U.S. GEOLOGICAL SURVEY
CHARLES D. WALCOTT, DIRECTOR

STATE OF PENNSYLVANIA
GEORGE W. MC NEES, SIMON HARROLD,
FRED D. BARKER, COMMISSIONERS

STRUCTURE AND ECONOMIC GEOLOGY

PENNSYLVANIA
INDIANA QUADRANGLE

79°15′ 10′ 5′ 79°00′ — 40°45′ — 40° — 35′ — 40°30′

WASHINGTON RAYNE GREEN ARMSTRONG WHITE CENTER INDIANA BRUSH VALLEY BLACKLICK BUFFINGTON

Kunkle Hill · Chambersville · Gilpin · Grove Chapel · Tanoma · Dixonville · Kintersburg · Home · Kellysburg · Gaildleton · Davis · Willet · Creeksides · Coleman Hill · Warner Hill · Crete · Edgewood · Reed · Smathers · Homer · Grierson · Onberg · Sample Run · Ideal · Penn Run · Glenville · Pikes Peak · Moose Hill · Evans Hill · Rico · Brush Valley · Mechanicsburg · Ravin

Crooked Creek · Plum Run · Two Lick Creek · Yellow Creek · Little Yellow Creek · Little Mahoning Creek · Dark Hollow Run · Muddy Run · Cherry Run · Cheese Run · Tadpin Run · Pine Run · Marsh Run · Little Brush Creek · South Branch Brush Creek · Yellow Run · Spruce Lick Run · Laurel Run · Two Lick Creek · Indiana Branch · Little Yellow Creek

Laurel Hill Anticline · Rayne Synclinal · Chambersville Synclinal · Elderas Anticline · Glen Campbell Synclinal · Penn Synclinal · Indiana Synclinal · Homer Synclinal · Brush Valley Synclinal · Brush Valley Anticline · Dias Ridge Syncline · Blacklick Synclinal · Laurel Hill Anticline

LEGEND

SEDIMENTARY ROCKS

(Areas of subaqueous deposits are shown by patterns of parallel lines; subaerial deposits by patterns of dots and circles.)

Recent — QUATERNARY

Qal — Alluvium *(in flood plains of present streams)*

Pennsylvanian series — CARBONIFEROUS

Ccm — Conemaugh formation *(sandstone, shale, and limestone with a few small coal beds)*

Ca — Allegheny formation *(shale, sandstone, thin limestone, fire clay and several workable beds of coal; Upper Freeport coal at the top.)*

Cpv — Pottsville formation *(massive sandstone and shale)*

Mississippian series

Cmc — Mauch Chunk shale *(red and green shale)*

- Coal mines
- Local coal banks
- Deep wells drilled for gas
- P Productive gas wells
- Diamond drill holes whose records are published in this folio

Known productive areas

Coal outcrops (Upper Freeport, Lower Freeport, Lower Kittanning, and other coals; broken line indicates that the presence of coal is doubtful.)

Coal (area underlain by coal of probable workable thickness; depth to Upper Freeport coal horizon may be calculated from the structure contours)

1200 — *Structure contours (showing the elevation above sea and the lay of the Upper Freeport coal horizon.)*

H. M. Wilson, Geographer in charge.
Control by A. H. Thompson, Frank Sutton, and J. D. Forster.
Topography by Frank Sutton and T. G. Basinger.
Surveyed in 1900 in cooperation with the State of Pennsylvania.

TRUE NORTH · MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION 1902.

Scale 1/62500

1 0 1 2 3 4 Miles

1 0 1 2 3 4 5 Kilometers

Contour interval 20 feet.
Datum is mean sea level.

Edition of July 1903.

Marius R. Campbell, Geologist in charge.
Geology by George B. Richardson.
Surveyed in 1901 in cooperation with the State of Pennsylvania.