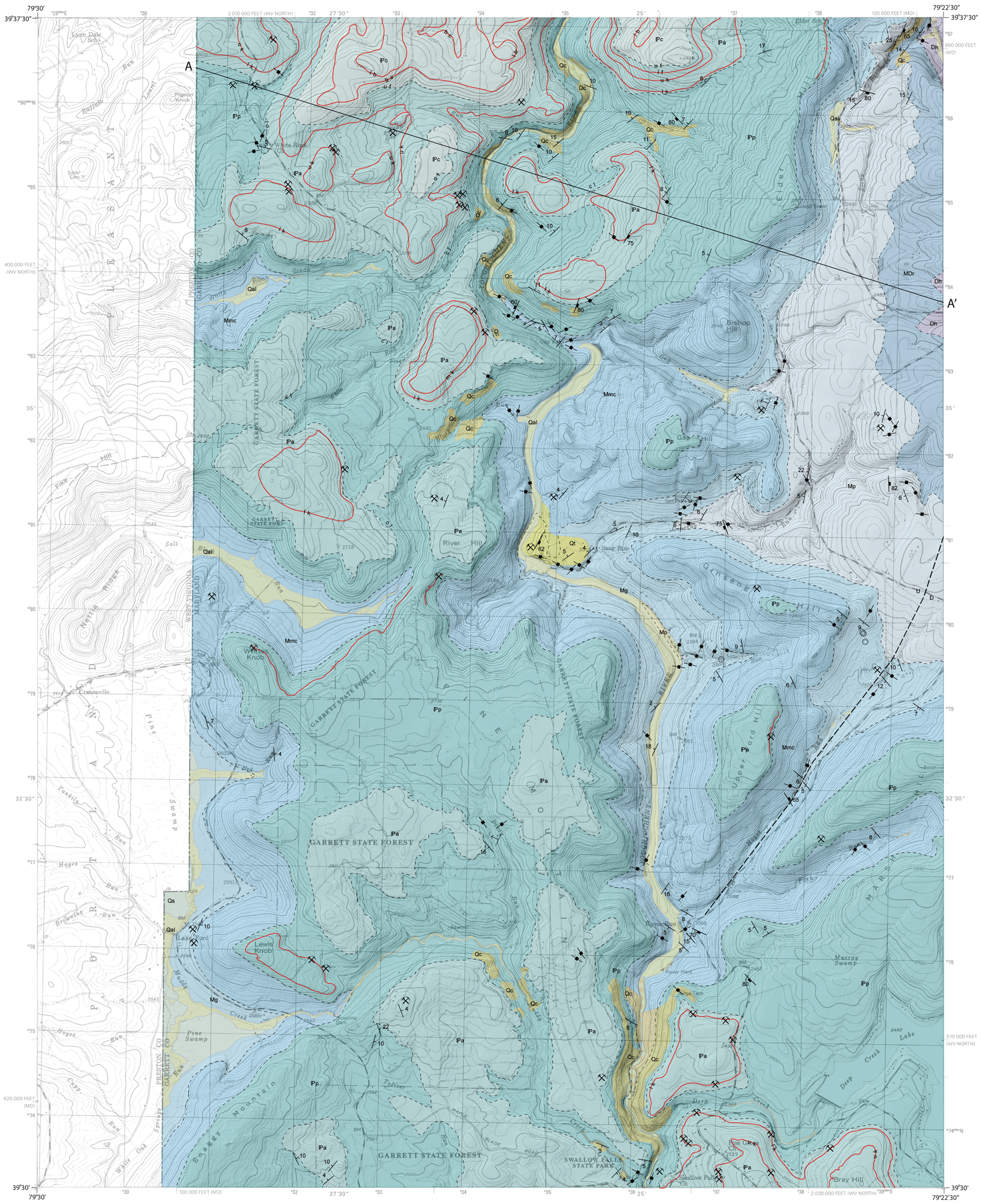


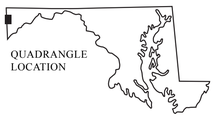
U.S. Geological Survey (USGS) US Topographic 7.5-minute Series
Sang Run, MD quadrangle, 1947. Map revised 1976.

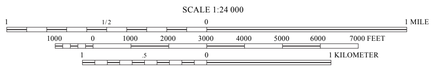
Maryland State Plane Coordinate System FIPS 1900
Projection: Lambert Conformal Conic, 1980 geodetic reference system
Horizontal Datum: North American Datum 1983

Geographic coordinates (latitude-longitude) shown near corners

Geologic Map of the Sang Run Quadrangle, Garrett County, Maryland

by
Rebecca Kavage Adams
2016



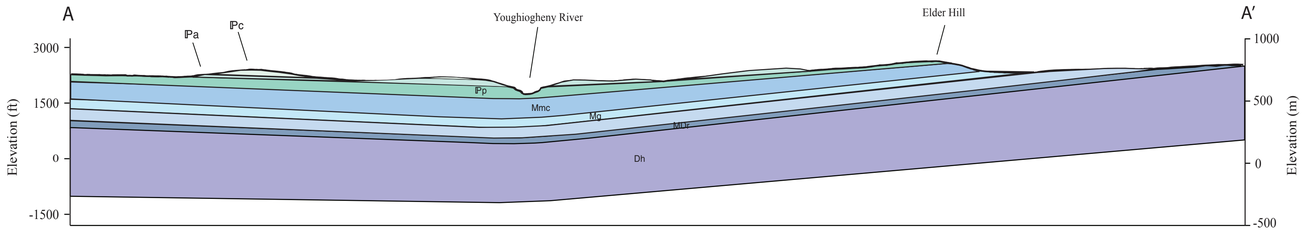


CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
(To convert elevations to North American Vertical Datum of 1988, subtract 1 foot)
(To convert from feet to meters, multiply by 0.3048)

1	2	3
4		5
6	7	8

1. Brandonville
2. Friendsville
3. Accident
4. Cuzzart
5. McHenry
6. Terra Alta
7. Oakland
8. Deer Park

Adjoining 7.5' quadrangle names
(Sang Run quadrangle shaded)



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Governor

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Department of Natural Resources
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Acknowledgements: This map was partially funded by the U.S. Geological Survey, National Cooperative Mapping Program, under USGS award number G15AC00238. The author appreciates the map review by D.K. Brezinski. The views and conclusions contained in this document are those of the author and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government.

Description of Map Units

Quaternary

Qal — **Alluvial Deposits**

Unconsolidated clay, sand, silt, pebbles, cobbles and boulders. Olive gray to medium dark gray, weathering moderate brown. Finer alluvium such as sand, silt and gravel underlies many of the lower gradient streams, while steeper streams are frequently floored by bedrock or locally derived cobble and boulders. Valley floors are narrow in the steep terrain of resistant sandstones (Pottsville Formation) and coarse colluvium is transitional with alluvium. Floodplains develop sinuosity on the soluble limestones of the Greenbrier Formation. Total thickness ranges from a thin veneer to 15 feet (5m).

Qc — **Colluvial Deposits**

Unconsolidated coarse cobbles, boulders, and large blocks of sandstone and conglomerate. Light olive gray to yellowish gray. Typically derived from massive Pottsville Formation sandstones that were transported by gravity, debris flow, and freeze-thaw processes. Abundant on steeper slopes adjacent to the Youghiogheny River. Includes boulder streams and boulder fields. Thickness is estimated at 3 to 50 feet (1-15m).

Qc/al — **Colluvial-alluvial Deposits**

Unconsolidated boulders and large blocks of sandstone and conglomerate in stream and river channels that are largely immobile, overlying clay, silt, sand, and pebbles moved by fluvial processes. These transitional deposits occur where the Pottsville Formation comprised the hillslopes along the Youghiogheny River, from Swallow Falls downstream 1 mile (1.6 km), and just north of Gap Falls for 2 miles (3.2 km) downstream. Thickness estimated at 3 to 50 feet (1-15m).

Qs — **Swamp Deposits**

Peat, lake gyttja and sandy clay formed during Pleistocene periglacial climate. Peat is grayish brown with thickness of 3 feet (1m). Beneath peat is gyttja formed from the partial decay of peat and sandy clay ranging from light brown to brown with plant debris and wood fragments. Deposits are located on the southwest corner of the quadrangle where solution of the Greenbrier Limestone forms a broad, poorly drained valley above the resistant Pottsville sandstones at Muddy Falls. Total thickness is 11 feet (3.5m).

Qt — **Alluvial Terrace Deposits**

Very poorly sorted clay, sand, pebbles, gravel, and boulders from 55 to 80 feet (17-25m) above the Youghiogheny River. Clasts are moderately well rounded to well rounded. Thickness is estimated at 10 feet (3m).

Pennsylvanian

IPc — **Conemaugh Group**

Shale, sandstone, siltstone, limestone, coal and underclay. Shale is medium gray to black, thinly bedded, fissile, typically found in association with coal and clay layers. Coarse olive gray sandstone weathers yellowish brown with black- and orange-stained, pitted surfaces. Some tabular cross-bedding present. Only lower portion of Conemaugh Group corresponding to Glenshaw Formation is present, including Lower Bakerstown and Brush Creek coals. The Mahoning Sandstone above the Upper Freeport Coal is also present. Base is mapped at the top of the Upper Freeport Coal. Thickness present on Sang Run quadrangle is 200-250 feet (60-75m).

IPa — **Allegheny Formation**

Sandstone, conglomerate, shale, coal and underclay. Interbedded sandstone and conglomerate intervals are very light to medium light gray, thick-bedded to massive with white quartz pebbles. Tabular cross-bedding and iron staining are common and iron banding is occasionally present. Erosional channel bases have abundant plant fossils, black to brown iron staining and stylolites. Shale is medium gray to black, thinly bedded, fissile, typically found in contact with coal and clay layers and capped by resistant sandstone layers. Five minable coals are mapped (from top): Upper Freeport (uf), Upper, Middle and Lower Kittanning (uk, mk, lk) and Clarion (cl). Upper Freeport marks the top of the Allegheny Formation. Base is mapped on occurrence of Clarion (Mt. Savage of Swartz and Baker, [1922]) coal and clay zone and/or the top of the Homewood Sandstone. Commercial coal mining in the Upper Youghiogheny basin was largely confined to the northwest and southeast quadrants of the Sang Run quadrangle. 200-250 feet (60-75m) thick.

IPp — **Pottsville Formation**

Sandstone, conglomerate, shale, coal, underclay. Four marker sandstones are present (top to bottom): the Homewood Sandstone, the Lower and Upper Connoquenessing sandstones, and the Sharon Sandstone. The Homewood Sandstone is massive, white-gray and conglomeratic with tabular cross-bedding, erosional channel bases, and fossil plant fragments. The Lower and Upper Connoquenessing sandstones are olive green to yellowish brown, thin-bedded to massive, coarse-grained, and cross-bedded. Channel-fill bases are frequently underlain by plant fossils up to 6 feet (2m) in length. The Sharon sandstone is pale yellowish brown, massive and conglomeratic with pebbles up to 0.5 inches (1.3 cm) in diameter. Occasional shale, thin coal, and underclay layers are also present (Quakertown and Mercer coals of Swartz and Baker, [1922]). One coal layer near the base of the formation, possibly the Sharon coal (?), is mapped based on the location of abandoned mine adits. The Pottsville Formation rests unconformably on the Mauch Chunk Formation. The base is mapped beneath the Sharon Sandstone where present and otherwise mapped on the disappearance of olive green sandstone and appearance of red and green argillaceous lithology or soil. The Homewood and Connoquenessing sandstones form ledges and cliffs in the Upper Youghiogheny River at and near Swallow Falls and River Hill and were quarried historically for sand. Total thickness is 150-200 feet (45-60m).

Mississippian

Mmc — **Mauch Chunk Formation**

Shale, siltstone, sandstone, limestone. Shale is reddish gray, olive green, thin-bedded and fissile with root casts. It weathers easily, and is typically covered with reddish gray soil. Siltstone and sandstone are thin- to medium-bedded, light olive gray, argillaceous, micaceous and frequently cross-bedded in multi-stacked fluvial layers that outcrop as small ridges on hillsides and bedrock steps in streams. The base is mapped in red and green shale below a 15-foot (3m) thick gray fossiliferous sandy limestone unit (Reynolds Member). The best exposure is in the Youghiogheny River upstream of the mouth of Hoyes Run, in Hoyes Run, and in Gap Run near its mouth. Total thickness is 450 feet (150m).

Mg — **Greenbrier Formation**

Limestone, shale, siltstone, sandstone. Four members are recognized but not mapped (Brezinski, 1989). The basal member (Loyalhanna) is a reddish gray to light gray, arenaceous limestone with strong cross-bedding accentuated by weathering. It is 50 feet (13 m) thick. The overlying Deer Valley Member is a light olive gray, massive, crystalline limestone with white to pink calcite veins and slickensides. It weathers to moderate yellowish brown and thin silt beds occur every 4-6 inches (10-15cm). It is 15 feet (5 m) thick. The Savage Dam Member overlies Deer Valley Member and is mostly clastic reddish gray, grayish green, thin-bedded siltstone and shale with variegated mudcracks. Sandstone layers are pale yellowish brown to yellowish gray, thick to massive, cross-bedded and calcareous. It is 75 feet (25m) thick. The uppermost unit of the Greenbrier Formation is the Wymps Gap Member, which is light olive gray to medium dark gray, shale to sandy argillaceous limestone with abundant brachiopod, bryzoan, and crinoid fossils. Bedding is thin to massive, ripple laminated, and sometimes nodular. A distinct fetid odor emerges upon breakage of some units and white calcite slickensides are present. It is 45 feet (14m) thick. The base of the formation is mapped at the base of the Loyalhanna Member, expressed as a decrease in slope above the Purslane Formation. The Greenbrier Formation appears along the southeastern end of the Accident anticline in the upper Hoyes Run valley, lower Sang Run valley, and along the Youghiogheny River from upstream of Steep Run to below Sang Run. The Cranesville Swamp formed atop the highly soluble Greenbrier Formation in the southwestern portion of the quadrangle, and shelter caves form along the Youghiogheny corridor upstream of Sang Run where white calcareous sandstones weather away under clastic layers in the Savage Dam member. The Greenbrier Formation was quarried historically for lime and is presently quarried for aggregate. Total thickness is 185 feet (56m).

Mp — **Purslane Formation**

Sandstone and conglomerate. Sandstone is predominant in the upper portion of formation and is light olive gray, thin- to medium-bedded, flaggy, and weathers moderate brown. Some layers are cross-bedded with erosional bases and shale rip-up clasts. The base of the formation is a massive yellowish gray to very pale orange conglomerate with rounded clear to white quartz pebbles ranging from 0.3-2 inches (0.5-5cm). Occasional white, friable beds are present. The base of the formation is mapped below this massive conglomerate, which forms ledges and block fields not as distinct as those of the Pottsville Formation. The Purslane Formation appears in the northeast section of the quadrangle in Ginseng Run and Stony Brook. A small previously unmapped section of the upper Purslane Formation is also exposed in the mouth of Steep Run at the Youghiogheny River. It was quarried historically and is presently quarried for sand. Total thickness is 250-300 feet (75-90m).

Devonian

MDr — **Rockwell Formation**

Shale, siltstone, and sandstone. Siltstone and sandstone are olive green to yellowish gray, thin- to thick-bedded, cross-bedded and burrowed. Shale is olive gray to black and thin-bedded with brachiopods, indeterminate bivalves and plant fragments. The base of the Rockwell Formation is mapped where the tan sands of the Rockwell Formation become prevalent over red shales of the Hampshire Formation. Total thickness is 150-200 feet (45-65m).

Dh — **Hampshire Formation**

Shale, siltstone and sandstone. Shale is grayish-red, greenish gray, thin-bedded and hackly with root casts. Siltstone and sandstone are olive green and grayish red, cross-bedded and blocky. Calcareous channel-lag conglomerate also present near confluence of Stony Creek and South Bear Branch. Where covered the Hampshire Formation is mapped on the presence of grayish red soil. Base is not present in the Sang Run quadrangle. Total thickness is 1,600-2,000 feet (500-600m).

References Cited:

Brezinski, D.K., 1989, The Mississippian System in Maryland: Maryland Geological Survey Report of Investigations No. 52, 75 p.

Swartz, C.K. and Baker, W.A., 1922, The coal formations and mines of Maryland, in Second Report on the coals of Maryland: Maryland Geological Survey, v. 11, pt. 1, 296 p.

Explanation of Map Symbols

A — A′ Cross section line

Contacts

Geologic contacts; approximately located

Faults

U / D — Fault; approximately located. U refers to up thrown side, D to down thrown side

35 — Small, minor inclined fault; showing strike and dip

Small, minor shear fault; showing strike

Coal Beds

lk — Projected outcrop trace of coal bed

Planar Features

40 — Inclined bedding; showing strike and dip

Horizontal bedding

60 — Small, minor, inclined joint; showing strike and dip

Small, minor, vertical or near-vertical joint; showing strike

Other Features

Mine or quarry, active or inactive

Sinkhole or disappearing stream

Base Map Symbols

Transportation

Primary route, class 1 (divided, lanes separated)

Primary route, class 1 (undivided)

Secondary route, class 2

Light duty road or street, class 3

Topography

300 — Topographic index contour (100- ft interval)

Topographic intermediate contour (20- ft interval)

Hydrography

Muddy Creek — Stream

Deep Lake — Water body (e.g. lakes, ponds, rivers)

Geologic field mapping conducted in 2015-2016. Version:SANG2016.OF MD DNR Publication no: 12-9262016-621