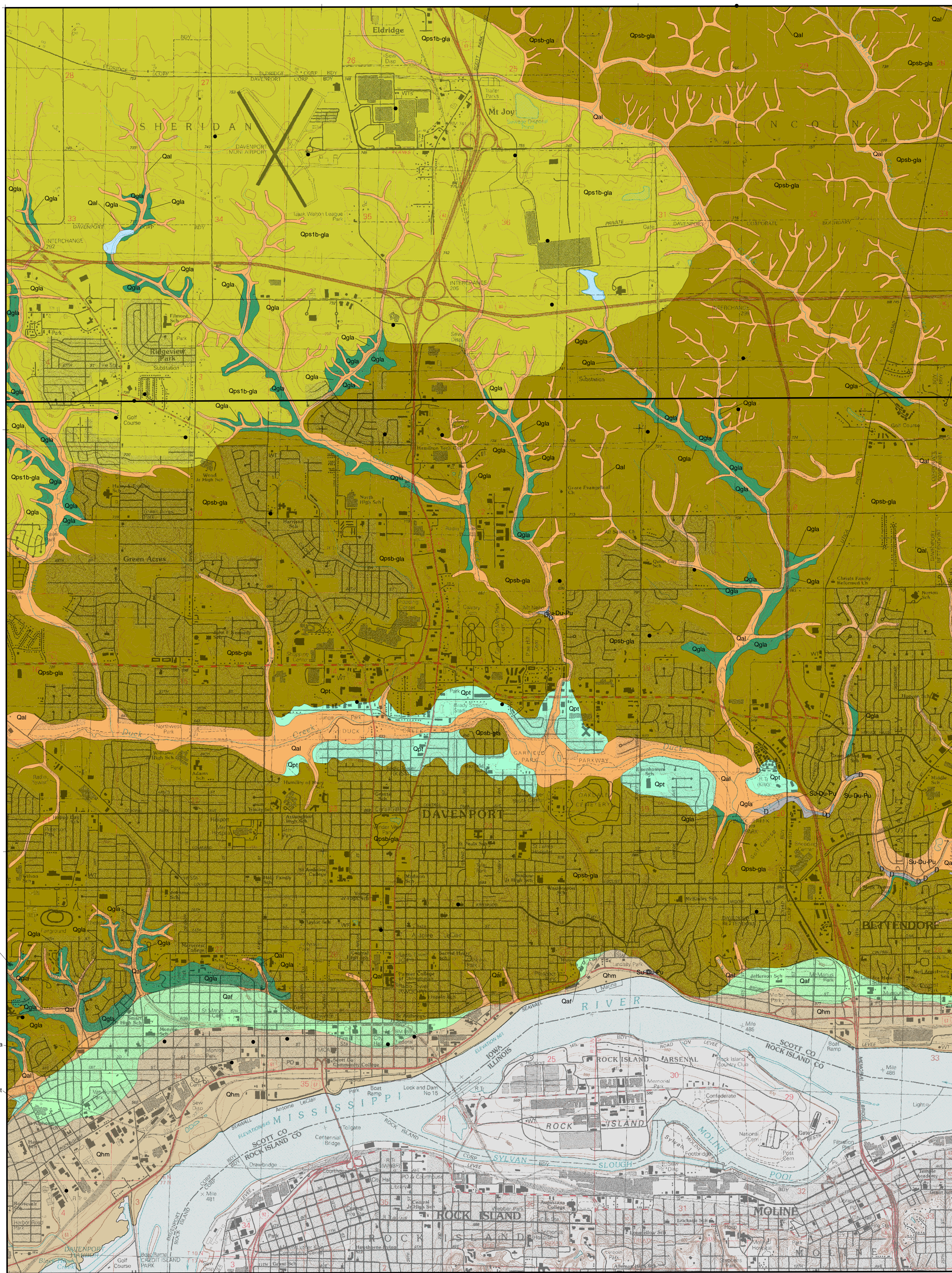
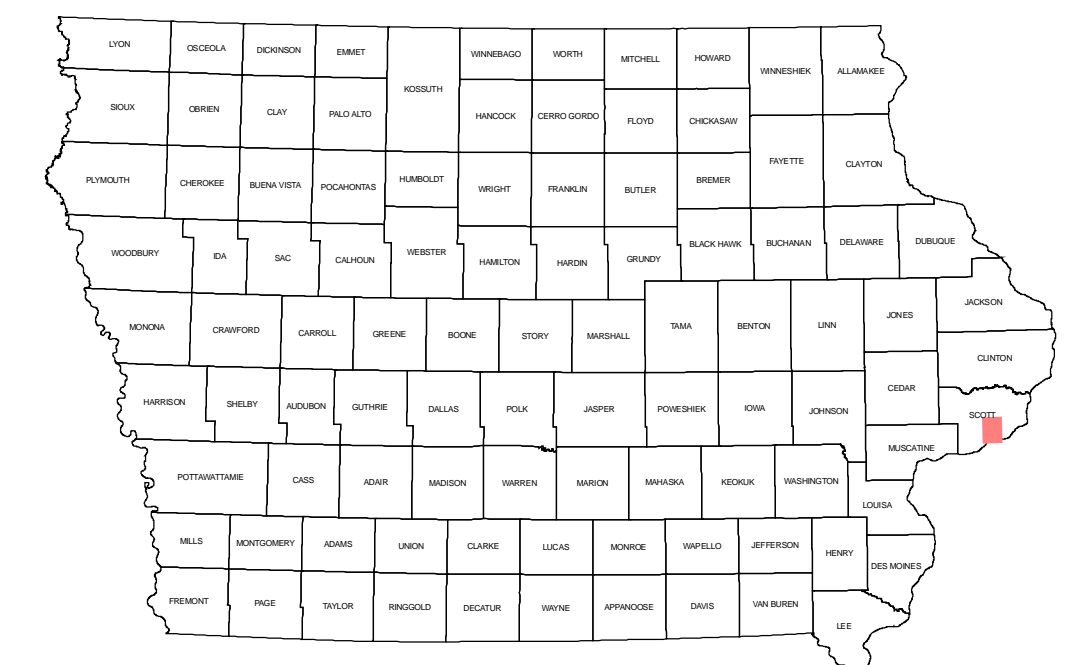
Iowa Geological Survey digital cartographic file DavenportEastquadr_surficial09.mxd, version 6/16/09 (ArcGIS 9.2)
Map projection and coordinate system based on Universal Transverse Mercator (UTM) Zone 15, datum NAD83.

The map and cross section are based on interpretations of the best available information at the time of mapping. Map interpretations are not a substitute for detailed site specific studies.

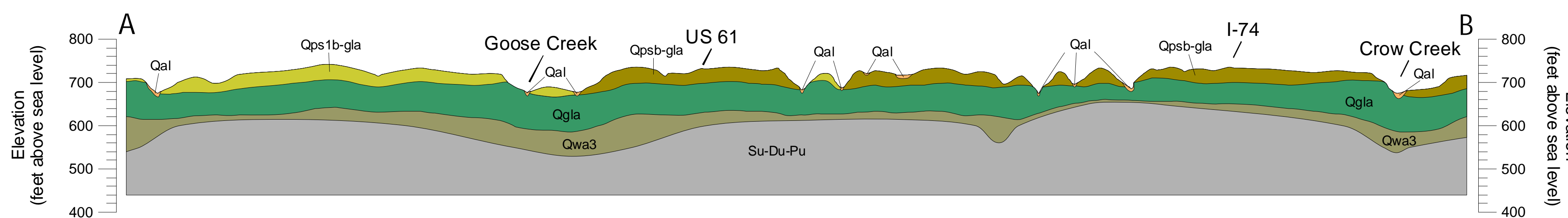
Adjacent 7.5' Quadrangles



Location Map



GEOLOGIC CROSS-SECTION A-B



Correlation of Map Units

