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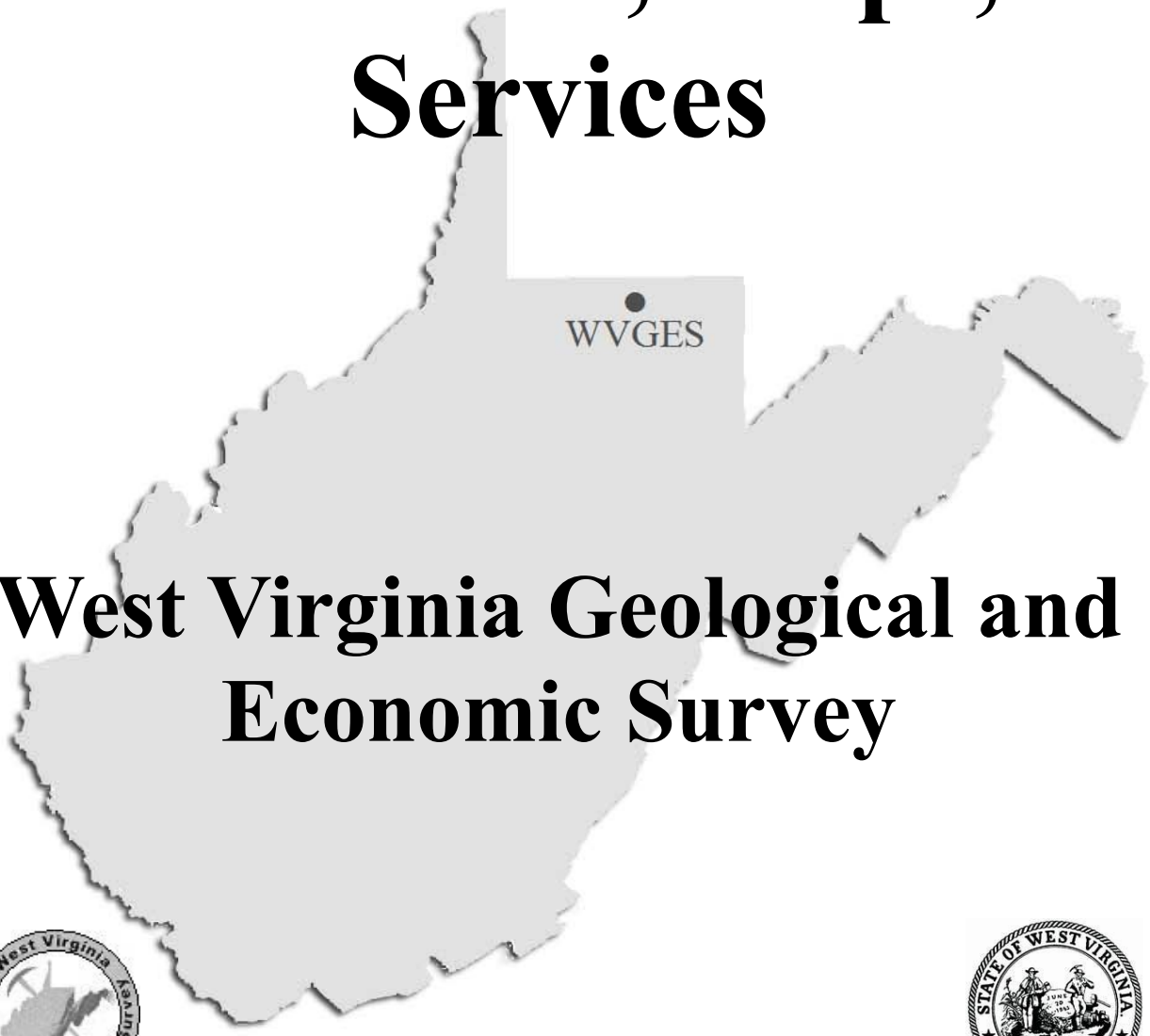

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Publication ED-A

2024

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West Virginia Cartographic Information Center

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***Services Available from Other Sources**

We often receive requests for information on the subjects listed below. They are outside the scope of our organization and we refer such requests to the sources indicated:

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State Parks and Forests: hours, facilities, and reservations	Phone 1-800-CALL-WVA or http://www.wvstateparks.com
Water Use Data	U.S. Geological Survey http://www.water.usgs.gov/watuse/data/2000/index.html Or: WV Department of Environmental Protection http://www.wvdep.org/item.cfm?ssid=11&ss1:d=722

ANNUAL REPORT

AR-__ A report containing operational and financial information submitted annually to the State Legislature; highlights current projects, staff, and new publications for the year. Limited availability; issues since 2003 can be viewed on our website http://www.wvgs.wvnet.edu/ under "Publications". Named by "AR" and year - for example, 2008 report is AR-2008.

BULLETINS

These are soft-cover pamphlets with a confined scope, like an oil and gas or groundwater report on a specific county or other limited area. Intended to be a compilation and summary of known information on a particular topic.

B-1 **Bibliography and Cartography**: S. B. Brown, 1901, 85 p.

B-2 **Levels and Coal Analyses**: I. C. White, 1910, 385 p. Part I: railway profiles, distance tables, and elevations along the railways and principal rivers of West Virginia. Part II: coal beds of West Virginia.

B-3 **The Cheat Mountain Coal Field of Randolph County, West Virginia**: D. B. Reger, 1928, 34 p, 1 map. Preliminary description of an important coal territory.

B-4 **Bibliography and Index of Geology and Natural Resources of West Virginia**: J. B. Lucke, 1937, 84 p. 700 references, arranged chronologically under author's name.

B-5 **Surface Water Supply of West Virginia**: H. M. Erskine, 1942, 54 p. Contains map showing location of stream measurement stations in West Virginia.

B-6 **Summary of Recent Prospecting for Manganese and Iron Ores in Southeastern West Virginia**: F. Reeves, 1942, 50 p, 2 f.

B-7 **Rock Salt Deposits of West Virginia**: J. H. C. Martens, 1943, 67 p, 5 f, 9 tables. Area of salt deposits and thickness of associated formations.

B-8 **Permeability, Porosity, Oil and Water Content of Natural Gas Reservoirs, Kanawha-Jackson and Campbell Creek Oriskany Wells**: A. J. W. Headlee and J. S. Joseph, 1945, 12 p, 4 f.

B-9 **Fifty Common Rocks and Minerals of West Virginia**: J. H. C. Martens, 1945, 42 p. (See ED-7, ED-8).

B-10 **Ground-Water Conditions Along the Ohio Valley at Parkersburg, West Virginia**: R. M. Jeffords, 1945, 57 p, 19 f, 11 tables. Includes analyses of water from the Ohio River.

B-11 **Oil and Gas Report and Map of Pleasants, Wood, and Ritchie Counties, West Virginia**: O. L. Haught, 1955, 21 p. Development and future possibilities, with 1:62,500 map showing structural contours on Greenbrier Limestone (map revised 1966). (See B-11A)

B-11A **Oil and Gas Report and Maps of Pleasants, Wood, and Ritchie Counties, West Virginia**: J. K. Filer, 1985, 87 p, 31 f, 2 tables. Complete revision of B-11. Covers stratigraphy, producing and prospective pay zones, structure, fields, wells, Devonian shale gas production, and geothermal gradient for these counties. Includes 1:62,500-scale maps of subsurface structure on Greenbrier Group and lower Huron Shale, and Devonian completions; stratigraphic cross sections; and type stratigraphic section, all on display-size sheets.

B-12 **Oil and Gas Report and Map of Marshall, Wetzel, and Tyler Counties, West Virginia**: O. L. Haught, 1955, 49 p. Petroleum history and development; accompanying 1:62,500 map shows geology of wells drilled; structural contours on Pittsburgh coal. (See B-12A)

B-12A **Oil and Gas Report and Map of Marshall, Wetzel, and Tyler Counties, West Virginia**: D. H. Cardwell, 1979, 50 p, 8 maps. Stratigraphy, structure, producing/prospective zones, fields, enhanced recovery projects, future prospects, and 42" x 58" 1:62,500 structural geologic map contoured on Greenbrier Limestone.

B-13 **Oil and Gas Report and Map of Monongalia, Marion, and Taylor Counties, West Virginia**: O. L. Haught, 1956, 51 p, 2 pl, 2 f. Petroleum history and development, accompanied by 1:62,500 geologic map showing wells; structural contours on Greenbrier Limestone.

B-14 **Ground-Water Resources of Harrison County, West Virginia**: R. L. Nace and P. P. Bieber, 1958, 55 p, 2 f, 11 tables. Availability of ground water; topography; climate; descriptions of municipal water-supply systems, including Bridgeport, Clarksburg, Lumberport, Salem, and Shinnston.

B-15 **Ground-Water Resources of Monongalia County, West Virginia**: C. W. Carlston, 1958, 42 p, 2 pl, 8 f, 3 tables. Availability of ground water; climate; topography; geology; general hydrology.

B-16 **Oil and Gas Report and Map of Doddridge and Harrison Counties, West Virginia**: O. L. Haught, 1959, 39 p. Petroleum history and development, accompanied by 1:62,500 map showing geology and wells drilled; structural contours on Greenbrier Limestone. (See B-16A)

B-16A **Oil and Gas Report and Map of Doddridge and Harrison Counties, West Virginia**: D. H. Cardwell, 1982, 55 p, 14 f, 5 tables. Extensive revision of B-16. Discusses stratigraphy, structure, producing and prospective zones, fields, secondary recovery, and future prospects. Includes eight display-size sheets: structural, isopachous, and well maps at 1:62,500 scale, 4 cross-sections, and stratigraphic section. Structure contours are on base of Greenbrier Group.

B-17 **Oil and Gas in Southern West Virginia**: O. L. Haught, 1959, 34 p, 7 f. Development and future of oil and gas in the area. Accompanied by 1:250,000 map showing location of oil and gas fields, thickness of Greenbrier (Big Lime) and Devonian shales, and structural contours on Berea Sandstone.

B-18 **Oil and Gas Report and Map of Lewis and Gilmer Counties, West Virginia**: O. L. Haught, 1960, 14 p, 1 pl, 3 f. History and development of oil and gas in these counties, accompanied by 1:62,500 map showing locations of wells drilled; structural contours on Greenbrier Limestone. (See B-18A)

B-18A **Oil and Gas Report and Map of Gilmer and Lewis Counties, West Virginia**: D. H. Cardwell, 1980, 55 p, 14 f, 6 tables. Extensive revision of B-18. Discusses stratigraphy, structure, producing and prospective zones, fields, secondary recovery, and future prospects. Includes four display-size sheets: structural map at 1:62,500 scale and cross-sections with stratigraphic section. Structure contours are on the base of the Greenbrier Group.

B-19 **Oil and Gas Report and Map of Kanawha County, West Virginia**: O. L. Haught, 1960, 24 p, 3 f. Development of oil and gas production in the county, accompanied by 1:62,500 map showing oil and gas fields with structural contours on Berea Sandstone and Huntersville Chert.

B-19A **Oil and Gas Report and Maps of Kanawha and Boone Counties, West Virginia**: F. P. Caramanica, 1988, 115 p, 48 f, 4 tables. Complete revision of B-19. Covers stratigraphy, producing zones, fields, wells, Devonian shale gas production potential. Includes 6 display-size sheets: stratigraphic section, cross sections, and 1:62,500-scale structure maps contoured on Greenbrier Limestone and lower Huron Member of Ohio Shale.

B-20 **Water Resources of Kanawha County, West Virginia**: W. L. Doll, B. M. Wilmoth, Jr., and G. W. Whetstone, 1960, 189 p, 4 pl, 29 f, 30 tables. Geography, water utilization, surface-water resources, ground-water resources, general geology and hydrology, chemical quality of surface water, and future development of water resources.

B-21 **Ground-Water Features of Berkeley and Jefferson Counties, West Virginia**: P. P. Bieber, 1961, 81 p, 2 pl, 7 f, 10 tables. Occurrence of ground water, its magnitude of availability either by pumping wells or from springs, and its chemical character. (See EGB-13, EGB-16.)

B-22 **Stratigraphy of Onesquethaw Stage of Devonian in West Virginia and Bordering States**: J. M. Dennison, 1961, 87 p, 8 pl, 18 f. Stratigraphy, paleontology, and geologic history of Middle Devonian Onesquethaw Stage (which includes Tioga metabentonite, Huntersville Chert, and Onondaga Limestone) in West Virginia and parts of Virginia, Maryland, Pennsylvania, and Ohio.

B-23 **Oil and Gas Report and Map of Jackson, Mason, and Putnam Counties, West Virginia**: W. K. Overbey, Jr., 1961, 26 p, 5 f. History and development of oil and gas production, accompanied by 1:62,500 map showing oil and gas fields, well locations, and structural contours on Berea Sandstone.

B-23A **Oil and Gas Maps of Jackson, Mason, and Putnam Counties, West Virginia**: W. T. Levendosky and W. A. McGill, 1988. 5 display-size sheets: cross sections, and 1:62,500-scale structure maps contoured on Greenbrier Limestone and lower Huron Member of Ohio Shale.

B-24 **Structure of Devonian Strata Along Allegheny Front**: J. M. Dennison and O. D. Naegele, 1963, 42 p, 10 f, 2 tables. Stratigraphy and structure of Middle and Upper Devonian rocks exposed along Allegheny Front from Corriganville, MD, to Spruce Knob, WV.

B-25 **Sulfate Minerals In West Virginia**: J. H. C. Martens, 1963, 13 p. Occurrence and localities of 12 sulfate minerals in West Virginia.

B-26 **West Virginia's Oil and Gas—Lubricants and Fuels**: O. L. Haught, 1964, 36 p, 9 f. Development of oil and gas production in West Virginia, including technical advances in the drilling industry. Important oil and gas fields in West Virginia, producing sands, methods of production, and prospective future production.

B-27 **Occurrence and Availability of Ground Water in Ohio County, West Virginia**: T. M. Robison, 1964, 57 p, 8 f, 7 tables. Data on geologic occurrence of ground water in the area and information on quality and chemical composition.

B-28 **Appalachian Connate Water**: E. T. Heck, C. E. Hare, and H. A. Hoskins, 1964, 42 p, 10 f, 3 tables. Discusses salt water commonly encountered in oil and gas well drilling. In two parts—"Ocean Salt" and "Geochemistry."

B-29 **Oil and Gas Report and Map of Braxton and Clay Counties, West Virginia**: O. L. Haught and W. K. Overbey, Jr., 1964, 19 p, 5 f, 2 tables. Geology of the area; productive sands; summarizes oil and gas development by county and district. 1:62,500 map shows locations of nearly all wells drilled; geologic structural contours on Greenbrier Limestone.

B-30 **Lithification of Sandstones in West Virginia**: M. T. Heald, 1965, 28 p, 16 f, 1 table. Discusses method of sandstone formation and factors (porosity, permeability, friability) influencing sandstone chemical and physical properties.

B-31 **Oil and Gas Report and Map of Barbour and Upshur Counties, West Virginia**: O. L. Haught, 1965, 15 p, 3 f. Geologic features and productive sands, with emphasis on Benson sand; summarizes oil and gas development in each county. 1:62,500 map shows locations of nearly all wells drilled; geologic structural contours on Greenbrier Limestone.

B-32 **Ground Water in Mason and Putnam Counties, West Virginia**: B. M. Wilmoth, 1966, 162 p, 3 pl, 16 f, 16 tables. Ground-water conditions of the area in relation to the geography, ground-water hydrology, and geologic units and their water-bearing characteristics.

B-33 **Oil and Gas Report and Map on Ohio, Brooke, and Hancock Counties, West Virginia**: O. L. Haught, 1968, 14 p, 2 f, 3 tables. Oil and gas development and production, accompanied by 1:62,500 map showing well locations and structural contours on Berea Sandstone.

B-34 **Geology of the Charleston Area**: O. L. Haught, 1968, 38 p, 10 f. Structure and stratigraphy, climate, topography, past and present mineral utilization, present and future land use, and recreational areas.

B-35 **The Newburg of West Virginia**: D. H. Cardwell, 1971, 54 p, 13 f, 8 tables. Accompanied by 1:500,000 structural geologic map of West Virginia contoured on Newburg (Williamsport Sandstone). Describes geology and tabulates data on existing fields. Discusses future prospects. (See C-6) Scans available and files for GIS.

B-36 **Hydrology of Limestone Karst**: W. K. Jones, 1973, 49 p, 3 pl, 23 f, 2 maps, 5 tables. Describes flow of water through cavernous Mississippian limestones in a sub-basin of the Greenbrier River, entirely in Greenbrier County, WV.

B-37 **Carboniferous Coal Guidebook**: A. C. Donaldson, M. W. Presley, and J. J. Renton (editors), 1979, 3 volumes, extensively illustrated. Prepared by Department of Geology and Geography, West Virginia University, and published by the West Virginia Geological and Economic Survey. Volumes are also available individually and are described below.

B-37-1 **Carboniferous Coal Guidebook: Volume 1, Carboniferous Coal Short Course**: 300-page volume contains nine articles on coal depositional systems, discontinuities, thickness and quality, mineral content, petrography, and sulfur occurrence.

B-37-2 **Carboniferous Coal Guidebook: Volume 2, Field Trip Guidebook**: 174-page guide to field trip along U. S. Route 48 and I-79 in Morgantown, WV area. Includes six cross-sections at stops, discussions of coals, and articles on stratigraphy and deposition.

B-37-3 **Carboniferous Coal Guidebook: Volume 3, Supplement**: 182-page collection of six additional articles on molasse, mineral matter in coal, a chemical coal model, and sulfur distribution.

B-38 **No. 3 Pocahontas Coal in Southern West Virginia--Resources and Depositional Trends**: E. A. Rehbein, C. D. Henderson, and R. Mullennex, 1981, 52 p, 17 f, 2 tables. 1:250,000 maps show control points, structure, mined area, thickness, fixed carbon, sulfur, ash, Btu, overburden thickness, gas fields. Discussion covers depositional environment, mining history, resources, mining conditions, and exploration.

B-39 **Atlas of Devonian Shale Gas Production and Potential in West Virginia**: D. G. Patchen, M. C. Behling, and M. E. Hohn, 1981, 25 p, 22 maps, 11" x 17" format; maps are printed one-side-only and are removable for light-table use. 1:125,000 maps show all wells drilled into the Devonian shales and their production, whether from shale, deeper, or shallower formations in 10 southwestern counties of the State.

B-40 **Oil and Gas Report and Maps of Wirt, Roane, and Calhoun Counties, West Virginia**: J. Sweeney, 1986, 102 p, 34 f, 2 tables. History, development, and future prospects of oil and gas in these counties. Discusses stratigraphy, structure, and enhanced recovery. Includes 12 display-size sheets: stratigraphic section, cross sections, and 1:62,500-scale structure maps contoured on Greenbrier Limestone and lower Huron Shale.

B-41 **Oil and Gas Report and Maps of Lincoln, Logan, and Mingo Counties, West Virginia**: D. W. Neal and B. K. Price, 1986, 68 p, 25 f, 3 tables. History, development, and future prospects of oil and gas in these counties. Discusses stratigraphy, producing and prospective pay zones, Devonian shale gas production, structure, wells, fields, and secondary and enhanced recovery. Includes 10 display-size sheets: stratigraphic section, cross sections, and 1:62,500-scale structure maps contoured on Greenbrier Limestone and lower Huron Member of Ohio Shale.

B-42 **Oil and Gas Report and Maps of Cabell and Wayne Counties, West Virginia**: J. F. Schwietering and P. A. Roberts, 1988, 95 p, 40 f, 3 tables. History, development, and production potential in these counties. Discusses stratigraphy, producing and prospective pay zones, wells, fields, and production controls. Includes 6 display-size sheets: stratigraphic section, cross sections, and 1:62,500-scale structure maps contoured on Greenbrier Limestone and lower Huron Member of Ohio Shale.

B-43 **Petroleum Geology and Reservoir Characterization of the Big Injun Sandstone (Price Formation) in the Rock Creek (Walton) Field, Roane County, West Virginia:** M.E. Hohn, D.L. Matchen, A.G. Vargo, R.R. McDowell, M.T. Heald, and J.Q. Britton, 1993, 76 p, 40 f, 1 table. Discusses results of research on the geology, reservoir character, and history of Rock Creek oil field production from Big Injun sandstones in the context of new stratigraphic and sedimentological studies of the Price Formation, new methods in computer analysis and flow simulation, and a new paradigm in studies of this kind.

B-44 **Petroleum Geology and Reservoir Characterization of the Big Injun Sandstone (Price Formation) in the Granny Creek (Stockly) Field, Clay and Roane Counties, West Virginia:** M.E. Hohn, R.R. McDowell, A.G. Vargo, D.L. Matchen, M.T. Heald, and J.Q. Britton, 1993. Discusses results of research on the geology, reservoir character, and history of Granny Creek oil field production from Big Injun sandstones in the context of new stratigraphic and sedimentological studies of the Price Formation, new methods in computer analysis and flow simulation, and a new paradigm in studies of this kind.

B-45 **Petroleum Geology and Reservoir Characterization of Upper Devonian Gordon Sandstone, Jacksonburg-Stringtown Oil Field, Northern West Virginia:** M.E. Hohn, Editor, 2001, 97p. Discusses results of research on the geology, reservoir character, and history of Jacksonburg-Stringtown oil field production from Gordon sandstones in the context of new stratigraphic and sedimentological studies of the Hampshire Formation, new methods in computer analysis and flow simulation, and a new paradigm in studies of this kind.

B-46 **Hydrogeology, Groundwater Flow, and Groundwater Quality of an Abandoned Underground Coal-Mine Aquifer, Elkhorn Area, West Virginia:** Kozar, Mark D., McCoy, K.J., Blake Jr., B.M., Britton, J.Q., 2012. 103 p, 38 f, 9 tables, 5 appendices. Produced in cooperation with USGS, WV-DEP, and WV-DHHR. This report presents results of a three-year investigation of the geology, hydrology, geochemistry, and groundwater flow processes within abandoned underground coal mines of the Pocahontas No. 3 coal seam, used as a source of water for public supply in the Elkhorn area, McDowell County, West Virginia. Available as a free download from WVGES website.

BASIC DATA REPORTS

(River Basins)

Prepared by the U. S. Geological Survey and published cooperatively by the West Virginia Geological and Economic Survey. Each consists of computer-printed tables and a detailed map of the basin showing data-collection sites. See also the companion series, RBB River Basin Bulletins and series X-WVDNR, Hydrologic Ground Water Atlases published by the WV-DEP Division of Water and Waste Management. *All three companion series are now conveniently packaged together by River Basin in the* ***Collections*** *section of this catalog.* (See ***index map*** on back cover of Catalog for locations of basins, related publications and Collection numbers.)

BDR-1 **Records of Wells, Springs, and Test Borings, Chemical Analyses of Ground Water, and Selected Driller's Logs from the Monongahela River Basin in West Virginia, 1968**: P. E. Ward and B. M. Wilmoth, 81 p, 2 f, 4 tables, and map insert showing data-collection sites. (See RBB-1, X-WVDNR-7, and COLL-9)

BDR-2 **Records of Wells, Springs, and Test Borings, Chemical Analyses of Water, Sediment Analyses, Standard Streamflow Data Summaries, and Selected Driller's Logs from the Little Kanawha River Basin in West Virginia**: E.A. Friel and G.L. Bain, 1971, 78 p, 4 f, 12 tables. Map shows data-collection sites. (See RBB-2, MAP-WV10, and COLL-8)

BDR-3 **Records of Wells, Springs, and Streams in the Potomac River Basin, West Virginia**: E. A. Friel, W. A. Hobba, Jr., and J. L. Chisholm, 1975, 100 p, 3 f, 10 tables. Map shows data-collection sites. (See RBB-3, MAP-33 and COLL-12)

BDR-4 **Records of Wells, Springs, Chemical Analyses of Water, Biological Analyses of Water, and Standard Streamflow Data Summaries from the Upper New River Basin in West Virginia**: J. L. Chisholm and P. M. Frye, 1976, 80 p, 10 tables, and two map inserts (1:370,000) showing data-collection sites. (See RBB-4, X-WVDNR-9 and COLL-6)

BDR-5 **Hydrologic Data for the Coal River Basin, West Virginia**: F. O. Morris, J. S. Bader, J. L. Chisholm, and S. C. Downs, 1976, 215 p, 11 tables, and 1:125,000 color map insert showing data-collection sites. (See X-WVDNR-1 and COLL-3)

BDR-6 **Hydrologic Data for the Elk River Basin, West Virginia**: G. R. Tarver, S. C. Downs, J. L. Chisholm, and P. M. Frye, 1976, 106 p and 1:125,000 color map insert showing data-collection sites. (See RBB-6, RBB-6P, X-WVDNR-2 and COLL-4)

BDR-7 **Hydrologic Data for the Guyandotte River Basin, West Virginia**: J. S. Bader, J. L. Chisholm, S. C. Downs, and R. L. Bragg, 1977, 570 p and 1:250,000 color map insert showing data-collection sites. (See RBB-7, X-WVDNR-4 and COLL-7)

CIRCULARS

Reports written by Survey staff detailing different techniques and topics related to geology.

C-A **Bibliography of References for Recognition of Depositional Environment from Wireline Log Data**: E. B. Nuhfer and R. D. Nurmi, January 1976, 15 p, 101 ref, index, annotated key. A reference source to literature for professionals who must reconstruct depositional environments from subsurface data. References cover methodology and case studies showing application.

C-1 **Some Low-Alumina Quartzitic Sandstones in West Virginia**: P. Chen, R. G. Hunter, and R. B. Erwin, 1965, 13 p, 1 f, 1 table. Locations and spectrochemical analyses of 16 high-silica, low-alumina sandstone samples from eastern and southeastern West Virginia.

C-2 **A Simple Technique for the Determination of the Weight Per Cent of Calcite and Dolomite in Carbonate Rocks**: J. J. Renton and R. G. Hunter, 1965, 19 p, 3 f. Describes method for determining percentage (by weight) of these minerals using generally available apparatus.

C-3 **Geology of Oil and Gas**: O. L. Haught, 1965, 39 p, 4 f. Origin and production of oil and gas, especially in West Virginia. Important oil and gas sands are described and located, and oil and gas production methods are described.

C-4 **Preliminary Palynological and Mineralogical Analyses of a Lake Monongahela (Pleistocene) Terrace Deposit at Morgantown, West Virginia**: J. A. Clendening, J. J. Renton, and B. M. Parsons, 1967, 18 p, 2 f, 3 tables. Illustrates floral/mineralogic variations in Lake Monongahela deposits, due to Pleistocene glaciation.

C-5 **A Pressure Chamber for the Impregnation of Porous Rock Specimens**: J. J. Renton, 1967, 11 p, 5 f. Describes a pressure chamber; outlines technique for high-pressure impregnation of low-porosity/permeability rock specimens.

C-6 **Newburg Gas Development in West Virginia**: D. G. Patchen, 1967, 4th edition revised to July 1, 1968, 46 p, 8 f, 3 tables. Tabulates all available data on Newburg tests and producing wells; discusses structure and stratigraphy in the productive area. (See B-35)

C-7 **Keefer Sandstone Gas Development and Potential in West Virginia**: D. G. Patchen, 1968, 20 p, 2 f, 1 table. Tabulates all available data on Keefer Sandstone tests and producing wells; discusses structure, stratigraphy, and depositional history.

C-8 **A Summary of Tuscarora Sandstone (Clinton Sand) and Pre-Silurian Test Wells in West Virginia**: D. G. Patchen, 1968, 34 p, 4 f, 1 table. Compiles all Tuscarora Sandstone and deeper wells; discusses structure, stratigraphy, and history. (Superseded by MRS-8.)

C-9 **Oriskany Sandstone-Huntersville Chert Gas Production in the Eastern Half of West Virginia**: D. G. Patchen, 1968, 46 p, 10 f, 2 tables. Characteristics and developments of the northern and eastern West Virginia gas fields, with emphasis on past decade. (Superseded by MRS-5A.)

C-10 **Proceedings of the 19th Annual Highway Geology Symposium, May 16 and 17, 1968**: R. B. Erwin, editor, 1968, 119 p, 44 f. Nine papers: mineral-resources distribution (2), tunnel design (2), landfills and landslides (2), mountain highway reconnaissance (1), material test, sandstone (1), general geology, abstract only (1). (See also C-10-1.)

C-10-1 **Field Trip Guide for the 19th Annual Highway Geology Symposium, 1968**: Morgantown-Fairmont area. (See C-10)

C-11 **Salty Ground Water in the Pocatalico River Basin**: G. L. Bain, 1970, 31 p, 8 f. Geology and hydrology of saltwater occurrences in Pocatalico River Basin upstream from Sissonville, West Virginia. Introductory section discusses, in nontechnical language, the presence of saltwater in West Virginia and its relation to oil and gas occurrence.

C-12 **The Use of Pelletized Samples for X-Ray Diffraction Analysis of Clay Minerals in Shales**: R. V. Hidalgo and J. J. Renton, 1970, 25 p, 8 f. Pelletizing technique and sample preparation of shales for X-ray diffraction analysis; illustrated advantages of this technique for rapid survey-type clay mineral analysis.

C-13 **The Trenton Group of Nittany Anticlinorium, Eastern West Virginia**: W. J. Perry, Jr., 1972, 30 p, 4 f, 1 table, map (1:24,000). Detailed stratigraphic study of the Dolly Ridge Formation (new) in the Ordovician stratigraphy of Pendleton County.

C-14 **Petrology of the Middle Silurian McKenzie Formation, Wayne County, West Virginia**: R. A. Smosna, 1974, 27 p, 10 f. Petrographic properties of rocks from the subsurface of Wayne County; characterization of ancient environments of deposition of McKenzie Formation. Fits paleo-environment and historic interpretations from western West Virginia into a regional paleogeographic picture.

C-15 **Program and Abstracts: The Tenth Annual Appalachian Petroleum Geology Symposium, "Computer Methods for Petroleum Geologists"**: sponsored by WVGES and WVU Department of Geology and Geography, 1979, 29 p, 20 abstracts of talks given at the symposium.

C-16 **Program and Abstracts: The Eleventh Annual Appalachian Petroleum Geology Symposium, "Current Research and Exploration in the Appalachian Basin"**: sponsored by WVGES and WVU Department of Geology and Geography, 1980, 30 p, 8 f, 19 abstracts, plus one article: "Fracture Identification in Devonian Shales Using Conventional Well Logs."

C-17 **Guideline for Geological Investigations of Hazardous-Waste Disposal Sites**: P. Lessing, 1980, 9 p. An outline for preparing reports.

C-18 **Water Use in West Virginia**: P. Lessing, M. C. Behling, and G. Hilgar, 1981, 45 p, 4 f. Preliminary summary of amount of water used in West Virginia, tabulated by county and planning region for the categories of agriculture, irrigation, mining, power generation, sewage, and water suppliers. Data are from 1976-1979.

C-19 **Gravel-Pack Water Wells**: M. K. Peck, 1980, 17 p, 4 f. Details design and construction of these good-quality water sources for municipalities and industries located in river flood plains.

C-20 **Program and Abstracts: The Twelfth Annual Appalachian Petroleum Geology Symposium, "Appalachian Thrust Belt/Tight Sands/Shale Gas"**: sponsored by WVGES and WVU Department of Geology and Geography, 1981, 80 p, 19 abstracts, 1980 drilling statistics for West Virginia.

C-21 **Storage of Low-Level Radioactive Waste—A Potential West Virginia Alternative**: P. Lessing, 1981, 23 p, 2 f, 2 tables. Suggests the use of abandoned limestone mines for storage; includes explanation of nuclear concepts.

C-22 **Organic and Pyritic Sulfur in Coal: Potential Errors in Determination**: R. W. Stanton and J. J. Renton, 1981, 15 p. Standard laboratory methods for determining sulfur species in coal may give inaccurate results because acid-leaching does not completely remove pyrite.

C-23 **More Water from Low-Yield Water Wells**: M. K. Peck, 1981, 20 p. Practical advice for the homeowner on what to do about a well that produces too little water. Discusses well development and water-storage systems.

C-24 **Abandoned Coal Mines as Sources of Water Supplies**: P. Lessing and W. A. Hobba, Jr., 1981, 25 p. Explains how water gets into abandoned coal mines, how to pump it out and treat it, and problems and benefits when used for public water supplies.

C-25 **Troubleshooting Water-Well Failure**: M. K. Peck, 1981, 20 p. Practical advice for the homeowner on what to do about a malfunctioning well. Covers the operation of aquifers, wells, and pumps; troubleshooting procedures; and includes trouble-shooting charts for submersible and jet pumps.

C-26 **Program and Abstracts: The Thirteenth Annual Appalachian Petroleum Geology Symposium, "Appalachian Reservoirs and Targets"**: sponsored by WVGES and WVU Department of Geology and Geography, 1982, 100 p, 29 abstracts, 1981 drilling statistics for West Virginia.

C-27 **Water Use in West Virginia for 1980**: H. C. Stevens and P. Lessing, 1982, 32 p. Summarizes amount of water used for agriculture, power generation, mining, public supply, sewage treatment, rural domestic, and irrigation. Statewide and for each county.

C-28 **Where Does All the Water Go?** P. Lessing, 1982, 16 p, 9 color maps showing water use for industry, power generation, irrigation, waste disposal, public supply, etc.

C-29 **Oil and Gas Activity in West Virginia, 1970-1979**: D. G. Patchen, 1982, 200 p, 35 f, 82 tables. For each year of the decade, describes important exploratory successes and failures, shallow and deep drilling, production, prices, fields, secondary recovery, etc. Tables show wells by county, most active fields, completions, stratigraphic summary, production, permits issued by formation, etc. A summary discussion of the decade includes 15 maps and graphs showing trends. (See C-32)

C-30 **Catalog of West Virginia Maps**: S. A. Kasales and P. Lessing, 1982, 112 p. Lists over 1,000 maps available from 17 State and Federal agencies. Maps are grouped by scale, and are indexed in over 60 subject categories, such as geologic, highway, county, historical, etc. Each entry shows map title, scale, date, size, area covered, availability, source with address, and price. (NOTE: This is a descriptive list and is *not illustrated*.) (See OF8701)

C-31 **Program and Abstracts: The Fourteenth Annual Appalachian Petroleum Geology Symposium, "Appalachian Fractured Reservoirs"**: sponsored by WVGES and WVU Department of Geology and Geography, 1983, 100 p, 33 abstracts, includes WV drilling statistics for 1982.

C-32 **Oil and Gas Developments in West Virginia in 1982**: D. G. Patchen and K. L. Avary, 1983, 35 p, 5 maps, 9 tables. Chronicles the industry's 1982 deep and shallow drilling, exploration, production, prices, secondary recovery, gas storage, major discoveries and failures, and the outlook for 1983.

C-33 **Water Use in West Virginia in 1981**: H. C. Stevens, K. E. Suder, and P. Lessing, 1984, 93 p, 1 color map of WV river basins. Summarizes water used for agriculture, power generation, mining, public supply, sewage treatment, rural domestic, flood control, injection wells, navigation, and irrigation; by county, by 32 river basins, and Statewide.

C-34 **Program and Abstracts: The Fifteenth Annual Appalachian Petroleum Geology Symposium, "Old Appalachian Oil Fields"**: 1984, 63 p. 25 abstracts cover drilling history, geology, reservoir character, production, reserves, enhanced recovery potential, and sources of old oil field data. Includes 1983 WV drilling statistics.

C-35 **Water Use in West Virginia in 1982**: K. E. Suder and P. Lessing, 1984, similar to C-33.

C-36 **Program and Abstracts: The Sixteenth Annual Appalachian Petroleum Geology Symposium, "Appalachian Potpourri"**: 1985, 70 p. 32 abstracts cover Appalachian drilling activity by state; tectonics and structure; predicting well performance; radiometric, geochemical, and seismic prospecting; gravity; SLAR; lineaments; ground water; and specific trends, prospects, and wells. Includes 1984 WV drilling statistics.

C-37 **Water Use in West Virginia in 1983**: K. E. Suder and P. Lessing, 1985, similar to C-33.

C-38 **Program and Abstracts: The Seventeenth Annual Appalachian Petroleum Geology Symposium, "Appalachian Basin Architecture"**: 1986, 88 p. 26 abstracts cover Appalachian drilling activity by state; structural styles and basin evolution; stratigraphy; sedimentation; reservoirs; thermal history; hydrocarbon generation and migration; and exploration. Includes 1985 WV drilling statistics.

C-39 **Water Use in West Virginia for 1984**: K. E. Suder and P. Lessing, 1986, similar to C-33.

C-40 **Program and Abstracts: The Eighteenth Annual Appalachian Petroleum Geology Symposium, "Rifts, Ramps, Reefs, and Royalties"**: 1987, 129 p. 38 abstracts cover Appalachian drilling activity by state; gravity and seismic studies; salt-related structure; regional subsurface mapping; stratigraphy and structure; economics; development strategies; tectonics; and future exploration. Includes 1986 WV drilling statistics.

C-41 **Water Use in West Virginia for 1985**: K. E. Suder and P. Lessing, 1987, similar to C-33.

C-42 **Program and Abstracts: The Nineteenth Annual Appalachian Petroleum Geology Symposium, "Geology of Appalachian Basin Devonian Clastics"**: 1988, 71 p. 36 abstracts cover Appalachian drilling activity by state; Devonian-age black shales, tight sandstones and siltstones and research on production from them; depositional environments of various lithologies; production potential; resource evaluation; and data-base development. Includes 1987 WV drilling statistics.

C-43 **Atlas of Upper Devonian/Lower Mississippian Sandstones in the Subsurface of West Virginia**: R. M. Boswell and G. A. Jewell, 1988, 144 p, including 80 page-size maps. Presents a series of regional isolith maps and more detailed isopach maps that reveal the distribution patterns of sandstones within the Acadian clastic wedge of northern, central, and southwestern West Virginia, roughly between 79°30'-81°W longitude and 37°45'-39°45' N latitude.

C-44 **Coalbed Gas Production, Big Run and Pine Grove Fields, Wetzel County, West Virginia**: D. G. Patchen, T. E. Repine, K. L. Avary, and J. F. Schwietering, 1991, 33 p, 25 f, 2 tables. Describes field histories, structure, stratigraphy, gas occurrence, and production information for these two prominent coal-bed methane resource fields.

C-45 **A Catalog of West Virginia Geological Maps, 1752-1992:** P. Lessing, 1993, 84 p, 1 f. Chronological listing of geologic maps covering all or parts of West Virginia. Listing for each map includes title, scale, year, author(s), coverage, description, and the source or location of the map. (See OF8701 for listings of other types of West Virginia maps.)

C-46 **Proceedings: 28th Forum on the Geology of Industrial Minerals:** C. M. Simard, compiler, 1995, 227 p., illustrated. 30 papers and 23 abstracts discuss non-fuel mineral development and utilization; geochemical trends, production; geology; health issues; more.

C-47 **Potential Effects of Mountaintop Removal Coal Mining on Fluvial Geomorphology and Aquatic Habitat, West Virginia–Review of Literature 1929-2000:** D. Newell and D. Chambers, 2002, 95p.

C-48 **Program and Abstracts: The 34th Annual Meeting of the American Association of Petroleum Geologists, Eastern Section, "Mountains of Opportunity"**, 2005, 38p, 68 abstracts. Sponsored by the WVGES and the Appalachian Geological Society.

COAL GEOLOGY BULLETINS

CGB-A **Proceedings of the Coal Agglomeration and Conversion Symposium**: C. J. Smith, compiler, April 1976, 238 p, highly illustrated. 20 papers cover inorganic mineralogy of WV coal; microscopic methods for determining extent of destruction of agglomerating properties; measuring agglomerating properties by petrography; coal plasticity mechanism; agglomerating characteristics affect on combustion in pulverized fuel boilers; more.

CGB-1 **Suitability of West Virginia Coals to Coal-Conversion Processes**: S. P. Babu, J. A. Barlow, L. L. Craddock, R. V. Hidalgo, and E. A. Friel, 1973, 32 p, 23 f, 21 colored maps. Proposes that coal-conversion plants be built in West Virginia for manufacture and exportation of finished products, rather than raw materials.

CGB-2 **Coal and Coal Mining in West Virginia**: J. A. Barlow, 1974, 63 p, 23 f, 3 tables. Provides excellent description of many aspects of coal and coal mining in the State, ranging from coal formation to the environmental impact of coal mining. Although written primarily for the layman, it is also of interest to the coal scientist, miner, and producer.

CGB-3 **Palynological Evidence for a Pennsylvanian Age Assignment of the Dunkard Group in the Appalachian Basin: Part II**: J. A. Clendening, 1974, 107 p, 23 pl, 2 f. Describes and compares the palynology (taxonomy and biostratigraphic significance) of the Dunkard Group and a comparable stratigraphic interval from Kansas. This exhaustive treatment of the subject is a supplement to Part I, which is a paper in the Proceedings of the First I. C. White Memorial Symposium—"The Age of the Dunkard" (see ED-B, ED-C). All the important palynomorphs are illustrated; two comprehensive charts give palynomorph ranges for Kansas and the Dunkard basin.

CGB-4 **Some Geochemical Considerations of Coal**: J. J. Renton and R. V. Hidalgo, 1975, 51 p, 8 f, 21 tables. Reports findings of a geochemical study that statistically tested interrelationships between basic organic and inorganic parameters commonly determined in routine analyses, and that tested stratigraphic and regional systematic variations of these parameters.

CGB-5 **Coal Analyses of McDowell County, West Virginia**: C. J. Smith, S. Vinton, G. Ahnell, and B. Blake, 1977, 74 p. Proximate analysis, sulfur, Btu, and FSI for samples from 14 seams at 64 sites distributed throughout the county. Includes columnar section, original minable tonnages, and list of seams.

CGB-6 **Proceedings of the Coal Processing and Conversion Symposium, June 1976**: C. J. Smith and D. G. Nichols, compilers, 1979, 120 p. 15 papers covering pyrite, National Coal Resources Data System, sulfurtain process, cleaning, in-situ gasification, ash removal, liquefaction, etc.

COLLECTIONS

Compilations of previously released publications centered around a specific geographical area or geological topic. These are NOT new publications; they are sets of similar publications scanned and packaged together. The contents included in each Collection are listed here, please see individual publication descriptions for more details on each component. The individual publications (in printed or scanned format) are still available separately for purchase, unless noted otherwise. See Price List for details.

COLL-1 **Mountain State Geology**: Magazine-like publications reporting on research done at the Survey. In print from 1961 to 1991. Now available as a compilation of all 36 issues in Adobe .pdf format with interactive search features, quick-links to articles, and more! See individual publication descriptions for more detail on each issue. Individual issues are NOT available separately in digital format. Limited quantities of printed original copies remain; see Price List.

COLL-2 **Recreational Hunting/Fishing Maps**: This collection includes scanned versions (in .tif format) of the following six Open Files: Stonewall Jackson Lake Wildlife Management Area (OF 9507), Sutton Lake (OF 9508), Beech Fork Lake Wildlife Management Area (OF 9509), Summersville Lake (OF 9510), Blackwater Falls State Park and Pendleton Creek Watershed (OF 9603), and Burnsville Lake Public Hunting and Fishing Area (OF 0401). Collection includes full-color scanned maps only. Printed, comb-bound 11" x 17" laminated maps are still available individually for purchase.

COLL-3 **Coal River Basin**: Includes Basic Data Report BDR-5 (.pdf) and full-color 40" x 56" Hydrologic Ground-Water Atlas X-WVDNR-1 (.tif). Package includes River Basin Publications index map (page size).

COLL-4 **Elk River Basin**: Includes Basic Data Report BDR-6 (.pdf), River Basin Bulletins RBB-6 and RBB-6P (.pdf), and full-color 40" x 56" Hydrologic Ground-Water Atlas X-WVDNR-2 (.tif). Package includes River Basin Publications index map (page size).

COLL-5 **Gauley River Basin**: Includes full-color 40" x 56" Hydrologic Ground-Water Atlas X-WVDNR-3 (.tif). Package includes River Basin Publications index map (page size).

COLL-6 **Greenbrier, Bluestone, and Upper New River Basin**: Includes Basic Data Report BDR-4 (.pdf), River Basin Bulletin RBB-4 (.pdf), and full-color 40" x 56" Hydrologic Ground-Water Atlas X-WVDNR-9 (.tif). Package includes River Basin Publications index map (page size).

COLL-7 **Guyandotte River Basin**: Includes Basic Data Report BDR-7 (.pdf), River Basin Bulletin RBB-7 (.pdf), and full-color 40" x 56" Hydrologic Ground-Water Atlas X-WVDNR-4 (.tif). Package includes River Basin Publications index map (page size).

COLL-8 **Little Kanawha River Basin**: Includes Basic Data Report BDR-2 (.pdf), River Basin Bulletin RBB-2 (.pdf), and full-color 42" x 58" Hydrologic Ground-Water Atlas MAP-WV10 (.tif). Package includes River Basin Publications index map (page size).

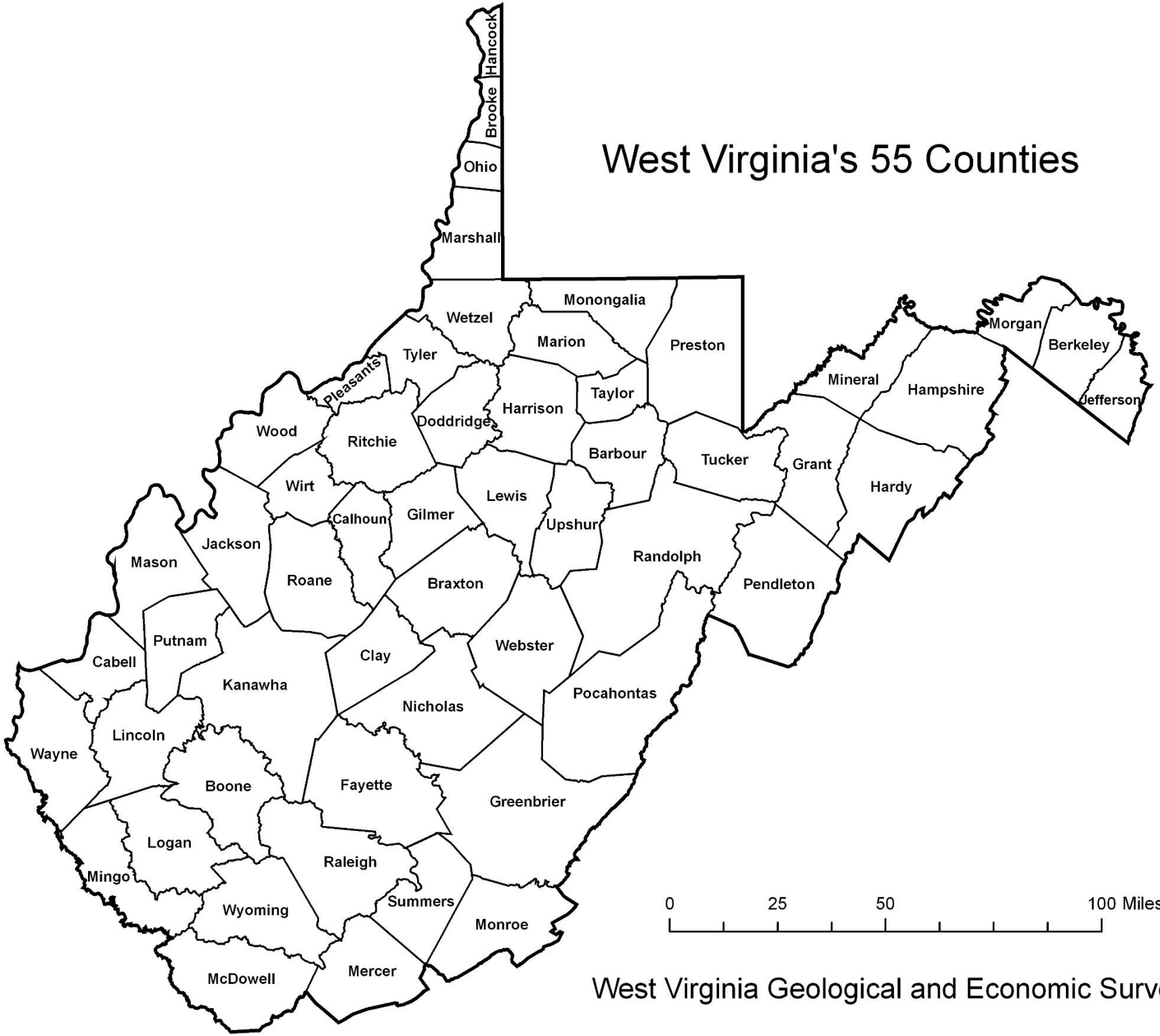
COLL-9 **Monongahela River Basin**: Includes Basic Data Report BDR-1 (.pdf), River Basin Bulletin RBB-1 (.pdf), and full-color 40" x 56" Hydrologic Ground-Water Atlas X-WVDNR-7 (.tif). Package includes River Basin Publications index map (page size).

COLL-10 **New, Kanawha, and Pocatalico River Basins**: Includes full-color 40" x 56" Hydrologic Ground-Water Atlas X-WVDNR-5 (.tif). Package includes River Basin Publications index map (page size).

COLL-11 **Ohio River Basin**: Includes full-color 40" x 56" Hydrologic Ground-Water Atlas X-WVDNR-6 (.tif). Package includes River Basin Publications index map (page size).

COLL-12 **Potomac River Basin**: Includes Basic Data Report BDR-3 (.pdf), River Basin Bulletin RBB-3 (.pdf), and full-color 31" x 45" Hydrologic Ground-Water Atlas MAP-33 (.tif). Package includes River Basin Publications index map (page size).

COLL-13 **Tug Fork of Big Sandy River and Twelvepole Creek River Basins**: Includes River Basin Bulletin RBB-8 (.pdf), and full-color 40" x 56" Hydrologic Ground-Water Atlas X-WVDNR-8 (.tif). Package includes River Basin Publications index map (page size).



West Virginia Geological and Economic Survey

CGR

COUNTY GEOLOGIC REPORTS AND MAPS

Each report describes the geology, physiography, and history of the area, and contains, where applicable, measured sections, coal analyses, oil-and-gas well records, data on clays, road materials, building stone, water power, forests, soils, and paleontology. The reports are accompanied by geologic, topographic, and, in some cases, soil maps, or other maps as listed below, all at a scale of 1:62,500 (about 1 inch to 1 mile). All maps are available as scanned images in .tif format, or as full-size, plotted color copies that can be printed on request. All reports are available scanned in Adobe Acrobat (.pdf) format, or as printed bound photocopies. Original County Geologic Reports are out-of-print except as noted below.

Report Number:	Counties Covered and Report Contents:
CGR-1	**Barbour, Upshur, and Western Randolph Counties**: D.B.Reger,1918, 864p, 53pl, 40f, 4 maps. *(See CGR-26)* Map I: Barbour County Topography Map, 1918 (26" x 32"); Map II: Barbour County General and Economic Geology Map, 1918 (26" x 32"); Map III: Upshur County and Western Portion of Randolph County Topographic Map, 1918 (36" x 46"); Map IV: Upshur County and Western Portion of Randolph County General and Economic Geology Map, 1918 (36" x 46").
	Berkeley (see Jefferson County)
CGR-2	**Boone County**: C. E. Krebs and D. D. Teets, Jr., 1915, 648 p, 42 pl, 3 f, 2 maps. Boone County Topography Map, 1914 (34" x 38"); Boone County General and Economic Geology Map, 1915 (34" x 38").
CGR-3	**Braxton and Clay Counties**: R. V. Hennen, 1917, 883 p, 29 pl, 16 f, 4 maps. Braxton County Topography Map, 1917 (34" x 30"); Braxton County General and Economic Geology Map, 1917 (34" x 30"); Clay County Topography Map, 1917 (32" x 30"); Clay County General and Economic Geology Map, 1917 (32" x 30").
	Brooke (see Ohio County)
CGR-4	**Cabell, Wayne, and Lincoln Counties**: C. E. Krebs, D. D. Teets, Jr., 1913, 483 p, 26 pl, 6 f, 9 maps. Cabell County Topography Map, 1913 (29" x 30"); Cabell County General and Economic Geology Map, 1913 (29" x 30"); Cabell County Agricultural Soils Map, 1913 (29" x 30"); Lincoln County Topography Map, 1913 (32" x 35"); Lincoln County General and Economic Geology Map, 1913 (32" x 35"); Lincoln County Agricultural Soils Map, 1913 (32" x 35"); Wayne County Topography Map, 1913 (29" x 44"); Wayne County General and Economic Geology Map, 1913 (29" x 44"); Wayne County Agricultural Soils Map, 1913 (29" x 44").
	Calhoun (see Wirt County)
	Clay (see Braxton County)
CGR-5	**Doddridge and Harrison Counties**: R. V. Hennen, 1912, 712 p, 25 pl, 5 f, 3 maps. Doddridge and Harrison Counties Topography Map, 1912 (50" x 34"); Doddridge and Harrison Counties General and Economic Geology Map, 1912 (50" x 34"); Doddridge and Harrison Counties Agricultural Soils Map, 1912 (43" x 30").
CGR-6	**Fayette County**: R. V. Hennen, D. D. Teets, Jr., R. C. Tucker, A. M. Hagan 1919, 1002 p, 24 pl, 24 f, 2 maps. Map I: Fayette County Topography Map, 1919 (44" x 36"); Map II: Fayette County General and Economic Geology Map, 1919 (44" x 36").
	Gilmer (see Lewis County)
	Grant (see Mineral County)
CGR-7	**Greenbrier County**: P. H. Price and E. T. Heck, 1939, 846 p, 53 pl, 33 f, 2 maps. Map I: Greenbrier County Topography Map, 1936 (60" x 42"); Map II: Greenbrier County General and Economic Geology Map, 1937 (60" x 42").
CGR-8	**Hampshire and Hardy Counties**: J. L. Tilton, W. F. Prouty, R. C. Tucker, and P. H. Price, 1927, 624 p, 78 pl, 19 f, 4 maps. (*Some original copies still available.*) Map I: Hampshire County Topography Map, 1926 (39" x 34"); Map II: Hampshire County General and Economic Geology Map, 1926 (39" x 40"); Map III: Hardy County Topography Map, 1926 (40" x 38"); Map IV: Hardy County General and Economic Geology Map, 1926 (39" x 39").

Report Number:	Counties Covered and Report Contents:
	Hancock (see Ohio County)
	Hardy (see Hampshire County)
	Harrison (see Doddridge County)
CGR-9	**Jackson, Mason, and Putnam Counties**: C. E. Krebs, 1911, 387 p, 31 pl, 5 f, 3 maps. Jackson, Mason and Putnam Counties Topography Map, 1911 (42" x 61"); Jackson, Mason and Putnam Counties General and Economic Geology Map, 1911 (42" x 61"); Jackson, Mason and Putnam Counties Agricultural Soils Map, 1911 (42" x 61").
CGR-10	**Jefferson, Berkeley, and Morgan Counties**: G. P. Grimsley, 1916, 644 p, 37 pl, 20 f, 3 maps. Jefferson, Berkeley and Morgan Counties Topography Map, 1916 (44" x 42"); Jefferson, Berkeley and Morgan Counties General and Economic Geology Map, 1916 (44" x 42"); Map Showing Low Silica Limestone Belts in the Martinsburg District, 1916 (17" x 28").
CGR-11	**Kanawha County**: C. E. Krebs, D.D. Teets, Jr., W. A. Price, 1914, 679 p, 33 pl, 14 f, 4 maps. Kanawha County Topography Map, 1913 (42" x 50"); Kanawha County General and Economic Geology Map, 1913 (42" x 50"); Kanawha County Agricultural Soils Map, 1912 (42" x 50"); Kanawha County Coals and Coal Mines Map, 1913 (1:93750 scale, 30" x 36").
CGR-12	**Lewis and Gilmer Counties**: D. B. Reger, 1916, 660 p, 30 pl, 12 f, 2 maps. Map I: Lewis and Gilmer Counties Topography Map, 1916 (46" x 36"); Map II: Lewis and Gilmer Counties General and Economic Geology Map, 1916 (46" x 36").
	Lincoln (see Cabell County)
CGR-13	**Logan and Mingo Counties**: R. V. Hennen, D. B. Reger, W. A. Price, 1915, 775 p, 15 pl, 23 f, 3 maps. Map I: Logan and Mingo Counties Topography Map, 1914 (48" x 42"); Map II: Logan and Mingo Counties General and Economic Geology Map, 1914 (48" x 42"); Map III: Logan and Mingo Counties Agricultural Soils Map, 1913 (46" x 39").
	Marion (see Monongalia County)
CGR-14	**Marshall, Wetzel, and Tyler Counties**: R. V. Hennen, 1909, 654 p, 12 pl, 3 f, 3 maps. Marshall, Wetzel and Tyler Counties Topography Map, 1909 (41" x 53"); Marshall, Wetzel and Tyler Counties General and Economic Geology Map, 1909 (41" x 53"); Marshall, Wetzel and Tyler Counties Agricultural Soils Map, 1909 (41" x 53").
	Mason (see Jackson County)
	McDowell (see Wyoming County)
CGR-15	**Mercer, Monroe, and Summers Counties**: D.B.Reger, P.H.Price, 1926, 963p, 34pl, 30f, 6 maps. *(See CGR-25)* Map I: Mercer County Topography Map, 1925 (39" x 30"); Map II: Mercer County General and Economic Geology Map, 1925 (39" x 32"); Map III: Monroe County Topography Map, 1925 (41" x 33"); Map IV: Monroe County General and Economic Geology Map, 1925 (41" x 33"); Map V: Summers County Topography Map, 1925 (30" x 38"); Map VI: Summers County General and Economic Geology Map, 1925 (30" x 38").
CGR-16	**Mineral and Grant Counties**: D. B. Reger and R. C. Tucker, 1924, 886 p, 43 pl, 31 f, 4 maps. Map I: Mineral County Topography Map, 1923 (43" x 38"); Map II: Mineral County General and Economic Geology Map, 1923 (43" x 38"); Map III: Grant County Topography Map, 1923 (34" x 43"); Map IV: Grant County General and Economic Geology Map, 1923 (34" x 43").
	Mingo (see Logan County)
CGR-17	**Monongalia, Marion, and Taylor Counties**: R.V. Hennen, D.B. Reger, 1913, 844 p, 33 pl, 11 f, 3 maps. *(See CGR-18)* Map I: Monongalia, Marion and Taylor Counties Topography Map, 1913 (44" x 38"); Map II: Monongalia, Marion and Taylor Counties General and Economic Geology Map, 1913 (44" x 38"); Map III: Monongalia, Marion and Taylor Counties Agricultural Soils Map, 1913 (44" x 38"). This Report also includes CGR-18, "Coal in Monongalia County".

Report Number:	Counties Covered and Report Contents:
CGR-18	**[Monongalia] Coal in Monongalia County**: L. M. Morris, 1932, 144 p, 11 pl, 21 f (this report does not contain large topographic or geologic maps). *(See CGR-17)* This Report comes bundled with CGR-17, "Monongalia, Marion, and Taylor Counties" and is not available separately.
	Monroe (see Mercer County)
	Morgan (see Jefferson County)
CGR-19	**Nicholas County**: D. B. Reger, W. A. Price, R. C. Tucker, J. D. Sisler, 1921, 847 p, 34 pl, 22 f, 2 maps. Map I: Nicholas County Topography Map, 1920 (52" x 36"); Map II: Nicholas County General and Economic Geology Map, 1920 (52" x 36").
CGR-20	**Ohio, Brooke, and Hancock Counties**: G. P. Grimsley, 1907, 378 p, 16 pl, 37 f, 9 maps. Map I: Ohio, Brooke and Hancock Counties Topography Map, 1924 (16" x 50"); Map II: Ohio, Brooke and Hancock Counties General and Economic Geology Map, 1938 (16" x 50"); Ohio, Brooke and Hancock Counties Agricultural Soils Map, 1906 (16" x 50"); Map of Brooke County Showing the Geologic Formations, 1906 (15" x 22"); Map of Brooke County Showing the Outcrops of Geologic Formations, 1906 (15" x 22"); Map of Hancock County Showing the Geologic Formations, 1906 (13" x 22"); Map of Hancock County Showing the Outcrops of Geologic Formations, 1906 (13" x 22"); Map of Ohio County Showing the Geologic Formations, 1906 (16" x 18"); Map of Ohio County Showing the Outcrops of Geologic Formations, 1906 (16" x 18").
CGR-21	**Pendleton County**: J. L. Tilton, W. F. Prouty, P. H. Price, and R. C. Tucker, 1927, 384 p, 80 pl, 25 f, 2 maps. Map I: Pendleton County Topography Map, 1927 (36" x 45"); Map II: Pendleton County General and Economic Geology Map, 1927 (36" x 52").
CGR-22	**Pleasants, Wood, and Ritchie Counties**: G. P. Grimsley, 1910, 352 p, 21 pl, 16 f, 4 maps. Pleasants, Wood, and Ritchie Counties Topography Map, 1909 (58" x 36"); Pleasants, Wood, and Ritchie Counties General and Economic Geology Map, 1909 (58" x 36"); Pleasants, Wood, and Ritchie Counties Agricultural Soils Map, 1909 (58" x 36"); Pleasants, Wood, and Ritchie Counties Oil and Gas Fields and Structural Contours Map, 1910 (58" x 36").
CGR-23	**Pocahontas County**: P. H. Price, 1929, 531 p, 71 pl, 21 f, 2 maps. Map I: Pocahontas County Topography Map, 1929 (42" x 55"); Map II: Pocahontas County General and Economic Geology Map, 1929 (42" x 55").
CGR-24	**Preston County**: R. V. Hennen, D. B. Reger, and W. A. Price, 1914, 566 p, 43 pl, 10 f, 3 maps. Map I: Preston County Topography Map, 1914 (36" x 46"); Map II: Preston County General and Economic Geology Map, 1914 (36" x 48"); Map III: Preston County Soil Map, 1912 (29" x 40").
	Putnam (see Jackson County)
CGR-25	**Raleigh County, Summers County West of New River, and the Coal Area of Mercer County**: C. E. Krebs and D. D. Teets, Jr., 1916, 778 p, 31 pl, 10 f, 4 maps. (*see CGR-15*) Raleigh County and Western Part of Summers County Topography Map, 1916 (42" x 34"); Raleigh County and Western Part of Summers County General and Economic Geology Map, 1916 (42" x 34"); Mercer County Topography Map, 1916 (35" x 29"); Mercer County General and Economic Geology Map, 1916 (35" x 29")(Shows geology of the coal area in the western part of county only).
CGR-26	**Randolph County**: D. B. Reger, 1931, 989 p, 74 pl, 30 f, 2 maps. (*see CGR-1*) Map I: Randolph County Topography Map, 1930 (40" x 64"); Map II: Randolph County General and Economic Geology Map, 1931 (40" x 64").
	Ritchie (see Pleasants County)
	Roane (see Wirt County)
	Summers (see Mercer County) (see also Raleigh County)
	Taylor (see Monongalia County)

Report Number:	Counties Covered and Report Contents:
CGR-27	**Tucker County**: D. B. Reger, W. A. Price and R. C. Tucker, 1923, 542 p, 16 pl, 11 f, 2 maps. Map I: Tucker County Topography Map, 1921 (42" x 36"); Map II: Tucker County General and Economic Geology Map, 1921 (42" x 36").
	Tyler (see Marshall County)
	Upshur (see Barbour County)
	Wayne (see Cabell County)
CGR-28	**Webster County**: D. B. Reger, R. C. Tucker and M. Buchanan, 1920, 682 p, 35 pl, 24 f, 2 maps. Map I: Webster County Topography Map, 1919 (36" x 39"); Map II: Webster County General and Economic Geology Map, 1919 (36" x 39"). (This report includes a Portion of Mingo District, Randolph County, South of Valley Fork of Elk River.)
	Wetzel (see Marshall County)
CGR-29	**Wirt, Roane, and Calhoun Counties**: R. V. Hennen, 1911, 574 p, 15 pl, 6 f, 3 maps. Wirt, Roane and Calhoun Counties Topography Map, 1911 (35" x 51"); Wirt, Roane and Calhoun Counties General and Economic Geology Map, 1911 (35" x 51"); Wirt, Roane and Calhoun Counties Agricultural Soils Map, 1911 (35" x 51").
	Wood (see Pleasants County)
CGR-30	**Wyoming and McDowell Counties**: R. V. Hennen, R. M. Gawthrop 1915, 783 p, 31 pl, 28 f, 2 maps. Map I: Wyoming and McDowell Counties Topography Map, 1915 (48" x 43"); Map II: Wyoming and McDowell Counties General and Economic Geology Map, 1915 (48" x 43").

DIGITAL DATA SERIES

Formerly "Computer Data Series". Selected pre-packaged geologic data, used in the production of Survey publications, are available on computer-processible media. The data format consists of ASCII files that can be provided on media or downloaded. For further information on the datasets in this series, and availability, prices, and ordering instructions, *directly* contact the Information Services Program, West Virginia Geological and Economic Survey, 1 Mont Chateau Road, Morgantown, WV 26508; phone (304)594-2331; FAX (304)594-2575. (DDS datasets *cannot* be ordered using the catalog Order Form.)

Subsurface Structure Datasets (DDS-1, 2, 3, formerly CDS-1, 2, 3) contain well locations and subsea stratigraphic depths used to generate structure maps for the Oil and Gas Report (**BULLETIN** series publication) listed with each dataset. Written in standard text form, these datasets can be used with most graphics software with little or no modification. All data are numeric and sorted by increasing county code and permit number. (In producing the maps for the published Oil and Gas Reports, certain points may have been deleted and contours modified; *exact* duplication of the published maps may not be possible.) These datasets are obsolete and have been superseded by DDS-5, the ***WVGES Oil and Gas Well Data for West Virginia.***

DDS-1A **Subsurface Structure Dataset for the Base of the Greenbrier Group in Cabell and Wayne Counties, WV:** 2,173 wells; used in B-42 (1988). (No longer available - Superseded by DDS-5)

DDS-1B **Subsurface Structure Dataset for the Base of the Lower Huron Member of the Ohio Shale in Cabell and Wayne Counties, WV:** 1,348 wells; used in B-42 (1988). (No longer available - Superseded by DDS-5)

DDS-2A **Subsurface Structure Dataset for the Base of the Greenbrier Group in Boone and Kanawha Counties, WV:** 2,705 wells; used in B-19A (1988). (No longer available - Superseded by DDS-5)

DDS-2B **Subsurface Structure Dataset for the Base of the Lower Huron Member of the Ohio Shale in Boone and Kanawha Counties, WV:** 1,298 wells; used in B-19A (1988). (No longer available - Superseded by DDS-5)

DDS-3A **Subsurface Structure Dataset for the Base of the Greenbrier Group in Jackson, Mason, and Putnam Counties, WV:** 2,505 wells; used in B-23A (1988). (No longer available - Superseded by DDS-5)

DDS-3B **Subsurface Structure Dataset for the Base of the Lower Huron Member of the Ohio Shale in Jackson, Mason, and Putnam Counties, WV:** 1,744 wells; used in B-23A (1988). (No longer available - Superseded by DDS-5)

DDS-4 **Mechanical Log Catalog:** Information about 12,876 mechanical well logs on file at the Survey. Datasets contain county code and permit number, 15-minute quadrangle and 5-minute section, well total depth, deepest formation encountered, well type, range of intervals logged, logs available, microfilm roll numbers on which logs are copied, and comments. Written in standard text form and can be used with most database software. Data are sorted by increasing county code and permit number. Available as a single statewide file or as any of 10 separate regional datasets. (No longer available - Superseded by DDS-5)

DDS-5 **WVGES Oil and Gas Well Data for West Virginia:** May 2022 (First release 1/2005, updated annually). Data for more than 152,000 individual oil and gas wells in every county of West Virginia (except Berkeley and Jefferson). Contains data in two formats: both as comma-delimited ASCII text files (with data fields enclosed in double quotes) and also as a generic Microsoft® Access database. Data types include: well locations, well owners/completions, pay/show/water intervals, stratigraphy, production reported since 1979, plugging, e-logs available at the Survey, and well samples and cores available at the Survey; record formats and a ReadMe file are provided in PDF format. Further information is available on the WVGES website: http://www.wvgs.wvnet.edu/www/news/ogdvd2.html .

Data that are available in digital format, such as archived scans of maps and books, or tables in Microsoft® Excel format, are listed in the individual product description or at the heading of each section of this catalog. Many publications that were previously listed as "out of print" are now available on digital media or for download in Adobe .pdf or .tif format.

Listed in this section are geologic data in a format that can be used in a Geographic Information System (GIS). The WVGES uses ESRI ArcGIS® software products; most GIS-ready data will be available in shapefile or geodatabase format. Additionally, the WVGES hosts many Interactive Mapping Services (IMS) on our website, showcasing our geologic GIS data to the public. Please visit the IMS portal page on our website: http://ims.wvgs.wvnet.edu/index.html . Basic GIS data for all of our geologic maps can be downloaded for FREE from our webpage http://www.wvgs.wvnet.edu/ .

Geologic Data Available For Use or Purchase:

Coal:

Coal Bed Mapping Project (CBMP): A series of coal resource maps and GIS map layers for each minable or potentially minable coal bed in West Virginia. Among the map layers available are: structural contours, elevation control points, mined and remaining coal areas including coal mine information, geological discontinuities, total bed thickness, net coal thickness, percent parting, and thickness control points for 80 different coal beds. Current CBMP data files for GIS are available or can be viewed on the free interactive map viewer on the WVGES website at http://www.wvgs.wvnet.edu/www/coal/cbmp/coalims.html . Shapefiles can be extracted and downloaded from the interactive maps.

Scanned mine maps and the Mine Information Database System (MIDS): Scanned images (.tif format) of West Virginia coal mine maps can be searched online using the Mine Information Database System (MIDS). The MIDS contains records of every mine map available at the WVGES. The database is comprised of over 43,000 documents and over 69,000 mines. Search by counties, quadrangles, coal beds and/or by entering company or mine names, permit numbers, or dates. Most of the mine map records contained in MIDS are available at the WVGES in the form of paper maps, aperture cards (microfilm), and digitally scanned mine map images which can be viewed on the CBMP interactive mapping service (link above), or downloaded from the MIDS website: http://www.wvgs.wvnet.edu/www/coal/wvminemaps.htm . In addition, many mine maps can be accessed directly via a hyperlink on the apcard label when an inquiry is performed on certain layers in the CBMP Interactive Maps.

General Geology:

Geologic Quadrangle Maps: All of the MAP-WV and Open-File (OF-series) Bedrock Geologic 7.5-Minute (1:24,000 scale) Quadrangle Maps have been digitally archived/scanned and are available in .tif format. In addition, these geologic maps have been digitized for use in a Geographic Information System (GIS), and the ESRI ArcGIS® -format shapefiles are available for **FREE download**. Layer shapefiles for each map may include: geologic contacts, geologic unit polygons, faults, structure/folds, bedding (strike/dip) points, igneous features, cross-section location line, and digitized cross-section. Some maps may also include surficial geology contact lines and polygons. More detailed GIS packages including original source material, ArcGIS® layer rendering files and full-color map layout document files are available for purchase. Maps available in GIS format are noted in the individual item descriptions in the MAP-WV and OF sections of this catalog, and are also shown in the ***index map*** **on the next page**. Please also inquire about updated digital availability of other maps and publications.

Statewide Geologic Map of West Virginia and Digitzed County Geologic Reports: The 1968 statewide geologic map (1:250,000 scale) has been digitized for use in GIS, and fully converted to USGS' GeMS data standard in 2022. See MAP-1 for a full description. Certain County Geologic Reports (CGR's) have been digitized for GIS (1:62,500 scale). Please inquire about availability or visit our website to search for and download data: http://www.wvgs.wvnet.edu/

Geophysical and Structure Maps: Various statewide (1:250,000 scale) geophysical maps (Bouguer Gravity, Aeromagnetic), linear features maps (Landsat Linear Features of WV, Allegheny Plateau Fracture Trends), and structure maps (top of Ordovician, Newburg/Williamsport Sandstones) have been digitized and are available for GIS. These include MAP-WV7, MAP-WV11, MAP-WV25, MAP-23, MRS-8, and Bulletin 35. See individual publications for full description. Please inquire about availability or visit the WV State GIS Data Clearinghouse to search for and download data: http://wvgis.wvu.edu/data/data.php

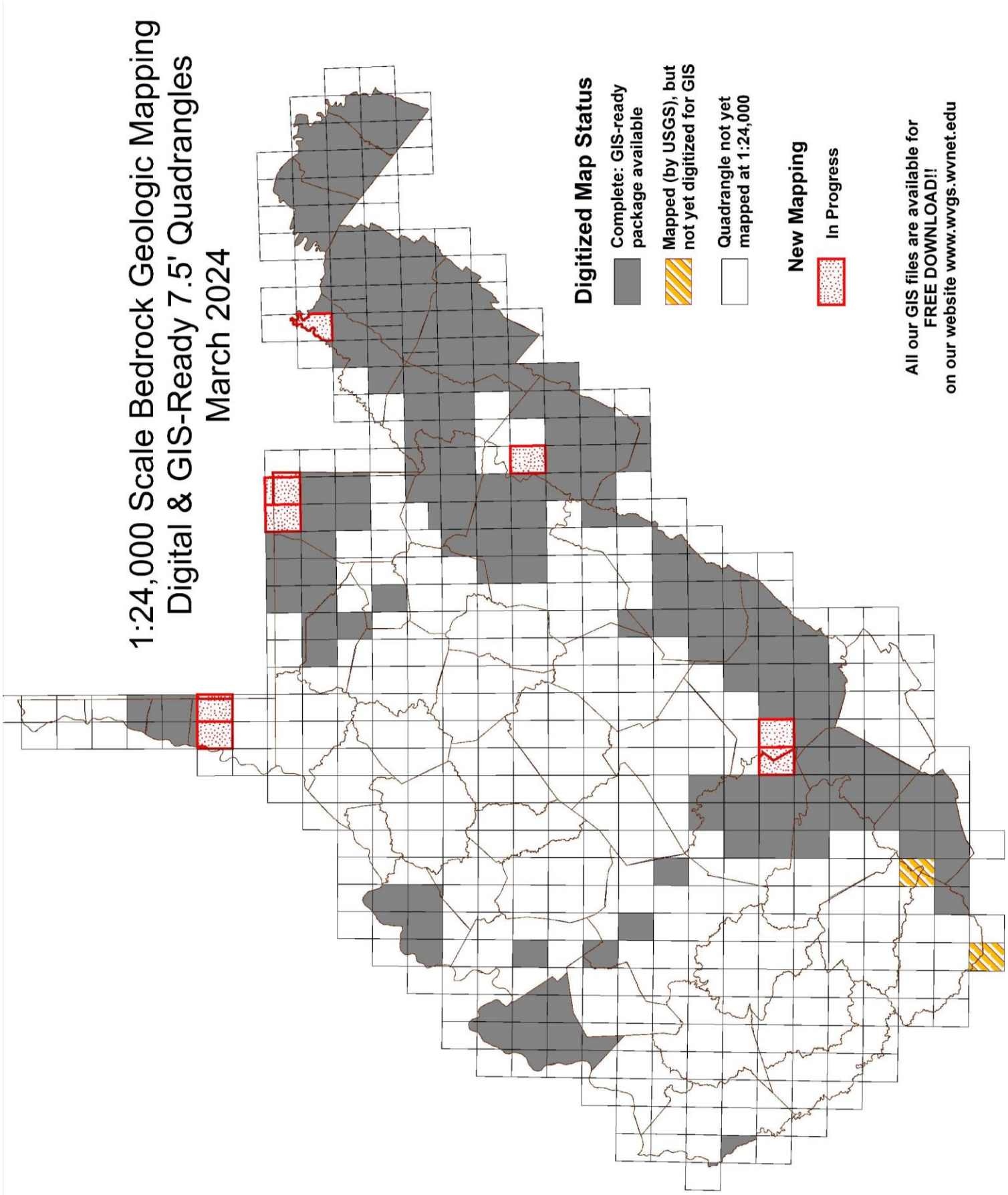
Geostatistical Case Studies: Case studies and data are available for download for two projects which computed risk-qualified estimates of natural resources. See http://www.wvgs.wvnet.edu/www/geostat/index.html .

Stratigraphic Geochemical Database for Portions of Pendleton County, West Virginia, and Adjacent Virginia Counties: R. R. McDowell (compiler), revised 9/2008 with periodic updates. Results of geochemical analyses of bedrock, soil, and stream sediment samples collected during geologic mapping in the eastern portion of West Virginia and nearby areas of Virginia. Available in Microsoft® Excel spreadsheet format or ESRI ArcGIS®-format shapefiles that can be used in a GIS. See publication RI-34 for full description.

Oil & Gas:

WVGES Oil and Gas Well Data for West Virginia: Data for more than 145,000 individual oil and gas wells that can be imported into a GIS. See publication DDS-5 for full description.

D-GIS


1:24,000 Scale Bedrock Geologic Mapping
Digital & GIS-Ready 7.5' Quadrangles
March 2024
Digitized Map Status
Complete: GIS-ready package available
Mapped (by USGS), but not yet digitized for GIS
Quadrangle not yet mapped at 1:24,000
New Mapping
In Progress
All our GIS files are available for FREE DOWNLOAD!!
on our website www.wvgs.wvnet.edu

Oil & Gas (continued):

"*Pipeline*": The Survey's "*Pipeline*" data system provides public access, through a Web browser, to oil and gas well data for more than 145,000 oil and gas wells. The data are keyed on the well's API number. Data contained within tables include: locations; completions; farm name and operator; pays and shows of hydrocarbons; water; formation tops and thicknesses; monthly and annual production of gas and/or oil, generally since 1979; plugging; data about mechanical logs on file in the Survey's log library as well as access to scanned well log images; and data about well samples and cores in the Survey's core library. http://www.wvgs.wvnet.edu/oginfo/pipeline/pipeline2.asp

Scanned E-logs, plats, and completion reports for viewing or download: Users can search and view or download electronic files of scanned logs (wireline logs), selected digitized logs, well plats, and completion reports since August 2004, plugging affidavits, photographs for selected slabbed cores, and available well sample descriptions. Most files are available in .tif, .las or .pdf formats. http://www.wvgs.wvnet.edu/pipe2/OGWISHelp.aspx

County-based Summary Oil and Gas Production Data: Oil and Gas production summaries searchable by county and by year, from 1979 to present. See http://www.wvgs.wvnet.edu/www/datastat/ogsummary/start2.asp

Appalachian Storage Hub (ASH): Report, isopach and structure contour maps, GIS mapping files, and digital data repository compiled as part of a geologic study to identify potential subsurface storage options for natural gas liquids. Geologic units selected for analysis include the Salina F4 salt (solution mining option); Greenbrier Limestone (mined-rock cavern option), and multiple siliciclastic units (depleted reservoir option). Study area is comprised of 50 counties located in proximity to the Ohio and Kanawha rivers in West Virginia, Pennsylvania, and Ohio. http://www.wvgs.wvnet.edu/ASH

Interactive Mapping Services (IMS) Provided on the WVGES Website: http://www.wvgs.wvnet.edu/

Appalachian Basin Tight Gas Plays: http://www.wvgs.wvnet.edu/ATG
An Appalachian Oil and Natural Gas Research Consortium (AONGRC) Project. Play-based maps featuring six tight gas plays for West Virginia and Pennsylvania: Berea/Murrysville, Venango, Bradford, Elk, Tuscarora, and Medina/"Clinton". This IMS features digitized maps from Volume 25: *The Atlas of Major Appalachian Gas Plays*, and other resources. Oil and gas data updated periodically. Ability to extract and download shapefiles of vector data.

Appalachian Region Oil and Gas Wells: http://ims.wvgs.wvnet.edu/PTTC
A Petroleum Technology Transfer Council (PTTC) Project, this map allows users to display *selected* historic and recent Trenton-Black River, coal bed methane, and non-vertical wells for the Appalachian Basin.

Coal Bed Mapping Project (CBMP): http://www.wvgs.wvnet.edu/www/coal/cbmp/coalims.html
More than 60 coal beds arranged in stratigraphic order—5 formations and 3 groups. These maps feature: links from mining layers to downloadable mine map images; total thickness, percent parting and net coal thickness polygons; polygons of underground and surface mining activity. Ability to extract and download shapefiles of vector data. Data updated periodically.

CBMP--All Mining Map: http://ims.wvgs.wvnet.edu/All_Coal
View general information pertaining to all underground, surface, auger and highwall mining within the state. This map features the ability to initially zoom to county level. Reference layers utilize mosaicked 2006 SAMB orthophotos.

CBMP--Pocahontas Formation Combined Maps: http://ims.wvgs.wvnet.edu/Fm_Pocahontas
A prototype for all-formation based coal bed mapping, this map features the ability to "mix and match" other coal seam information within a specific formation, and the ability to extract and download shapefiles of vector data which are updated periodically.

A Geologic Transect Across West Virginia Story Map: A "Story Map" featuring detailed panoramic photographs and descriptions of representative geologic outcrops of every rock formation in WV from west to east (youngest to oldest rocks) across the state.
http://www.wvgs.wvnet.edu/www/geology/geologic_transect.html

Geology of the Marcellus Shale: http://www.wvgs.wvnet.edu/www/datastat/devshales.htm
Map featuring geologic information about this Devonian shale unit in West Virginia, of current exploratory and development interest for gas resources in the Appalachian basin. This map features: Marcellus wells, Onondaga structure, Marcellus outcrop, tax district and topographic map base layers.

Lithostratigraphy of Middle and Upper Devonian Organic-Rich Shales in West Virginia: A peer-reviewed study addressing the distribution and thickness of formally and informally recognized Middle and Upper Devonian rock strata in West Virginia focusing on the Marcellus and other organic-rich shales. Nearly 400 wells were studied, using gamma-ray geophysical well logs, to develop a statewide formalization of the lithostratigraphic nomenclature. http://www.wvgs.wvnet.edu/www/MUDvnnSh/MUDvnnSh.htm

Regional Geology of the Ordovician Trenton-Black River Formations: http://ims.wvgs.wvnet.edu/TBR_ver3/viewer.htm
An Appalachian Oil and Natural Gas Research Consortium (AONGRC) Project, featuring a basin-wide research effort on these Ordovician plays. An integrated, multi-faceted, resource-assessment model of Trenton-Black River reservoirs in NY, Ohio and WV. An integrated structural-diagenetic-stratigraphic model for the origin of Trenton-Black River hydrothermal dolomite reservoirs.

Interactive Mapping Services (IMS) Provided on the WVGES Website (continued)

Topographic Map Index: http://ims.wvgs.wvnet.edu/topomap.htm
Use this map to find and order paper USGS topographic maps (WV only) of various sizes, or view the 7.5 minute USGS topographic maps of West Virginia interactively online. Contains information about 7.5 minute quadrangles, 15 minute quadrangles, 30 X 60 minute quadrangles, 1° X 2° quadrangles. Create custom maps to help locate a topo map with major roads, streams/rivers, state/national parks, wildlife management areas, and much more.

Utica Shale Play Book: Report, interactive mapping application, and digital data repository compiled as part of a public-private partnership to characterize the Ordovician Utica/Point Pleasant gas play in Ohio, Kentucky, West Virginia, Pennsylvania, and New York. Play book sections include chapters on drilling activity and development; lithostratigraphy; subsurface mapping and correlation; core studies; inorganic geochemistry; source rock geochemistry; reservoir porosity and permeability; resource assessment; and implications for play development. http://www.wvgs.wvnet.edu/utica/playbook/index.aspx

West Virginia Broadband Mapping Program: http://www.wvcommerce.org/business/wvbmp/default.aspx
This map shows a comprehensive picture of existing broadband service and identifies areas in the state that still do not have it. Maps can be viewed and/or downloaded for whole state, or by region. Data updated periodically.

West Virginia Geothermal Energy Interactive Map: http://www.wvgs.wvnet.edu/www/geothermal/index.html
Page of information and links about geothermal energy research and potential in WV. Interactive map shows well locations, springs, structural features and temperature-at-depth for WV.

West Virginia Oil and Natural Gas Wells (WVOG): http://ims.wvgs.wvnet.edu/WVOG Interactive map featuring more than 145,000 oil and natural gas well locations and data. This map features links from oil and gas well points to extensive well information via WVGES' *"Pipeline"* and *"Pipeline-Plus"* applications; ability to extract and download data to a Microsoft® Excel spreadsheet via the inquiry tools. Data updated periodically.

EDUCATIONAL

Additional educational items, such as videos, are available from the I.C. White Memorial Symposia Fund, Ltd. See the **X-ICW** section of the catalog for listings and ordering information. Other educational publications are listed in the Open-files, see **OF** section for item details.

ED-A **Publications, Maps, and Services of the West Virginia Geological and Economic Survey**: Revised and reprinted periodically. Indexed.

ED-B **I. C. White Memorial Symposium—"The Age of the Dunkard"—Symposium Abstracts and Reference Papers**: J. A. Barlow, editor, 1972, 47 p. Abstracts of the 15 papers presented, an abstract of the reference paper by Havlena, and the entire reference paper by Dunbar. (See CGB-3)

ED-C **Proceedings of the First I. C. White Memorial Symposium**: **"The Age of the Dunkard"**: J. A. Barlow and S. Burkhammer, editors, December 1975, 370 p. Four reference papers and the 15 papers presented. Included after each speaker's paper is a transcription of the discussions. (See CGB-3)

ED-D **Proceedings of the Fourth Conference on Karst Geology and Hydrology**: H. W. Rauch and E. Werner, editors, 1974, 192 p. 22 papers, 2 extended abstracts, and abstracts of the remainder of the 32 papers presented.

ED-E **Current Geological Research in West Virginia**: R. I. Hayhurst, editor. Compilation of all known geological studies currently underway in the State. (Discontinued with 1978 issue; see Annual Reports for current research projects of the West Virginia Geological and Economic Survey.)

ED-F **Appalachian Structures—Origin, Evolution, and Possible Potential for New Exploration Frontiers**: **A Seminar:** 1972, 322 p, 60 f, edited by P. Lessing, R. I. Hayhurst, J. A. Barlow, and L. D. Woodfork. 10 papers dealing with Appalachian geology from the Blue Ridge to the Plateau. Coverage includes structure, stratigraphy, rock mechanics, tectonics, sedimentation, and petroleum potential.

ED-G **Ask Us!** Pamphlet describing services of the West Virginia Geological and Economic Survey to the public. *No Longer Available.*

ED-H **West Virginia Water Use Data System**: Informational brochure, 1980, 8 p.

ED-1 **Natural Resources of West Virginia**: P. H. Price, 2nd ed. 1957, 19 p, 35 f. The State's mineral, soil, forest, and water resources.

ED-2 **A Guide to the Common Fossil Plants of West Virginia**: W. H. Gillespie and I. S. Latimer, Jr., 1960, 59 p, 23 pl, 15 f. Describes and illustrates common plant fossils of WV, and discusses their classification and fossilization. (See ED-3A.)

ED-3 **Plant Fossils of West Virginia**: W. H. Gillespie, I. S. Latimer, Jr., and J. A. Clendening, 1966, 131 p, 43 pl, 15 f. Geologic history of West Virginia plant life with descriptions and illustrations of common fossil plants. (See ED-3A.)

ED-3A **Plant Fossils of West Virginia**: W. H. Gillespie, J. A. Clendening, and H. W. Pfefferkorn, revised edition 1978, 172 p, 64 pl, 20 f. Extensively updated and highly illustrated; an excellent guide for students. Organized chronologically from Precambrian to Recent. Includes chapters on how and where fossils occur, collecting and preservation methods, and spores and pollens. Thoroughly indexed.

ED-4 **History and Bibliography of West Virginia Paleobotany**: W. H. Gillespie and I. S. Latimer, Jr., 1961, 13 p. (Reprinted from **Castanea**, v. 26, p. 157-171, 1961). Brief history of the study of plant fossils in West Virginia, including an extensive bibliography.

ED-5 **Oil and Gas in West Virginia**: O. L. Haught, 1964, 42 p, 5 f. General discussion of the origin, history, and production of oil and gas in West Virginia.

ED-6 **Synopsis of Drilling in West Virginia**: O. L. Haught, 1964, 30 p. Compilation by county and district of drilling activity in the State between Jan. 1, 1960 and Jan. 1, 1964.

ED-7 **Common Minerals and Rocks of West Virginia**: 5th ed. 1966, 16 p, 4 f. Descriptive booklet (originally accompanied by 18 mineral specimens, which are no longer available).

ED-8 **Minerals of West Virginia**: J. H. C. Martens, 1964, 41 p, 8 f. Discusses geologic occurrence of West Virginia minerals. 37 minerals are described, and mineral localities are given by county.

ED-9 **Coal and Coal Mining in West Virginia**: O. L. Haught, revised ed. 1964, 38 p, 9 f. How coal forms, coal beds of the State, and methods of mining. (See CGB-2)

ED-10 **Geologic History of West Virginia**: D. H. Cardwell, 1975, 69 p, 2 f, 2 tables. Written for naturalists, teachers, students, and hobbyists. A popular account of geologic history of West Virginia. Extensively illustrated.

ED-11 **A Practical Handbook for Individual Water-Supply Systems in West Virginia**: R. A. Landers, 1976, 110 p, 41 f, 22 tables, "STOP" format. Aids in location, evaluation, development, and maintenance of water-supply systems for individual homes in West Virginia. Of particular benefit to homeowners, builders, local and regional officials, and planners.

ED-12 **Coal Blooms: Description of Sulfate Mineral Efflorescences Associated with Coal**: E. B. Nuhfer, 1976, 5 p.

ED-13 **Adaptive Earth Science Activities**: 1998, 78 p. Compilation of earth science activities and projects for kindergarten through 12th-grade classroom use, designed and tested by West Virginia teachers participating in the Survey's RockCamp earth science education project. Each activity description includes objectives, materials needed, procedures, assessments, and teaching suggestions. Well illustrated.

ED-14 **West Virginia Through Geologic Time: A Teacher's Guide**: D. Hemler, 2001, Version 1.0, Interactive CD-ROM contains information and activities about general WV geology designed for use by science teachers, students, and the general public. Any West Virginia teacher may obtain a single free copy of this disc with an order using school letterhead.

ED-15 **Conceptual Understanding Series for West Virginia Teachers: Plate Tectonics:** J. J. Renton, T. E. Repine, Jr, 2009, 33 p, 33 f, 8.5" x 14" booklet to assist the K-12 science teacher in understanding and teaching introductory theories and concepts of plate tectonics. Classroom activities and demonstrations. Engaging and well illustrated conversational text style. Single free print copy with any order using school letterhead. Free printable digital PDF version and downloadable JPG illustrations available on WVGES website: http://www.wvgs.wvnet.edu/www/geoeduc/geoeduc.htm .

ED-16 **Conceptual Understanding Series for West Virginia Teachers: Sedimentary Rocks:** J. J. Renton, T. E. Repine, Jr, 2011, 48 p, 94 f, 8.5" x 14" booklet to assist the K-12 science teacher in understanding and teaching introductory theories and concepts covering the formation and deformation of sedimentary rocks. Classroom activities and demonstrations. Engaging and well illustrated conversational text style. Single free print copy with any order using school letterhead. Free printable digital PDF version and downloadable JPG illustrations available on the WVGES website: http://www.wvgs.wvnet.edu/www/geoeduc/geoeduc.htm .

ED-17 **Conceptual Understanding Series for West Virginia Teachers: Igneous Rocks:** J. J. Renton, T. E. Repine, Jr, 2013, 19 p, 31 f, 8.5" x 14" booklet to assist the K-12 science teacher in understanding and teaching introductory theories and concepts covering the formation and identification of common igneous rocks. Classroom activities and demonstrations. Engaging and well illustrated conversational text style. Single free print copy with any order using school letterhead. Free printable digital PDF version and downloadable JPG illustrations available on the WVGES website: http://www.wvgs.wvnet.edu/www/geoeduc/geoeduc.htm .

ENVIRONMENTAL GEOLOGY BULLETINS

EGB-1 **Geological Considerations of Sanitary Landfill Site Evaluations**: P. Lessing and R. S. Reppert, 3rd ed. 1973, 34 p, 4 f, 1 table. Discusses topography, bedrock geology, soils, and hydrology, and their effect on landfill location. Includes 1981 "Supplement 1—Appendix E, New Federal Solid Waste Disposal Regulations," available separately, below. *No longer available.*

EGB-1/S1 Supplement available separately. *No longer available.*

EGB-2 **Sanitary Landfill Sites in the Eastern Panhandle**: R. S. Reppert and P. Lessing, 1971, 21 p, 8 maps. Summarizes EGB-1 and includes 8 county maps (scale 1:250,000) showing possible landfill locations. *No longer available.*

EGB-3 **Sanitary Landfill Sites in Southeastern West Virginia**: P. Lessing and R. S. Reppert, 1971, 25 p, 7 maps. Summarizes EGB-1 and includes 7 county maps (scale 1:250,000) showing possible landfill locations. *No longer available.*

EGB-4 **Sanitary Landfill Sites in Southwestern West Virginia**: R. S. Reppert and P. Lessing, 1971, 25 p, 9 maps. Summarizes EGB-1 and includes 9 county maps (scale 1:250,000) showing possible landfill locations. *No longer available.*

EGB-5 **Sanitary Landfill Sites in Central West Virginia**: P. Lessing and R. S. Reppert, 1972, 31 p, 11 maps. Summarizes EGB-1 and includes 11 county maps (scale 1:250,000) showing possible landfill locations. *No longer available.*

EGB-6 **Sanitary Landfill Sites in Northwestern West Virginia**: R. S. Reppert and P. Lessing, 1972, 29 p, 11 maps. Summarizes EGB-1 and includes 11 county maps (scale 1:250,000) showing possible landfill locations. *No longer available.*

EGB-7 **Sanitary Landfill Sites in Northern West Virginia**: P. Lessing and R. S. Reppert, 1972, 21 p, 9 maps. Summarizes EGB-1 and includes 9 county maps (scale 1:250,000) showing possible landfill locations. *No longer available.*

EGB-8 **Bibliography of Environmental Geology in West Virginia**: R. A. Landers and P. Lessing, 1973, 33 p. 434 references covering a wide range of published material.

EGB-9 **The Waste of our Fuel Resources**: I. C. White, 1972, 19 p. Address to 1908 Governor's Conference, reprinted to commemorate the Survey's 75th Anniversary.

EGB-10 **Geology Underlies It All**: R. B. Erwin, with related land-use papers by K. O. Schmude and B. M. Wilmoth, 1974, 21 p, 4 f, 4 maps. Overview of land-use planning; soil and water influences.

EGB-11 **Relative Acid-Producing Potential of Coal**: J. J. Renton, R. V. Hidalgo, and D. L. Streib, 1973, 7 p. A method for determining acid production from coal.

EGB-12 **Earthquake History of West Virginia**: P. Lessing, 1974, 13 p, 6 f, 2 tables. Provides critical earthquake information for West Virginia and the surrounding region to assist planners and decision-makers.

EGB-13 **Ground-Water Hydrology of Berkeley County, W. Va**: W. A. Hobba, Jr., 1976, 21 p, 8 f, "STOP" format, 1:50,000 map of county. Provides data for developing and protecting ground-water resources, and water-quality information.

EGB-14 **Aerial and Satellite Imagery of West Virginia**: S. M. Woodring, 1977, 100 p, 26 f, 3 tables. Explains how imagery is produced, and where and how to obtain it. Maps show West Virginia areas covered by various types of remote sensing, such as high- and low-altitude aerial photos, and Landsat and Skylab imagery. 11" x 15" format.

EGB-15A **West Virginia Landslides and Slide-Prone Areas**: P. Lessing, B. R. Kulander, B. D. Wilson, S. L. Dean, and S. M. Woodring, 1976, 68 p, extensively illustrated report and 28 22" x 30", 1:24,000 scale 7.5-minute topographic maps overprinted with landslide information. Report is in two sections: (1) General information: advice to homeowners, government responsibilities, flood insurance; (2) Technical information: landslide types and causes, statistics, recommendations. Appendices cover state agency responsibilities, West Virginia Court of Claims opinions, and Colorado's model regulations. Report and 28 maps (also available separately, below) are packaged in slipcase.

All maps in groups A and C shown below on the ***index map*** are also available as scanned and georeferenced (in ESRI ArcGIS®) .tif images.

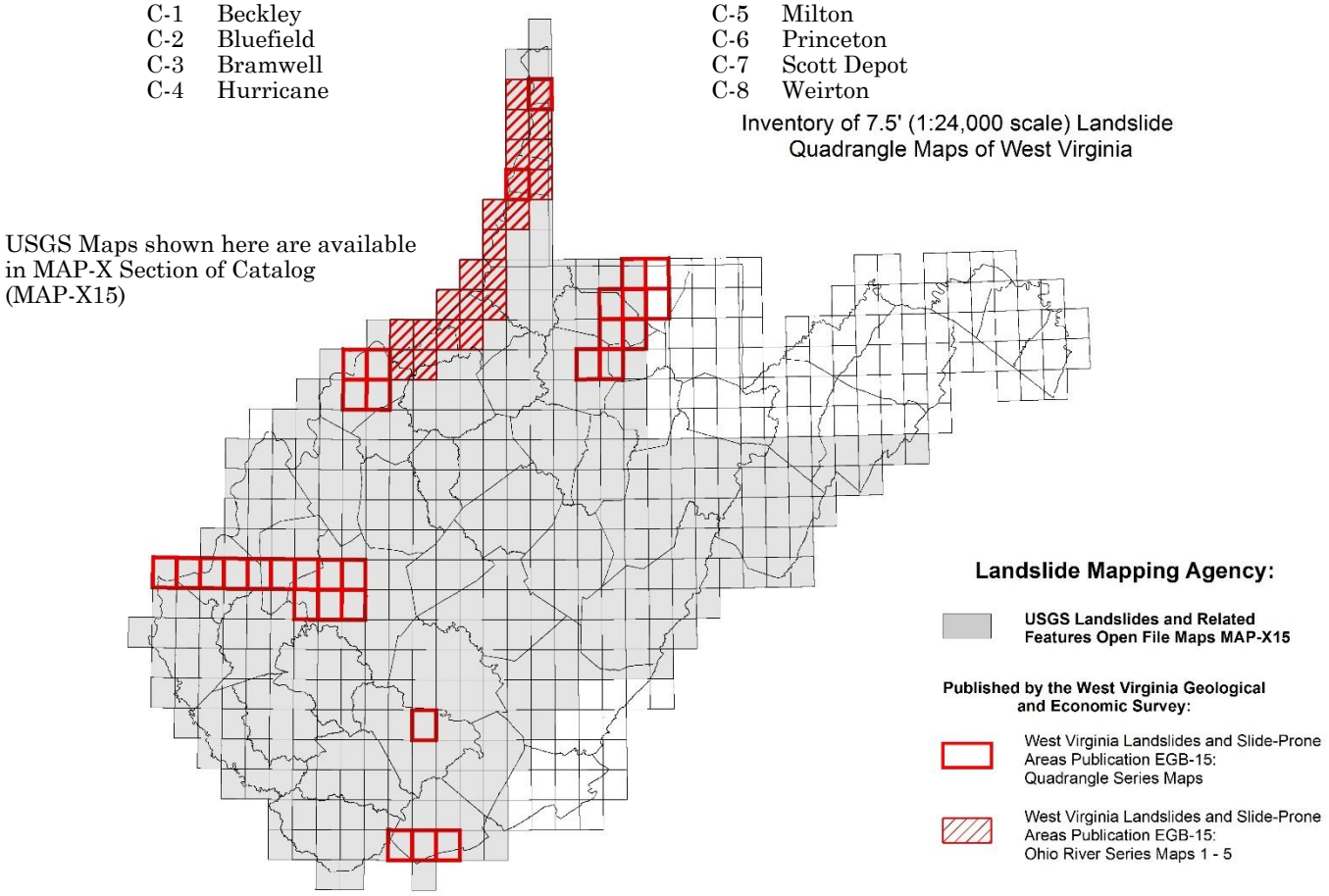
These 28 maps showing landslides and slide-prone areas are included in package above; they are also available individually:

A-1 Alum Creek
A-2 Barboursville
A-3 Big Chimney
A-4 Catlettsburg/Huntington
A-5 Charleston East
A-6 Charleston West
A-7 Clarksburg (landslides)
A-8 Clarksburg (slope)
A-9 Fairmont East
A-10 Fairmont West
A-11 Grant Town
A-12 Kanawha
A-13 Morgantown North
A-14 Morgantown South
A-OR-1 Ohio River 1 (Miles 57-76, Weirton area)
A-OR-2 Ohio River 2 (Miles 77-86 and 96-108, Wheeling area)
A-OR-3 Ohio River 3 (Miles 108-129, New Martinsville area)
A-OR-4 Ohio River 4 (Miles 130-148, Paden City-Sistersville area)
A-OR-5 Ohio River 5 (Miles 149-175, St. Marys-Williamstown area)
A-15 Osage
A-16 Parkersburg
A-17 Pocatalico
A-18 Rivesville
A-19 Rosemont
A-20 South Parkersburg
A-21 Saint Albans
A-22 Valley Mills
A-23 Wheeling

EGB-15B Report only, without maps and slipcase.

EGB-15C These maps were published later (1979 and 1980); they are *not* included with the report and must be purchased separately:

C-1 Beckley
C-2 Bluefield
C-3 Bramwell
C-4 Hurricane
C-5 Milton
C-6 Princeton
C-7 Scott Depot
C-8 Weirton



EGB-16 **Ground-Water Hydrology of Jefferson County, West Virginia**: W. A. Hobba, Jr., 1981, 21 p, 8 f, "STOP" format, 1:50,000 map of county. Provides data for developing and protecting ground-water resources, and water-quality information. Maps shows topography, culture, drainage, water-table contours, sampling sites, faults, fractures, lineaments, and cavernous zones.

EGB-17 **Karst Subsidence and Linear Features, Greenbrier and Monroe Counties, West Virginia**: P. Lessing, 1979, 32" x 58" two-color wall map, 1:50,000 scale. Map is a composite of eleven 7.5-minute topographic quadrangles (Trout, Droop, Cornstalk, Williamsburg, Anthony, Asbury, Lewisburg, Fort Spring, Ronceverte, Union, Gap Mills). Inset map shows extent of limestone.

EGB-18A **Land Use Statistics for West Virginia**: J. S. McColloch and P. Lessing, WV Geological and Economic Survey in cooperation with U. S. Geological Survey, 1980, 60 p. Acreages and percentages by land-use category for all 55 counties in West Virginia. (Note: **Land-Use Maps of West Virginia, Scale 1:250,000**, have been prepared by USGS. Base maps are the 11 Army Map Service 1° x 2° quadrangles that cover West Virginia [Baltimore, Bluefield, Canton, Charleston, Charlottesville, Clarksburg, Columbus, Cumberland, Huntington, Jenkins, Roanoke]. A composite of the 11 maps is on display at our offices as is an index and ordering information. Individual quads are *not available from WVGES* but may be purchased from U. S. Geological Survey, 507 National Center, Reston, VA 22092).

EGB-19 **Water in Hardy, Hampshire, and Western Morgan Counties, WV (Lost River)**: W. A. Hobba, Jr., 1985, 91 p, 34 f, "STOP" format. Covers hydrology of the area. Color maps depict water quality.

(Additional Field Trip Guides are listed in the Open-files, see **OF** section for item details.)

FTG-A **Conservation of Non-Renewable Resources—Field Trip**: T. Arkle, Jr. and others, 1958, 17 p. Field trip along WV Route 7 near Morgantown.

FTG-B **Annual Meeting, Southeastern Section, Geological Society of America—Logs of Field Trips**: 1957, 16 p. General and economic geology of the Morgantown area.

FTG-C **American Petroleum Institute, Eastern District Spring Meeting—Log of Field Trip**: 1948, 4 p. White Sulphur Springs area.

FTG-D **American Petroleum Institute, Eastern District Spring Meeting—Log of Field Trip**: 1954, 8 p. White Sulphur Springs area.

FTG-E **AIME, Central Appalachian and Ohio Valley Section, Industrial Minerals Division—Logs of Field Trips**: 1951, 30 p. General and economic geology of Morgantown-Fairmont-Mannington area

FTG-1 **The Development of New Gas Fields in Eastern West Virginia, Western Maryland, and Western Virginia**: T. Arkle, Jr. and others, 1952, 29 p, 2 pl. Prepared for joint meeting of Appalachian Geological Society and Engineers Society of Western Pennsylvania, May 17-18, 1952. Log of trip from Morgantown, WV, to Harrisonburg, VA, to Davis, WV, including descriptions of gas fields (Terra Alta, Mountain Lake Park, Canaan Valley).

FTG-2 **The Oriskany Sandstone and Associated Rocks**: T. Arkle, Jr., R. R. Flowers, and O. L. Haught, 1953, 27 p, 2 pl, 6 f. Prepared for meeting of Appalachian Geological Society, June 20-21, 1953. Log of trip from Elkins, WV, to Clifton Forge, VA, to White Sulphur Springs, WV. Discussion of the Oriskany sandstone in light of new drilling in southern and eastern West Virginia.

FTG-3 **Blackwater Falls State Park Area**: T. Arkle, Jr. and others, 1957, 24 p, 2 f. Prepared for joint meeting of Appalachian Geological Society and Pittsburgh Geological Society, Oct. 11-12, 1957. Describes geology and natural resources of Blackwater Falls State Park and Seneca Rocks area. (See SP-6A.)

FTG-4 **Centennial Field Trip**: T. Arkle, Jr. and others, 1963, 35 p, 21 f. Prepared for meeting of the Association of American State Geologists, May 5-9, 1963. General trip in Appalachian Plateau and Valley and Ridge of West Virginia, including Seneca Rocks and Germany Valley.

FTG-5 **The Great Valley of West Virginia**: T. Arkle, Jr. and others, 1964, 62 p, 20 f. Prepared for joint meeting of Appalachian Geological Society and Pittsburgh Geological Society, Oct. 16-17, 1964. Detailed trip in Cambrian and Ordovician exposures of eastern West Virginia, with descriptions of stratigraphy and structure.

FTG-6 **Some Appalachian Coals and Carbonates—Models of Ancient Shallow-Water Deposition**: 17 papers, edited by A. C. Donaldson, originally prepared for the 1969 preconvention G. S. A. field trip, 385 p, 167 f, 16 tables. Theoretical, practical, and economic aspects of geology of coal measures of northern West Virginia, and some ancient carbonates of the Eastern Panhandle.

FTG-7 **I. C. White Memorial Symposium Field Trip**: T. Arkle, Jr., 1972, 79 p, 17 f, 1 table. Detailed road log of field trip through the Dunkard basin in northwestern West Virginia, eastern Ohio, and southwestern Pennsylvania, plus detailed descriptions of each of the 41 scheduled stops. Included are five brief paleontological articles.

FTG-8 **Appalachian Plateaus Natural Areas Conference Field Trip**: T. Arkle, Jr., R. S. Little, and D.W. Little, 1974, 17 p, 2 f. Detailed road log of field trip through the oil and gas-producing regions of North Bend State Park and adjacent areas of Ritchie, Wirt, Wood, and Pleasants counties.

FTG-9 **What the H!? Paleozoic Stratigraphy Exposed, Pre-Meeting Field Trip Guide for the 46th Annual Meeting, Eastern Section of the American Association of Petroleum Geologists (ESAAPG), Morgantown, WV, Sept. 24 & 25, 2017**: P.J. Hunt, R.R. McDowell, B.M. Blake Jr., J. Toro, P.A. Dinterman, 2017, 99 p, 73 f. Regional Stratigraphy and Structure in the Central Appalachians from the Ordovician to the Pennsylvanian as seen in new outcrops along US 48 ("Corridor H") and other locations. Bibliography, color maps, photographs.

FTG-10 **Appalachian Basin Stratigraphy, Tectonics, and Eustasy from the Blue Ridge to the Allegheny Front, Virginia and West Virginia**: Haynes, John T., Alan D. Pitts, Daniel H. Doctor, Richard J. Diecchio, B. Mitchell Blake, Jr., 2018, 89 p, 32 f. This guide is from a two-day field trip in western Virginia and eastern West Virginia held before the 2015 Geological Society of America annual meeting in Baltimore, Maryland. The field trip examines exposures of Paleozoic sedimentary strata in the Appalachian Basin starting in the Blue Ridge physiographic province, going through the Valley and Ridge physiographic province, and ending in the Appalachian Plateau. Most of the field-trip stops are along US 48 (Corridor H) in West Virginia. Bibliography, color maps, photographs. FREE download on our website.

We make available maps produced by our agency, and some maps produced by the United States Geological Survey (USGS). Many reports are accompanied by large maps, as noted in the report descriptions.

Map scales:

Scale	1 inch equals	Approx. Dimensions of West Virginia boundaries on map
1:24,000	2,000 feet	(No statewide map available at this scale)
1:62,500	about 1 mile	(No statewide map available at this scale)
1:63,360	exactly 1 mile	(No statewide map available at this scale)
1:125,000	about 2 miles	(No statewide map available at this scale)
1:250,000	about 4 miles	60"H x 68"W (on 2 sheets, each about 42" x 58")
1:500,000	about 8 miles	30"H x 34"W (on single sheet, about 36" x 40")
1:1,000,000	about 16 miles	15"H x 17"W (on single sheet, about 20" x 22")
1:2,000,000	about 32 miles	7½"H x 8½"W (on 8½" x 11" sheet)

Maps available from other sources:

State Highway Map, scale 1:750,000 (1 inch equals about 12 miles) free from Division of Highways, State Capitol, Charleston, WV 25301.

County Highway Maps, scale 1:63,360 (1 inch equals exactly 1 mile) sold by Division of Highways, State Capitol, Charleston, WV 25301.

West Virginia Cartographic Information Center: The Survey maintains microfiche files and indexes of aerial photography, Skylab photography, Landsat imagery, and other forms of remote-sensing. We do not sell this material, but our files are available for examination, and we will assist you with ordering. We also maintain microfiche copies of out-of-print maps for examination only. Due to the extreme variety of this material (low and high altitude; color, color-infrared, or black and white; scale; date of acquisition; area of interest; etc.), we encourage personal visits rather than phone or letter requests. Please contact our Earth Science Information Center, WV Geological and Economic Survey, 1 Mont Chateau Road, Morgantown, WV, 26508-0879. PH: 304-594-2331. Several free pamphlets are available concerning maps and remote sensing.

MAPS

Most of these maps have been digitally archived/scanned and are additionally available in .tif format as noted below. Also, many of the geologic maps have been digitized for use in a Geographic Information System (GIS), and the ESRI ArcGIS®-format shapefiles and georeferenced map images are available. The GIS package for each map publication or quadrangle includes scanned, georeferenced original source material, original text documents, and a detailed metadata/data-model document. Layer shapefiles for each map **may** include: **geologic contacts, geologic unit polygons, faults, structure/folds, bedding (strike/dip) points, igneous features, cross-section location line, and digitized cross-section. Some maps may also include surficial geology contact lines and polygons.** The ArcGIS® layer rendering files and map layout document files are included where available. Maps available in GIS format are noted below (as "files for GIS") in the item descriptions, and are also shown in the ***index map*** in the ***Digital and GIS Data*** section of this Catalog. Please also call the WVGES (PH: 304-594-2331) to check on updated availability of other maps and publications in digital format.

MAP-1 **Geologic Map of West Virginia**: D.H. Cardwell, R.B. Erwin, and H.P. Woodward, 1968, 1:250,000, in two sheets (east and west halves), each 42" x 58". Shows areal geology, topographic contours, streams, lakes, and general culture. Insets include tectonic, basement, and systemic maps with explanatory texts, correlation charts, cross sections, formation descriptions, and generalized columnar sections. Scans available, files for GIS, and interactive map on our website.

MAP-2 **Geologic Map of West Virginia**: 1932, 1:500,000, 33" x 37". Full-color map showing major geologic units at the surface in West Virginia, with two geologic cross sections.

MAP-3 **Drainage Map of West Virginia**: USGS, 1966, 1:500,000, 33" x 38". County names and boundaries, towns, railroads, elevations, and topographic features in black; drainage in blue. *No longer available.*

MAP-4 **Drainage Map of West Virginia**: same as MAP-3, except 1:1,000,000 and all black. (Available as supplied by USGS.)

MAP-5 **Railroad Map of West Virginia**: 1917, 1:500,000, 35" x 39½". Shows all steam railways to July 1917, with mileages and valuation for taxation. (See MAP-3)

MAP-6 **Relief Map of West Virginia**: 1937, 1:500,000, 33" x 37". Relief is shown by shading and colors. Shows county names, boundaries, and seats; principal towns; mountains, streams, State parks and forests; and railroads.(*No longer available*, superceded by MAP-7)

MAP-7 **Relief Map of West Virginia**: 1966, 1:500,000, 33" x 37". Relief is shown by shading. Map shows county names, boundaries, and seats; principal towns; mountains, streams, and reservoirs; State and Federal parks; forests, railroads, and highways. Metal-stripped for hanging. (See MAP-WV23)

MAP-8 **Oil and Gas Fields Map of West Virginia**: E. T. Heck, 1941, 1:250,000, 44" x 63". Shows names of fields, producing sands, approximate depths, major pipelines, gasoline plants, compressor stations, refineries, and axes of anticlines and synclines. (See MRS-7)

MAP-9 **Oil and Gas Fields Map of West Virginia**: W. K. Overbey, Jr. and R. C. Tucker, 1962, 1:250,000, 50" x 65". Revision of 1941 map. Accompanied by pamphlet by O. L. Haught, giving drilling data for each field shown. (See MRS-7)

MAP-10 **Oil and Gas Fields Map of West Virginia**: D. H. Cardwell, D. G. Patchen, and L. D. Woodfork, 1970, 1:250,000, 53" x 64". Revision of 1962 map. Shows new fields, extended boundaries of old fields, and revision of the oil and gas pipeline network in the State. Shows locations of important wildcats, along with the deepest formation encountered. Distinguishes deep (Onondaga or deeper) from shallow fields and gas storage fields. (See MRS-7)

MAP-11 **Oil and Gas Fields Map of West Virginia**: D. H. Cardwell, 1976, 1:250,000, two 35" x 53" sheets. (See MRS-7)

MAP-12 **Base Map of West Virginia**: C. E. Hare, 1941, 1:250,000, 63" x 70". In two sections—one is base used for Oil and Gas Fields Map of West Virginia (1941); other covers remaining eastern part of State. Streams shown in blue; county and district lines, principal towns, and county seats shown in black. (*No longer available, superceded by* MAP-16)

MAP-13 **Topographic Map of West Virginia**: USGS, 1984, 1:500,000, 36" x 40". Full-color map showing contours (200-foot intervals), highways, counties, drainage, towns (with population key), national parks and forests. (Available as supplied by USGS.) (See also MAP-WV29) Scan available.

MAP-14 **Base Map of West Virginia**: 1:1,000,000, with county outlines and names. *No longer available.*

MAP-15 **Base map used for 1970 Oil and Gas Fields Map:** without oil and gas information, 1:250,000, 53" x 64". Counties, towns, tax districts, drainage, and 15-minute grid. *No longer available.*

MAP-16 **Base map used for 1976 Oil and Gas Fields Map**: without oil and gas information, 1:250,000, in two sheets (north and south halves), each about 53" x 35". Counties, towns, tax districts, drainage, and 15-minute grid.

MAP-17 **Mineral Resources and Mineral Industries Map of West Virginia**: 1958, 1:500,000, 34" x 39". Shows areal distribution of coal, oil and gas, limestone, rock salt, and gas storage fields, and locations of principal pipelines, coal mines, quarries, and gravel pits. (See MAP-WV24)

MAP-18 **Structural Contour Map on the Greenbrier Limestone in West Virginia**: O. L. Haught, 1968, 1:500,000, 35" x 38". Contour intervals 100 and 500 feet. Shows outcrop of Greenbrier and westward extent of continuous Mauch Chunk. Brief text and generalized cross section describe the distributions of Greenbrier in the State. Scan available.

MAP-19 **Coal Map: Probable Original Minable Extent of the Bituminous Coal Seams of West Virginia**: C. W. Lotz, 1970. 71 small state maps arranged on 42" x 58" sheet for wall display. Six of the maps show coals by group or formation, and 62 show distribution of individual seams. Remaining maps show geology of the Pennsylvanian and Permian, rank, and fixed carbon. Included are two cross sections, a stratigraphic column (from MAP-20), commonly used seam names, and estimated original tonnages by seam and county. Scan available.

MAP-20 **Bituminous Coal Beds in West Virginia**: R. C. Tucker, 1939. Columnar section, 1 inch = 200 feet, showing positions, names, and average thicknesses of State's coal beds. (See MAP-19)

MAP-21 **Coal Form-Line Structure**: R. C. Shumaker, 1974, 1:250,000, contour interval 100 feet, 58" x 32". Provides structure overview of West Virginia's coal measures.

MAP-22 **Pipeline Map of West Virginia**: D. H. Cardwell, 1976, in two 42" x 58" sheets. Revision of oil and gas pipeline network shown on Oil and Gas Fields Map (1970). Also shows gas storage fields and secondary recovery projects.

MAP-23 **Aeromagnetic Map of West Virginia**: USGS, 1978, 1:250,000, in two 36" x 54" sheets (north and south halves). Shows total intensity magnetic field in 10- and 50-gamma contour intervals. (Available as supplied by USGS). Scans available and files for GIS.

MAP-24 **Appalachian Region, as designated by the Appalachian Regional Commission**: USGS, 1967, 1:2,500,000 scale (1 inch = about 40 miles), 26" x 31". Eastern U. S., with Appalachian region highlighted.

MAP-25 **Geologic Map of West Virginia**: 1969, about 1:2,000,000 scale. Outlines areas of each rock system exposed at the surface. Each system is shown in a different color, with major mineral resources and age ranges. 8½" x 11". *(superseded by* MAP-25A)

MAP-25A **Geologic Map of West Virginia**: 2011, 1:2,000,000 scale. An updated map that replaces MAP-25, showing simplified state geology based on the 1968 state geologic map (MAP-1) Outlines areas of each rock system exposed at the surface. Each system is shown in the USGS coloring scheme, with major mineral resources and age ranges. Includes 2 new inset maps for Mesozoic, Cenozoic and Precambrian features. Completely new text on second page authored by R. R. McDowell and B. M. Blake. 2 p, 8½" x 11". High and low resolution maps available in an interactive, layered, geo-enabled .pdf format for free download on our website: http://www.wvgs.wvnet.edu/www/maps/maps.htm.

MAP-26 **Limestone Outcrops and Probable Area Underlain by Rock Salt and Natural Brine in West Virginia**: About 1:2,375,000 scale, 8½" x 11". Shows in color various limestones and salt/brine areas. Available in .pdf format on our website here: http://www.wvgs.wvnet.edu/www/maps/LSOutcropsSaltBrine.pdf

MAP-27 **Probable Original Minable Extent of the Bituminous Coal Seams in West Virginia**: About 1:2,375,000 scale, 8½" x 11" available in .pdf format for free download on our website: http://www.wvgs.wvnet.edu/www/maps/maps.htm.

MAP-28 **Areas in West Virginia Serviced by Major Gas Utilities**: J. R. Eggleston, 1975, 1:2,534,000 scale, 8½" x 11". Shows in color the areas serviced by each of the major gas-utility companies in West Virginia, and lists the companies in order of the number of customers they service.

MAP-29 **Generalized Stratigraphic Column**: Includes standard geologic nomenclature and oil-and-gas drillers' names for "sands". (8½" x 11") *superseded by MAP-29A*.

MAP-29A **Generalized Stratigraphic Chart for West Virginia**: Includes revised current standard geologic nomenclature and oil-and-gas drillers' terms, also includes page of selected references. 2016, 2 p, 1 f, 8½" x 11" . Available for free download from WVGES website: http://www.wvgs.wvnet.edu/www/geology/GenStratChartWV.pdf

MAP-30 **Geologic Timetable**: Includes a West Virginia rock column, major physical and life-development events, formations, and economic products. (8½" x 11")

MAP-31 **Wirt, Roane, and Calhoun Counties, Showing Oil and Gas Fields**: O. L. Haught, 1958, 1:62,500. Productive areas, structural features contoured on top of Greenbrier Limestone, and all known well locations, status, and results. (See B-40)

MAP-32 **Structural and Contour Map on the Benson Sand in Barbour, Upshur, Lewis, and Harrison Counties, West Virginia**: O. L. Haught, 1966, 1:62,500. Locations, permit numbers, and well results.

MAP-33 **Ground-Water Hydrology of the Potomac River Basin, West Virginia**: W. A. Hobba, E. A. Friel, and J. L. Chisholm, 1973, 1:250,000, 31" x 45". A self-contained summary of the occurrence and quality of ground water in this area. Includes maps and descriptive text on: (1) availability of ground water; (2) suitability of chemical quality of ground water for domestic or public supplies; (3) water-table contours; (4) the general hydrology of a high-relief area; (5) a cross section showing geology, structure, and water-table relationships; and (6) a map and summary table dividing the basin into hydrologic units. (This map is included in RBB-3 and COLL-12.) Scan available.

MAP-WV1 **Generalized Sulfur Content of the Bituminous Coals of West Virginia**: 1:2,000,000 scale. Shows in color the sulfur content of minable coals in the State. 8½" x 11" available in .pdf format for free download on our website: http://www.wvgs.wvnet.edu/www/maps/maps.htm.

MAP-WV2 **Generalized Geologic Map of the Coal Fields of West Virginia**: 1:2,000,000 scale. Shows in color the outcrop of the Pennsylvanian and Permian coal measures rock units in the State, and Northern and Southern Coalfields separated by the "hinge line". 8½" x 11" available in .pdf format for free download on our website: http://www.wvgs.wvnet.edu/www/maps/maps.htm.

MAP-WV3 **Generalized BTU Heating Value of the Bituminous Coals of West Virginia**: 1:2,000,000 scale. Shows in color the heating value of the minable coals in the State. 8½" x 11" available in .pdf format for free download on our website: http://www.wvgs.wvnet.edu/www/maps/maps.htm.

MAP-WV4 **Generalized Ash Content of the Bituminous Coals of West Virginia**: 1:2,000,000 scale. Shows in color the ash content of minable coals in the State. 8½" x 11" available in .pdf format for free download on our website: http://www.wvgs.wvnet.edu/www/maps/maps.htm.

MAP-WV5 **Landsat Image of Eastern West Virginia**: 1979, 1:1,000,000 scale. Interesting full-color (color infrared) image from 575 miles altitude. 8½" x 11" available in .pdf format for free download on our website: http://www.wvgs.wvnet.edu/www/maps/maps.htm.

MAP-WV6 **Landsat Image of Western West Virginia**: 1979, 1:1,000,000 scale. Interesting full-color (color infrared) image from 575 miles altitude. 8½" x 11" available in .pdf format for free download on our website: http://www.wvgs.wvnet.edu/www/maps/maps.htm.

MAP-WV7 **Landsat Linear Features of West Virginia**: J. H. Reynolds and others, 1979, 1:250,000, set of two 42" x 58" sheets (east and west halves of State). Base map shows topography, drainage, and culture in black; linear features are overprinted in red. Scans available and files for GIS.

MAP-WV8 **Coal Rank Map of the Bituminous Coals of West Virginia**: 1980, 1:2,000,000. Shows in color areas of high-, medium-, and low-volatile coals. 8½" x 11" available in .pdf format for free download on our website: http://www.wvgs.wvnet.edu/www/maps/maps.htm.

MAP-WV9 **Oil and Gas Fields Map of West Virginia**: 1980, 1:2,000,000 scale. Areas of production of oil (green) and gas (red). Axes of major anticlines and synclines are shown. 8½" x 11" Revised in 2003, see MAP-WV9A.

MAP-WV9A **Oil and Gas Fields Map of West Virginia**: 2003, about 1:2,000,000 scale. Shows areas of production of oil (green), gas (red), and combination oil and gas (gold). Axes of major anticlines and synclines are shown. 8½" x 11", available in .pdf format for free download on our website: http://www.wvgs.wvnet.edu/www/maps/maps.htm.

MAP-WV10 **Ground-Water Hydrology of the Little Kanawha River Basin, West Virginia**: W. A. Hobba, Jr., 1980, 42" x 58". A self-contained summary of occurrence and quality of ground water in the basin. Includes 1:250,000 geologic map of basin, summary of aquifer characteristics, and text/map sections on potential ground-water yield, water quality, and saline water. (This map is included in Collection COLL-8).

MAP-WV11 **Fracture Trends in the Allegheny Plateau of West Virginia**: B. R. Kulander, S. L. Dean, R E. Williams, and others, 1980, 1:250,000 in two 35" x 53" sheets (north half, south half). Shows systematic coal-fracture trends, fracture domains, and Mississippian shale, sandstone, and limestone fractures. Includes 1:2,000,000 scale inset maps of the State showing general geology, geology of the coal fields, and basement depth. Scans available and files for GIS.

MAP-WV12 **Fresh and Saline Ground-Water Map of WV**: J. B. Foster, 1980. Includes (a) 1:250,000 "Elevation of Base of Fresh Water" map in two 35" x 53" sheets (north half, south half), with data-density map, and (b) 1:250,000 "Elevation of Top of Saline Water" map in two 35" x 53" sheets (north half, south half), with data density map. Both maps include a 1:1,000,000 inset map showing thickness of zone between fresh and saline water. (See also OF101) Scan available.

MAP-WV13 **Geologic Cross Section and Apparent Structure Along Interstate 79, Monongalia County, WV**: R. F. Fonner and C. P. Messina, 1981, 1:48,000, 30" x 20". A field-trip guide on one sheet, including stratigraphic sketches, elevations, highway milemarker scale, major coal seams, and culture/drainage from 7.5-minute topographic maps. Includes generalized stratigraphic column. Accompanying booklet contains measured sections and discussion. Scan available.

MAP-WV14 **Geologic Cross Section and Apparent Structure Along the West Virginia Portion of U. S. Highway 48 (Now Interstate 68) (from 1-79 to the Maryland Line)**: R. F. Fonner and others, 1981, 1:48,000, on two sheets (west half and east half) each 30" x 20". (See MAP-WV13 for description.) Scan available.

MAP-WV15 **Geologic Cross Section and Apparent Structure Along Interstate 79, Marion County, WV**: R. F. Fonner and C. P. Messina, 1981, 1:48,000, 30" x 20". (See MAP-WV13 for description.) Scan available.

MAP-WV16 **Total-Sulfur Contour Maps for Various Coal Seams in West Virginia**: C. J. Smith and H. M. King, 1982, about 1:2,200,000, 8½"x 11". *No longer available.*

WV16A	Beckley Coal	WV16D	Pittsburgh Coal
WV16B	Coalburg Coal	WV16E	No. 3 Pocahontas Coal
WV16C	Lower Kittanning/ No. 5 Block Coal	WV16F	Sewell Coal

MAP-WV17 **Oriskany Sandstone—Regional Stratigraphic Relationships and Production Trends**: R. J. Diecchio, S. E. Jones, and J. M. Dennison, 1983, 7 maps, 2 correlation diagrams, and brief text. Maps show extent, thickness and lithofacies, structure, structural provinces, fields and pools, and pre/post-Oriskany geology.

MAP-WV18 **Geologic Cross Section and Apparent Structure Along Interstate 79, Harrison County, WV**: R. F. Fonner and N. Fedorko III, 1985. (See MAP-WV13 for description.) Scan available.

MAP-WV19 **Geologic Cross Section and Apparent Structure Along U.S. Route 33, Canfield to Bowden, Randolph County, WV**: J. S. McColloch and J. F. Schwietering, 1985. (See MAP-WV13 for description.) Scan available.

MAP-WV20 **Geologic Cross Section and Apparent Structure Along Interstates 70 and 470, Ohio County, WV**: R. F. Fonner, C. P. Messina, and N. Fedorko III, 1987. (See MAP-WV13 for description.) Scan available.

MAP-WV21 **West Virginia Index to 7.5-Minute Topographic Maps**: 1:500,000. Shows location grid for 7.5-minute topographic maps, counties, tax districts, and some physical and cultural place names. (This map is also sold as part of V-24). ***Visit our Interactive Topo Map Index***: http://ims.wvgs.wvnet.edu/topomap.htm

MAP-WV22 **West Virginia Universal Transverse Mercator (UTM) Coordinate Map**: 1:500,000. Shows 10,000-meter UTM grid, tax districts, and some physical and cultural place names. (This map is also sold as part of V-24.)

MAP-WV23 **West Virginia Shaded Relief Map**: 1984, 1:500,000. Color-airbrushed map simulates a three-dimensional view of the State, and shows drainage; major highways; county boundaries, names, and seats; and elevations of higher peaks. Revision of 1963 map. (This map is also sold as part of V-24.) Scan available.

MAP-WV24 **Mineral Resources of West Virginia**: H. M. King and D. S. Kirstein, 1987, 1:500,000, 63" x 34", full color. Shows minable coal extent, oil and gas fields, rock salt extent, major limestone outcrops, potential areas for limestone deep mining, Ohio River sand-and-gravel areas, transportation system (major highways, railroads, and navigable waterways), producing counties, and three generalized stratigraphic columns (northwestern, northeastern, and southern West Virginia, with mineral resources highlighted). Scan available.

MAP-WV25 **Bouguer Gravity Map of West Virginia**: B. R. Kulander, S. L. Dean, and D. S. Hodge, 1987, 1:250,000 in two 34" x 53" sheets (north half, south half), full color. Bouguer gravity values are depicted in 1 milligal contour intervals, partially terrain-corrected. Axes of persistent gravity highs and lows are highlighted. Insets include basement depth map, generalized gravity and magnetic anomaly maps, Bouguer gravity profile of Rome Trough, residual gravity profile of Nittany Anticlinorium, and residual gravity anomaly along Nittany Anticlinorium. Scans available and files for GIS.

MAP-WV26 **Geology of the Capon Springs, Mountain Falls, Wardensville, Woodstock, and Yellow Spring Quadrangles, Hampshire and Hardy Counties, WV**: S. L. Dean, B. R. Kulander, and P. Lessing, 1985, 1:24,000, 42" x 58", full color. Shows geology, structure, strike/dip. Includes text, index maps, and cross sections. Scans available and files for GIS.

MAP-WV27 (Publication cancelled)

MAP-WV28 **Geologic Cross Section and Apparent Structure Along Interstate 64, Wayne County, WV**: R. F. Fonner and G. A. Chappell, 1987. (See MAP-WV13 for description.) Scan available.

MAP-WV29 **Base Map of West Virginia**: USGS, 1984, 1:500,000, 36" x 40". Full-color map showing highways, counties, drainage, towns, parks, forests, and railroads. *Excludes topography*. (Available as supplied by USGS). (See also MAP-13).

MAP-WV30 **West Virginia Transportation System**: Published jointly with the West Virginia Public Service Commission and the West Virginia State Rail Authority, 1995, 1:500,000, 36" x 40". Full-color map showing railways, highways, airports, navigable waterways, towns, streams, counties, rail trails, parks. Scan available.

MAP-WV31 **Geology of the Hedgesville, Keedysville, Martinsburg, Shepherdstown, and Williamsport Quadrangles, Berkeley and Jefferson Counties, WV:** S. L. Dean, B. R. Kulander, and P. Lessing, 1987, 1:24,000, 47" x 63", full color. Shows geology, structure, strike/dip. Includes text, index maps, and cross sections. Scans available and files for GIS.

MAP-WV32 **Geologic Cross Section and Apparent Structure Along Interstate 64, Cabell County, WV:** R. F. Fonner and G. A. Chappell, 1987. (See MAP-WV13 for description.) Scan available.

MAP-WV33 **Geologic Cross Section and Apparent Structure Along Interstate 64, Putnam County, WV:** R. F. Fonner, 1987. (See MAP-WV13 for description.) Scan available.

MAP-WV34 **Devonian Shale Fields and Pools in West Virginia:** M. E. Hohn and K. J. Timberlake, 1988, eight 40" x 56" full color sheets, 1:125,000. For northwestern and southwestern West Virginia, shows isopotential of oil and gas, gas pools in Devonian shales above the Lower Huron Shale, gas pools in the lower Huron Shale, and gas pools in Devonian shales below the lower Huron Shale.

MAP-WV35 **Geology of the Berryville, Charles Town, Harpers Ferry, Middleway, and Round Hill Quadrangles, Jefferson County, WV:** S. L. Dean, B. R. Kulander, and P. Lessing, 1990, 1:24,000, 47" x 63", full color. Shows geology, structure, strike/dip. Includes text, index maps, and cross sections. Scans available and files for GIS.

MAP-WV36 (Publication cancelled)

MAP-WV37 **Geology of the Bergton, Lost City, Lost River State Park, and Orkney Springs Quadrangles, Hardy County, WV:** S. L. Dean, B. R. Kulander, and P. Lessing, 1992, 1:24,000, 47" x 63", full color. Shows geology, structure, strike/dip. Includes text, index maps, and cross sections. Scans available and files for GIS.

MAP-WV38 **Bedrock Geologic Map of the Moorefield 7.5' Quadrangle, West Virginia:** S. L. Dean, B. R. Kulander, G. H. McColloch, J. S. McColloch, C. S. Kulander, and P. Lessing, 2004, 1:24,000, 34" x 46", full color layout shows geology, structure, strike/dip, text, index map, and cross section. Scans available and files for GIS.

MAP-WV39 **Surficial Geologic Map of the Moorefield 7.5' Quadrangle, West Virginia:** S. L. Dean, B. R. Kulander, G. H. McColloch, J. S. McColloch, C. S. Kulander, and P. Lessing, 2004, 1:24,000, 33" x 29", full color layout shows surficial geology on topographic base map, text, and index map. Scans available and files for GIS.

MAP-WV40 **Bedrock Geologic Map of the Palo Alto 7.5' Quadrangle, West Virginia and Virginia:** R. R. McDowell, D. L. Matchen, and K. L. Avary, 2004, 1:24,000, 34" x 46", full color layout shows geology, structure, strike/dip, text, index map, and cross section. Replaces publication OF9704. Scans available and files for GIS.

MAP-WV41 **Bedrock Geologic Map of the Franklin 7.5' Quadrangle, West Virginia:** R. R. McDowell, D. L. Matchen, K. L. Avary, R. J. Diecchio, K. E. Hicks, and C. L. Howton, 2005, 1:24,000, 34" x 46", full color layout shows geology, structure, strike/dip, text, index map, and cross section. Scans available and files for GIS.

MAP-WV42 **Bedrock Geology of the Elkins Area, West Virginia: Elkins, Junior, Beverly East and Beverly West 7.5-minute Quadrangles:** B.L. Nugent, E. Moser, R.J. Johnson, J.Q. Britton, J.S. Chapman, J.W. Perkins, G.W. Daft, Jr., D. Jones, J. M. Horner, Digital Cartography by S.E. Gooding, 2021, 1:24,000 scale, 2 pages, 60"x 42" and 42"x 42". Full color map shows geology and structure, strike/dip. Second page includes text, legend, and cross sections. Scan available and files for GIS.

QUADRANGLE MAPS

Quantities of one to five maps are mailed folded, unless rolled copies are requested. Larger quantities are shipped rolled. Most of these maps (identified below) are published by the U. S. Geological Survey, and therefore our inventory depends entirely on availability from USGS.

MAP-X1 **7.5-Minute Topographic Quadrangles**: 1:24,000, paper size about 22½" x 27". Issued by USGS in cooperation with the West Virginia Geological Survey. 495 of these maps depict the entire State of West Virginia. Each map shows topography, elevations, towns, roads, streams, buildings, boundaries, etc., in color. Unless otherwise specified, supplied with green woodland overprint. Order by quadrangle name. To order, please refer to the ***index map*** on the following three pages. A larger copy of this index map is available (see MAP-X1A). An index to symbols used on topographic maps is available (see MAP-X1B). (Available as supplied by USGS.) ***Interactive Topo Map Index***: http://ims.wvgs.wvnet.edu/topomap.htm

MAP-X1A **Index to 7.5-Minute Topographic Maps**: 1:1,000,000. Scan available and an interactive version can be viewed on the WVGES website: http://ims.wvgs.wvnet.edu/topomap.htm

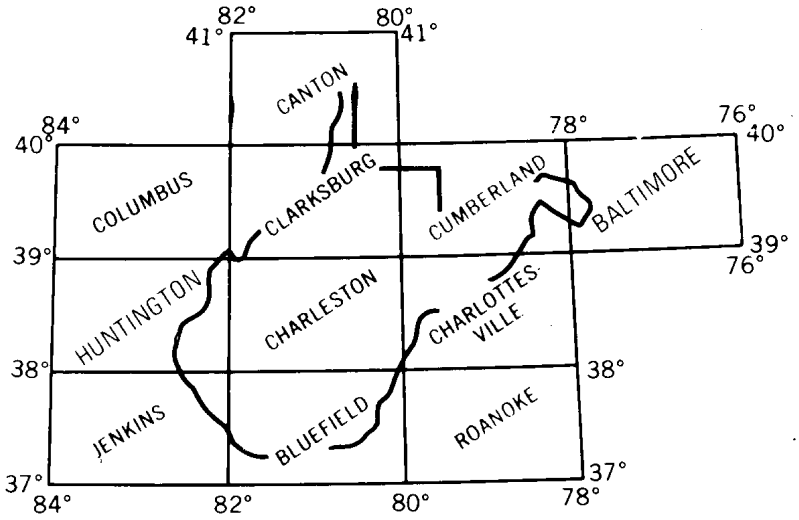
MAP-X1B **Key to Symbols Used on Topographic Maps**. (Available as supplied by USGS.) Available in .pdf format on our website here: http://ims.wvgs.wvnet.edu/topo/topomapsymbols.pdf

MAP-X2 **Same as MAP-X1**, without green woodland overprint. Not all quadrangles are available; please inquire. (Available as supplied by USGS.)

MAP-X3 **Same as MAP-X1**, planimetric (lacking topographic contour lines and green woodland overprint). Not all quadrangles are available; please inquire. (Available as supplied by USGS.)

MAP-X4 **15-Minute Topographic Quadrangles**. 1:62,500, paper size about 17" x 21". Issued by USGS in cooperation with the West Virginia Geological and Economic Survey. 135 of these maps depict the State. This series has been replaced by the 7.5-Minute series described above; most quadrangles are out of print, archived scan images are available. An index is available upon request. Some quadrangles are available with or without green woodland overprint; some planimetrics are available; please inquire. (Available as supplied by USGS.)

MAP-X5 **1° x 2° Topographic Quadrangles**: Army Map Service, 1:250,000, paper size about 22" x 28". 11 maps depict the State (available as supplied by USGS). Order by name shown in quadrangle (*see map below*).

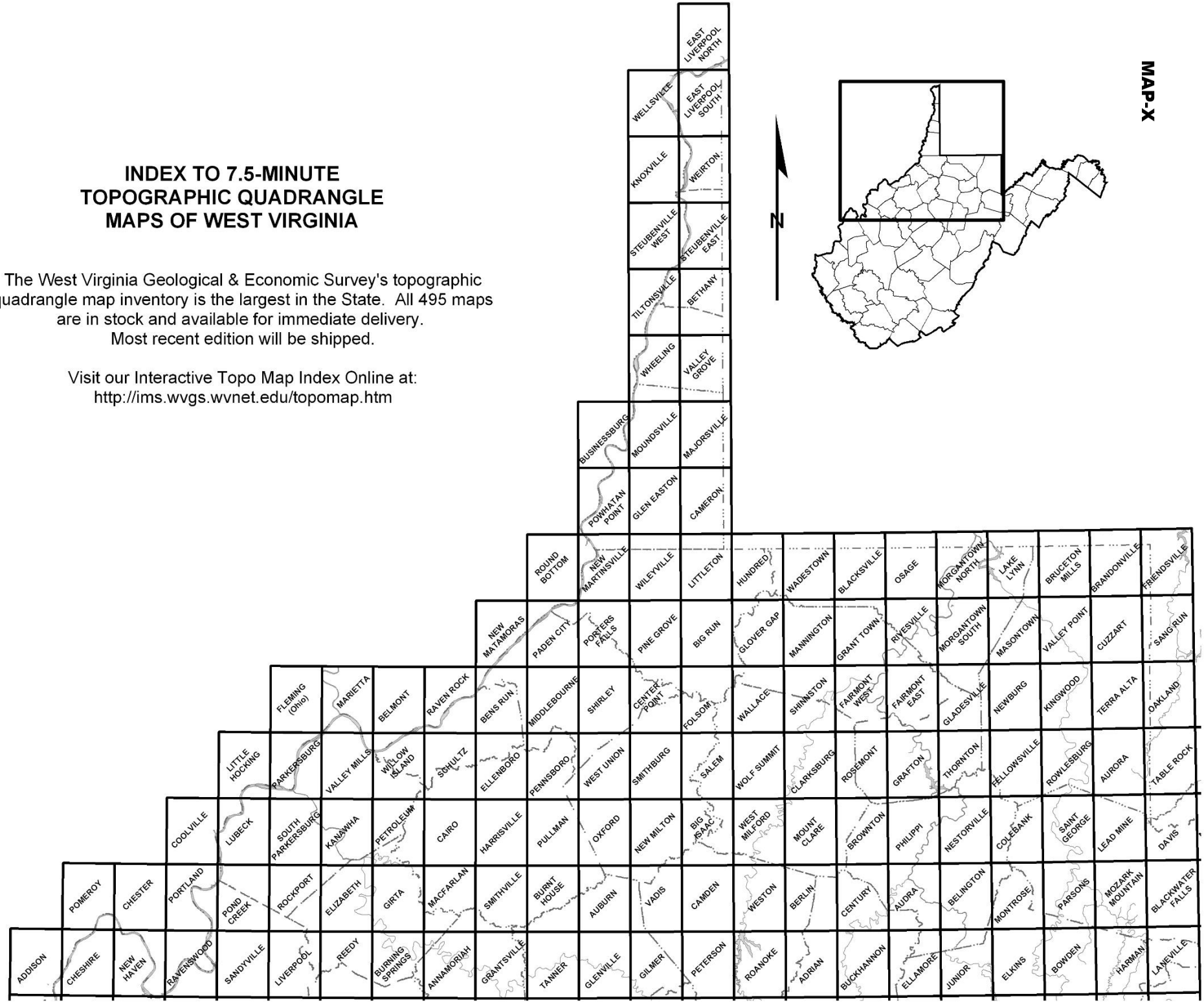


MAP-X6 **1° x 2° Raised Relief (Three-Dimensional) Quadrangle Maps**. Same as above, except printed on embossed plastic to show relief. Available quads: Bluefield, Charleston, Charlottesville, Clarksburg, Cumberland, Huntington. *When mailed, these maps require an additional shipping charge.* (Available as supplied by manufacturer.)

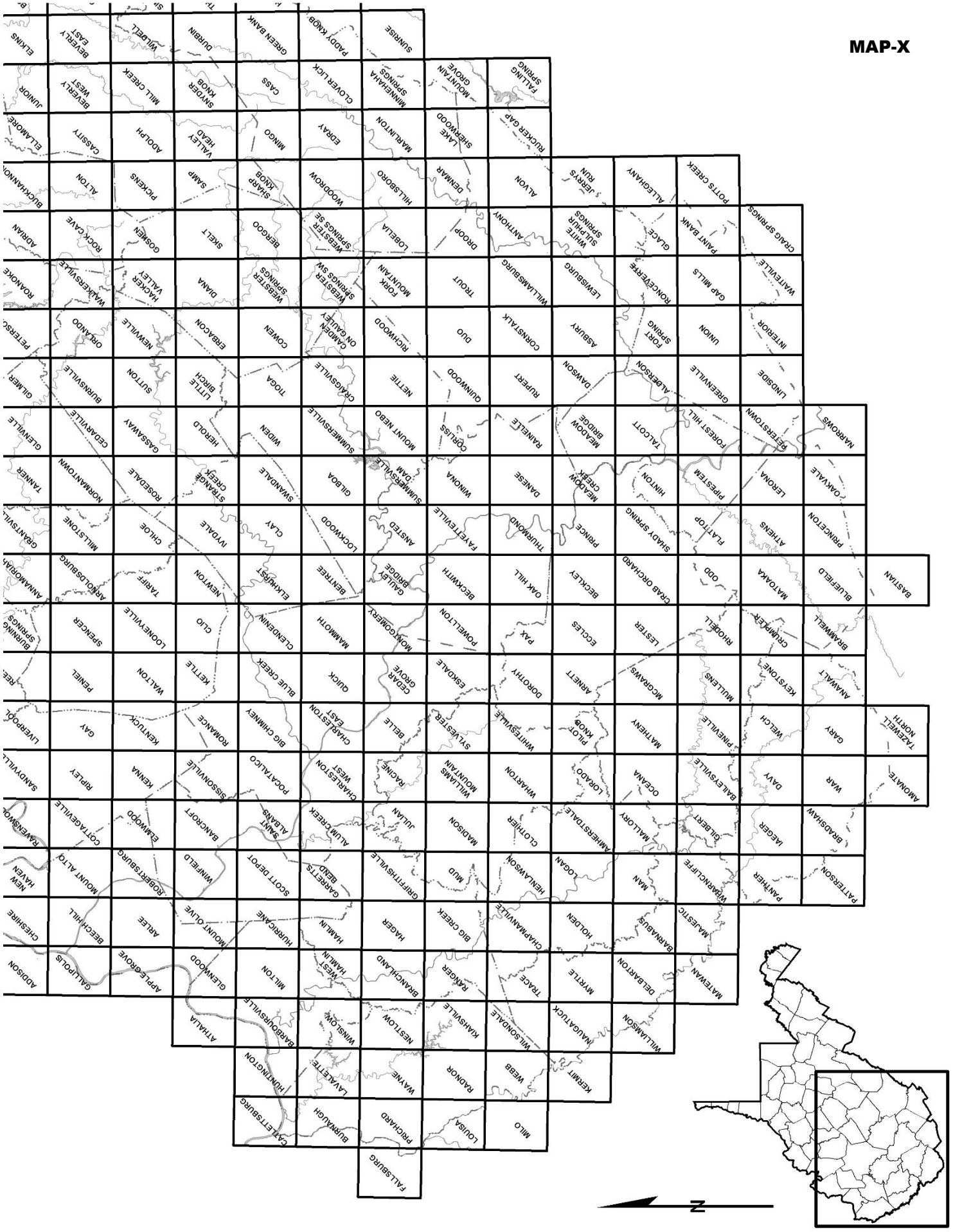
INDEX TO 7.5-MINUTE TOPOGRAPHIC QUADRANGLE MAPS OF WEST VIRGINIA

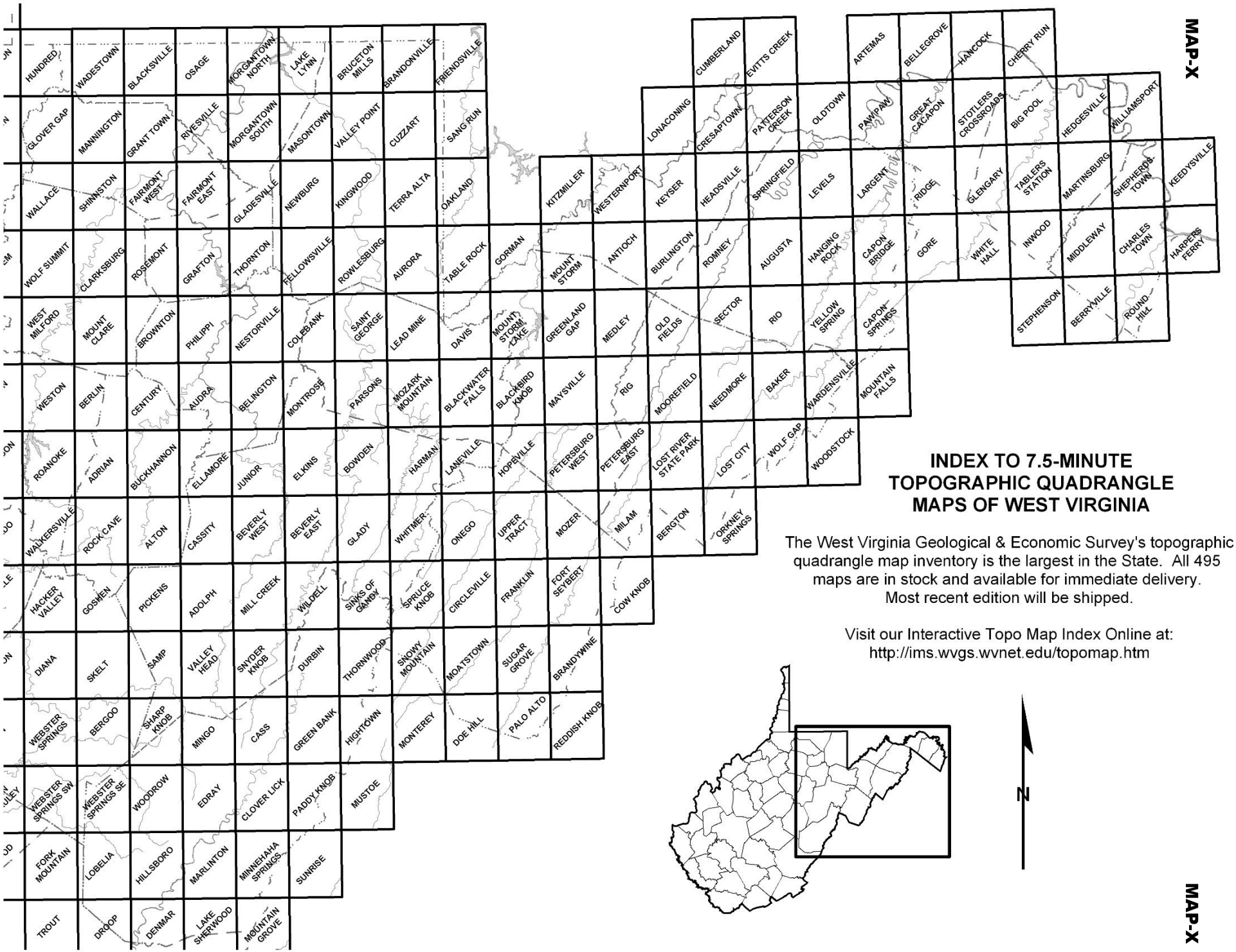
The West Virginia Geological & Economic Survey's topographic quadrangle map inventory is the largest in the State. All 495 maps are in stock and available for immediate delivery. Most recent edition will be shipped.

Visit our Interactive Topo Map Index Online at:
http://ims.wvgs.wvnet.edu/topomap.htm



MAP-X


SUNRISE
PADDY KNOB
GREEN BANK
DURBIN
WILDELL
BEVERLY EAST
ELKINS
FALLING SPRING
MOUNTAIN GROVE
LAKE SHERWOOD
RUCKER GAP
MINNEHAHA SPRINGS
CLOVER LICK
CASS
SNYDER KNOB
MILL CREEK
BEVERLY WEST
JUNIOR
MARLINTON
EDRAY
MINGO
VALLEY HEAD
ADOLPH
CASSITY
ELLAMORE
DENMAR
WOODROW
SHARP KNOB
SAMP
PICKENS
ALTON
BUCKHANNON
HILLSBORO
ALVON
JERRYS RUN
ALLEGHANY
POTTS CREEK
CRAIG SPRINGS
DROOP
LOBELIA
WEBSTER SPRINGS SE
BERGOO
SKELT
GOSSEN
ROCK CAVE
ADRIAN
ANTHONY
WHITE SULPHUR SPRINGS
GLACE
PAINT BANK
GAP MILLS
WAITEVILLE
FORK MOUNTAIN
WEBSTER SPRINGS SW
DIANA
HACKER VALLEY
WILLIAMSBURG
TROUT
LEWISBURG
RONCEVERTE
UNION
INTERIOR
ROANOKE
WAKEFIELD
CAMDEN ON GAULEY
RICHWOOD
DUO
CORNSTALK
ASBURY
FORT SPRING
GREENVILLE
LINDSIDE
PETERSBURG
ORLANDO
NEWVILLE
ERBACON
COWEN
NETTIE
QUINWOOD
RUPERT
DAWSON
ALDERSON
FOREST HILL
PETERSTOWN
NARROWS
GILMER
BURNSVILLE
SUTTON
LITTLE BIRCH
TIOGA
CRAIGSVILLE
SUMMERSVILLE
MOUNT NEBO
CORLISS
RAINELLE
MEADOW BRIDGE
TALCOTT
GLENVILLE
CEDARVILLE
GASSAWAY
HEROLD
WIDEN
GILBOA
SWANDALE
STRANGE CREEK
ROSEDALE
NORMANTOWN
TANNER
SUMMERSVILLE DAM
WINONA
DANESE
MEADOW CREEK
HINTON
PIPESTEM
LERONA
OAKVALE
GRANTSVILLE
MILLSTONE
CHLOE
IVYDALE
CLAY
LOCKWOOD
ANSTED
FAYETTEVILLE
THURMOND
PRINCE
SHADY SPRING
FLATTOP
ATHENS
PRINCETON
ANNAMORIAH
ARNOLDSBURG
TARIFF
NEWTON
ELKHURST
BENTREE
GAULEY BRIDGE
BECKWITH
OAK HILL
BECKLEY
CRAB ORCHARD
ODD
MATOAKA
BLUEFIELD
BASTIAN
BLUEWING SPRINGS
SPENCER
LOONEYVILLE
CLO
CLENDENIN
MAXWOTH
MONTGOMERY
POWELLTON
PAX
ECCLES
LESTER
RHODELL
CRUMPLER
BRAMWELL
RED
PENIEL
WALTON
KETTLE
BLUE CREEK
QUICK
CEDAR GROVE
ESKDALE
DOROTHY
ARNETT
MCGRAWS
MULLENS
KEYSTONE
ANAWALT
LIVERPOOL
GAY
KENTUCK
ROMANCE
BIG CHIMNEY
CHARLESTON EAST
BELLE
SYLVESTER
WHITESVILLE
PLOT KNOB
MATHENY
PINEVILLE
WELCH
GARY
TAZEWELL NORTH
SANDYVILLE
RIPLEY
KENNA
SISSONVILLE
POCATALICO
CHARLESTON WEST
RACINE
WILLIAMS MOUNTAIN
WHARTON
LORADO
OCEANA
BALLEYSVILLE
DAVY
WAR
AMONATE
RAVENSWOOD
COTTAGEVILLE
ELMWOOD
BANCROFT
SAINT ALBANS
ALUM CREEK
JULIAN
MADISON
CLOTHIER
AMHERSTDALE
MALLORY
GILBERT
LAGER
BRADSHAW
NEW HAVEN
MOUNT ALTO
ROBERTSBURG
WINFIELD
SCOTT DEPOT
GARRETTS BEND
GRIFFITHSVILLE
MUD
HENLAWSON
LOGAN
MAN
WARRIORCLIFFE
PANTHER
PATTERSON
CHESHIRE
BEECH HILL
ARLEE
MOUNT OLIVE
HURRICANE
HAMLIN
HAGER
BIG CREEK
CHAPMANVILLE
HOLDEN
BARRACKVILLE
MAJESTIC
ADDISON
GALLIPOLIS
APPLEGROVE
GLENWOOD
MILTON
WEST HAMLIN
BRANCHLAND
RANGER
TRACE
MYRTLE
DELBARTON
MATEWAN
ATHALIA
BARBOURSVILLE
WINSLOW
NESTLOW
KIAHSVILLE
WILSONDALE
MAPLEGATUCK
MILLAMSON
HUNTINGTON
LAVALETTE
WAYNE
RADNOR
WEBB
KERMIT
CHARLESTSBURG
BUFFALO
PRICHARD
LOUISA
MILO
FALLSBURG
N


MAP-X
HUNDRED
WADESTOWN
BLACKSVILLE
OSAGE
MORGANTOWN NORTH
LAKE LYNN
BRUCETON MILLS
BRANDONVILLE
FRIENDSVILLE
GLOVER GAP
MANNINGTON
GRANT TOWN
RIVESVILLE
MORGANTOWN SOUTH
MASONTOWN
VALLEY POINT
CUZZART
SANG RUN
WALLACE
SHINNSTON
FAIRMONT WEST
FAIRMONT EAST
GLADESVILLE
NEWBURG
KINGWOOD
TERRA ALTA
OAKLAND
WOLF SUMMIT
CLARKSBURG
ROSEMONT
GRAFTON
THORNTON
FELLOWSVILLE
ROWLESBURG
AURORA
TABLE ROCK
GORMAN
WEST MILFORD
MOUNT CLARE
BROWNTON
PHILIPPI
NESTORVILLE
COLEBANK
SAINT GEORGE
LEAD MINE
DAVIS
MOUNT STORM LAKE
WESTON
BERLIN
CENTURY
KUDRA
BELINGTON
MONTROSE
PARSONS
MOZARK MOUNTAIN
BLACKWATER FALLS
BLACKBIRD KNOB
ROANOKE
ADRIAN
BUCKHANNON
ELLAMORE
JUNIOR
ELKINS
BOWDEN
HARMAN
LANEVILLE
HOPEVILLE
WALKERSVILLE
ROCK CAVE
ALTON
CASSITY
BEVERLY WEST
BEVERLY EAST
GLADY
WHITMER
ONEGO
UPPER TRACT
HACKER VALLEY
GOSHEN
PICKENS
ADOLPH
MILL CREEK
WILDELL
SINKS OF GANDY
SPRUCE KNOB
CIRCLEVILLE
FRANKLIN
DIANA
SKELT
SAMP
VALLEY HEAD
SNYDER KNOB
DURBIN
THORNWOOD
SNOWY MOUNTAIN
MOATSTOWN
SUGAR GROVE
WEBSTER SPRINGS
BERGOO
SHARP KNOB
MINGO
CASS
GREEN BANK
HIGHTOWN
MONTEREY
DOE HILL
PALO ALTO
WEBSTER SPRINGS SW
WEBSTER SPRINGS SE
WOODROW
EDRAY
CLOVER LICK
PADDY KNOB
MUSTOE
FORK MOUNTAIN
LOBELIA
HILLSBORO
MARLINTON
MINNEHAHA SPRINGS
SUNRISE
TROUT
DROOP
DENMAR
LAKE SHERWOOD
MOUNTAIN GROVE
KITZMILLER
WESTERNPORT
MOUNT STORM
ANTIOCH
GREENLAND GAP
MEDLEY
MAYSVILLE
RIG
PETERSBURG WEST
PETERSBURG EAST
FORT SEYBERT
COW KNOB
LONACONING
KEYSER
BURLINGTON
OLD FIELDS
MOOREFIELD
LOST RIVER STATE PARK
BERGTON
CUMBERLAND
CRESAPTOWN
HEADSVILLE
ROMNEY
SECTOR
NEEDMORE
LOST CITY
ORKNEY SPRINGS
EVITTS CREEK
PATTERSON CREEK
SPRINGFIELD
AUGUSTA
RIO
BAKER
WOLF GAP
OLDTOWN
LEVELS
HANGING ROCK
YELLOW SPRING
WARDENSVILLE
WOODSTOCK
ARTEMAS
PAW PAW
LARGENT
CAPON BRIDGE
CAPON SPRINGS
MOUNTAIN FALLS
BELLEGROVE
GREAT CACAPON
RIDGE
GORE
HANCOCK
STOTLERS CROSSROADS
GLENGARY
WHITE HALL
CHERRY RUN
BIG POOL
TABLERS STATION
INWOOD
STEPHENSON
HEDGESVILLE
MARTINSBURG
MIDDLEWAY
BERRYVILLE
WILLIAMSPORT
SHEPHERDS TOWN
CHARLES TOWN
ROUND HILL
KEEDYSVILLE
HARPERS FERRY
MAP-X
INDEX TO 7.5-MINUTE
TOPOGRAPHIC QUADRANGLE
MAPS OF WEST VIRGINIA
The West Virginia Geological & Economic Survey's topographic quadrangle map inventory is the largest in the State. All 495 maps are in stock and available for immediate delivery. Most recent edition will be shipped.
Visit our Interactive Topo Map Index Online at:
http://ims.wvgs.wvnet.edu/topomap.htm
N

MAP-X7 **7.5-Minute Orthophotoquads**. Orthophotoquads are finely-detailed rectified aerial photos, corresponding in area covered to 7.5-minute topographic maps, 1:24,000, paper size about 22½" x 27". Issued by the U. S. Geological Survey in cooperation with USDA Soil Conservation Service. An index is available upon request. (Available as supplied by USGS.) Currently available orthophotoquads:

Alum Creek	Center Point	Milton	Raven Rock
Athalia	Charleston East	Montgomery	Rivesville
Bancroft	Charleston West	Morgantown South	Robertsburg
Barboursville	Cumberland	New Matamoras	Saint Albans
Belle	Ellenboro	Osage	Schultz
Belmont	Friendsville	Paden City	Scott Depot
Bens Run	Glenwood	Pennsboro	Shirley
Big Chimney	Grant Town	Pine Grove	West Union
Blue Creek	Huntington	Pocatalico	Willow Island
Cedar Grove	Middlebourne	Porters Falls	

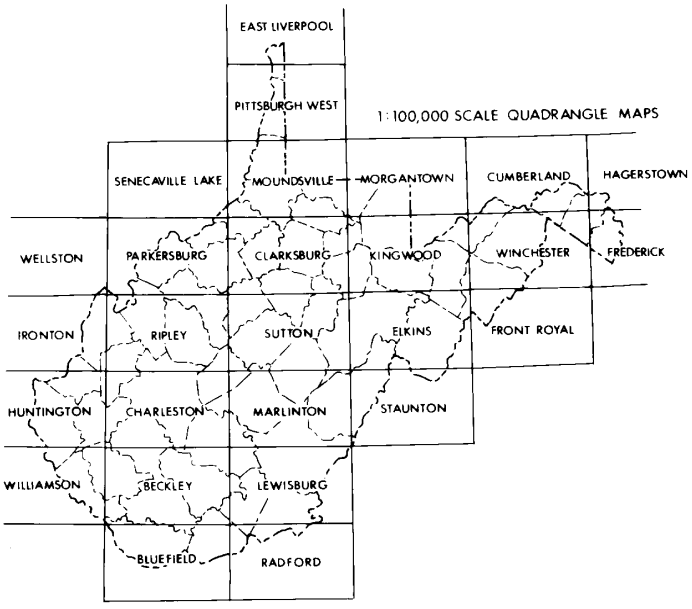
MAP-X9 **Region Maps Showing County and Tax District Outlines, with 7.5-Minute Quadrangle Grid**: 1:500,000, 22" x 27". Six regional maps cover the State. (No Longer Available - Replaced by MAP-WV21)

MAP-X10 (GM-1) **Geology of the Keyser 7.5-Minute Quadrangle**: J. M. Dennison, 1963, 1:24,000, paper size 37½" x 37". Color geologic map of Keyser 7.5-minute topographic quadrangle, with stratigraphic column and geologic cross sections. Brief summary on the map describes geology, structure, and mineral resources of the area. Scans available and files for GIS.

MAP-X11 **Geology of the Martinsburg 7.5-Minute Quadrangle**: R. C. Page, A. E. Burford, and A. C. Donaldson, 1964, (GM-2) 1:24,000, paper size 33½" x 35½". Color geologic map with stratigraphic column and geologic cross sections. Brief summary on the map describes geology, structure, and mineral resources of the area. Scans available.

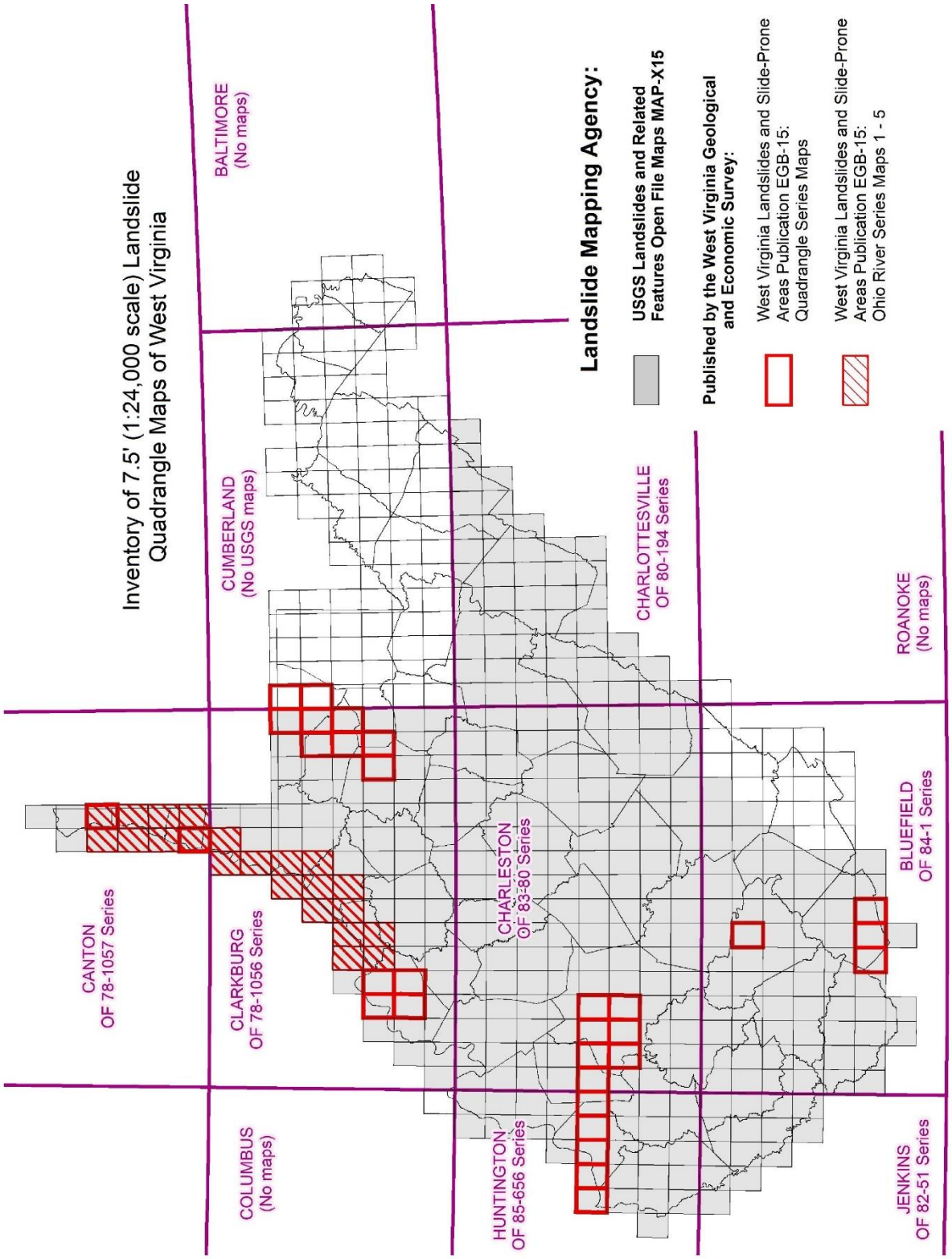
MAP-X12 (GM-3) **Geology of the Charleston Area**: O. L. Haught, 1967, 1:24,000, paper size 41" x 55". Color geologic map covering Big Chimney, Charleston East, Charleston West, and Pocatalico 7.5-minute topographic quadrangles with structural contours on the No. 5 Block Coal. Out-of-print/sale discontinued.

MAP-X13 **1:100,000 Metric Topographic Quadrangles**: USGS 30**'** x 60**'** series. Similar to, and compiled from, USGS 1:24,000 maps. Shows topography, culture, drainage, highways, woodland areas, and 10,000m UTM grid. Paper size 44" x 24", folded only. A few quadrangles are also available without topography (planimetric). A few quadrangles are not yet available—please inquire. Order by name shown in quadrangle (*see map below*). (Available as supplied by USGS.)



MAP-X14 **1:100,000 County Topographic Maps:** Based on USGS 7.5-minute 1:24,000 topographic quadrangles, these show culture, topography, drainage, highways, and woodland areas for entire counties. Paper size varies with county size, folded only. These counties have been produced (available as supplied by USGS—please inquire): Cabell County (1988); Harrison County (1988); Kanawha County (1987); Marion County (1988); Monongalia County (1988); Raleigh County (1988).

MAP-X15 **Landslides and Related Features Maps:** Landslide maps of West Virginia issued by USGS between 1978 and 1985 as USGS Open File Reports OF-78-1056, OF-78-1057, OF-80-194, OF-82-51, OF-83-80, OF-84-1, and OF-85-656. These 7.5-minute quadrangle maps are grouped into series by USGS 1° x 2° topographic quadrangles (see ***index map*** for 1° x 2° topographic quadrangle names). Landslide maps are 1:24,000 scale, paper size about 22" x 40", show old and active landslides and areas susceptible to landslide activity. Maps available from WVGES are indicated in the ***index map*** on this page. All maps held by WVGES are scanned as .tif files, georeferenced in ESRI ArcGIS®, and are available digitally or can be plotted on request. Order **7.5-minute quadrangles individually** by quadrangle name. (See MAP-X1 for quad names).



MINERAL BRIEFS

MB-1 **West Virginia Mineral Industry Status (Preliminary)**: 20 p, annual, issued about mid-year. Tabular and graphic summary of nonmetallic mineral and fossil-fuel production statistics for West Virginia. (Data for this publication are not available until several months after the end of a calendar year. Thus, for example, our 1982 issue contains 1981 data.) (Discontinued with 1987 issue. See MRS-9.)

MB-2 **Surface Mines in West Virginia**: About 80 p, revised as needed. Lists surface mineral producers under permit in the State. Organized by county, listing companies alphabetically with permit number, status, resource extracted, geological unit (name of coal, limestone, etc.), and 7.5-minute topographic quadrangle. (Discontinued with 1/83 issue. See MB-3.)

MB-3 **Mines in West Virginia**: Replaces MB-2; includes both surface and underground mines. Semiannual. (Discontinued with 1/86 issue. See MRS-9.)

METC: PRELIMINARY CROSS SECTIONS, MIDDLE AND UPPER DEVONIAN IN WEST VIRGINIA

Prepared in 1980 by J. F. Schwietering, D. W. Neal, and M. E. Dowse under contract to the U. S. Department of Energy, Eastern Gas Shales Project. These cross sections show correlations of well logs. Each is folded in a storage envelope. All are also available scanned.

METC-205 Cross section A-D-A' (see map below)

METC-206 Cross section A-C

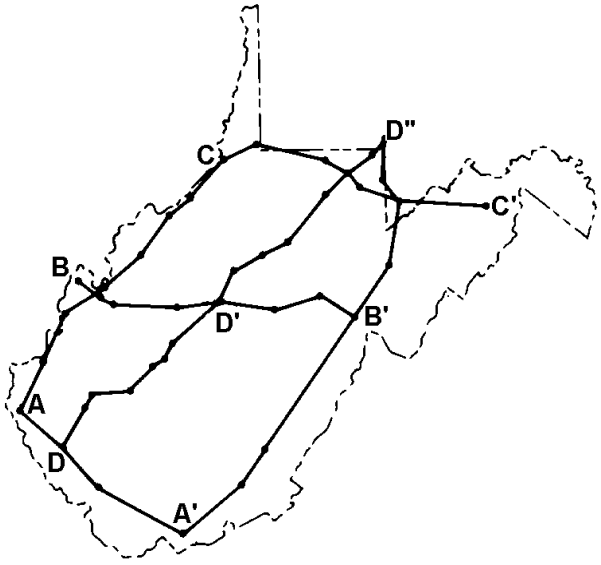
METC-207 Cross section D-D'

METC-208 Cross section D'-D"

METC-209 Cross section B-D'-B'

METC-210 Cross section C-C'

METC-211 Cross section A'-B'-D"



MISCELLANEOUS PUBLICATIONS

We make available a few items that are prepared by other organizations, but are of particular usefulness to West Virginians.

MISC-1 **Ground-Water Issues and Answers**: American Institute of Professional Geologists, 1983, 29 p, 33 f. Colorful booklet covers ground-water occurrence, use, quality, contamination, problems. (*No Longer Available*)

MISC-2 **Relations Between Warm Springs and Geology Delineated by Side-Looking Airborne-Radar Imagery in Eastern West Virginia**: P. Lessing, W.A. Hobba, Jr., S.L. Dean, and B.R. Kulander, 1991, 44 p, 27 f, 1 table. Using field mapping, radar imagery, aerial photography, and chemical analyses, the geological and structural control of the area's warm springs is interpreted. Published by the U.S. Geological Survey as Water-Resources Investigations Report 88-4096. Scan available.

MISC-3 **Relation of Fracture Systems to Transmissivity of Coal and Overburden Aquifers in Preston County, West Virginia**: W.A. Hobba, Jr., 1991, 24 p, 11 f, 4 tables. Presents the results of a study to determine if a correlation exists between the direction of maximum transmissivity in a coal aquifer and the orientation of the face cleat in the coal bed. Published by the U.S. Geological Survey as Water-Resources Investigations Report 89-4137. Scan available.

MISC-4 **Mineral Resources of West Virginia**: W.F. Cannon, S.H.B. Clark, F.G. Lesure, M.E. Hinkle, R. L. Paylor, H.M. King, C.M. Simard, K.C. Ashton, and J.S. Kite, 1994, 1:500,000 scale, 58" x 39". Full-color map shows non-fuel mineral occurrences and production, and interpretations of possible undiscovered non-fuel mineral deposits. Includes 14-page explanatory booklet. Published by the U.S. Geological Survey as Miscellaneous Investigations Series MAP I-2364-A. Scan available.

MISC-5 **River Bed Recharge to Quaternary Alluvium Bordering the Ohio River near Point Pleasant, WV**: R.G. Kazmann, R.M. Jeffords, and E.J. Schaefer, 1943 and 1960, 184p. Open File report by the U.S. Geological Survey in cooperation with the WVGES regarding a detailed hydrologic investigation to determine source and yield of water well fields supplying a former ordinance works site on an Ohio River terrace north of Point Pleasant, WV. Scan available.

MINERAL RESOURCES SERIES

MRS-1 **West Virginia Mineral Producers and Processors Directory**: Tabulated directory of producers and processors by commodity and county. Includes production figures Statewide, by county, and by commodity. (Discontinued with 1987 issue. See MRS-9.)

MRS-2 **Oil and Gas Developments in West Virginia, 1970-71**: D. G. Patchen and L. D. Woodfork, 1973, 41 p, 8 f, 19 tables. Drilling statistics, reserves, production, and products. (See C-29, C-32)

MRS-3 **Clays of West Virginia—Part I**: P. Lessing and R. D. Thomson, 1973, 190 p. Compilation of physical, chemical, and mineralogical data for 174 clay and shale samples. (See OF792 for Part II.) (See V-18)

MRS-4 (Publication cancelled.)

MRS-5A **Oriskany and Huntersville Gas Fields of West Virginia (and Deep Well and Structural Geologic Map)**: D. H. Cardwell, 1982, 180 p, 26 f, 25 tables, and display map. Describes fields, stratigraphy; includes 12 structural maps, 5 cross sections, and detailed tables for 25 areas and fields. Includes 1:250,000 "Deep Well and Structural Geologic Map of West Virginia," in two 35" x 53" sheets (north and south halves of State). Map has detailed insets of North and South Sissonville areas and Glady Field, and an isopach map of the Onesquethaw.

MRS-6 **Catalog of Subsurface Information for West Virginia**: D. G. Patchen, P. C. Kline, M. A. Patchen, D. H. Cardwell, and M. C. Behling, 1977, 189 p, 5 f. Computer printout of data on wells for which the Survey has samples, showing county, permit number, quadrangle, result (gas, oil, or dry), total depth, lowest strata, operator, farm name/number, district, intervals, and type of log available. (No longer available, superseded by DDS-5).

MRS-6-1 **Catalog of Subsurface Information for West Virginia: Volume 1—Well Samples and Cores**: Extensive revision of MRS-6. (No longer available, superseded by DDS-5).

MRS-6-2 **Catalog of Subsurface Information for West Virginia: Volume 2—Mechanical Logs**: N.L. Simcoe, K.L. Avary, M.C. Behling, P.J. Johns, and K.J. Timberlake, 1992 with annual updates, 322 p, 7 f. Information listing for over 14,000 wells in 53 counties for which the Survey has mechanical logs. Wells are listed by county and permit number and include range of intervals, types of logs available, microfilm cassette number (on which the log is copied), farm name and number (company number), operator, completion data (total depth, formation, result), 15-minute quadrangle and 5-minute section location. Companion volume to MRS-6-1. (See also CDS-4 and OGM.) (No longer available, superseded by DDS-5).

MRS-7B **Oil and Gas Fields of West Virginia**: D. H. Cardwell and K. L. Avary, 1982, 171 p. Discusses developments since 1970, with 8½" x 11" maps showing new productive areas 1970-75 in various formations; about 150 pages are tabular field descriptions. Includes Oil and Gas Fields Map of West Virginia (1976), 1:250,000, in two 35" x 53" sheets (north and south halves of State).

MRS-8 **West Virginia Gas Development in the Tuscarora and Deeper Formations (with Structural Maps Contoured on Top of Ordovician and Precambrian)**: D. H. Cardwell, 1977, 38 p, 1 map insert. Presents data from about 150 West Virginia wells. Includes 1:500,000 40" x 36" "Structural Geologic Map of West Virginia, Datum: Top of Ordovician." Scans available and files for GIS.

MRS-9 **West Virginia Mineral Industries Directory:** Tabulated directory of all permitted mineral producers by commodity. Includes production figures statewide, by county, and by commodity. Revised biennially. Current issue is sent unless an earlier year is requested.

MOUNTAIN STATE GEOLOGY

Magazine-like publications reporting on research done at the Survey. In print from 1961 to 1991. (Formerly titled "Newsletter of the West Virginia Geological Survey") Now available as a compilation of all 36 issues in Adobe .pdf format with interactive search features, quick-links to articles, and more! See item COLL-1 in the **Collections** section of this Catalog.

MSG-61 **1961 Newsletter**: Topographic mapping in West Virginia. 8 p.

MSG-62JAN **January 1962 Newsletter**: West Virginia coal—its past, present, and future. 12 p.

MSG-62APR **April 1962 Newsletter**: New outlook for oil and gas in West Virginia. 12 p.

MSG-62OCT **October 1962 Newsletter**: 65 years—serving West Virginia through geological research. 12 p.

MSG-63JAN **January 1963 Newsletter**: A centennial look at the West Virginia Geological and Economic Survey. 12 p.

MSG-63APR **April 1963 Newsletter**: Special issue—annual meeting of the Association of American State Geologists. 16 p.

MSG-65JAN **January 1965 Newsletter**: West Virginia's water situation—the role of ground water. 12 p.

MSG-65OCT **October 1965 Newsletter**: Geologic maps as a basis for land classification—the geology of a land area controls its use. 12 p.

MSG-66OCT **October 1966 Newsletter**: The mineral resources potential of West Virginia. 16 p.

MSG-67 **1967 Newsletter**: Oil and gas developments. 16 p.

MSG-68JAN **January 1968 Newsletter**: Geologic data program. 16 p.

MSG-68SEP **September 1968 Newsletter**: Biographic sketch of Paul H. Price. 24 p.

MSG-69 **1969 Newsletter**: The fossil *Greererpeton burkemorani*; general news of activities. 20 p.

MSG-70 **1970 Newsletter**: The Dunkard in West Virginia; general news of activities. 28 p.

MSG-71 **1971 Newsletter**: Coal in West Virginia—the Survey's contribution. 32 p.

MSG-72 **1972 Newsletter**: Biographic sketch of I. C. White; environmental geology. 36 p.

MSG-73 **1973 Newsletter**: Oil and gas. 52 p.

MSG-74 **1974 Newsletter**: Remote sensing; environmental geology; landslides. 56 p.

MSG-75 **1975 Newsletter**: Oil and coal; history of West Virginia's mineral industries; land use. 72 p.

MSG-76 **1976 Newsletter**: Computer processing of geologic data; coal processing/conversion symposium; oil and gas developments; Germany Valley geology; history of geologic studies in WV; archeology. 72 p.

MSG-77 **1977 Mountain State Geology**: Special issue on Devonian shale research by the Survey; composition of coal. 64 p.

MSG-78 **1978 Mountain State Geology**: Douglas coal in Panther State Forest; coal resources study; U. S. Route 48 (Now Interstate 68) roadcut geology; Grave Creek mound; geologic time. 56 p.

MSG-79 **1979 Mountain State Geology**: Topographic maps covering West Virginia (includes sample map and symbol key); plant fossils; acid mine drainage; Federal surface-mining law. 48 p.

MSG-80 **1980 Mountain State Geology**: History and accomplishments of the Survey under I. C. White, Paul H. Price, and Robert B. Erwin; WV's oil and gas regulations; coal; archeology. 48 p.

MSG-81 **1981 Mountain State Geology**: Computer-generated coal-quality maps; West Virginia caves; world's oldest seeds; coal thin-sections; roadcut geology; Indian pithouses; brick industry; Monitor Lineament. 48 p.

MSG-82 **1982 Mountain State Geology**: Computerizing the Mountain State's geology; oil and gas statistics; pictorial guide to arrowheads; Fort Martin archeology; Ice Age in West Virginia; 300 million year old footprints in Tucker County; gemstones. 48 p.

MSG-83 (No issue in 1983.)

MSG-84 **1984 Mountain State Geology**: New River Gorge; No. 3 Pocahontas Coal; Limestone, the Unsung Mineral Hero; Coal Information Available from WV Geological and Economic Survey; Oil and Gas Pools; Finding the Right Coal; Services of the Survey; Devonian Shale. 48 p.

MSG-85 **1985 Mountain State Geology**: Acid Mine Drainage; Grahamite and the Ritchie Mine; Great Valley (Shenandoah Valley) Hydrology; Geologic Processes in Cheat Lake; WV's Aggregates Industry; Limestones; Ash Fusion Study of WV's Coals; Mine Maps Show Location/Status of State's Coal Mines; Moisture in Coal; 115,135,454 Tons of Coal. 48 p.

MSG-86 **1986 Mountain State Geology**: Coal-Fired Power Plants; Mine Subsidence and Geology; X-Radiographs of Coal; How Fossil Fuels Cook; Three Miles Beneath WV; Preston County Coal Resources; Mining Beneath the Ohio River; Jackson Dam Geology; Salt; New River Gorge Geology; 10,600,000 Tons of Stone. 56 p.

MSG-87 **1987 Mountain State Geology**: Homeowner's Guide to Geologic Hazards; Rock Climbing and Geology; Chlorine in Coal Combustion; Fluted Rocks; Ohio River Terraces; Water Use in WV; Geologic Observation and Floods. 44 p.

MSG-88 **1988 Mountain State Geology**: WV Gazetteer of Place Names; Springs of WV; Fossil Footprints in Eastern Panhandle; Expanded Aggregate; Seneca Rocks Geology; Mountain-Building Processes. 40 p.

MSG-89 **1989 Mountain State Geology:** Geologic Publishing; Mineral Resources Map; Coal Availability Study; Volcanic Ash in WV; Manganese in WV; First Survey Publication; Oil and Gas Section; Devonian Shale Studies; Clay Mines of Hancock County; R. B. Erwin Retires. 48 p.

MSG-90SPG **Spring 1990 Mountain State Geology:** Coalbed Methane; Oil Sampling; Geologic Mapping; Solid Waste Symposium. 16 p.

MSG-90S/F **Summer/Fall 1990 Mountain State Geology**: Old Sweet Spring; Manganese Study; Mississippian Sandstone Mapped; Reservoir Heterogeneity Symposium.

MSG-90WIN **Winter 1990 Mountain State Geology**: Survey Gets Seismic Station; Nuclear Graphite from Coal; Old Photos.

MSG-91S/S **Spring/Summer 1991 Mountain State Geology**: Earth Science Information Center; Flint Clay Age Confirmed; Kanawha Formation Studies; Quake Detector Operational.

OPEN-FILE REPORTS

Open-file reports are unpublished research products. They may be incomplete, not formally reviewed, and in unpolished form. Open-file reports may be examined at our offices during regular business hours. Gaps exist in report identification numbers because reports are occasionally withdrawn or a final version is published, replacing the Open-file version. Reports are listed chronologically starting with OF791 (first two digits are year of publication, following digits are in series for that year); earlier reports are not in chronological order.

Copying policy:

1. Some reports are shown as "not copyable." This means that, due to size, shape, or condition of the original, reproduction by photocopying is not practical. (Some of these reports can be hand-copied, traced, or photographed on our premises by requesters.)
2. Reports are available at prices indicated in the Price List.
3. The remaining reports are copyable. We encourage requesters to examine reports on our premises. If a copy of a report (or portion) is desired, the requester may make copies on our premises, at the prevailing rate. (This copying privilege includes photocopying on our convenience copier only, under supervision of a Survey employee.) Alternatively, Survey personnel can make the copy, but at a substantially higher rate, and as time is available.
4. Most Open-file reports have been digitally archived and are available in Adobe Acrobat .pdf or in .tif format, as indicated below, as well as printed or plotted copies. Please inquire about digital availability of the others.
5. Copies of Open-file reports are not returnable for credit.

Digital Formats/GIS Files:

All of the Open-file Geologic 7.5-Minute (1:24,000 scale) Quadrangle Maps, starting with OF801, have been digitally archived/scanned and are additionally available in .tif format as noted below. In addition, these geologic maps have been digitized for use in a Geographic Information System (GIS), and the ESRI ArcGIS® -format shapefiles are available for **FREE download from https://www.wvgs.wvnet.edu/** . Layer shapefiles for each map may include: geologic contacts, geologic unit polygons, faults, structure/folds, bedding (strike/dip) points, igneous features, cross-section location line, and digitized cross-section. Some maps may also include surficial geology contact lines and polygons. More detailed GIS packages including original source material, ArcGIS® layer rendering files and full-color map layout document files are available for purchase. Maps available in GIS format are noted below in the item descriptions, and are also shown in the ***index map*** in the ***Digital and GIS Data*** section of this Catalog. Please also inquire to check on updated availability of other maps and publications in digital format.

OF1 **Final Report: July 9, 1973 Landslides in Kanawha City Area of Charleston, WV**: R. A. Landers and R. A. Smosna, 1973, 22 p.

OF2 **Geology and Water Resources of West Virginia State Forests**: R. A. Landers and R. A. Smosna, 1974, 142 p, some color sketches. *No longer available.*

OF3 **Preliminary Investigation of Acid Mine Water, Carmelite Monastery, Wheeling, WV**: P. Lessing and R. S. Reppert, 1972, 22 p.

OF4 **Recent Production Trends in West Virginia's Bituminous Coal Fields**: C. W. Lotz, 1979, 130 p. Coal production 1945-1979 by seam and county.

OF6 **A Lineament and Fracture Study in Cabell and Wayne Counties, WV**: R. F. Fonner, P. Lessing, and S. J. Tewalt, 1978, 36 p.

OF7 **Maps Showing Areas of Coal Removed by Underground Mining for All Major Coal Seams in WV:** Overlays for 7.5-minute quadrangles. Inquire as to areas available. (See also OF8505) Scans available. Superseded by CBMP program (*see Digital/GIS Data Section of Catalog*) Current data in files for GIS on free interactive map viewer on our Website at http://www.wvgs.wvnet.edu/www/coal/cbmp/coalims.html

OF8 **Coal Tonnages for Various Counties in West Virginia:** 74 maps, scans available. Inquire as to counties available.

OF9 **Coal Bed Maps for Various Quadrangles in WV:** Inquire as to counties available. Maps show outcrop (area underlain by coal), coal thickness, drainage basins, and reliability per USGS Bulletin 1450. Overlays for 7.5-minute quadrangles. Scans available. Superseded by CBMP program (*see Digital/GIS Data Section of Catalog*) Current data in files for GIS and on free interactive map viewer on our Website at http://www.wvgs.wvnet.edu/www/coal/cbmp/coalims.html

OF10 **The Effects of Some Oxidants on the Artificial Oxidation of Coal:** S. J. Bialobok and J. A. Seckel, 1976, 15 p. *No longer available.*

OF11 **Sand and Gravel Resources Data for WV**: T. Arkle, Jr., S. M. Brock, Jr., and C. E. Hozdic. *No longer available.*

OF12 **Coal Tonnages by Magisterial Districts, from the West Virginia Geological and Economic Survey's County Geological Reports**: 125 p of tabular data by county, district, and seams, referenced to specific pages in the County Reports. *No longer available.*

OF13 **Surface Mining—Mineral Resource Seam Names and Thicknesses**: This is a card file covering permits issued since 1975. *No longer available.*

OF14 **Structure Maps Contoured on Minable Coal Seams for Various Quadrangles in WV**: Overlays for 7.5-minute quadrangles. Scans available. Superseded by CBMP program (*see Digital/GIS Data Section of Catalog*) Current data in files for GIS and on free interactive map viewer on our Website at http://www.wvgs.wvnet.edu/www/coal/cbmp/coalims.html

OF15 **Coal Sample Library**: Over 5,000 cataloged samples. Nearly 3,000 samples (raw coal, pulverized, etc.) are available upon request for use by qualified scientific organizations. Analytical data frequently accompany samples. *No longer available.*

OF16 **The Duvall Site: A Monongahela Settlement in Northern West Virginia**: R. C. Dunnell, January 1964, 116 p.

OF17 **An Osteobiography of the Buffalo Site, Putnam County, West Virginia**: J. F. Metress, 1972, 92 p. *No longer available.*

OF18 **Handbook of West Virginia Archeology: Part 1—Projectile Point Type Descriptions:** B. J. Broyles, 1972, 137 p.

OF19 **Fort Ancient Mortuary Customs in West Virginia**: B. J. Broyles, 1973, 209 p.

OF30 **Test Excavations at the General Adam Stephen House**: J. K. Pitts, September 1974, 3 p.

OF44 **Investigations at Grave Creek Mound 1975-76**: **A Sequence for Mound and Moat Construction:** E. T. Hemmings, 1978, 102 p.

OF45 **Fairchance Mound and Village: An Early Middle Woodland Settlement in the Upper Ohio Valley**: E. T. Hemmings, 1978, 181 p.

OF52 **Low Sulfur Coal Deposits of Southern West Virginia: A Depositional Model**: A. F. Keiser and others, 1979, 35 p. Paper presented at the Ninth International Congress of Carboniferous Stratigraphy and Geology, Urbana, IL, May 24, 1979.

OF53 **Introducing Laymen to West Virginia's Igneous Rocks**: R. L. Saas, 1969, 13 p. (See also RI-12)

OF54 **Pilot Study of the Feasibility of Subsurface Injection of Industrial Liquid Wastes in West Virginia**: R. Hidalgo, M. Behling, and R. Drabish, 1974, 113 p. (Also available from the National Technical Information Service.)

OF55 **STOP: A Procedure for Effective Publications**: D. M. McLean (Martin Marietta Corp.), 1978, 30 p.

OF56 **Generalized Coal-Reflectance Map of West Virginia**: G. A. Cole and C. J. Smith, 1979, 8 p, 3 maps. Describes the pattern of coal reflectance for West Virginia's coals. *No longer available.*

OF57 **Regional Coalification Patterns for the Coals of Eastern Kentucky, Virginia, West Virginia, Ohio, Maryland, and Southern Pennsylvania**: G. A. Cole, D. A. Williams, and C. J. Smith, 1979, 23 p, 6 f, 9 maps, 8½" x 11". Describes how the factors influencing coalification affected West Virginia. Includes State coal rank map.

OF58 **Btu Calculation Graph**: C. J. Smith, 1980, 1 p. Shows how to calculate Btu for West Virginia's coals from other known quality parameters.

OF59 **Computer Mapping of Quality Data for Coals in West Virginia—An Aid in Matching a Specific Coal Grade to a Specific End Use**: C. J. Smith and H. M. King, 1982, 14 p, 5 pl, 1 f, 7 maps. Describes computer-mapping techniques for coal-quality data. *No longer available.*

OF60 **Coal Exploration Procedure**: C. J. Smith, 1982, 7 p. An outline that describes the various stages in the development of a coal exploration project. *No longer available.*

OF61 **Maps Showing the Chlorine, Sodium, and Phosphorus Contents of West Virginia's Coals**: H. M. King, 1982, 3 maps. Maps show average content by county. *No longer available.*

OF62 **Organic Sulfur Map for West Virginia Bituminous Coal Seams**: H. M. King and C. J. Smith, 1982. Shows organic sulfur content variability. 1: 500,000 scale. Scan available.

OF63 **Pyritic Sulfur Map for West Virginia Bituminous Coal Seams**: H. M. King and C. J. Smith, 1982. Shows pyritic sulfur content variability. 1:500,000 scale. Scan available.

OF64 **Phosphorus Map for West Virginia Bituminous Coal Seams**: H. M. King and C. J. Smith, 1983. Shows phosphorus content variability. 1:500,000 scale. Scan available.

OF65 **Hardgrove Grindability Map for West Virginia Bituminous Coal Seams**: C. J. Smith and H. M. King, 1982. Shows the Hardgrove Index that relates to the ease or difficulty of grinding coal. 1:500,000 scale. Scan available.

OF66 **Pounds of SO_x per Million Btu Map for West Virginia Bituminous Coal Seams**: C. J. Smith and H. M. King, 1982, 2 maps. Shows the possible amount of sulfur conversion to SO_x on a million-Btu basis. 1:500,000 scale. Scan available.

OF67 **Ash Content Map for West Virginia Bituminous Coal Seams**: C. J. Smith and H. M. King, 1982. Shows the ash variability. 1:500,000 scale. Scan available.

OF68-1 **Total Sulfur Map for West Virginia Bituminous Coal Seams < O.7% Sulfur**: H. M. King, 1983, 2 maps. Shows the sulfur variability. 1:500,000 scale. Scan available.

OF68-2 Same as OF68-1, except < 1% Sulfur. Scan available.

OF69 **Volatile Matter Map for West Virginia Bituminous Coal Seams**: C. J. Smith and H. M. King, 1983. Shows the volatile matter variability. 1:500,000 scale. Scan available.

OF70 **Fixed Carbon Map for West Virginia Bituminous Coal Seams**: H. M. King and C. J. Smith, 1983. Shows the fixed carbon variability. 1: 500,000 scale. Scan available.

OF71 **Btu Map for West Virginia Bituminous Coal Seams**: C. J. Smith and H. M. King, 1983. Shows the heating value variability. 1:500,000 scale. Scan available.

OF72 **Sample Location Map for West Virginia Bituminous Coal Seams**: H. M. King and C. J. Smith, 1982. Shows the location of over 3,000 data points that relate to the coal quality for samples from all bituminous coal seams. 1:500,000 scale. Scan available.

OF73 **Volatile Matter Map for West Virginia's Lower Kittanning/No. 5 Block Coal**: C. J. Smith and H. M. King, 1981. Shows the volatile matter variability. 1:500,000 scale. Scan available.

OF74 **Fixed Carbon Map for West Virginia's Lower Kittanning/No. 5 Block Coal**: C. J. Smith and H. M. King, 1981. Shows the fixed carbon variability. 1:500,000 scale. Scan available.

OF75 **Ash Map for West Virginia's Lower Kittanning/No. 5 Block Coal**: C. J. Smith and H. M. King, 1981. Shows the ash variability. 1:500,000 scale. Scan available.

OF76 **Hardgrove Grindability Map for West Virginia's Lower Kittanning/No. 5 Block Coal**: C. J. Smith and H. M. King, 1981. Shows the Hardgrove Index, which relates to the ease or difficulty of grinding coal. 1:500,000 scale. Scan available.

OF77 **Kilocalories Per Kilogram Map for West Virginia's Lower Kittanning/No. 5 Block Coal**: H. M. King and C. J. Smith, 1981. Shows heating value variability, in the metric system (cf. OF78). 1:500,000 scale. Scan available.

OF78 **Btu Map for West Virginia's Lower Kittanning/No. 5 Block Coal**: H. M. King and C. J. Smith, 1981. Shows heating value variability, in the English system (cf. OF77). 1:500,000 scale. Scan available.

OF79 **Fuel-Ratio Map for West Virginia's Lower Kittanning/No. 5 Block Coal**: H. M. King and C. J. Smith, 1981. Shows fixed carbon, divided by volatile-matter variability—a rank indicator, 1:500,000 scale. Scan available.

OF80 **Free-Swelling Index (F.S.I.) Map for West Virginia Bituminous Coal Seams**: H. M. King and C. J. Smith, 1983. Shows the index variability. 1:500,000 scale. Scan available.

OF85 **Slope Maps, 7.5-Minute, 1:24,000**. Slope ranges of 15%, 25%, and 35% are shown by gray shading. These quads are all available scanned:

OF85A	Alum Creek	OF85M	Morgantown North
OF85B	Barboursville	OF85N	Morgantown South
OF85C	Big Chimney	OF85O	Osage
OF85D	Catlettsburg	OF85P	Parkersburg
OF85E	Charleston East	OF85Q	Pocatalico
OF85F	Charleston West	OF85R	Rivesville
OF85G	Clarksburg	OF85S	Rosemont
OF85H	Fairmont East	OF85T	Saint Albans
OF85I	Fairmont West	OF85U	South Parkersburg
OF85J	Grant Town	OF85V	Valley Mills
OF85K	Huntington	OF85W	Wheeling
OF85L	Kanawha		

OF95 **Deposition of the 5-Block Coal in the Widen and Swandale 7.5-Minute Quadrangles, Clay and Nicholas Counties, WV**: R. S. Reppert, 1978, 10 p.

OF96 **Kanawha Black Flint: Its Occurrence and Extent in WV**: R. S. Reppert, 1978, 11 p.

OF97 **Middle Devonian Conodont Biostratigraphy in the Subsurface of Northern West Virginia**: K. P. McCartney, 1981, 40 p, 6 f.

OF100 **Active Surface Mine Maps**: 256 7.5-minute 1:24,000 scale quadrangles, updated as needed to show active and reclaimed surface mines, and active deep-mine portals in the State from 9/73 to present. (See also MB-2)

OF101 **Listing of Data Points Considered for Fresh and Saline Ground-Water Map-WV12**: prepared for WV Department of Natural Resources, Water Resources Division, 1980, 219 p of computer tables. *No longer available.* (See MAP-WV12)

OF103 **Staining Techniques for Carbonate, Feldspar, and Shale Determination**: 18 p. Assemblage of journal articles on the subject, plus flowchart for organic staining of carbonates, and reagent mixing instructions. *No longer available.*

OF104 **Riverbank Erosion Along the Ohio River at Ravenswood, WV**: W. A. Van Wie and R. A. Landers, 1974, 15 p, prepared for the City of Ravenswood. *No longer available.*

OF105 **Coal Rank Map for West Virginia Bituminous Coal Seams**: C. J. Smith and H. M. King, 1983. 1:500,000 scale. Scan available.

OF112 **Summary Report of Archeological Excavations at the Oak Mound (46Hs2), Harrison County, WV**: W. H. Lesser, 1983, 10 p. Salem College's 1969 work at this Early Woodland site, radiocarbon-dated circa 100 B.C. Scan available.

OF113 **Topographic Maps Showing Mine Subsidence Susceptibility, Based on Overburden Thickness, 7.5-Minute, 1:24,000**: J. S. McColloch, 1982. Subsidence susceptibility is shown at three levels: low (overburden> 300'), medium (overburden 150'-300'), and high (overburden <150'). Overburden thickness contours and crop line of coal are depicted. 52 quadrangles are available, some showing susceptibility for more than one coal seam. (Not copyable) Superseded by CBMP program (*see Digital/GIS Data Section of Catalog*). Current data in files for GIS and on free interactive map viewer on our Website at http://www.wvgs.wvnet.edu/www/coal/cbmp/coalims.html

OF114 **Flood-Prone Area Maps**: circa 1975. 1:24,000 scale 23" x 27" black and white topographic maps covering most of West Virginia, showing 100-year flood elevation on major rivers and streams. (Not valid for flood-insurance criteria.) *No longer available.*

OF115 **Landslide Maps**: circa 1979. 1:24,000 scale 22" x 34" black and white maps covering portions of northern West Virginia, showing slides and related features. (*No longer available,* superseded by EGB-15 and MAP-X15)

OF116 **Planimetric Maps**: circa 1920. 1:48,000 scale 17" x 21" maps of about 35 quadrangles in various parts of West Virginia. Similar to 15-minute topo maps except for scale and deletion of contour lines. *No longer available.*

OF117 **Geological Folio of Paw Paw and Hancock 15' Quadrangles**: 1912. 1:62,500 scale 18½" x 22". Two color maps from USGS Folio 179. *No longer available.*

OF118 **Topographic Maps**: circa 1884-1900. 1:125,000 scale, 17" x 20". 30 quadrangle maps covering southern 2/3 of West Virginia. Published in color by USGS. *No longer available.*

OF119 **Clinometric [Slope] Maps**: 1975. 1:250,000 scale 22" x 32". Black and white maps covering the Monongahela River Basin. Six quadrangles, each covered by five sheets(0-8%, 8-15%, 15-25%, 25-36.5%, >36.5%) Scans available.

OF121 **Free-Swelling Index Trends Map for the Pittsburgh, Redstone, #5 Block, #2 Gas, #3 Pocahontas Coals in West Virginia**: 1979. 1:500,000 scale, 33" x 37". *No longer available.*

OF122 **Generalized Free-Swelling Index Map of the Allegheny Coals in West Virginia**: 1979. 1:500,000 scale, 33" x 37". *No longer available.*

OF123 **Map Showing Occurrence of Coal, Oil, and Gas in West Virginia**: 1904. 1:500,000 scale, 35" x 46". Color.

OF124 **Map of West Virginia Showing Coal, Oil, Gas, Iron Ore, and Limestone Areas**: 1908-1910. 1:443,520 scale, 39" x 45". Scan available.

OF125 **Map of West Virginia Showing Coal, Oil, Gas, Iron Ore, and Limestone Areas**: 1913-1921. 1:500,000 scale, four maps, about 36" x 47". Maps also depict transportation routes, post offices, and towns. Scan available.

OF126 **Oil and Gas Fields of the State of West Virginia**: 1922. 1:500,000 scale 34" x 37". Map also shows refineries and oil pipelines. Scan available.

OF127 **Geologic Map of the Catoctin Belt**: 1893. 1:375,000 scale 11" x 15". Color map showing geological units in the Great Valley and Piedmont Provinces, covering Berkeley and Jefferson Counties plus parts of PA, MD, and VA. Map is Plate XXII from USGS 14th Annual Report, Part II. *No longer available.*

OF128 **Map of West Virginia Showing Railroads**: 1917. 1:500,000 scale, 34" x 37". Color.

OF129 **Hotchkiss' Geological Map of Virginia and West Virginia**: 1880. 1:1,520,640 scale, 13½" x 20". Color map (geology by W. B. Rogers). Also shows proposed route, Richmond and Southwestern Railway.

OF791 **Geologic Logs of Two Deep Core Holes in the Proposed Stonewall Jackson Lake-Dam Project Area, Lewis County, WV**: N. Fedorko III, T. Repine, and T. Jake, 1978, 83 p.

OF792 **Clays of West Virginia—Part II**: R. E. Larese, P. Lessing, J. A. Seckel, W. A. Van Wie, and R. D. Thompson, 1977, 110 p. (See MRS-3 for Part 1.) (See V-18)

OF793 **Mine Subsidence Study**: **Core Drilling at Fairmont, WV, June 1979:** R. F. Fonner and J. H. Reynolds, 1979, 29 p.

OF801 **Geologic Maps 7.5-Minute, 1:24,000**. Corresponding to 7.5-minute topographic maps. These are black-and-white 7.5-minute topographic base maps with geology superimposed. Geology of WV part of quadrangle only. These quadrangles are available as black-and-white full-sized plots, or as scanned .tif images. Most are also available as digitized files for GIS, (marked with * below):

OF801A	*Marietta (this map lacks topographic base and shows geology only)	OF801I	Morgantown South (See also OF0404)
OF801B	*Little Hocking	OF801J	Rivesville (See also OF0503)
OF801C	*Parkersburg	OF801K	Osage (See also OF0502)
OF801D	*Valley Mills	OF801L	*Fairmont West
OF801E	*Lubeck	OF801M	*Grafton
OF801F	*South Parkersburg	OF801N	*Beckley
OF801G	*Kanawha	OF8010	Bluefield (See also OF0003)
OF801H	Morgantown North (See also OF0403)	OF801P	Princeton (See also OF0004)
		OF801Q	Wheeling (See also OF0701)

OF806 **Geology of the Hardy County, WV Landfill**: J. S. McColloch and R. F. Fonner, 1980, 19 p. *No longer available.*

OF807 **Neale's Landing: An Archeological Study of a Fort Ancient Settlement on Blennerhassett Island, WV**: E.T. Hemmings, 1977, 258 p.

OF809 **Archeological Survey of Blennerhassett Island, Wood County, West Virginia**: D. N. Fuerst, J. R. Greybill, 1980, 77 p, 19 f, 3 tables.

OF8012 **Bureau of Mines Mine Subsidence Study—Fairmont, WV Core Drilling Report**: J. S. McColloch, R. F. Fonner, and C. P. Messina, September 1980, 55 p.

OF8013 **Core-Drill Logs for Bureau of Mines Mine Subsidence Study, Duncan Hill, Clarksburg, WV**: R. F. Fonner, J. S. McColloch, and C. P. Messina, September 1980, 13 p.

OF8101 **Oil and Gas Exploration and Potential in the Northwestern Part of Ridge and Valley Province in WV (Berkeley, Morgan, Hampshire, Hardy, Mineral, Grant, and Pendleton Counties)**: P. Chen, 1980, 140 p, 34 maps (report is reproducible, maps are not).

OF8102 **Brief Description of Ground-Water Conditions and Aquifers in West Virginia (with Annotated Bibliography)**: J. F. Schwietering, January 1981, prepared under contract with WV Department of Natural Resources, 121 p and two map inserts. Report is reproducible; maps "Hydrologic Unit Map—1974—State of West Virginia" and "Water-Resources Investigations in West Virginia, 1978" can be purchased from USGS, Reston, VA 22092.

OF8201 **Cheat Summit Fort: A Status Report Concerning Eligibility for Nomination to the National Register of Historic Places**: W. H. Lesser, 1982, 25 p.

OF8202 **The Mode of Occurrence and Distribution of Sulfur in West Virginia Coal and Devonian Shales**: H. M. King, 1982, 231 p. (Available from University Microfilms, 300 N. Zeeb Road, Ann Arbor; MI 48106.) *No longer available from WVGES.*

OF8301 **Coal Maps of Monongalia County, West Virginia**: T. Repine, N. Fedorko III, and P. R. Liston, 1983, eleven 27" x 42" maps. 1:100,000-scale maps of county showing outcrop, 120ft and 1000ft overburden contours, thickness contours in 14" increments, and area disturbed by all mining. Insets: generalized geologic column; histogram showing reserves and mined tonnages vs. thickness; and statistics by thickness, drainage basin, and quadrangle. Useful in mining feasibility studies and geologic education. Available maps:

OF8301A	Waynesburg Coal	OF8301G	Lower Kittanning Coal
OF8301B	Pittsburgh Coal	OF8301H	Upper Kittanning Coal
OF8301C	Redstone Coal	OF8301I	Upper Freeport Coal
OF8301D	Sewickley Coal	OF8301J	Sections and Quality of Minable Coal Seams
OF8301E	Waynesburg "A" Coal		
OF8301F	Washington Coal	OF8301K	Geology and Tonnage of Minable Coal Seams

OF8401 **Limestones of Harrison County, WV**: D. B. Welker and D. S. Kirstein, 1984. Text, cross sections, tables of physical data and chemical analyses, and 63 1:24,000 maps showing outcrop, thickness, and data points for the Benwood, Sewickley, Redstone, and miscellaneous limestones.

OF8402 **Spectrum of West Virginia Coal**: C. J. Smith and H. M. King, updated periodically, about 60 p. Provides a general overview of West Virginia coal for the layman. Includes geologic and coal quality maps, rank chart, explanation of the Geological Survey's method for helping users find the right coal to meet specifications, and lists Survey coal publications. Available in Chinese, German, Japanese, and Spanish translations; English version is sent unless otherwise specified on Order Form.

OF8405 **Total Sulfur—Lower Kittanning Coal in West Virginia**: C. J. Smith and H. M. King, 1983, 1:500,000 scale. Scan available.

OF8407 **Field Trip for AAPG Trustees to Eastern Greenbrier County and Southern Pocahontas County, WV, 4/14/84**: L. D. Woodfork and J. F. Schwietering, 1984, 22 p.

OF8408 **List of Coal Preparation Plants and Transportation Facilities in WV**: 1984. See Preparation Plant Map OF8502.

OF8409 **Kilocalories per Kilogram Map for West Virginia Bituminous Coal Seams**: 1984, 1:500,000 scale. Scan available.

OF8410 **SO_x Compliance Contour Map for Lower Kittanning/No. 5 Block Coal**: 1984, 1:500,000 scale. Scan available.

OF8411 **Pittsburgh Coal in West Virginia—Total Sulfur Map**: 1984, 1:500,000 scale. Scan available.

OF8412 **Sewell Coal in West Virginia—Total Sulfur Map**: 1984, 1:500,000 scale. Scan available.

OF8413 **Minable Bituminous Coal Seams of the New River Formation in West Virginia—Total Sulfur Map**: 1984, 1:500,000 scale. Scan available.

OF8414 **Minable Bituminous Coal Seams of the New River Formation in West Virginia—High Temperature Ash Map**: 1984, 1:500,000 scale. Scan available.

OF8415 **Minable Bituminous Coal Seams of the New River Formation in West Virginia—Btu Map**: 1984, 1:500,000 scale. Scan available.

OF8416 **Minable Bituminous Coal Seams of the Pocahontas Formation—Total Sulfur Map**: 1984, 1:500,000 scale. Scan available.

OF8417 **Minable Bituminous Coal Seams of the Pocahontas Formation—High Temperature Ash Map**: 1984, 1:500,000 scale. Scan available.

OF8418 **Minable Bituminous Coal Seams of the Pocahontas Formation—Btu Map**: 1984, 1:500,000 scale. Scan available.

OF8419 **Beckley Coal in West Virginia—Total Sulfur Map**: 1984, 1:500,000 scale. Scan available.

OF8420 **No. 3 Pocahontas Coal in West Virginia—Total Sulfur Map**: 1984, 1:500,000 scale. Scan available.

OF8421 **Coalburg Coal in West Virginia—Total Sulfur Map**: 1984, 1:500,000 scale. Scan available.

OF8422 **Dimension Stone of West Virginia**: D. B. Welker and C. M. Simard, 1983. *No longer available.*

OF8423 **Total Sulfur Map—Minable Coal Seams of the Allegheny Formation in West Virginia**: 1984, 1:500,000 scale. Scan available.

OF8424 **High-Temperature Ash Map—Minable Coal Seams of the Allegheny Formation in West Virginia**: 1984, 1:500,000 scale. Scan available.

OF8425 **Btu Map—Minable Coal Seams of the Allegheny Formation in West Virginia**: 1984, 1:500,000 scale. Scan available.

OF8426 **Total Sulfur Map—Minable Coal Seams of the Kanawha Formation in West Virginia**: 1984, 1:500,000 scale. Scan available.

OF8427 **High-Temperature Ash Map—Minable Coal Seams of the Kanawha Formation in West Virginia**: 1984, 1:500,000 scale. Scan available.

OF8428 **Btu Map—Minable Coal Seams of the Kanawha Formation in West Virginia**: 1984, 1:500,000 scale. Scan available.

OF8501 **Surface Transportation Map of West Virginia**: 1985, 1:500,000 scale. Shows active railroads, major highways, and navigable waterways. *No longer available.*

OF8501A Same as OF8501, except includes railroad *names*. Scan available.

OF8502 **Coal Preparation Plant Map of West Virginia**: 1985, 1:500,000 scale (See preparation plant list, OF8408) Scan available.

OF8503A **Mined Areas, Sections, and Quality of Major Minable Coal Seams in Raleigh County, WV**: 1985, 1:100,000 scale, Scan available.

OF8503B **Geology and Tonnage of Major Minable Coal Seams in Raleigh County, WV**: 1985, 1:100,000 scale, Scan available.

OF8504 **Geology of Mason County, WV**: R. F. Fonner, 1982-83. Geology of WV part of quadrangle only, on sixteen 1:24,000 scale 7.5-minute topographic base maps. These quadrangles are available as black-and-white full-sized plots, as scanned .tif images, or as digitized files for GIS (all):

OF8504A	Addison	OF8504I	Gallipolis
OF8504B	Apple Grove	OF8504J	Glenwood
OF8504C	Arlee	OF8504K	Hurricane
OF8504D	Beech Hill	OF8504L	Mount Alto
OF8504E	Cheshire	OF8504M	Mount Olive
OF8504F	Chester	OF8504N	New Haven
OF8504G	Cottageville	OF8504O	Pomeroy
OF8504H	Elmwood	OF8504P	Robertsburg

OF8505 **Approximate Undermined Coal Areas of WV**: 1985. 1:500,000 scale map shows counties, extent of coal-bearing rocks in WV, and approximate outline of mining areas. Compiled from detailed maps in OF7. Scans available. Superseded by CBMP program (see ***Digital and GIS Data*** Section of Catalog). Current data in files for GIS and on free interactive map viewer on our website at http://www.wvgs.wvnet.edu/www/coal/cbmp/coalims.html

OF8506 **Ash Fusion Temperatures for WV Coals**: 1985. Four 1:1,000,000 scale maps on one sheet show initial deformation, softening, hemispherical, and fluid temperatures for coals statewide. Scan available.

OF8507 **Ash Fusion Initial Deformation Temperature Map (Reducing Atmosphere) for West Virginia's Bituminous Coal Seams**: 1985. 1:500,000 scale. Scan available.

OF8508 **Ash Fusion Softening Temperature Map (Reducing Atmosphere) for West Virginia Bituminous Coal Seams**: 1985. 1:500,000 scale. Scan available.

OF8601 **Ash Fusion Hemispherical Temperature Map (Reducing Atmosphere) for West Virginia Bituminous Coal Seams**: 1985. 1:500,000 scale. Scan available.

OF8602 **Ash Fusion Fluid Temperature Map (Reducing Atmosphere) for West Virginia Bituminous Coal Seams**: 1985. 1:500,000 scale. Scan available.

OF8603A **Geology and Tonnage of Coals in Preston County**: 1986. 1:100,000 scale. Scan available.

OF8603B **Mined Areas, Sections, and Quality of Coals in Preston County**: 1986. 1:100,000 scale. Scan available.

OF8604 **West Virginia Coal: Guide to Ash-Fusion Characteristics**: 1986, 82 p. Contract report prepared for the Appalachian Regional Commission documenting results of ash-fusion research conducted by the Coal Section of the WVGES. Illustrated with numerous graphs and maps.

OF8605 **Lower Kittanning/No. 5 Block Coal Initial Deformation Ash-Fusion Temperature**: 1986. 1:1,000,000-scale West Virginia map. Scan available.

OF8606 **Pittsburgh Coal Initial Deformation Ash-Fusion Temperature**: 1986. 1:1,000,000-scale West Virginia map. Scan available.

OF8607 **Sewell Coal Initial Deformation Ash-Fusion Temperature**: 1986. 1:1,000,000-scale West Virginia map. Scan available.

OF8608 **The Occurrence of Oil and Gas in Devonian Shales and Equivalents in West Virginia**: J. F. Schwietering, 1980, 39 p. Includes 18 page-size maps.

OF8609 **Land-Use Map of Martinsburg, West Virginia**: 1976. 1:24,000 scale. Classifications shown in Level III (1 acre). Scan available.

OF8701 **Catalog of West Virginia Maps (MAPCAT)**: P. Lessing, approx. 350 p. Subject-indexed. (See publication C-45 for listings of geological maps.) Sixth edition lists maps published up to 1999. Also available in Adobe Acrobat .pdf format.

OF8702 **SLAR Lineament Map of the Valley and Ridge Province, West Virginia**: P. Lessing, 1987. 1:250,000 scale. Scan available.

OF8801 **SEFOP 1987: Field Guide for the First Annual Meeting of the Southeastern Friends of the Pleistocene**: J. S. Kite and R. C. Linton (editors), 1987, 85 p. Numerous illustrations and maps.

OF8802 **Research on the Late Cenozoic of the Potomac Highlands**: **Southeastern Friends of the Pleistocene, Volume 1**: J. S. Kite (editor), 1987, 85 p. Numerous illustrations and maps. Available in .pdf format.

OF8803 **The November 1985 Storm and Flood and Resulting Geomorphic Effects on South Branch Basin of the Potomac River, West Virginia:** M. L. McKoy, 1988, 143 p.

OF8901 **Partial Index to Mined Area Overlays (on file at the West Virginia Geological Survey) as of Feb. 1981:** P. R. Liston, 1981, 35 p. *No longer available.*

OF8902 **Mountain State Coal:** T. E. Repine, 1989, 194 p. Compilation of coal-related articles from **Mountain State Geology**.

OF8903 **Geologic History of the Lower Terrace and Floodplains of the Upper Ohio River Valley:** C. M. Simard, 1989, West Virginia University M.S. thesis, 171 p, 20 f, 5 tables, bibliography. Characterizes these economically important features, models their stratigraphy, and reconstructs their Late Pleistocene geologic history. Study area covered is from the northern tip of West Virginia to below Parkersburg, and includes adjacent parts of Ohio and Pennsylvania. Appendices include sample locations, lab methods, computer programs, and grain-size data.

OF9001 **The Coal Availability Study in West Virginia: Mammoth 7.5-Minute Quadrangle, Kanawha and Clay Counties:** E. I. Loud, B. M. Blake, Jr. and N. Fedorko III, 1989, 130 p. Final report to U.S. Geological Survey.

OF9002 **"Corridor G" (U.S. 119, Kanawha, Lincoln, and Boone Counties) Pennsylvanian Stratigraphy:** A. F. Keiser, B. M. Blake, Jr., and R. L. Martino, 1988, 48 p. Field trip guide for AAPG Eastern Section meeting, Charleston, WV, Field Trip #2, Sept. 13, 1988.

OF9003 **The Coal Availability Study in West Virginia: Sylvester 7.5-Minute Quadrangle, Kanawha and Boone Counties:** B. M. Blake, Jr. and N. Fedorko III, 1988, 63 p. Final report to U.S. Geological Survey.

OF9004 **The Coal Availability Study in West Virginia: Beckley 7.5-Minute Quadrangle, Raleigh County:** E. I. Loud, 1988, 42 p. Final report to U.S. Geological Survey.

OF9005 **The Coal Availability Study in West Virginia: War 7.5-Minute Quadrangle, McDowell County**: E. I. Loud, B. M. Blake, Jr., and N. Fedorko III, 1991, 58 p. Final report to U.S. Geological Survey.

OF9201 **Geology of the Baker, Needmore, and Wolf Gap Quadrangles, Hardy County, WV:** S. L. Dean, B. R. Kulander, and P. Lessing, 1992, 1:24,000 scale. 39" x 46", in 2 parts: colorized map with cross section, text in booklet. Scans available and files for GIS.

OF9301 **Introductory Activities in Coal Geology**: T. E. Repine, Jr. and D. Lane, 1993, 37 p. Two activities covering basic geologic principles of describing, correlating, and mapping surface and subsurface coalbeds lead into an activity demonstrating how coal reserve tonnages are determined.

OF9302 **Earth Science in West Virginia for the Twenty-First Century**: H. M. King, C. M. Simard, and T. E. Repine, Jr. (editors), 1993, 66 p. Compilation of various earth science ideas and activities developed by teachers participating in National Science Foundation-funded "Earth Science in West Virginia for the Twenty-First Century" workshops.

OF9303 **Let's Draw A Coal Swamp!**: H. M. King, 1993, 21 p. Guidebook illustrating how a simplified drawing suitable for overhead projection or chalkboard may be used to explain how coal forms.

OF9304 **Earth Science in West Virginia for the Twenty-First Century: A Sampler of Activities**: H. M. King (editor), 1993, 82 p. Favorite activities of instructors from the National Science Foundation-funded "Earth Science in West Virginia for the Twenty-First Century" workshop program.

OF9305 **Geological Aspects of Coal-Bed Methane Occurrence in the Northern Appalachian Basin**: 1993, 86 p. Highly illustrated study of the subsurface delineation of Allegheny Formation coal beds and associated reservoir-quality sandstones through the use of all publicly available coal-specific and oil and gas records; the mapping of coals and sandstones to show the occurrence and geometry; interpretation of coal-sandstone relationships; and the collection of available data on hydrology, gas production, gas content and composition, and permeability.

OF9401 **Earth Science in West Virginia for the Twenty-First Century: 1992 Participant's Activities**: C. M. Simard (editor), 1994, 79 p. Compilation of earth science activities for elementary, middle, and high school students developed by teachers participating in the National Science Foundation-funded "Earth Science in West Virginia for the Twenty-First Century" 1992 workshop program.

OF9402 **Earth Science in West Virginia for the 21st Century: 1993 Participant's Activities**: C. M. Simard (editor), 1994, 235 p. Similar to OF9401 but consists of teacher-developed activities for the 1993 workshop program.

OF9403 **Earth Science in West Virginia for the 21st Century: Ideas and Activities Presented at the 1994 West Virginia Science Teachers Association Meeting**: T. E. Repine, Jr. (editor), 1994, 66 p. Favorite activities of instructors from the National Science Foundation-funded "Earth Science in West Virginia for the Twenty-First Century" workshop program.

OF9404 **Geology of the Tablers Station Quadrangle, Berkeley County, WV:** S. L. Dean, P. Lessing, and B. R. Kulander, 1994, 1:24,000 scale, 22" x 36", black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9405 **Geology of the Inwood and Stephenson Quadrangles, Berkeley and Jefferson Counties, WV:** S. L. Dean, P. Lessing, and B. R. Kulander, 1994, 1:24,000 scale, 22" x 38", black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9406 **Geology of the White Hall Quadrangle, Berkeley County, WV:** P. Lessing, S. L. Dean, and B. R. Kulander, 1994, 1:24,000 scale, 22" x 38", black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9407 **Geology of the Hanging Rock Quadrangle, Hampshire County, WV:** S. L. Dean, P. Lessing, B. R. Kulander, D. B. Mustafaga, and T. Baehr, 1994, 1:24,000 scale, 20" x 35", black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9408 **Bedrock and Surficial Geology Maps of the Blackwater Falls Quadrangle, Tucker County, WV:** N. Fedorko, III, J. S. Kite, D. Cenderelli, G. S. Springer, and R. E. Behling, 1994, 1:24,000 scale. Contains 5 sheets: bedrock geology, Homewood Sandstone structure contours, surficial geology (2 sheets), and detailed stratigraphic column with unit descriptions. Bedrock geology was revised in 1998 and is included in the 4-quadrangle Geology of Canaan Valley map compilation OF9902A. Surficial map sheets revised and redrafted in 2007. Scans available and files for GIS (bedrock geology files for GIS as part of OF9902A only).

OF9408A **Surficial Geology Maps of the Blackwater Falls Quadrangle, Tucker County, WV:** N. Fedorko, III, J. S. Kite, D. Cenderelli, G. S. Springer, R. E. Behling, E. N. Davis, and S. C. Anderton, 2007, 1:24,000 scale. Surficial geology of OF9408 revised in 2007 and digitized for use in GIS. 3 map sheets: *Landform Units*; *Surficial Materials*; *Origin of the Surficial Geology*. All three 33" x 30" full color layouts include text and unit descriptions. Scans available and files for GIS.

OF9501 **Geology of the Glengary Quadrangle, Berkeley and Morgan Counties, WV:** P. Lessing, S. L. Dean, and B. R. Kulander, 1995, 1:24,000 scale, black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9502 **Geology of the Big Pool Quadrangle, Berkeley and Morgan Counties, WV:** P. Lessing, S. L. Dean, B. R. Kulander, and E. A. Langenderfer, 1995, 1:24,000 scale, black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9503 **Geology of the Hancock Quadrangle, Morgan County, WV:** S. L. Dean, P. Lessing, B. R. Kulander, and D. W. Hawley, 1995, 1:24,000 scale, black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9504 **Geology of the Stotlers Crossroads Quadrangle, Berkeley and Morgan Counties, WV:** B. R. Kulander, P. Lessing, S. L. Dean, and C. S. Kulander, 1995, 1:24,000 scale, black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9505 **Geology of the Cherry Run Quadrangle, Morgan County, WV:** S. L. Dean, P. Lessing, B. R. Kulander, and E. A. Langenderfer, 1995, 1:24,000 scale, black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9506 **Bedrock and Surficial Geology Maps of the Davis Quadrangle, Grant and Tucker Counties, WV:** B. M. Blake, Jr., N. Fedorko, III, and J. S. Kite, 1995, 1:24,000 scale. Currently only available as part of publication OF9902A. Scans available and files for GIS.

OF9507 **Stonewall Jackson Lake Wildlife Management Area:** 1995, 1:24,000 scale. Three laminated 11" x 17" comb-bound color sheets based on 7.5-minute topographic quadrangles show lake and surrounding area including original river channels and 20-foot elevation contours. Scan available. This publication is also available as part of the Recreational Hunting & Fishing Maps Collection (COLL-2).

OF9508 **Sutton Lake:** 1995, 1:24,000 scale. Four laminated 11" x 17" comb-bound color sheets based on 7.5-minute topographic quadrangles show lake and surrounding area including original river channels and 20-foot elevation contours. Similar to OF-9507. Scan available. This publication is also available as part of the Recreational Hunting & Fishing Maps Collection (COLL-2).

OF9509 **Beech Fork Lake Wildlife Management Area:** 1995, 1:24,000 scale. Three laminated 11" x 17" comb-bound color sheets based on 7.5-minute topographic quadrangles show lake and surrounding area including original river channels and 20-foot elevation contours. Similar to OF-9507. Scan available. This publication is also available as part of the Recreational Hunting & Fishing Maps Collection (COLL-2).

OF9510 **Summersville Lake:** 1995, 1:24,000 scale. Four laminated 11" x 17" comb-bound color sheets based on 7.5-minute topographic quadrangles show lake and surrounding area including original river channels and 20-foot elevation contours. Similar to OF-9507. Scan available. This publication is also available as part of the Recreational Hunting & Fishing Maps Collection (COLL-2).

OF9601 **Geology of the Ridge Quadrangle, Hampshire and Morgan Counties, WV:** S. L. Dean, P. Lessing, and B. R. Kulander, 1996, 1:24,000 scale, black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9602 **Geology of the Gore Quadrangle, Hampshire County, WV:** P. Lessing, S. L. Dean, and B. R. Kulander, 1996, 1:24,000 scale, black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9603 **Blackwater Falls State Park and Pendleton Creek Watershed:** 1996, 1:24,000 scale. One laminated 11" x 17" color sheet based on 7.5-minute topographic quadrangles show lake and surrounding area including original river channels and 20-foot elevation contours. Similar to OF-9507. Scan available. This publication is also available as part of the Recreational Hunting & Fishing Maps Collection (COLL-2).

OF9604 **Bedrock Geology of the Mount Storm Lake Quadrangle, Grant and Tucker Counties, WV:** D. L. Matchen and S. J. Murphy, 1996, 1:24,000 scale, 22" x 34", full color map shows geology only. *(See OF9902A)* Files available for GIS.

OF9605 **Regional Stratigraphy and Coal Geology of the Kanawha Formation in Southern West Virginia: Eastern Section, American Association of Petroleum Geologists Energy Minerals Division Field Trip Guide:** B. M. Blake, Jr., W. C. Grady, and C. F. Eble, 1996, 54p.

OF9701 **Geology of the Great Cacapon and Bellegrove Quadrangles, Morgan County, WV:** P. Lessing, S. L. Dean, and B. R. Kulander, 1997, 1:24,000 scale, black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9702 **Geology of the Paw Paw and Artemas Quadrangles, Hampshire and Morgan Counties, WV:** B. R. Kulander, P. Lessing, and S. L. Dean, 1997, 1:24,000 scale, black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9703 **Geology of the Oldtown Quadrangle, Hampshire County, WV**: B. R. Kulander, S. L. Dean, and P. Lessing, 1997, 1:24,000 scale, black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9704 **Preliminary Bedrock Geologic Map of the Palo Alto Quadrangle**: R. R. McDowell, D. L. Matchen, and K. L. Avary, 1997, 1:24,000 scale. *(Superseded by MAP-WV 40.)*

OF9801 **Geology of the Largent Quadrangle, Hampshire and Morgan Counties, WV**: P. Lessing, S. L. Dean, and B. R. Kulander, 1998, 1:24,000 scale, black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9802 **Geology of the Levels Quadrangle, Hampshire County, WV**: S. L. Dean, P. Lessing, and B. R. Kulander, 1998, 1:24,000 scale, black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9803 **Coal Geology, Paleobotany, and Regional Stratigraphy of the Middle Part of the Kanawha Formation, Southern West Virginia: Southeast Section, Geological Society of America Coal Division Field Trip Guide**: B. M. Blake, Jr., R. L. Martino, W. C. Grady, and C. F. Eble, 1998, 140 p. Available in .pdf format.

OF9804 **The Late Devonian (Frasnian-Famennian) Extinction Event in the Catskill Delta of Virginia and West Virginia: Southeast Section, Geological Society of America Coal Division Field Trip Guide:** T. J. Rossbach and J. C. Hall, 1998, 35 p. Available in .pdf format.

OF9805 **Geologic Field Guide to Extensional Structures Along the Allegheny Front in Virginia and West Virginia Near the Giles County Seismic Zone: Southeast Section, Geological Society of America Field Trip Guide**: J. M. Dennison and K. G. Stewart (editors), 1998, 102 p.

OF9806 **Preliminary Bedrock Geologic Map of the Sugar Grove Quadrangle**: R. R. McDowell, D. L. Matchen, K. L. Avary, and T. P. Cook, 1998, 1:24,000 scale, color, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9807 **Preliminary Bedrock Geologic Map of the Doe Hill Quadrangle**: R. R. McDowell, D. L. Matchen, and K. L. Avary, 1998, 1:24,000 scale, color, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9808 **Upper Mississippian Paleosols as Indicators of Allocyclic and Autocyclic Events, Southern West Virginia: Southeast Section, Geological Society of America Coal Division Field Trip Guide:** J. D. Beuthin and D. W. Neal, 1998, 16p.

OF9901 **The Coal Availability Study in West Virginia: Tables of Results for the Crumpler, Man, Rivesville, Glover Gap, and Thornton 7.5-Minute Quadrangles**: E. I. Loud, 1999. Final report to U.S. Geological Survey.

OF9902 **Geology of Canaan Valley**: D. L. Matchen, N. Fedorko, III, and B. M. Blake, Jr., 1999, 1:24,000 scale. (*Superseded by OF9902-A*)

OF9902A **Bedrock Geology of Canaan Valley, West Virginia**: D. L. Matchen, N. Fedorko, III, B. M. Blake, Jr., S. J. Murphy, R. R. McDowell, and P. J. Hunt, 2008, 1:24,000 scale. Fully revised in 2008, 2 full-color sheets, 42" x 60" and 40" x 42", includes revised geologic map, all-new text, cross section and unit descriptions. Map covers Blackbird Knob, Blackwater Falls, Davis, and Mount Storm Lake 7.5-minute quadrangles. Scans available and files for GIS.

OF9903 **Geology of the Capon Bridge Quadrangle, Hampshire County, WV**: P. Lessing, S. L. Dean, and B. R. Kulander, 1999, 1:24,000 scale, black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9904 **Geology of the Rio Quadrangle, Hampshire and Hardy Counties, WV**: S. L. Dean, P. Lessing, and B. R. Kulander, 1999, 1:24,000 scale, black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9905 **Geology of the Augusta Quadrangle, Hamsphire County, WV**: S. L. Dean, P. Lessing, B. R. Kulander, A.C. Kocher, C.S. Kulander, 1999, 1:24,000 scale, black and white, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF9906 **Preliminary Bedrock Geologic Map of the Moatstown Quadrangle**: R. R. McDowell, D. L. Matchen, K. L. Avary, R. Diecchio, D. R. Pierson, and C. S. Wilkes, 1999, 1:24,000 scale, color, in 2 parts: colorized map with cross section, text in booklet. Scans available and files for GIS.

OF0001 **The Coal Availability Study in West Virginia: Tables of Results for the Camden and Valley Point 7.5-Minute Quadrangles**: E. I. Loud, 2000. Final report to the U.S. Geological Survey.

OF0002A **Bedrock Geologic Map of the Brandywine Quadrangle**: R. R. McDowell, K. L. Avary, D. L. Matchen, R. Diecchio, N. Dodge, and B. Hinkle, 2000, 1:24,000 scale, 42" x 32", full color. Shows geology, structure, strike/dip. Map layout (Fully revised in 2009) includes text, legend, and cross section. Scans available and files for GIS.

OF0003 **Bedrock Geologic Map of the Bluefield Quadrangle, West Virginia-Virginia**: J. D. Beuthin, B. M. Blake Jr., and E. Rader, 2000, 1:24,000 scale. Scans available and files for GIS.

OF0004 **Bedrock Geologic Map of the Princeton Quadrangle, West Virginia-Virginia**: B. M. Blake Jr., J. D. Beuthin, and E. Rader, 2000, 1:24,000 scale. Scans available and files for GIS.

OF0005 **Bedrock Geology of the Sector Quadrangle, Hampshire and Hardy Counties, WV**: S. L. Dean B. R. Kulander, G. H. McColloch, J. S. McColloch, C. S. Kulander, and P. Lessing, 2001, 1:24,000 scale, 34" x 44", full color. Shows geology, structure, strike/dip. Map layout includes text, legend, and cross section. Full color 33" x 29" surficial map on separate sheet shows surficial geology on topographic base with text. Scans available and files for GIS.

OF0101 **Preliminary Bedrock Geologic Map of the Snowy Mountain Quadrangle**: R. R. McDowell, K. L. Avary, D. L. Matchen, R. J. Diecchio, H. E. McCoy, and F. A. Rutledge, 2001, 1:24,000 scale, color, in 2 parts: colorized map with cross section, text in booklet. Scans available and files for GIS.

OF0102 **Preliminary Bedrock Geologic Map of the Spruce Knob Quadrangle**: R. R. McDowell, K. L. Avary, D. L. Matchen, R. J. Diecchio, H. E. McCoy, and F. A. Rutledge, 2001, 1:24,000 scale, color, in 2 parts: colorized map with cross section, text in booklet. Scans available and files for GIS.

OF0104 **Bedrock Geologic Map of the Athens Quadrangle, West Virginia:** J. D. Beuthin and B. M. Blake, Jr., 2001, 1:24,000 scale. Scans available and files for GIS.

OF0105 **Bedrock Geologic Map of the Oakvale Quadrangle, West Virginia-Virginia:** B. M. Blake Jr., J. D. Beuthin, and E. Rader, 2001, 1:24,000 scale. WV portion of quadrangle only. Scans available and files for GIS.

OF0201 **Bedrock Geologic Map of the Circleville Quadrangle:** R. R. McDowell, K. L. Avary, D. L. Matchen, R. Diecchio, S. Cole, and A. Gross, 2002, 1:24,000 scale, 42" x 32", full color. Shows geology, structure, strike/dip. Map layout revised in 2015 includes text, legend, and cross section. Scans available and files for GIS.

OF0202 **Bedrock Geologic Map of the Thornwood Quadrangle:** R. R. McDowell, K. L. Avary, D. L. Matchen, R. Diecchio, S. Cole, and A. Gross, 2002, 1:24,000 scale, 42" x 32", full color. Shows geology, structure, strike/dip. Map layout revised in 2010 includes text, legend, and cross section. Scans available and files for GIS.

OF0203 **Bedrock Geology of the Petersburg East Quadrangle, Hardy County, West Virginia:** S. L. Dean, B. R. Kulander, G. H. McColloch, J. S. McColloch, R. S. Sites, and C. S. Kulander, 2002, 1:24,000 scale, 34" x 44", full color. Shows geology, structure, strike/dip. Map layout includes text, legend, and cross section. Surficial map on separate sheet. Scans available and files for GIS.

OF0204 **Bedrock Geologic Map of the Rig Quadrangle:** S. L. Dean, B. R. Kulander, G. H. McColloch, J. S. McColloch, R. S. Sites, 2002, 1:24,000 scale, 42" x 32", full color. Shows geology, structure, strike/dip. Map layout revised in 2006 includes text, legend, and cross section. (Originally mapped in halves, now combined into one map). Surficial map on separate sheet. Scans available and files for GIS.

OF0205 **Bedrock Geologic Map of the Lerona Quadrangle, West Virginia-Virginia:** J. D. Beuthin and B. M. Blake, Jr., 2002, 1:24,000 scale. Scans available and files for GIS.

OF0206 **Bedrock Geologic Map of the Matoaka Quadrangle, West Virginia:** B. M. Blake, Jr. and J. D. Beuthin, 2002, 1:24,000 scale. Scans available and files for GIS.

OF0301 **The Coal Availability Study in West Virginia: Tables of Results for the Mount Storm Lake and Weirton 7.5-Minute Quadrangles:** E. I. Loud, 2003. 14p. Final report to the U.S. Geological Survey.

OF0302 **Bedrock Geologic Map of the Old Fields 7.5' Quadrangle, West Virginia:** S. L. Dean, B. R. Kulander, 2003, 1:24,000 scale, 42" x 32", full color. Shows geology, structure, strike/dip. Map layout revised in 2006 includes text, legend, and cross section. (Originally mapped in halves, now combined into one map). Full color 33" x 29" surficial map on separate sheet, revised in 2013, shows surficial geology on topographic base with text. Scans available and files for GIS.

OF0401 **Burnsville Lake Public Hunting and Fishing Area:** 2004, 1:24,000 scale. One laminated 11" x 17" color sheet based on 7.5-minute topographic quadrangle shows lake and surrounding area including original river channels and 20-foot elevation contours. Similar to OF9507. Scan available. This publication is also available as part of the Recreational Hunting & Fishing Maps Collection (COLL-2).

OF0402 **Geology of the Romney Quadrangle, Hampshire and Mineral Counties, WV:** S. L. Dean, B. R. Kulander, 2005, 1:24,000 scale, 42" x 32", full color. Shows geology, structure, strike/dip. Map layout revised in 2011 includes text, legend, and cross section. (Originally mapped in halves, now combined into one map). Full color 33" x 29" surficial map layout revised in 2011 on separate sheet shows surficial geology on topographic base with text. Scans available and files for GIS.

OF0403 **Bedrock Geology of the Morgantown North Quadrangle, Monongalia County, West Virginia and Greene and Fayette Counties, Pennsylvania:** G. H. McColloch, J. S. McColloch, S. J. Murphy, 2004. 1:24,000 scale, 32" x 42", full color. Shows geology and structure. Map layout includes text, legend, and cross section. Map and layout revised in 2013. Scan available and files for GIS.

OF0404 **Bedrock Geology of the Morgantown South Quadrangle, Monongalia and Preston Counties, West Virginia:** G.H. McColloch, J.S. McColloch, T.P. Cook, 2004, 1:24,000 scale, 32" x 42", full color. Shows geology and structure. Map layout includes text, legend, and cross section. Map and layout revised in 2019. Scan available and files for GIS.

OF0405 **Bedrock Geology of the Lake Lynn Quadrangle, Monongalia and Preston Counties, West Virginia and Fayette County, Pennsylvania:** G. H. McColloch, J. S. McColloch, T. P. Cook, 2004, 1:24,000 scale, 32" x 42", full color. Shows geology and structure. Map layout includes text, legend, and cross section. Map and layout revised in 2019. Scan available and files for GIS.

OF0406 **Bedrock Geologic Map of the Springfield 7.5' Quadrangle, West Virginia** : S. L. Dean, B. R. Kulander, 2006, 1:24,000 scale, 42" x 32", full color. Shows geology, structure, strike/dip. Map layout revised in 2006 includes text, legend, and cross section. (Originally mapped in halves, now combined into one map). Full color 33" x 29" surficial map on separate sheet revised in 2013 shows surficial geology on topographic base with text. Scans available and files for GIS.

OF0407 **Rhythm of the Wrinkles: A Newly Mapped Anticlinorium Within the Antioch, Burlington, Keyser, and Medley Quadrangles of Eastern West Virginia:** J. M. Dennison, 2004, 39-page PDF file with 16 figures, cross sections and map files in .jpg and .tif format. Related 2005 AAPG Field Trip Guide included.

OF0408 **Bedrock Geologic Map of the Fort Seybert 7.5' Quadrangle, West Virginia**: R. R. McDowell, J. Q. Britton, K. L. Avary, D. L. Matchen, R. J. Diecchio, K. E. Hicks, L. C. Walkup, M. S. Burns, and P. J. Waggy, 2007, 1:24,000 scale, 42" x 40", full color. Shows geology, structure, strike/dip. Map layout includes text, legend, and cross sections. Scans available and files for GIS.

OF0501 Publication cancelled.

OF0502 **Bedrock Geology of the Osage Quadrangle Monongalia County, West Virginia and Greene County, Pennsylvania:** G. H. McColloch, J. S. McColloch, 2005, 1:24,000 scale, 33" x 43", full color. Shows geology and structure. Map layout includes text, legend, and cross section. Scan available and files for GIS.

OF0503 **Bedrock Geology of the Rivesville Quadrangle, Monongalia and Marion Counties, West Virginia:** G. H. McColloch, J. S. McColloch, 2005, 1:24,000 scale, 33" x 43", full color. Shows geology and structure. Map layout includes text, legend, and cross section. Scan available and files for GIS.

OF0504 **Geology of the Patterson Creek Quadrangle, Hampshire and Mineral Counties , WV:** S. L. Dean, B. R. Kulander, 2006, 1:24,000 scale, 22" x 28", color, in 3 parts: colorized map with cross section, surficial map, text booklet. Scans available and files for GIS.

OF0505 **Bedrock Geologic Map of the Mozer Quadrangle:** R. R. McDowell, K. L. Avary, J. Q. Britton, D. L. Matchen, P. J. Waggy, L. C. Walkup, and M. S. Burns, 2005, 1:24,000 scale, 42" x 32", full color. Shows geology and structure, strike/dip. Map layout includes text, legend, and cross section. Full color 33" x 30" surficial map on separate sheet shows surficial geology on topographic base with text. Scans available and files for GIS.

OF0601 **Bedrock Geology of the Grant Town Quadrangle, Monongalia and Marion Counties, West Virginia:** G. H. McColloch, J. S. McColloch, 2006, 1:24,000 scale, 33" x 43", full color. Shows geology and structure. Map layout includes text, legend, and cross section. Scan available and files for GIS.

OF0602 **Preliminary Bedrock Geologic Map of the Milam Quadrangle:** R. R. McDowell, K. L. Avary, J. E. Lewis, J. Q. Britton, P. J. Hunt, P. J. Waggy, and M. E. Ganak, 2007, 1:24,000 scale, color, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF0603 **Preliminary Bedrock Geologic Map of the Cow Knob Quadrangle:** R. R. McDowell, K. L. Avary, J. E. Lewis, J. Q. Britton, P. J. Hunt, P. J. Waggy, and M. E. Ganak, 2007, 1:24,000 scale, color, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF0604 **Geology of the Headsville Quadrangle, Hampshire and Mineral Counties, West Virginia:** S. L. Dean, and B. R. Kulander, 2007, 1:24,000 scale, 22" x 28", color, in 4 parts: bedrock map, surficial map, cross section, text booklet. Scans available and files for GIS.

OF0701 **Bedrock Geology of the Wheeling 7.5' Quadrangle, Ohio and Marshall Counties, West Virginia:** G. H. McColloch, J. S. McColloch, 2007, 1:24,000 scale, 33" x 43", full color. Shows geology and structure. Map layout includes text, legend, and cross section. Scan available and files for GIS.

OF0702 **Bedrock Geology of the Tiltonsville 7.5' Quadrangle, Ohio and Brooke Counties, West Virginia:** G. H. McColloch, J. S. McColloch, 2007, 1:24,000 scale, 33" x 43", full color. Shows geology and structure of WV portion only. Map layout includes text, legend, and cross section. Scan available and files for GIS.

OF0703 **Bedrock Geology of the Bethany 7.5' Quadrangle, Ohio and Brooke Counties, West Virginia, and Washington County, Pennsylvania:** G. H. McColloch, J. S. McColloch, 2008, 1:24,000 scale, 33" x 43", full color. Shows geology and structure. Map layout includes text, legend, and cross section. Scan available and files for GIS.

OF0704 **Geology of the Burlington Quadrangle, Hampshire and Mineral Counties, West Virginia:** S. L. Dean, and B. R. Kulander, 2008, 1:24,000 scale, 22" x 28", color, in 4 parts: bedrock map, surficial map, cross section, text booklet. Scans available and files for GIS.

OF0801 **Bedrock Geology of the Valley Grove 7.5' Quadrangle, Ohio and Marshall Counties, West Virginia and Washington County, Pennsylvania:** G. H. McColloch, J. S. McColloch, 2008, 1:24,000 scale, 33" x 43", full color. Shows geology and structure. Map layout includes text, legend, and cross section. Scan available and files for GIS.

OF0802 **Bedrock Geology of the Mannington 7.5 Minute Quadrangle**, **Monongalia and Marion Counties, West Virginia:** G. H. McColloch, J. S. McColloch, 2008, 1:24,000 scale, 33" x 43", full color. Shows geology and structure. Map layout includes text, legend, and cross section. Scan available and files for GIS.

OF0803 **Geology of the Medley Quadrangle, Grant, Hardy and Mineral Counties, West Virginia:** S. L. Dean, B. R. Kulander, and R. S. Sites, 2009, 1:24,000 scale, 22" x 28", color, in 4 parts: bedrock map, surficial map, cross section, text booklet. Scans available and files for GIS.

OF0804 **Preliminary Bedrock Geologic Map of the West Virginia Portion of the Hightown 7.5' Quadrangle:** R. R. McDowell, J. E. Lewis, K. L. Avary, J. Q. Britton, J. E. Hitzig, M. A. Van Dyke, 2009, 1:24,000 scale, greyscale, in 3 parts: map, cross section, text booklet. Scans available and files for GIS.

OF0901 **Bedrock Geology of the Sharp Knob 7.5' Quadrangle, Randolph, Pocahontas and Webster Counties, West Virginia:** G. H. McColloch, J. S. McColloch, P. J. Hunt, M. S. Burns, C. A. Smith, 2009, 1:24,000 scale, 32" x 42", full color. Shows geology and structure. Map layout includes text, legend, and cross section. Map and layout revised in 2017. Scan available and files for GIS.

OF0902 **Bedrock Geologic Map of the West Virginia Portion of the Paddy Knob and Mustoe 7.5' Quadrangles:** R. R. McDowell, P. J. Hunt, J. E. Lewis, K. L. Wilson, K. L. Avary, M. S. Burns, C. A. Smith, 2010, 1:24,000 scale, 48" x 38", full color. Shows geology and structure. Map layout includes text, legend, and cross section. Scan available and files for GIS.

OF0903 **Geology of the Antioch 7.5' Quadrangle, Grant and Mineral Counties, West Virginia:** S. L. Dean, K. C. Kenaley, and R. S. Sites, 2010, 1:24,000 scale, 42" x 36", full color. Shows geology, structure, strike/dip. Map layout revised in 2016 includes text, legend, and cross section. Full color 33" x 29" surficial map layout on separate sheet revised in 2016 shows surficial geology on topographic base with text. Scans available and files for GIS.

OF1001 **Gauley River National Recreation Area Bedrock Geologic Map: Ansted and Summersville Dam 7.5' Quadrangles, West Virginia:** P. J. Hunt, K. L. Wilson, J. S. McColloch, G. H. McColloch, 2010, 1:24,000 scale, 60" x 42", full color. Shows geology and structure. Two-quadrangle map layout includes text, legend, cross sections, and full color stratigraphic column. Scans available and files for GIS.

OF1003 **Geology of the Greenland Gap 7.5' Quadrangle, Grant County, West Virginia:** S. L. Dean, K. C. Kenaley, E. Moser, 2011, 1:24,000 scale, 42" x 36", full color. Shows geology, structure, strike/dip. Map layout includes text, legend, and cross section. Full color 33" x 29" surficial map layout on separate sheet shows surficial geology on topographic base with text. Scans available and files for GIS.

OF1101 **Bedrock Geologic Map of the Bluestone National Scenic River, Flat Top and Pipestem 7.5' Quadrangles, West Virginia:** D. L. Matchen, J. L. Allen, R. C. Peck, D. Mercier, 2011, 1:24,000 scale, 75" x 36", full color. Shows geology and structure. Two-quadrangle map layout includes text, legend, cross section, and full color stratigraphic column. Scans available and files for GIS.

OF1102 **Bedrock Geologic Map of the Clover Lick 7.5' Quadrangle:** R. R. McDowell, P. J. Hunt, P. A. Dinterman, J. E. Lewis, K. L. Wilson, K. L. Avary, M. S. Burns, C. A. Smith, 2011, 1:24,000 scale, 42" x 60", full color map shows geology and structure, strike/dip. Map layout revised in 2014 includes text, legend, and cross sections. Scan available and files for GIS.

OF1201 **Geology of the Maysville 7.5' Quadrangle, Grant County, West Virginia:** S. L. Dean, R. S. Sites, M. Ferguson, B. R. Kulander, M. Baranoski, 2012, 1:24,000 scale, 42" x 36", full color. Shows geology, structure, strike/dip. Map layout includes text, legend, and cross section. Full color 33" x 29" surficial map layout on separate sheet shows surficial geology on topographic base with text. Scans available and files for GIS.

OF1202 **Bedrock Geologic Map of the West Virginia Portion of the Minnehaha Springs and Sunrise 7.5' Quadrangles, WV-VA:** R. R. McDowell, P. J. Hunt, J. E. Hitzig, P. A. Dinterman, G. N. Case, J. A. Sidney, M. S. Burns, 2012, 1:24,000 scale, 50" x 36", full color map shows geology and structure, strike/dip of WV portion only. Map layout includes text, legend, and cross section. Scan available and files for GIS.

OF1203 **Bedrock Geologic Map of the Glady 7.5' Quadrangle, West Virginia:** B. L. Nugent, J. Q. Britton, R. J. Johnson, J. M. Horner, G. W. Daft, Jr., J. W. Perkins, J. S. Chapman, 2012, 1:24,000 scale, 42" x 36", full color map shows geology and structure, strike/dip. Map layout includes text, legend, and cross section. Scan available and files for GIS.

OF1301 **Bedrock Geology of the New River Gorge National River: Beckwith, Fayetteville, Winona, Thurmond, Danese, Prince, Meadow Creek, Meadow Bridge, Hinton, and Talcott 7.5' Quadrangles, West Virginia:** G. H. McColloch, P.J. Hunt; J.S. McColloch; R.L. Peck; B.M. Blake, Jr.; D.L. Matchen; Digital Cartography by S.E. Gooding, 2013, 1:24,000 scale, 36p, 4 sheets 75" x 36", 60" x 36", Full color maps show geology and structure. Map layouts include stratigraphic column, legend, and cross section. Text in booklet. Mapsheet 1: Beckwith, Fayetteville, Winona quadrangles. Mapsheet 2: Thurmond, Danese quadrangles. Mapsheet 3: Prince, Meadow Creek, Meadow Bridge quadrangles. Mapsheet 4: Hinton, and Talcott quadrangles. Scans available and files for GIS.

OF1302 **Bedrock Geologic Map of the Marlinton 7.5' Quadrangle, WV:** R. R. McDowell, J. E. Hitzig, P. J. Hunt, M. S. Burns, C. A. Smith, 2014, 1:24,000 scale, 42" x 40", full color map shows geology and structure, strike/dip. Map layout includes text, legend, and 2 cross sections. 2-p Geochemical Report insert. Scan available and files for GIS.

OF1303 **Bedrock Geologic Map of the Whitmer 7.5' Quadrangle, West Virginia:** B. L. Nugent, R. J. Johnson, J. S. Chapman, J. Q. Britton, J. W. Perkins, G. W. Daft, Jr., J. M. Horner, 2014, 1:24,000 scale, 42" x 36", full color map shows geology and structure, strike/dip. Map layout includes text, legend, and cross section. Scan available and files for GIS.

OF1304 **Bedrock Geologic Map of the Oak Hill 7.5' Quadrangle, West Virginia:** J. S. McColloch, G. H. McColloch, 2014, 1:24,000 scale, 60" x 36", full color map shows geology and structure. Map layout includes text, legend, stratigraphic column, and cross section. Scan available and files for GIS.

OF1305 **A Preliminary Natural Gas Resource Assessment of the Marcellus Shale for West Virginia using Basic Geologic Data and GIS:** S. Pool, 2013, Penn State University M.S. thesis, 68 p, 24 f, 2 tables, bibliography. Quantifies Marcellus Shale natural gas resources for WV using a geologic-based (volumetric) approach. Original gas-in-place was determined using geophysical well log data from >300 wells across the State and core data from >10 wells. Results include: 1) a conservative estimate of total original gas-in-place and 2) ten stratigraphic cross-sections highlighting the Marcellus Shale, maps identifying reservoir location, its geographic extent, thickness, depth, formation temperature, level of organic maturity, and original gas-in-place volumes.

OF1401 **Surficial Geologic Map of the Bluestone National Scenic River Area, West Virginia:** M. K. Yates, J. S. Kite, 2014, 1:12,000 scale, 42" x 36", full color. Shows surficial geology on DEM-derived degree slope map base, with unit descriptions, text, and legend. Scans available and files for GIS.

OF1402 **Bedrock Geologic Map of the Harman 7.5' Quadrangle, West Virginia:** B. L. Nugent, R. J. Johnson, J. S. Chapman, J. Q. Britton, J. W. Perkins, G. W. Daft, Jr., J. E. Lewis; Digital Cartography by S.E. Gooding, 2015, 1:24,000 scale, 42" x 36", full color map shows geology and structure, strike/dip. Map layout includes text, legend, and cross section. Scan available and files for GIS.

OF1403 **Bedrock Geologic Map of the Masontown 7.5' Quadrangle, West Virginia:** J. S. McColloch, G. H. McColloch; Digital Cartography by S.E. Gooding, 2015, 1:24,000 scale, 21 p, 32" x 42", full color map shows geology and structure. Map layout includes legend, stratigraphic column, and cross section. Text in booklet. Scan available and files for GIS.

OF1404 **Bedrock Geologic Map of Lake Sherwood and the WV Portion of Mountain Grove 7.5' Quadrangles, WV - VA:** P. J. Hunt, R. R. McDowell, M. S. Burns, J. M. Sutton; Digital Cartography by S.E. Gooding, 2015, 1:24,000 scale, 28p , 36" x 60", full color map shows geology and structure, strike/dip of WV portion only. Map layout includes stratigraphic column, legend, and cross section. Text in booklet. 2-page Geochemical Report insert. Scan available and files for GIS.

OF1501 **Surficial Geologic Map of the New River Gorge National River, West Virginia:** M. K. Yates, J. S. Kite, 2015, 1:48,000 scale, 42" x 36", full color. Shows surficial geology on LiDAR and DEM-derived degree slope map base, with unit descriptions, text, and legend. Scans available and files for GIS.

OF1502 **Bedrock Geologic Map of the Bowden 7.5' Quadrangle, West Virginia:** J.S. Chapman, J.W. Perkins, R.J. Johnson, B.L. Nugent, J.Q. Britton, G.W. Daft, Jr.; Digital Cartography by S.E. Gooding, 2016, 1:24,000 scale, 42" x 36", full color map shows geology and structure, strike/dip. Map layout includes text, legend, and cross section. Scan available and files for GIS.

OF1503 **Bedrock Geologic Map of the Alvon 7.5' Quadrangle, West Virginia:** P. J. Hunt, R. R. McDowell, G. J. McClure, M. S. Burns; Digital Cartography by S.E. Gooding, 2016, 1:24,000 scale, (*Superseded by OF-1503A*)

OF1503A **Bedrock Geologic Map of the Alvon and Rucker Gap 7.5' Quadrangles, Greenbrier County, West Virginia:** P. J. Hunt, R. R. McDowell, S. R. Brown, S. J. Hostetler, G. J. McClure, M. S. Burns; Digital Cartography by S.E. Gooding, 2022, 1:24,000 scale, 36p, 60" x 42", full color map shows geology and structure, strike/dip of WV portion only. Map layout includes stratigraphic column, legend, and cross sections. Text in booklet. 2-page Geochemical Report insert. Scan available and files for GIS.

OF1504 **Bedrock Geologic Map of the Valley Point, Cuzzart and Sang Run (WV Portion) 7.5' Quadrangles, West Virginia:** G. H. McColloch, J. S. McColloch, S. E. Gooding; Digital Cartography by S. E. Gooding, 2016, 1:24,000 scale, 27 p, 65" x 42", full color map shows geology and structure. Map layout includes stratigraphic column, legend, and cross section. Text in booklet. Scan available and files for GIS.

OF1601 **Surficial Geologic Map of the Gauley River National Recreation Area, West Virginia:** J. S. Kite, 2016, 1:12,000 scale, 42" x 72", full color. Shows surficial geology on LiDAR and DEM-derived degree slope map base, with unit descriptions, text, and legend. Scans available and files for GIS.

OF1602 **Bedrock Geologic Map of the Parsons and Southern Part of Saint George 7.5' Quadrangles, West Virginia:** J.S. Chapman, J.W. Perkins, R.J. Johnson, J.Q. Britton, B.L. Nugent, G.W. Daft, Jr.; Digital Cartography by S.E. Gooding, 2017, 1:24,000 scale, 42" x 45", full color map shows geology and structure, strike/dip. Map layout includes text, legend, and cross section. Scan available and files for GIS.

OF1603 **Bedrock Geologic Map of the Kingwood, Terra Alta and Oakland (WV Portion) 7.5' Quadrangles, West Virginia:** G. H. McColloch, J. S. McColloch, S. E. Gooding; Digital Cartography by S. E. Gooding, 2017, 1:24,000 scale, 32 p, 65" x 42", full color map shows geology and structure. Map layout includes stratigraphic column, legend, and cross section. Text in booklet. Scan available and files for GIS.

OF1701 **SEFOP 2016: Southeastern Friends of the Pleistocene Field Trip Guidebook, Blackwater Falls State Park and Vicinity, WV, 21-23 October 2016:** M. Shaney, J. S. Kite, M. Purtill, M. Reed, K. Konsoer, C. Schaney, 2016, 41 p. Peat Wetlands, Periglacial Features, and Giant Rockslides; Late Quaternary Landscape Evolution of the Blackwater and Cheat River Basins near the Eastern Continental Divide. Numerous illustrations and maps, field trip stops. Bibliography.

OF1702 **Bedrock Geologic Map of the Montrose 7.5' Quadrangle, West Virginia:** G. H. McColloch, J. S. McColloch, S. E. Gooding; Digital Cartography by S. E. Gooding, 2018, 1:24,000 scale, 20 p, 36" x 42", full color map shows geology and structure. Map layout includes stratigraphic column, legend, and cross section. Text in booklet. Scan available and files for GIS.

OF1703 **Bedrock Geologic Map of the of the Lead Mine 7.5' Quadrangle, West Virginia:** J.S. Chapman, J.W. Perkins, J.Q. Britton, R.J. Johnson; Digital Cartography by S.E. Gooding, 2018, 1:24,000 scale, 52" x 38", full color map shows geology and structure, strike/dip. Map layout includes text, legend, cross section and stratigraphic column. Scan available and files for GIS.

OF1704 **Bedrock Geologic Map of the Mozark Mountain 7.5' Quadrangle, West Virginia:** J.W. Perkins, J.S. Chapman, R.J. Johnson, J.Q. Britton, B.L. Nugent, G.W. Daft, Jr.; Digital Cartography by S.E. Gooding, 2018, 1:24,000 scale, 52" x 36", full color map shows geology and structure, strike/dip. Map layout includes text, legend, cross section and stratigraphic column. Scan available and files for GIS.

OF1705 **Bedrock Geologic Map of the White Sulphur Springs 7.5' Quadrangle, West Virginia:** P.J. Hunt, R.R. McDowell, M.S. Burns; Digital Cartography by S.E. Gooding, 2018, 1:24,000 scale, (*Superseded by OF-1705A*)

OF1705A **Bedrock Geologic Map of the White Sulphur Springs and Jerrys Run 7.5' Quadrangles, Greenbrier County, West Virginia:** P.J. Hunt, R.R. McDowell, S. J. Hostetler, S. R. Brown, M.S. Burns; Digital Cartography by S.E. Gooding, 2022, 1:24,000 scale, 12p, 60" x 42", full color map shows geology and structure, strike/dip. Map layout includes legend, 2 cross sections and stratigraphic column. 2-page Geochemical Report insert. Text in booklet. Scan available and files for GIS.

OF1801 **Bedrock Geologic Map of the Hillsboro 7.5' Quadrangle, West Virginia:** J.W. Perkins, J.K. Tudek, J.S. Chapman, G.R. Dasher; Digital Cartography by S.E. Gooding, 2019, 1:24,000 scale, 56" x 42", full color map shows geology and structure, strike/dip. Map layout includes text, legend, cross section and stratigraphic column. 2-page Geochemical Report insert. Scan available and files for GIS.

OF1802 **Bedrock Geologic Map of the Edray 7.5' Quadrangle, West Virginia:** P.J. Hunt, M.S. Burns, J.K. Tudek, J.W. Perkins, S.R. Brown, P.A. Dinterman, R.R. McDowell; Digital Cartography by S.E. Gooding, 2019, 1:24,000 scale, 56" x 42", full color map shows geology and structure, strike/dip. Map layout includes text, legend, cross section and stratigraphic column. 2-page Geochemical Report insert. Scan available and files for GIS.

OF1901 **Bedrock Geologic Map of the Woodrow 7.5' Quadrangle, Pocahontas County, West Virginia:** J.K. Tudek, J.W. Perkins, S.J. Hostetler, P.J. Hunt; Digital Cartography by S.E. Gooding, 2020, 1:24,000 scale, 52" x 42", full color map shows geology and structure, strike/dip. Map layout includes text, legend, cross section and stratigraphic column. Scan available and files for GIS.

OF1902 **Bedrock Geologic Map of the Lobelia 7.5' Quadrangle, Pocahontas, Greenbrier and Webster Counties, West Virginia:** J.W. Perkins, J.K. Tudek, G.R. Dasher; Digital Cartography by S.E. Gooding, 2020, 1:24,000 scale, 54" x 42", full color map shows geology and structure, strike/dip. Map layout includes text, legend, cross section and stratigraphic column. Scan available and files for GIS.

OF1903 **Bedrock Geologic Map of the Denmar 7.5' Quadrangle, Pocahontas and Greenbrier Counties, West Virginia:** P.J. Hunt, M.S. Burns, S.R. Brown, R.R. McDowell, P.A. Dinterman; Digital Cartography by S.E. Gooding, 2020, 1:24,000 scale, 56" x 42", full color map shows geology and structure, strike/dip. Map layout includes text, legend, cross section and stratigraphic column. 4-page Geochemical Report insert. Scan available and files for GIS.

OF2001 **Bedrock Geologic Map of the Droop 7.5' Quadrangle, Pocahontas and Greenbrier Counties, West Virginia:** J.W. Perkins, J.K. Tudek, D.L. Spurgeon, S.E. El-Ashkar, S.J. Hostetler, S.R. Brown, R.T. Toth, L.A. Woodward, C. Lindsay; Digital Cartography by S.E. Gooding, 2021, 1:24,000 scale, 9 p, 42" x 42", full color map shows geology and structure, strike/dip. Map layout includes legend, cross sections and stratigraphic column. Text in booklet. Files for GIS available.

OF2002 **Bedrock Geologic Map of the Trout 7.5' Quadrangle, Greenbrier County, West Virginia:** J.K. Tudek, S.J. Hostetler, E.C. Rhenberg, D.L. Spurgeon; Digital Cartography by S.E. Gooding, 2021, 1:24,000 scale, 12 p, 42" x 42", full color map shows geology and structure, strike/dip. Map layout includes legend, cross section and stratigraphic column. Text in booklet. Files for GIS available.

OF2003 **Bedrock Geologic Map of the Anthony 7.5' Quadrangle, Greenbrier County, West Virginia:** S.R. Brown, G.D.M. Andrews, J.W. Perkins, S.E. Gooding; Digital Cartography by S.E. Gooding, 2021, 1:24,000 scale, 12 p, 42" x 42", full color map shows geology and structure, strike/dip. Map layout includes legend, cross section and stratigraphic column. Text in booklet. Files for GIS available.

OF2101 **Bedrock Geologic Map of the Asbury 7.5' Quadrangle, Greenbrier County, West Virginia:** D.L. Spurgeon, J.W. Perkins, J.K. Tudek, S.E. El-Ashkar, R.T. Toth; Digital Cartography by S.E. Gooding, 2022, 1:24,000 scale, 8 p, 42" x 42", full color map shows geology and structure, strike/dip. Map layout includes legend, cross sections and stratigraphic column. Text in booklet. Files for GIS available.

OF2102 **Bedrock Geologic Map of the Cornstalk 7.5' Quadrangle, Greenbrier County, West Virginia:** S.E. El-Ashkar, J.W. Perkins, J.K. Tudek, P.A. Dinterman, P.J. Hunt, D.L. Spurgeon; Digital Cartography by S.E. Gooding, 2022, 1:24,000 scale, 13 p, 42" x 42", full color map shows geology and structure, strike/dip. Map layout includes legend, cross sections and stratigraphic column. Text in booklet. Files for GIS available.

OF2103 **Bedrock Geologic Map of the Lewisburg 7.5' Quadrangle, Greenbrier County, West Virginia:** J.K. Tudek, E.C. Rhenberg, D.L. Spurgeon, S.E. El-Ashkar, P.A. Dinterman, J.W. Perkins; Digital Cartography by S.E. Gooding, 2022, 1:24,000 scale, 14 p, 42" x 42", full color map shows geology and structure, strike/dip. Map layout includes legend, cross section and stratigraphic column. Text in booklet. Files for GIS available.

OF2104 **Bedrock Geologic Map of the Greenbrier County Portion of the Ronceverte 7.5' Quadrangle, Greenbrier County, West Virginia:** P.A. Dinterman, P.J. Hunt, J.K. Tudek, D.H. Doctor, S.E. El-Ashkar; Digital Cartography by S.E. Gooding, 2022, 1:24,000 scale, 15 p, 42" x 36", full color map shows geology and structure, strike/dip. Map layout includes legend, cross section and stratigraphic column. Text in booklet. Files for GIS available.

OF2105 **Bedrock Geologic Map of the Williamsburg 7.5' Quadrangle, Greenbrier County, West Virginia:** J.W. Perkins, J.K. Tudek, S.E. El-Ashkar, D.L. Spurgeon, R.T. Toth, L.A. Woodward, C.F. Lindsay; Digital Cartography by S.E. Gooding, 2022, 1:24,000 scale, 9 p, 42" x 42", full color map shows geology and structure, strike/dip. Map layout includes legend, cross sections and stratigraphic column. Text in booklet. Files for GIS available.

OF2201 **Bedrock Geologic Map of the Greenbrier and Summers County Areas of the Alderson and Fort Spring 7.5' Quadrangles, West Virginia:** D.L. Spurgeon, J.W. Perkins, S.E. El-Ashkar; Digital Cartography by S.E. Gooding, 2023, 1:24,000 scale, 10 p, 42" x 60", full color map shows geology and structure, strike/dip. Map layout includes legend, cross sections and stratigraphic column. Text in booklet. Files for GIS available.

OF2202 **Bedrock Geologic Map of the Dawson 7.5' Quadrangle, Greenbrier and Summers Counties, West Virginia:** S.E. El-Ashkar, D.L. Spurgeon, J.W. Perkins, P.J. Hunt, H.E. Sphar, C. Davidson, J.K. Tudek, P.A. Dinterman; Digital Cartography by S.E. Gooding, 2023, 1:24,000 scale, 16 p, 42" x 42", full color map shows geology and structure, strike/dip. Map layout includes legend, cross sections and stratigraphic column. Text in booklet. Files for GIS available.

OF2203 **Bedrock Geologic Map of the Summers and Mercer County Areas of the Forest Hill, Greenville, Peterstown, and Narrows 7.5' Quadrangles, West Virginia:** J.W. Perkins, S.E. El-Ashkar, D.L. Spurgeon, P.A. Dinterman, H.E. Sphar, R.E. Carte, Jr.; Digital Cartography by S.E. Gooding, 2023, 1:24,000 scale, 12 p, 50" x 42", full color map shows geology and structure, strike/dip. Map layout includes legend, cross sections and stratigraphic column. Text in booklet. Files for GIS available.

REPORTS OF ARCHEOLOGICAL INVESTIGATIONS

RAI-A **Introduction to West Virginia Archeology**: E. V. McMichael, 2nd edition, 1968, 68 p, 50 f, 7 text maps. West Virginia's prehistory, with descriptions of cultures and groups. Illustrations depict archeological sites and typical artifacts.

RAI-B **Archeological Survey of Nicholas County, West Virginia**: E. V. McMichael, 1965, 100 p, 39 f, 3 text maps. Survey of archeological sites with artifact lists and discussion of cultures.

RAI-1 **Excavation of the Murad Mound, Kanawha County, West Virginia, and an Analysis of Kanawha Valley Mounds**: E. V. McMichael and O. L. Mairs, 1969, 41 p, 30 f. Excavation of an Early Woodland mound and its relation to other mounds of Kanawha Valley.

RAI-2 **Archeological Survey of the Rowlesburg Reservoir**: R. E. Jensen, 1970, 31 p, 12 f. Reconstructs a major portion of human activity in this area back to about 6000 B.C.

RAI-3 **Second Preliminary Report: The St. Albans Site (46Ka27), Kanawha County, West Virginia**: B. J. Broyles, 1971, 104 p, 55 f. Excavation, zones, features, artifacts, and significance of the site. Five appendices describe other important aspects, including climate and recent geologic history.

RAI-4 **Biological and Archeological Analysis of Bones from a 17th Century Indian Village (46Pu31), Putnam County, West Virginia**: J. E. Guilday, 1971, 64 p, 13 f, 14 tables. Faunal remains are compared with material from other Late Prehistoric sites, giving insight into the food habits of the aboriginal hunter-farmers who lived at the Buffalo Site in the 17th century.

RAI-5 **The Buffalo Site—a Late 17th Century Indian Village Site (46Pu31) in Putnam County, West Virginia**: L. H. Hanson, Jr., 1975, 117 p, 72 f, 5 tables. Excavations, structures uncovered, burials, and artifacts used by the Fort Ancient people during the mid-to-late 17th century.

RAI-6 **A Late Archaic Component at the Buffalo Site, Putnam County, West Virginia**: B. J. Broyles, 1976, 33 p, 20 f, 2 tables. Features uncovered during the excavations, and artifacts left by the Late Archaic people who lived in the area almost 4,000 years ago.

RAI-7 **Exploration of an Early Adena Mound at Willow Island, WV**: E. T. Hemmings, 1978, 50 p, 20 f. Chapters cover excavations, mound structure, radiocarbon dating, contemporary and intrusive burials and features, and artifacts of special interest.

RAI-8 **Bibliography of West Virginia Archeology**: R. P. S. Davis, Jr., 1978, 182 p. Annotated listing in two parts (published sources, unpublished sources) with indexes by county, cultural period, and subject.

(Note: No further numbers are planned in this series, as our agency is no longer involved in archeological activities.)

RIVER BASIN BULLETINS

Interpretive reports prepared by the U. S. Geological Survey and published cooperatively by the West Virginia Geological and Economic Survey. Each is highly illustrated, with many charts, tables, and maps. See also the companion series, BDR, Basic Data Reports, and series X-WVDNR, Hydrologic Ground Water Atlases published by the WV-DEP Division of Water and Waste Management. *All three companion series are now conveniently packaged together by River Basin in the **Collections** section of this catalog.* (See ***index map*** on back cover of Catalog for locations of basins, related publications and Collection numbers.)

RBB-1 **Ground-Water Hydrology of the Monongahela River Basin in West Virginia**: P. E. Ward and B. M. Wilmoth, 1968, 54 p, 22 f, 6 tables. Guide to ground-water potential and characteristics. (See BDR-1, X-WVDNR-7 and COLL-9)

RBB-2 **Water Resources of the Little Kanawha River Basin, West Virginia**: G. L. Bain and E. A. Friel, 1972, 170 p, 71 f, 20 tables. Evaluation of ground water, surface water, and water quality. (See BDR-2, MAP-WV10 and COLL-8)

RBB-3 **Water Resources of the Potomac River Basin, West Virginia**: W. A. Hobba, Jr., E. A. Friel, and J. L. Chisholm, 1972, 110 p, 48 f, 30 tables, and three 1:250,000 map inserts. Evaluation of ground water, surface water, and water quality. Map inserts 2 and 3 show data-collection sites. Map insert 1, a self-contained summary of ground-water occurrence and quality, is a full-color 31" x 45" hydrologic/geologic map with insets showing relief, a cross section, quality, and availability. (See BDR-3, MAP-33 (Map insert 1 only), and COLL-12) Scans of map plates available.

RBB-4 **Water Resources of the Upper New River (Greenbrier) Basin, West Virginia**: W. E. Clark, J. L. Chisholm, and P. M. Frye, 1976, 90 p, 38 f, 14 tables, and three 1:250,000 map inserts. Covers surface and ground water, and water quality. Maps show geology, structure, and sampling sites for surface and ground water. (See BDR-4, X-WVDNR-9 and COLL-6)

RBB-5 **Water Resources of the Coal River Basin, West Virginia**: Publication Cancelled. (See BDR-5, X-WVDNR-1 and COLL-3)

RBB-6 **Water Resources of the Elk River Basin, West Virginia**: M. V. Mathes and S. M. Ward, 1990, 37 p, 17 f, 11 tables. Covers surface and ground water, and water quality. In "STOP" format. (See BDR-6, RBB-6P, X-WVDNR-2 and COLL-4)

RBB-6P **Improving Stream-Water Quality in the Elk River Basin**: R. A. Landers and R. A. Smosna, October 1974, 45 p, 22 f. Comprehensive analysis of stream-water quality problems, causes, and 19 recommendations to improve the quality. In "STOP" format. (See BDR-6, RBB-6, X-WVDNR-2 and COLL-4)

RBB-7 **Water Resources of the Guyandotte River Basin, West Virginia:** J. S. Bader, J. L. Chisholm, R. L. Bragg, and S. C. Downs, 1989, 130 p, 72 f, 13 tables. Covers surface and ground water, and water quality. In "STOP" format. (See BDR-7, X-WVDNR-4 and COLL-7)

RBB-8 **Water Resources of the Tug Fork of Big Sandy River Basin, West Virginia, Kentucky, and Virginia, and Twelvepole Creek Basin, West Virginia:** J. S. Bader, M. V. Mathes, and G. S. Runner, 1989, 113 p, 46 f, 25 tables. Covers surface and ground water, and water quality. In "STOP" format. (See X-WVDNR-8 and COLL-13)

REPRINTS

Reprints of papers by Survey staff, available while supply lasts. Limited quantities of originals are available for certain reprints, listed as "*Limited availability"* below. We regretfully cannot copy reprints once we run out due to copyright restrictions. Copies may still be available from the individual journals or through libraries.

Archeology Reprints

RE-AR-1 **Environment and Culture in West Virginia**: E. V. McMichael, from Proc. WV Acad. Sci. 33, 1961, 5 p. *Limited availability.*

RE-AR-2 **Prehistoric Man in the Kanawha and Ohio Valleys**: B. J. Broyles, from Proc. WV Acad. Sci. 40, 8 p. *Limited availability.*

RE-AR-3 **Core Drilling in an Archeological Site**: J. C. Price and others, from American Antiquity 30(2), October 1964, 4 p. *Limited availability.*

Coal Reprints

RE-CL-1 **Elements in Coal Ash and Their Industrial Significance**: A. J. W. Headlee and R. G. Hunter, from Industrial and Engineering Chemistry 45, 1953, 4 p. *Limited availability.*

RE-CL-2 **Germanium and Other Elements in Coal and the Possibility of Their Recovery**: A. J. W. Headlee, from Transactions of the AIME—Mining Engineering, 1953, 4 p. *Limited availability.*

RE-CL-3 **Petrographic Study of Sized Coal**: I. S. Latimer, Jr., from Proc. WV Acad. Sci. 33, 1961, 6 p. *Limited availability.*

RE-CL-4 **Remaining Reserves of Pittsburgh Coal in West Virginia**: I. S. Latimer, Jr., from Proc. WV Acad. Sci. 34, 1962, 4 p. *Limited availability.*

RE-CL-5 **X-Ray Radiography of Coal**: R. Vinopal, from Jour. Sed. Petr. 49(2), June 1979, 4 p. *No longer available from WVGES due to copyright.*

RE-CL-6 **The Mississippian and Pennsylvanian (Carboniferous) Systems in the United States—West Virginia and Maryland**: T. Arkle, Jr. and others, 1979. Historical review and summary of area; stratigraphic, structural, and economic geology of Mississippian, Pennsylvanian, and Lower Permian rocks in West Virginia and adjacent parts of Maryland. USGS Professional Paper 1110-D, 38 p, 12 f. *No longer available from WVGES due to copyright.*

RE-CL-7 **Relationships Among Macerals, Minerals, Miospores and Paleoecology in a Column of Redstone Coal (Upper Pennsylvanian) from North-Central West Virginia (USA):** W. C. Grady and C. F. Eble, from International Journal of Coal Geology 15, 1990, 26 p. *No longer available from WVGES due to copyright.*

RE-CL-8 **Brown Coal Maceral Distributions in a Modern Domed Tropical Indonesian Peat and a Comparison with Maceral Distributions in Middle Pennsylvanian-Age Appalachian Bituminous Coal Beds:** W. C. Grady, C. F. Eble, and S. G. Neuzil, GSA Special Paper 286, 1993, 20 p. *No longer available from WVGES due to copyright.*

Environmental Geology Reprints

RE-EV-1 **Environmental Impact Statements—Worthwhile or Worthless?** P. Lessing and R. A. Smosna, from Geology, May 1975, 2 p. *Limited availability.*

RE-EV-2 **Landslide Risk Assessment**: P. Lessing, C. P. Messina, and R. F. Fonner, from Environmental Geology, Vol. 5, No. 2, 1983, 6 p. *Limited availability.*

Geotechnology Reprints

RE-GT-1 **The Technique of X-Ray Radiography**: **Some Applications to Geology:** D. G. Patchen, Proc. WV Acad. Sci. 40, 1968, 8 p. *No longer available from WVGES due to copyright.*

RE-GT-3 **Two-Step Process for Extraction of Microfossils from Indurated Organic Shales**: S. L. Duffield and S. M. Warshauer, from Jour. Paleo., May 1979, 2 p. *No longer available from WVGES due to copyright.*

Oil and Gas Reprints

RE-OG-1 **Natural Coal Gas in West Virginia**: P. H. Price and A. J. W. Headlee, from AAPG Bull. 27(4), April 1943, 10 p. *Limited availability.*

RE-OG-2 **Stratigraphy of Deep Well in Harrison County, West Virginia**: J. H. C. Martens, from AAPG Bull. 27(11), November 1943, 10 p. *No longer available from WVGES due to copyright.*

RE-OG-3 **Interactions Between Interstitial and Injected Water—A Review**: A. J. W. Headlee, 25th Annual Meeting of the American Petroleum Institute, Chicago, 1945, 6 p. *Limited availability.*

RE-OG-4 **Densities of Natural Brines**: H. A. Hoskins, from Proc. WV Acad. Sci. 19, 1947, 4 p. *Limited availability.*

RE-OG-5 **The Composition and Properties of Natural Gas in the Appalachian Fields**: A. J. W. Headlee, from Appal. Geol. Soc. Bull. 1, 1949, 10 p. *No longer available from WVGES due to copyright.*

RE-OG-6 **Interpretations of Salt Water Analyses**: H. A. Hoskins, From Appal. Geol. Soc. Bull. 1, 1949, 12 p. *Limited availability.*

RE-OG-7 **Present Results and Future Prospects of Oil and Gas from Deep Drilling and New Areas in West Virginia**: P. H. Price and R. C. Tucker, from Appal. Geol. Soc. Bull. 1, 1949, 12 p. *Limited availability.*

RE-OG-9 **Cambrian, Ordovician, Silurian, and Devonian Systems of West Virginia, by Herbert P. Woodward**: Review by A. Bevan, from AAPG Bull. 36(11), November 1952, 5 p. *No longer available from WVGES due to copyright.*

RE-OG-10 **Sampling and Analysis of Natural Gas and Use in Gas Measurement Problems**: A. J. W. Headlee, from Proceedings of the Twelfth Annual Gas Measurement Short Course, 1952, 24 p. *No longer available from WVGES due to copyright.*

RE-OG-11 **Suggestions for the Reduction of Drilling Costs**: O. L. Haught, from Producers Monthly, Vol. 17, No. 2, 1952, 1 p. *No longer available from WVGES due to copyright.*

RE-OG-12 **Lithologic Factors Affecting Prospects for Early Paleozoic Oil and Gas in West Virginia**: O. L. Haught, from AAPG Bull. 37(3), March 1953, 10 p. *Limited availability.*

RE-OG-13 **Natural Chemicals from Natural Gas**: A. J. W. Headlee, from Producers Monthly, 20(2), December 1955, 4 p. *Limited availability.*

RE-OG-15 **Kittlelick Thrust—A New Fault in Mineral and Grant Counties, West Virginia**: J. M. Dennison and others, from Proc. WV Acad. Sci. 38, 1966, 10 p. *Limited availability.*

RE-OG-16 **A Feasibility Study for Paleocurrent Analysis in Lutaceous Monongahela-Dunkard Strata of the Appalachian Basin**: M. L. Jones and J. A. Clendening, from Proc. WV Acad. Sci. 40, 1968, 8 p. *Limited availability.*

RE-OG-17 **"Big Injun" Oil and Gas Production in North-Central West Virginia**: E. E. Ruley, from AAPG Bull. 54(5), May 1970, 27 p. *Limited availability.*

RE-OG-18 **Petroleum Related to Middle and Upper Devonian Deltaic Facies in Central Appalachians**: J. M. Dennison, AAPG Bull. 55(8), August 1971, 15 p. *No longer available from WVGES due to copyright.*

RE-OG-19 **The Evolution of a Carbonate Shelf, Silurian McKenzie Formation, WV**: **A Cluster Analytic Approach:** R. A. Smosna and S. M. Warshauer, from Jour. Sed. Petr. 48(1), March 1978, 16 p. *Limited availability.*

RE-OG-21 **Oil and Gas Developments in Maryland, Ohio, Pennsylvania, Virginia, and West Virginia in 1978**: D. G. Patchen and others, from AAPG Bull. 63(8), August 1979, 36 p. *Limited availability.*

RE-OG-23 **Niagaran Bioherms and Interbioherm Deposits of Western West Virginia**: R. Smosna and D. Patchen, from AAPG Bull. 64(5), May 1980, 9 p. *Limited availability.*

RE-OG-24 **Oil and Gas Developments in Maryland, Ohio, Pennsylvania, Virginia, and West Virginia in 1979**: D. G. Patchen and others, from AAPG Bull. 64(9), September 1980, 34 p. *Limited availability.*

RE-OG-25 **Devonian of the Appalachian Basin, United States**: W. A. Oliver, Jr. and others, from International Symposium on the Devonian System, Alberta Society of Petroleum Geologists, v. 1, undated, Calgary, Alberta, 40 p. *No longer available from WVGES due to copyright.*

RE-OG-26 **Interpretation of Drilling Records in Appalachian Region**: H. C. Martens, from Producers Monthly, undated, 3 p. *Limited availability.*

RE-OG-27 **Upper Devonian (Frasnian) Conodonts and Ostracodes from the Subsurface of Western West Virginia**: S. L. Duffield and S. M. Warshauer, from Journal of Paleontology, 55(1), January 1981. *Limited availability.*

RE-OG-28 **Oil and Gas Developments in Maryland, Ohio, Pennsylvania, Virginia, and West Virginia in 1981**: D. G. Patchen and others, reprinted from November 1982 AAPG Bulletin, 45 p. *Limited availability.*

Paleobotany Reprints

RE-PB-2 **A Lower Kittanning Flora from Northern West Virginia**: W. H. Gillespie and J. A. Clendening, from Proc. WV Acad. Sci. 34, 1962, 9 p. *No longer available from WVGES due to copyright.*

RE-PB-3 **A Patelliform Gastropod, *Palaelophacmaea criola*: A New Genus and Species from the Lower Ordovician of Central Pennsylvania**: A. C. Donaldson, from Proc. WV Acad. Sci., 1962, 8 p. *Limited availability.*

RE-PB-4 **Small Spores Applicable to Stratigraphic Correlation in the Dunkard Basin of West Virginia and Pennsylvania**: J. A. Clendening, from Proc. WV Acad. Sci. 34, 1962, 11 p. *Limited availability.*

RE-PB-5 **Characteristic Small Spores of the Pittsburgh Coal in West Virginia and Pennsylvania**: J. A. Clendening and W. H. Gillespie, from Proc. of WV Acad. Sci. 35, 1963, 10 p. *Limited availability.*

RE-PB-6 **An Interesting Marl Deposit in Hardy County, West Virginia**: W. H. Gillespie and J. A. Clendening, from Proc. WV Acad. Sci. 36, 1964, 5 p. *Limited availability.*

RE-PB-8 **Characteristic Small Spores of the Redstone Coal in West Virginia**: J. A. Clendening, from Proc. of WV Acad. Sci. 37, 1965, 7 p. *Limited availability.*

RE-PB-9 **Schopfipollenites in the Washington Formation, Dunkard Group, Upper Pennsylvanian of West Virginia and Pennsylvania**: J. A. Clendening, from Proc. WV Acad. Sci. 38, 1966, 8 p. *Limited availability.*

RE-PB-10 **West Virginia Plant Fossils, I. *Dolerotheca* and *Daubreeia***: W. H. Gillespie and J. A. Clendening, from Proc. WV Acad. Sci. 38, 1966, 10 p. *Limited availability.*

RE-PB-11 **Three New Species of *Fabasporites* Sullivan 1964 from the Appalachian Basin**: J. A. Clendening, from Proc. WV Acad. Sci. 39, 1967, 5 p. *Limited availability.*

RE-PB-12 **A Flora from Proglacial Lake Monongahela**: W. H. Gillespie and J. A. Clendening, from Castanea 33, 1968, 33 p. and folded map. *No longer available from WVGES due to copyright.*

RE-PB-13 **Roof Shale Flora of the Type Cedar Grove Coal, Kanawha Formation, Middle Pennsylvanian**: S. McClelland and W. Norton, from Proc. WV Acad. Sci. 51(2), 1979, 6 p. *Limited availability.*

RE-PB-14 *Gillespieisporties* **gen. nov. and** *Laevigatosporites plicatus* **sp. nov. from Dunkard Strata of the Appalachian Basin**: J. A. Clendening, from Proc. WV Acad. Sci. 40, 8 p. *Limited availability.*

Water Reprints

RE-W-1 **Recharge to Water-Bearing Formations Along the Ohio Valley**: R. M. Jeffords, from Jour. Amer. Water Works Assoc. 37(2) 1945,12 p. *No longer available from WVGES due to copyright.*

RE-W-2 **Hydraulic Properties and History of Development of Lower Pennsylvanian Aquifers**: B. M. Wilmoth, from Proc. WV Acad. Sci., 1967, 8 p. *Limited availability.*

RE-W-3 **Characteristics of the Underground Floodplain**: W. K. Jones, from National Speleological Society Bulletin 33(3), 1971, 10 p. *Limited availability.*

REPORTS OF INVESTIGATION

RI-1 **Analysis of West Virginia Brines**: H. A. Hoskins, 1947, 22 p. Supplements V-8 with analyses made since 1937. (See V-8)

RI-2 **Ground-Water Conditions at Charleston, W. Va**: R. M. Jeffords and R. L. Nace, 1947, 6 p. Reprinted from Jour. Am. Water Works Assoc. v. 38, no. 11, pt. 1, 1946. *No longer available from WVGES due to copyright.*

RI-3 **Composition and Properties of Petroleum in West Virginia**: A. J. W. Headlee, 1947, 24 p. Results and analyses of petroleum samples from many parts of the State. (See RI-3A)

RI-3A **Composition and Properties of Petroleum in West Virginia**: A. J. W. Headlee and others, 1948, 15 p. Additional analyses supplementing RI-3. (See RI-3)

RI-4 **Dolomitic Zone at Base of Greenbrier Limestone (Big Lime)**: J. H. C. Martens and H. A. Hoskins, 1948, 37 p, 4 f. Subsurface geology, mineralogic and chemical composition, and origin of this often gas-productive dolomitic zone.

RI-5 **Spectrographic Chemical Analysis**: R. G. Hunter, 1948, 22 p, 7 f, 2 tables. Use of the Geological Survey's Littrow spectrograph in making spectrochemical analyses.

RI-6 **Possibility of Shaft Mining of Greenbrier Limestone**: J. H. C. Martens, 1948, 18 p, 2 f, 3 tables. Factors related to mining of this limestone in areas remote from the outcrop.

RI-7 **The Geomorphic History of the New-Kanawha River System**: H. M. Fridley, 1950, 12 p, 4 pl, 4 f, 1 table. Geomorphic development of Teays Valley, Ohio River, and the New-Kanawha system.

RI-8 **Germanium in Coals of West Virginia**: A. J. W. Headlee and R. G. Hunter, 1951, 13 p, 3 f, 6 tables. Results of spectrochemical analyses of coal ash from 35 coal columns. Coals studied range from No. 3 Pocahontas to Redstone.

RI-9 **Composition of Ash from West Virginia Petroleum**: A. J. W. Headlee and R. G. Hunter, 1951, 10 p, 2 tables. Spectrochemical analyses for over 100 petroleum ash samples.

RI-10 **The Geology of the Pittsburgh Coal**: A. T. Cross, 1954, 80 p, 55 f. Reprinted from Second Conference on Origin and Constitution of Coal, Crystal Cliffs, Nova Scotia, June 1952. Stratigraphy, petrology, origin, and composition of the Pittsburgh coal, including geologic interpretations of mining problems. *Limited availability.*

RI-11 **Regional Setting and Mineralogic Features of the Howell Zinc Prospect, Jefferson County, W. Va**: J. C. Ludlum, 1955, 8 p, 4 f. Reprinted from Econ. Geol. v. 50, no. 8, Dec. 1955. Geologic and petrographic study of the richest hydrothermal base metal deposit recorded in the State. *Limited availability.*

RI-12 **The Igneous Rocks of Pendleton County, West Virginia**: T. E. Garner, Jr., 1956, 31 p, 9 f, 2 tables. Origin, geology, and interpretations of the State's only exposed igneous rocks. (See OF53 and RI-34)

RI-13 **Relation of Geology to Drainage, Floods, and Landslides in the Petersburg Area, West Virginia**: V. T. Stringfield and R. C. Smith, 1956, 19 p, 3 pl, 2 f, 1 table. Damaging effects of heavy rainfall in 1949 in Grant and Hardy Counties, in relation to the geology of the area.

RI-14 **Wood County Deep Well**: R. E. Bayles, W. H. Henry, C. R. Fettke, L. D. Harris, R. R. Flowers, and O. L. Haught, 1956, 62 p, 3 pl, 2 f. Sample and core description and stratigraphic summary of the first well in West Virginia drilled to Precambrian.

RI-15 **A Subsurface Study of the Greenbrier Limestone in West Virginia**: R. R. Flowers, 1956, 17 p, 2 pl, 3 f. Lithology and thickness of Greenbrier Limestone, with consideration of adjacent strata. Reprinted from Producers Monthly. *Limited availability.*

RI-16 **Sandstones of West Virginia**: T. Arkle, Jr. and R. G. Hunter, 1957, 58 p, 23 f, 9 tables. Silica materials of West Virginia in two parts, "Building with West Virginia's Sandstones" and "High-Silica Sandstones of West Virginia," describing the physical, mineralogical, and chemical characteristics of various sandstone units.

RI-17 **High-Alumina Clays of West Virginia**: W. A. Tallon and R. G. Hunter, 1959, 49 p, 8 pl, 5 f. Location by county, and spectrographic analyses of high-alumina clays.

RI-18 **A Symposium on the Sandhill Deep Well, Wood County, West Virginia**: H. P. Woodward (editor), 1959, 182 p, 4 pl, 23 f, 9 tables. Eleven papers on geology, stratigraphy, structure, and core petrography of the Wood County deep well.

RI-19 **Photogeologic Techniques Applied to the Mapping of Rock Joints**: V. N. D. Hough, 1960, 21 p, 5 pl, 2 f, 5 maps. Geologic study, using aerial photographs, of a portion of Chestnut Ridge Anticline in northern West Virginia. Structural, stratigraphic, drainage, and fracture-density relationships are discussed.

RI-20 **Oriskany Gas Development and Structural Map on Onondaga-Huntersville**: O. L. Haught and W. R. McCord, 1960, 28 p, 3 f, 2 tables. Part l: "The Development of Oriskany Gas Production in West Virginia." Part 2: "Explanation of Onondaga-Huntersville Structural Map." 1:250,000 map shows structure contours on Onondaga-Huntersville and locations of deep wells in West Virginia. (See MRS-5A)

RI-21 **Radioactivity Survey in Eastern West Virginia**: F. J. Mitchell, 1961, 12 p, 3 f, 4 tables. Survey for radioactive materials using a car-borne Geiger-Muller counter.

RI-22 **Cone-in-Cone in Coal**: P. H. Price and B. M. Shaub, 1963, 9 p, 5 f. Study of a coal specimen exhibiting rare cone-in-cone structure.

RI-23 **Stratigraphy and Petrography of the Williamsport Sandstone, West Virginia**: D. G. Patchen, 1974, 16 p, 15 f. Summarizes a combined surface-subsurface stratigraphic/petrographic study and postulates depositional models for sand dispersion. Reprinted from Proceedings of the West Virginia Academy of Science 45:3, 1973. *No longer available from WVGES due to copyright.*

RI-24 **Determination of Calcite/Dolomite Ratios by Infrared Spectroscopy in the 750 to 200 cm^{-1} Region and Comparison with X-Ray Diffraction Analysis**: J. J. Renton and J. Kovach, 1974, 16 p, 8 f, 3 tables. Describes technique for determining calcite/dolomite ratios.

RI-25 **Stratigraphy and Petrology of Middle Silurian McKenzie Formation in West Virginia**: D. G. Patchen and R. A. Smosna, 1976, 22 p, 22 f. Combines the results of a detailed petrographic study of a McKenzie core with a regional stratigraphic study to postulate lateral and vertical distribution of McKenzie environments of deposition. Also relates the occurrence of natural gas in Wayne County to the rocks deposited in two of the higher-energy environments. Reprinted from AAPG Bulletin 59:12, December 1975. *No longer available from WVGES due to copyright.*

RI-26-1 **Lower Paleozoic Stratigraphy, Tectonics, Paleogeography, and Oil/Gas Possibilities in the Central Appalachians (West Virginia and Adjacent States)**: **Part 1. Stratigraphic Maps:** P. Chen, 1977, 141 p, 62 f. Detailed multicolor maps depict strata thickness and lithofacies from Precambrian surface through the Upper Silurian. Nomenclature correlations and control locations are shown. Book size 11" x 15". (See RI-26-2)

RI-26-2 **Lower Paleozoic Stratigraphy, Tectonics, Paleogeography, and Oil/Gas Possibilities in the Central Appalachians (West Virginia and Adjacent States): Part 2. Measured Sections**: P. Chen, 1981, 300 p. Compilation of thicknesses and descriptions of over 200 outcrops in the eastern overthrust belt. Book size 11" x 15". (See RI-26-1)

RI-27 **Gravity, Magnetics, and Structure: Allegheny Plateau/Western Valley and Ridge in West Virginia and Adjacent States**: B. R. Kulander and S. L. Dean, 1978, 91 p, 3 maps. Methods; tectonic implications; appendix with gravity-station data. Includes three 1:250,000 maps: (1) Terrain-Corrected Bouguer Gravity (over county base); (2) Residual Bouguer Gravity (over geology base); and (3) Total-Intensity Magnetic (over county base).

RI-28 **Relationships Between Depositional Environments, Tonoloway Limestone, and Distribution of Evaporites in the Salina Formation, West Virginia**: R. A. Smosna, D. G. Patchen, S. M. Warshauer, and W. J. Perry, Jr., 1978, 20 p. Reprint from Studies in Geology No. 5: American Association of Petroleum Geologists, 1977. *No longer available from WVGES due to copyright.*

RI-29 **Silurian Evolution of the Central Appalachian Basin**: R. A. Smosna and D. G. Patchen, 1978, 21 p. Reprinted from American Association of Petroleum Geologists Bulletin, Vol. 62, No. 11, Nov. 1978. *No longer available from WVGES due to copyright.*

RI-30 **A Very Early Devonian Patch Reef and Its Ecological Setting**: R. A. Smosna and S. M. Warshauer, 1979, Jour. Paleo. reprint, 10 p. *No longer available from WVGES due to copyright.*

RI-31 **A Scheme for Multivariate Analysis in Carbonate Petrology with an Example from the Silurian Tonoloway Limestone**: R. A. Smosna and S. M. Warshauer, 1979, Jour. Sed. Petr. reprint, 15 p. *Limited availability.*

RI-32 **The Wills Mountain Anticline: A Study in Complex Folding and Faulting in Eastern West Virginia**: W. J. Perry, Jr., 1978, 34 p, 18 f. Detailed structure study in a scenic area of petroleum interest. Includes geologic map.

RI-33 **Effects of Underground Mining and Mine Collapse on the Hydrology of Selected Basins in West Virginia**: W. A. Hobba, Jr., 1982, 84 p, in highly illustrated "STOP" format. Examines the effects of mining and collapse on hydrology in two contrasting situations: where the mined coal is *above* major streams (Roaring Creek/Grassy Run drainage in Norton area, Randolph County) and *below* major streams (Buffalo Creek basin in Farmington area, Marion County, and Indian Creek Basin, Monongalia County). Includes glossary.

RI-34 **Stratigraphic Geochemical Database for Portions of Pendleton County, West Virginia, and Adjacent Virginia Counties:** R. R. McDowell (compiler), 2008, revised 6/2022 with periodic updates. Results of geochemical analyses of bedrock, soil, and stream sediment samples collected during geologic mapping in the eastern portion of West Virginia, and in some adjacent areas of Virginia. Data is in "raw" form and separated by stratigraphic unit (for bedrock) or sample type (for soil or stream sediment). Presented for individual samples are sample number, collection date, lithologic description, stratigraphic unit, UTM location, and analytical values for 49 elements including precious metals, ferrous and nonferrous metals, trace elements and rare earths, and radionuclides. Stratigraphic units covered range from Pre-Cambrian through Pennsylvanian and also Jurassic and Eocene igneous rocks found in the area. Supplement added in 2018, now with 63 elements analyzed (including all the Rare Earth Elements), using different analytical techniques. 15 new major element analyses added in 2022, including mineral oxides. Available in Microsoft® Excel spreadsheet format and ESRI ArcGIS®-format shapefiles that can be used in a GIS (includes spreadsheet).

RI-35 **Lithostratigraphy of Middle and Upper Devonian Organic-Rich Shales in West Virginia:** R. M. Boswell, S. E. Pool, 2018, 47 p, 31 f. RI-35 and the accompanying products are the result of a peer-reviewed study addressing the distribution and thickness of formally and informally recognized Middle and Upper Devonian rock strata in West Virginia focusing on the Marcellus and other organic-rich shales. Nearly 400 wells were studied, primarily using gamma-ray geophysical well logs, to develop a statewide formalization of the lithostratigraphic nomenclature. Results from the study may prove useful given continued interest in Appalachian basin hydrocarbon resource development and storage opportunities. The full publication package is being freely distributed on the WVGES web site and consists of the report, an interactive map application, a series of stratigraphic cross-sections, and a downloadable Excel spreadsheet. http://www.wvgs.wvnet.edu/www/MUDvnnSh/MUDvnnSh.htm

RI-36 **Estimates of Natural Gas Resources and Recovery Efficiency Associated with Marcellus Development in West Virginia:** S. E. Pool, R. M. Boswell, J. T. Saucer, B. J. Carney, 2021, 58 p, 36 f, 24 maps, 2 tables. RI-36 is a peer-reviewed study in which more than 270 digital well log suites were evaluated to estimate original gas-in-place (OGIP) for the Devonian Marcellus organic-rich shale play in West Virginia. Observed and predicted Marcellus production are taken into account and in-place estimates are calibrated accordingly. The study also examines the Geneseo-Burket and introduces the idea of a Marcellus Reservoir Unit and a separate Geneseo-Burket Reservoir Unit. Marcellus OGIP volumes are higher than those in other recent studies but are reasonable given production and calculated recovery efficiencies. The full publication is being freely distributed on the WVGES web site:
http://www.wvgs.wvnet.edu/www/MUDvnnSh/MUDvnnSh.htm

STATE PARK BULLETINS

SP-1 **The Geology of Hawks Nest State Park, West Virginia**: J. C. Ludlum, 1951, 25 p, 9 pl, 4 f. Geology and geography of the famous New River Gorge at Hawks Nest, Fayette County.

SP-2 **The Geology of Cacapon State Park, West Virginia**: J. C. Ludlum, 1952, 33 p, 18 pl, 4 f. Geology, geography, and natural resources of Cacapon State Park, Morgan County. Replaced by SP-7

SP-3 **The Geology of Lost River State Park, West Virginia**: J. C. Ludlum, 1952, 33 p, 21 pl, 3 f. Geology and natural resources of Lost River State Park, Hardy County. Replaced by SP-7

SP-4 **The Geology of Watoga and Droop Mountain Battlefield State Parks, West Virginia**: J. C. Ludlum, 1954, 40 p, 17 pl, 3 f. Popular account of geology, history, and resources of two State parks in Pocahontas County.

SP-5 **Geology of the Coopers Rock State Forest and Mont Chateau State Park**: C. E. Hare, 1957, 26 p, 14 pl, 3 f. Geology and resources of Coopers Rock State Forest in Monongalia and Preston Counties, and Mont Chateau State Park in Monongalia County.

SP-6 **Blackwater Falls State Park and Canaan Valley State Park—Resources, Geology, and Recreation**: J. C. Ludlum and T. Arkle, Jr., revised 1971, 60 p, 18 pl, 4 f, 4 maps. Historical summary of settlement and economic developments; geology; scenic trips. (See FTG-3) Replaced by SP-6A

SP-6A **The Geology of Canaan Valley Resort and Blackwater Falls State Parks**: K. C. Ashton and L. Stocks, fully revised 2008, 5½" x 8½" booklet, 32 p, 2 maps on one double-sided 11" x 17" folded insert. Highly illustrated, user-friendly overview of West Virginia geology specific to the parks. (Also see FTG-3)

SP-7 **The Geology of Cacapon Resort and Lost River State Parks**: K. C. Ashton, fully revised 2008, 5½" x 8½" booklet, 36 p, 2 maps on one double-sided 11" x 17" folded insert. Highly illustrated, user-friendly overview of West Virginia geology specific to the parks.

USGS
OPEN-FILE LOW-SULFUR COAL REPORTS

Reports outlining the availability of low sulfur coal in select counties throughout West Virginia. Scans available.

USGS-1 **Availability of Low-Sulfur Coal in Clay County, WV**: D. G. Hadley, 1972, 16 p, 4 f, 1 table.

USGS-2 **Availability of Low-Sulfur Coal in Fayette County, WV**: D. G. Hadley, 1972, 20 p, 3 f, 1 table.

USGS-3 **Availability of Low-Sulfur Coal in Greenbrier County, WV**: K. J. Englund and J. F. Windolph, Jr., 1972, 21 p, 8 f, 1 table.

USGS-4 **Availability of Low-Sulfur Coal in Kanawha County, WV**: D. G. Hadley, 1972, 18 p, 3 f, 1 table.

USGS-5 **Availability of Low-Sulfur Coal in McDowell County, WV**: K. J. Englund, 1972, 19 p, 3 f.

USGS-6 **Availability of Low-Sulfur Coal in Mercer County, WV**: K. J. Englund, 1972, 14 p, 3 f.

USGS-7 **Availability of Low-Sulfur Coal in Mingo County, WV**: F. D. Spencer, 1972, 24 p, 3 f, 1 table.

USGS-8 **Availability of Low-Sulfur Coal in Nicholas County, WV**: D. G. Hadley, 1972, 16 p, 4 f, 2 tables.

USGS-9 **Availability of Low-Sulfur Coal in Raleigh County, WV**: K. J. Englund, 1972, 23 p, 3 f, 1 table.

USGS-10 **Availability of Low-Sulfur Coal in Wayne County, WV**: F. D. Spencer, 1972, 19 p, 3 f, 1 table.

USGS-11 **Availability of Low-Sulfur Coal in Wyoming County, WV**: K. J. Englund, 1972, 22 p, 3 f.

VOLUMES

Hardcover books with a large scope, such as a report outlining all the aspects of a geological system or of a large regional area. All Volumes are now available digitally archived with text in Adobe Acrobat .pdf format; maps and plates as .tif files.

V-1 **Petroleum and Natural Gas; Levels; True Meridians**: I. C. White, 1899, 392 p.

V-1A **Petroleum and Natural Gas, Precise Levels**: I. C. White, 1904, 625 p. History of oil and gas development of West Virginia; anticlinal theory of oil and gas occurrence.

V-2 **Coal**: I. C. White, 1903, 725 p. Describes coal-bearing rocks and coal beds of West Virginia.

V-2A **Supplementary Coal Report**: I. C. White, 1908, 720 p. Includes map showing locations of bore holes, with records.

V-3 **Clays, Limestones, and Cements:** G. P. Grimsley, 1906, 565 p, 44 pl, 54 f. Clay and limestone resources of West Virginia.

V-4 **Iron Ores, Salt, and Sandstone**: G. P Grimsley, 1909, 603 p, 24 pl, 16 f. Geology, distribution, and production of iron ore, salt, and sandstone in West Virginia.

V-5 **Forestry and Wood Industries**: A. B. Brooks, 1911, 481 p, 59 pl. Detailed report on West Virginia forests, accompanied by forest map.

V-5A **The Living and Fossil Flora of West Virginia**: Part I, "The Living Flora," by C. F. Millspaugh; Part II, "The Fossil Flora," by D. White, 1913, 491 p. No illustrations.

V-6 **Springs of West Virginia:** P. H. Price, J. B. McCue, and H. A. Hoskins, 1936, 146 p, 37 pl, 1 map. Geology and history of the springs, with chemical and physical data on the waters.

V-6A **Springs of West Virginia**: J. S. McColloch, 1986, 493 p, 49 maps, 11 f, 5 tables, 62 photos. Fiftieth anniversary revision of V-6, published cooperatively with the American Fisheries Society and The Conservation Fund, Inc. Compilation of all available data on the 1,193 documented springs in 49 of West Virginia's 55 counties. Includes 1:250,000-scale county location maps; spring listings by county; brief history; discussion of geologic/geographic occurrence of springs; tables of chemical/physical data; glossary; index.

V-7 **Deep Well Records**: R. C. Tucker, 1936, 560 p, 1 pl, 2 maps. Records of deep wells in West Virginia, and a few in adjoining counties in Virginia, Kentucky, Ohio, and Pennsylvania. Records of productiveness of oil and gas sands in each county, with suggestions regarding deep drilling. Two isopach maps of Devonian shales.

V-8 **Salt Brines of West Virginia**: P.H. Price, C.E. Hare, J.B. McCue, and H.A. Hoskins, 1937, 203p, 23 pl, 18f. History of the salt brine industry in West Virginia, geology of the brine-bearing regions, and chemical analyses of 189 brines. (See RI-1)

V-9 **Physical and Chemical Properties of Natural Gas in West Virginia**: P. H. Price and A. J. W. Headlee, 1937, 223 p, 12 pl, 40 f, 9 tables. History of natural gas development in West Virginia; analyses of 337 well samples and of the gas serving 43 cities and towns. Interpretations of the analyses include probable limits of oil and gas areas.

V-10 **Geology and Natural Resources of West Virginia**: P. H. Price, R. C. Tucker, and O. L. Haught, 1937, 462 p, 231 pl, 61 f. Discusses the geology of West Virginia.

V-11 **Petrography and Correlation of Deep-Well Sections in West Virginia and Adjacent States**: J. H. C. Martens, 1939, 255 p, 22 pl, 8 f. Describes approximate relative abundance of minerals occurring in certain formations and formation thicknesses in more important wells. Lower Devonian strata are shown in generalized and detailed columnar sections.

V-12 **Limestones of West Virginia**: J. B. McCue, J. B. Lucke, and H. P. Woodward, 1939, 560 p, 37 pl, 15 f, 1 map. Geologic and geographic distribution, extraction, and preparation of limestone; tables of chemical analyses. Localities for limestone plants are suggested. Map shows limestone areas and sample localities.

V-13 **Characteristics of Minable Coals of West Virginia**: A. J. W. Headlee and J. P. Nolting, 1940, 272 p, 18 pl, 112 f. Part I: Describes minable coal seams and probable minable extent of each seam. Part II: Statistical study and correlation of West Virginia coal analyses. Appendix contains coal analyses and estimated original tonnages. Maps show isocarb lines and location of commercial coal mines. (See V-13A)

V-13A **Characteristics of Minable Coals of West Virginia**: A. J. W. Headlee, R. G. Hunter, and others, 1955, 166 p, 68 f. Part III: "Some Physical Properties of the Coals." Part IV: "Sulfur in the Coals." Part V: "The Inorganic Elements in the Coals". Part VI: "The Structure of Bituminous Coals." Part VII: "Changes in the Concentration of the Inorganic Elements During Coal Utilization." (See V-13)

V-14 **Silurian System of West Virginia**: H. P. Woodward, 1941, 326 p, 33 pl, 12 f. Discusses Silurian rocks of West Virginia, including stratigraphy, correlation, fossils, and economic resources.

V-15 **Devonian System of West Virginia**: H. P. Woodward, 1943, 655 p, 65 pl, 17 f. Describes each Devonian formation, its general character, thickness, distribution, correlation and nomenclature, and comments on each exposure having special geologic or economic interest.

V-16 **Summarized Records of Deep Wells**: R. C. Tucker, 1944, 938 p, 2 maps. Maps show locations of oil and gas wells drilled to Corniferous (Onondaga) Lime and deeper horizons.

V-17 **Well-Sample Records**: J. H. C. Martens, 1945, 888 p. Sample records for about 360 oil and gas wells in West Virginia, Kentucky, Maryland, New York, Ohio, Pennsylvania, and Virginia.

V-18 **Clays of West Virginia**: J. B. McCue and others, 1948, 234 p, 13 pl, 44 f. Analyses and tests on 335 samples from 47 counties of West Virginia. (See MRS-3, OF792)

V-19 **Caverns of West Virginia**: W. E. Davies, 1949, 330 p, 57 pl, 82 f. The location, origin, geology, history, and biology of about 400 caverns are discussed. (See V-19A)

V-19A **Caverns of West Virginia**: W. E. Davies, 1958, 402 p, 57 pl, 95 f. Revised edition of Volume 19. Includes 1965 supplement containing data compiled since 1958, with information on both known and newly discovered caves, bound under one cover. (See V-19S)

V-19S 1965 supplement only, 72 p, 13 f.

V-20 **Cambrian System of West Virginia**: H. P. Woodward, 1949, 317 p, 52 pl, 10 f. Detailed description of each Cambrian formation, including general character, thickness, distribution, correlation, and nomenclature; discusses each exposure of Cambrian rocks having special geologic or economic interest.

V-21 **Ordovician System of West Virginia**: H. P. Woodward, 1951, 627 p, 38 pl, 43 f. Describes each of the subdivisions of the Ordovician, their character, thickness, distribution, and correlation; discusses principal geologic characteristics and economic minerals.

V-22 **Geology and Economic Resources of the Ohio River Valley in West Virginia**: 1955-56, 409 p, 2 pl, 199 f, 19 tables, 2 maps. Complete set includes Parts I, II, III, and maps as available, below:

V-22a Part I only: "Geology," A. T. Cross and M. P. Schemel, 150 p, 93 f. Summarizes geologic principles and processes as related to features of the Ohio River Valley.

V-22b Part II only: "Economic Resources," A. T. Cross, M. P. Schemel, and O. L. Haught, 135 p, 68 f.

V-22c Part III only: "Ground-Water Resources," C. W. Carlston and G. D. Graeff, Jr., 131 p, 2 pl, 38 f, 19 tables. Detailed report on occurrence, source, movement, methods of recovery, chemical character, and potential uses of ground water.

V-22d Map I only: Geologic map, 1:250,000.

V-22e Map II only, sheet 1: Northern area.

V-22f Map II only, sheet 2: Central area.

V-22g Map II only, sheet 3: Southern area.

(All three sheets of map II are 1:125,000, each showing distribution of bedrock and alluvium, oil and gas fields, coal seam boundaries, rock salt and other mineral deposits, principal industrial plants and building sites, highways, railroads, etc., with columnar sections and geologic cross sections.)

V-23 **West Virginia Geological and Economic Survey—Its Accomplishments and Outlook**: edited by I. S. Latimer, Jr., J. C. Ludlum, J. C. Welden, and R. C. Tucker, 1963, 207 p, 65 f, 7 tables. Centennial Volume of the WV Geological Survey. Contains 14 chapters by 13 authors. WV Geological Survey's contributions to understanding of geology and natural resources of West Virginia.

V-24 **West Virginia Gazetteer of Physical and Cultural Place Names**: 1986, 809 p, 6 f, 3 maps. Alphabetically lists place names in West Virginia, and for each name shows what the place name is (town, church, stream, etc.), county, tax district, USGS 7.5-minute quadrangle map, Universal Transverse Mercator coordinates, and elevation in feet and meters. Place names are from USGS 7.5-minute maps, 15-minute maps, the Survey's County Geologic Report maps, and other sources. Maps show locations of major place names, counties, tax districts, quadrangles, and relief. Includes MAP-WV21 (index to quadrangles), MAP-WV22 (UTM), and MAP-WV23 (shaded relief), all 1:500,000 scale. Types of place names listed: airports, archeological sites, bends, bottoms, bridges, caves, cemeteries, communities, country clubs, dams, fords, gaps, hollows, institutions, islands, knobs, lakes, monuments, mountains, natural features, overlooks, parks, places of worship, powerplants, railroads, recreation areas, ridges, roads, schools, springs, streams, towers, trails, triangulation stations, tunnels, valleys, waterfalls, and wetlands.

V-25 **The Atlas of Major Appalachian Gas Plays:** J.B. Roen and B.J. Walker, editors, 1996, 201 p, 2 pl, 579 f, 77 tables. Describes the 30 most significant natural gas plays in the Appalachian Basin grouped by geologic control: fluvial-deltaic sandstone, nearshore sandstone, shallow shelf sandstone, turbidite sandstone, transgressive sandstone, shallow marine shelf carbonate, reef and carbonate, unconformity-related, fractured anticlines and combination traps, and fractured reservoir plays. Each play description consists of narratives on play location, production history, stratigraphy, structure, reservoir, key fields, resources and reserves, and future trends. Illustrations for each play include a regional map showing the play outline and producing wells, key fields map, correlation chart, type logs, stratigraphic and structural cross sections, isopach and pay thickness maps, initial potential and cumulative production maps, decline curves, and depositional models. Each play has a 50-element data table for fields and pools mentioned in the play description covering basic reservoir data, reservoir parameters, fluid and gas properties, and volumetric data. Includes comprehensive bibliography. Available scanned . *See also the interactive maps created from figures digitized from this publication featured in the* ***Appalachian Basin Tight Gas Plays IMS:*** http://www.wvgs.wvnet.edu/ATG/ The interactive map features scanned illustrations and digitized maps and cross sections for only 6 of the 30 plays outlined in this Volume. The 6 plays are: Berea, Venango, Bradford, Elk, Tuscarora and Clinton/Medina.

V-25A **Database of Appalachian Gas Fields and Reservoirs:** 1996. Developed concurrently with **The Atlas of Major Appalachian Gas Plays**, this database contains geologic, engineering, and production data on more than 4,000 natural gas fields and reservoirs in the Appalachian Basin. Available in both ASCII and Microsoft® Excel file formats.

V-25B The above-described atlas (V-25) and the database (V-25A) sold together.

ADDITIONAL PUBLICATIONS

Additional publications relating to West Virginia's geology are available from the following organizations. These items are stocked by the West Virginia Geological and Economic Survey and are available in both hard-copy and digital format (.tif files).

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF WATER AND WASTE MANAGEMENT

Hydrologic ground-water atlases of nine West Virginia river basins are available from the West Virginia Department of Environmental Protection, Division of Water and Waste Management (formerly known as West Virginia Department of Natural Resources (WVDNR), Division of Water Resources). The full-color atlases are in map form, each approximately 40" x 56". They show the geology as it relates to the hydrologic conditions that exist in each river basin and include a narrative, tables, and inset maps describing water-bearing properties of rocks, ground-water yield, and ground-water quality. Availability and occurrence of ground water are mapped, along with natural and man-induced variations in water quality.

Atlases for these river basins are available:

X-WVDNR-1 Coal	X-WVDNR-4 Guyandotte	X-WVDNR-7 Monongahela
X-WVDNR-2 Elk	X-WVDNR-5 Kanawha	X-WVDNR-8 Tug Fork/Twelvepole Creek
X-WVDNR-3 Gauley	X-WVDNR-6 Ohio	X-WVDNR-9 Upper New

See also the companion series, BDR, Basic Data Reports, and series RBB, River Basin Bulletins. *All three companion series are now conveniently packaged together by River Basin in the* ***Collections*** *section of this catalog.* See ***index map*** on back cover of Catalog for locations of basins, related publications and Collection numbers.

I.C. WHITE MEMORIAL SYMPOSIA FUND, LTD.

The I.C. White Memorial Symposia Fund, Ltd. is a private, nonprofit West Virginia corporation dedicated solely to scientific and educational endeavors promoting West Virginia's geologic, energy, water, and mineral resources and related environmental concerns through appropriate outreach efforts of the West Virginia Geological and Economic Survey. The Fund is named in memory of Israel Charles White (1848-1927), world renowned geologist, first State Geologist of West Virginia, and first Director of the Survey. The I.C. White Memorial Symposia Fund, Ltd. is funded wholly from non-state appropriated, private revenue sources generated through its activities.

The following items are available:

X-ICW-1 **Program and Abstracts: The Twentieth Annual Appalachian Petroleum Geology Symposium, "Horizontal and Inclined Drilling in the Appalachian Basin"**: 1989, 95 p. 31 abstracts cover Appalachian drilling by state; Oriskany Sandstone; Mississippian carbonates; Cambro-Ordovician stratigraphy; thermal history; and horizontal or inclined drilling to produce more gas from fractured shales, tight sands, or old oil reservoirs; more. Includes 1988 West Virginia drilling statistics.

X-ICW-2 **Program and Abstracts: The Twenty-First Annual Appalachian Petroleum Geology Symposium, "Appalachian Reservoir Heterogeneity":** 1990, 87 p. 33 abstracts cover Appalachian drilling by state; reservoir engineering aspects of heterogeneous formations; geophysical applications for definition of reservoir heterogeneity; central Appalachian foreland; reservoir characterization of Devonian shale; researching reservoir heterogeneity with geostatistical models; displacement transfer; and the Cambridge monocline; more. Includes 1989 West Virginia drilling statistics.

X-ICW-3 **Program and Abstracts: The Twenty-Second Annual Appalachian Petroleum Geology Symposium, "Exploration Strategies in the Appalachian Basin"**: 1991, 106 p. 40 abstracts cover Appalachian drilling by state; principal plays of the basin; structural and paleotopographic mapping; deposition environments and recovery efficiency; geochemistry in the search for reserves; seismic modeling; multi-strata coal-bed methane; future exploration techniques; more. Includes 1990 West Virginia drilling statistics.

X-ICW-4 **Program and Abstracts: The Twenty-Third Annual Appalachian Petroleum Geology Symposium, "Mississippian Plays in the Appalachian Basin—Shallow Targets for Tough Times"**: 1992, 92 p. 36 abstracts cover Appalachian drilling by state; Mississippian stratigraphy; reservoir sedimentology and petrophysical heterogeneity in the Big Injun sandstone; stratigraphy and depositional environments of the Mississippian Greenbrier Limestone; the Mauch Chunk clastic wedge; production potential from the Big Injun sandstone; seismic studies, analysis and correlation of core and log data of Granny Creek oil field; evaluation of techniques for quantification of reservoir heterogeneity; Berea sandstone production; more. Includes 1991 West Virginia drilling statistics.

X-ICW-5 **Program and Abstracts: The Twenty-Fourth Annual Appalachian Petroleum Geology Symposium, "Innovative Concepts in Reservoir Characterization":** 1993, 138 p. 37 abstracts cover Appalachian drilling by state; reservoir characterization using core and log data and initial potential data; Knox Group natural gas plays; Big Injun sandstone production trends and reservoir heterogeneity; reservoir modeling, Rock Creek oil field geology; modified scanning electron microscopy for reservoir characterization; stratigraphic comparisons of Big Injun fields; permeability determinations using well log data; more. Includes 1992 West Virginia drilling statistics.

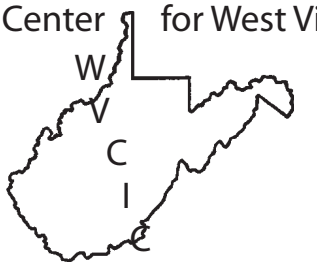
X-ICW-6 **Program and Abstracts: The Twenty-Fifth Annual Appalachian Petroleum Geology Symposium, "Major Appalachian Basin Gas Plays"**: 1994, 100 p. 29 abstracts describe gas plays in the Atlas of Major Appalachian Basin Gas Plays project being conducted by the Appalachian Oil and Natural Gas Research Consortium. Included are fluvial deltaic sandstone plays; nearshore, shallow marine, and slope-to-basin sandstone plays; shallow marine shelf carbonate plays; reef and carbonate bar plays; facies changes, unconformities, and paleokarst plays; fractured reservoir plays; structural and combination trap plays; more.

X-ICW-7 **Rocks and Rivers: West Virginia's Geologic Heritage Video**: WVGES, 1993. Through live-action footage and contemporary and historic photographs, this entertaining and understandable 19-minute DVD-format video tells the story of the State's geology, its prominent role in creating "wild, wonderful West Virginia," and its impact on the State's history, culture, and economy.

I.C. White publications on this page must be ordered separately from other publications in this catalog. For prices and ordering information, see *I.C. White Fund Order Form* in Price List or contact:

I.C. White Fund
1 Mont Chateau Road
Morgantown, WV 26508-8079
Phone: (304) 594-2331

The West Virginia
Geological and Economic Survey
is the Geologic and Cartographic
Information Center for West Virginia.



- Topographic Maps
  - 7.5' quadrangles
  - 15' quadrangles
  - 30' x 60' quadrangles
  - 1° x 2° quadrangles
- Planimetric Maps
- Mylar 7.5' Topographic Maps
- County Maps
- Flood-prone Area Maps
  - U.S.G.S.
  - F.E.M.A.
- Transportation Maps
- Slope Maps
- Orthophotoquads
- Reproduction of Historic Topographic Maps
  - 15' quadrangles
  - 30' quadrangles
- Geologic Maps
- Geophysical Maps
  - gravity
  - magnetic
- Reproductions of Coal Mine Maps
- Aerial and Space Photography
  - low altitude (1938-1973)
  - high altitude (1980's microfiche)
  - space photographs
- Karst Subsidence Map
- Faults and Lineaments Map
- Coal Resources Maps 7.5'
  - outcrops
  - structure
  - coal thickness
  - mined areas
  - overburden
- Satellite Images
- Geodetic Information
- Mineral Resources Map
- Oil and Gas Well Maps
  - well logs
  - well plats
- Computer Databases
  - coal
  - oil & gas
  - limestone
  - place names
  - springs
- Gazetteer
- Geophysical Logs
  - electrical
  - radioactivity
  - density
- Hydrologic Publications
- Water Use Information

For more details call (304) 594-2331;
West Virginia Geological and Economic Survey,
1 Mont Chateau Road, Morgantown, WV 26508-8079.

AERIAL PHOTOGRAPHS OF WEST VIRGINIA
AVAILABLE FROM
THE WEST VIRGINIA EARTH SCIENCE INFORMATION CENTER (ESIC)

The earliest aerial photographs of West Virginia were taken in the late 1930s. Since then, most of the State has been photographed up to eight different times from various altitudes in various seasons and with various types of film.

ESIC SERVICES:

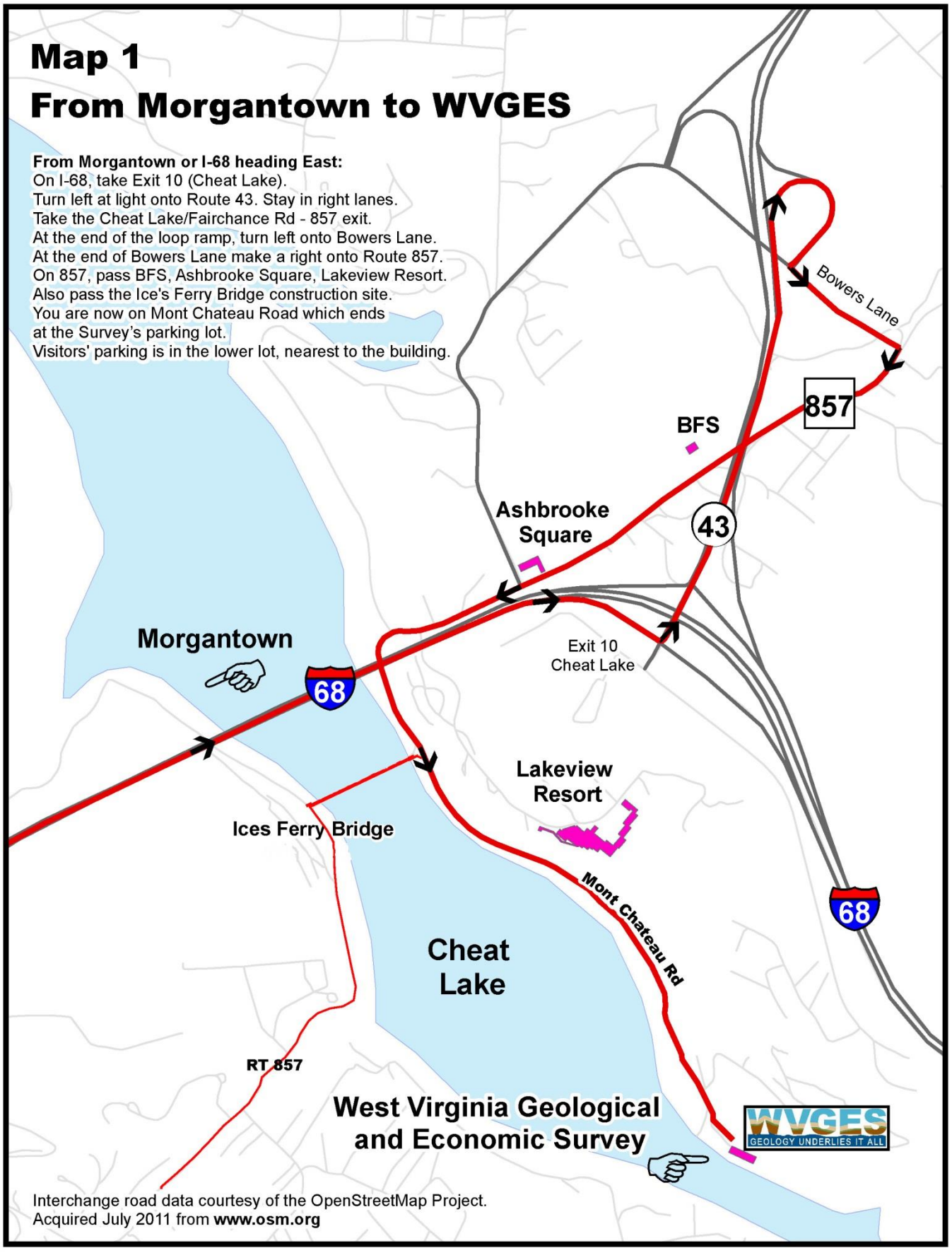
- Maintain indexes of available photography.
- Keep available photo indexes and some photography for public viewing.
- Provide information searches for requested photos.
- Scan the photographs at a high resolution (1200 dpi).
- Provide digital copies of the photographs upon request.

ORDERING AERIAL PHOTOGRAPHS:

- Write to: West Virginia Geological and Economic Survey
  ESIC Office
  1 Mont Chateau Road
  Morgantown, WV 26508
- Call (304) 594-2331
- FAX (304) 594-2575
- Provide the geographic area of interest**, preferably send a photocopy of a topographic map with the extent of the area of interest indicated.**
- Give your name, address, and daytime phone number.

COST: **$10.00 per scan** Add 6% sales tax plus $5.60 for postage and handling.

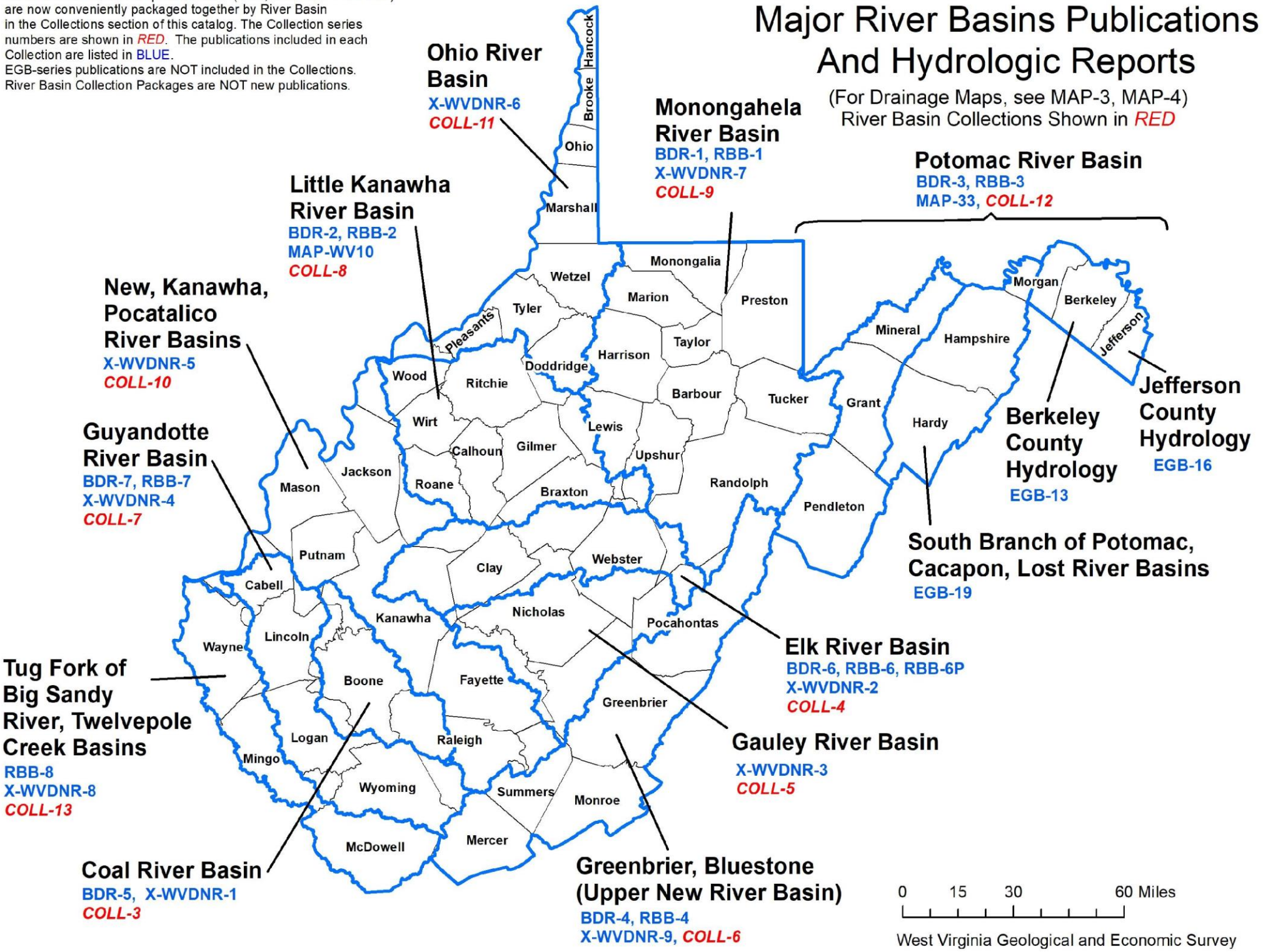
Map 1
From Morgantown to WVGES



All three River Basin companion series (BDR, RBB and X-WVDNR) are now conveniently packaged together by River Basin in the Collections section of this catalog. The Collection series numbers are shown in *RED*. The publications included in each Collection are listed in BLUE.
EGB-series publications are NOT included in the Collections.
River Basin Collection Packages are NOT new publications.

Major River Basins Publications And Hydrologic Reports

(For Drainage Maps, see MAP-3, MAP-4)
River Basin Collections Shown in *RED*



West Virginia Geological and Economic Survey