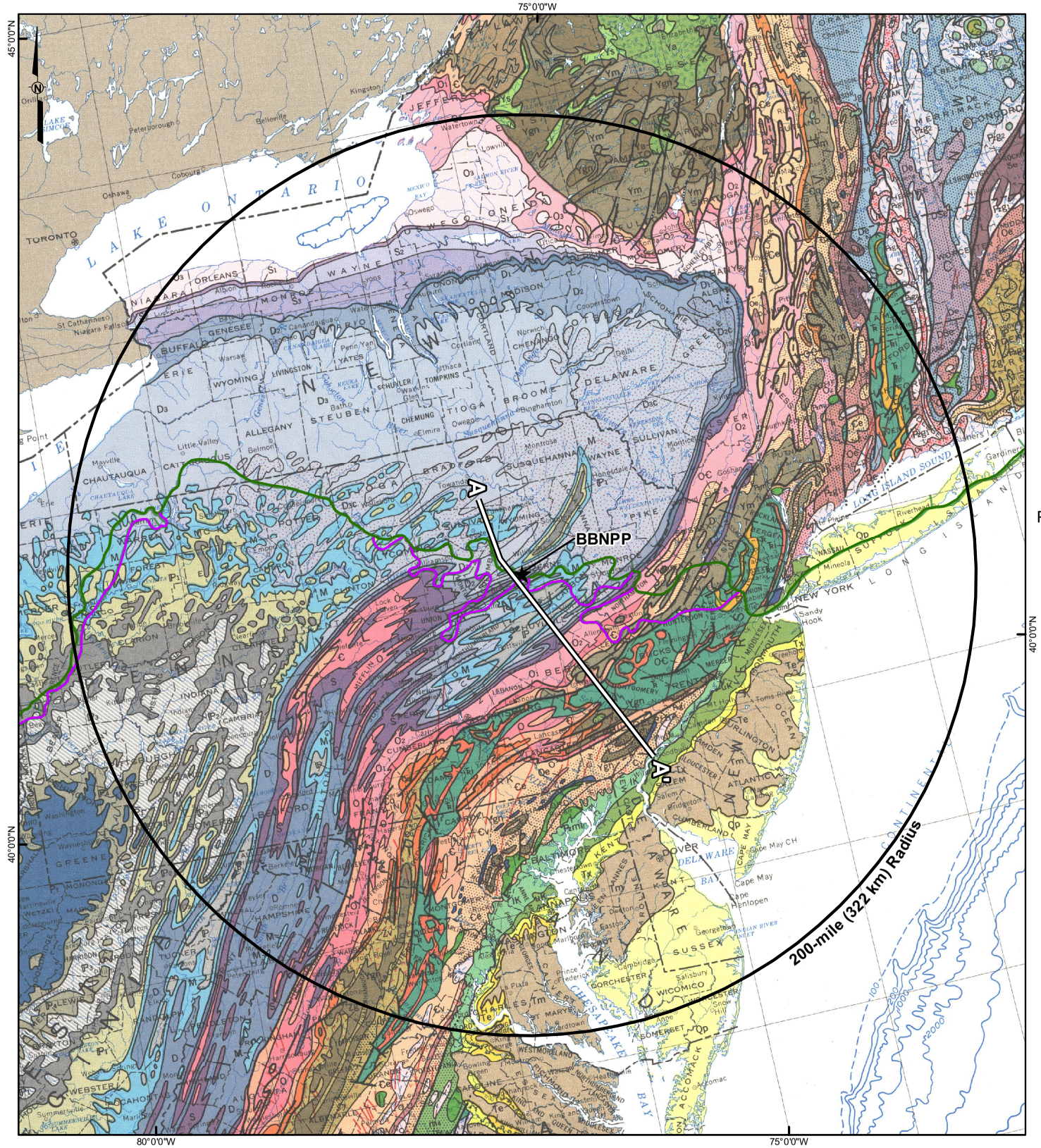
Figure 2.5-181—{Regional Geology Map 200 Mile (322 km) Radius}



LEGEND

Period	Epoch	
Quaternary	Qh	Holocene
	Qp	Pleistocene
Tertiary	Te_3	Jackson Group
	Te_2	Claiborne Group
	Te_1	Wilcox Group
	Tx	Paleocene
Cretaceous	Uk_4	Navarro Group
	Uk_3	Taylor Group
	Uk	Upper Cretaceous
Pennsylvanian	P_4	Virgilian Series
	P_3	Missourian Series
	P_2	Des Moinesian Series
	P_1	Atokan and Morrowan Series
Mississippian	M_3	Chesterian Series
	M_2	Meramecian Series
	M_1	Osagean and Kinderhookian Series
Devonian	D_3	Upper Devonian
	D_2	Middle Devonian
	D	Devonian
Silurian	S_3	Upper Silurian
	S_2	Middle Silurian
	S	Silurian
Ordovician	O_3	Upper Ordovician
	O_2	Middle Ordovician
	O_1	Lower Ordovician
Cambrian	Ꞓ	Cambrian

Pre-Wisconsin Glacial Limit

Wisconsin Glacial Limit

Fault

A A' Cross Section

★ Center Point of Proposed Bell Bend NPP (BBNPP)

○ NPP Reactor 200-mile (322 km) Radius

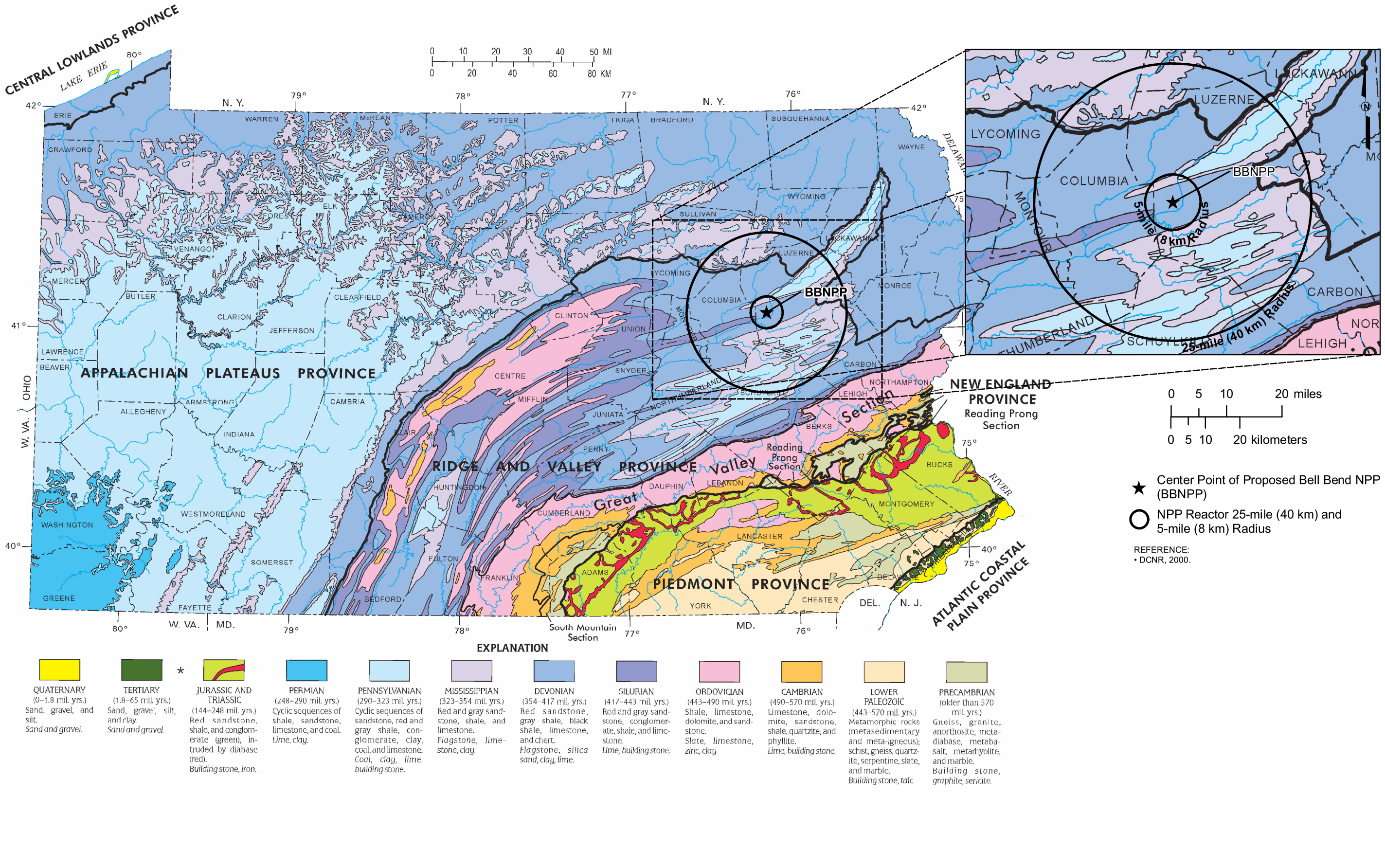
REFERENCES:
- USGS, 1997.
- Berg, 1980.

Note:
Refer to Regional Cross Section figure for indicated A-A' cross section.

0 25 50 100 miles
0 35 70 140 kilometers

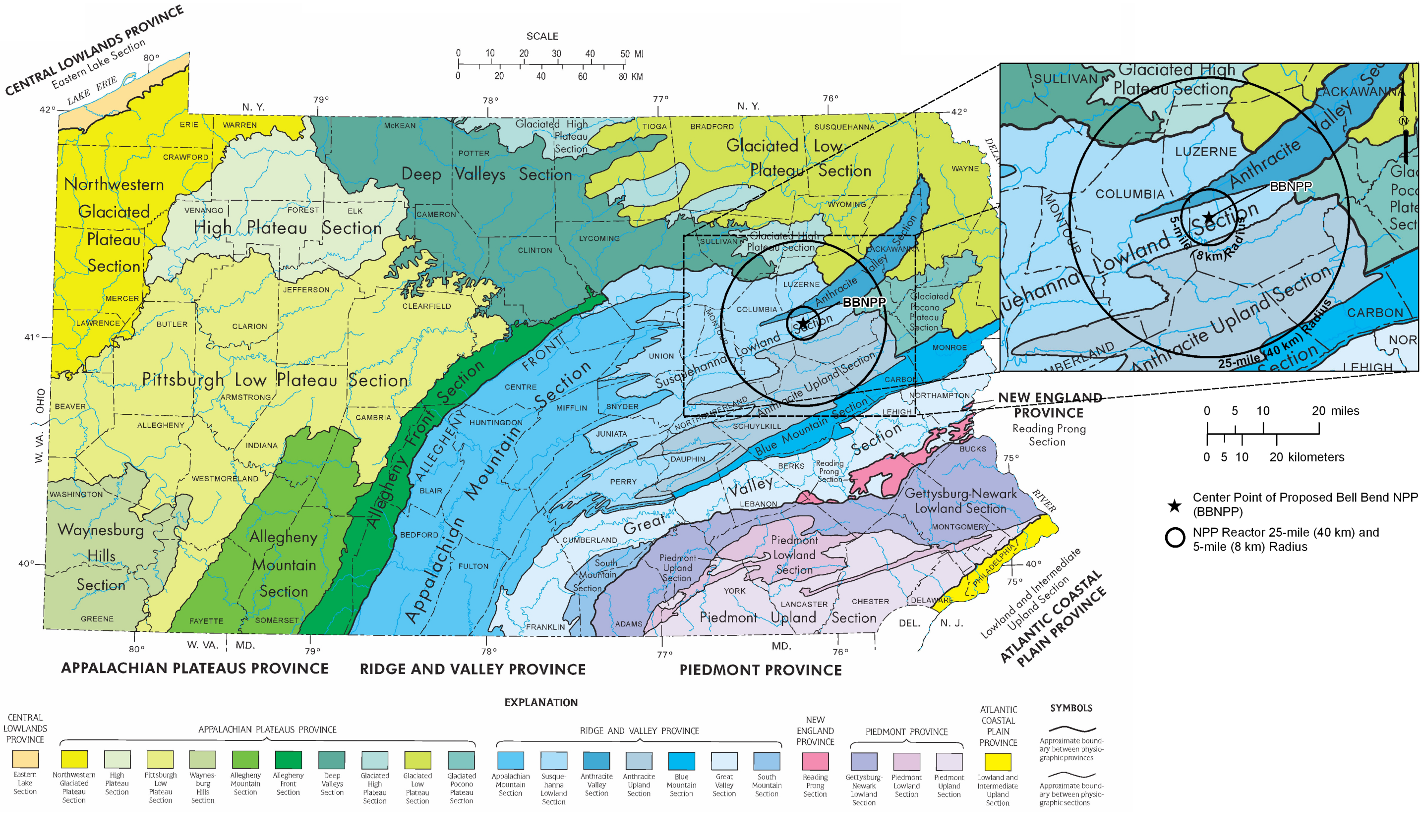
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Figure 2.5-182—{Physiographic Provinces of Pennsylvania (Geologic Map of Pennsylvania) 25 Mile (40 km) and 5 Mile (8 km) Radii}



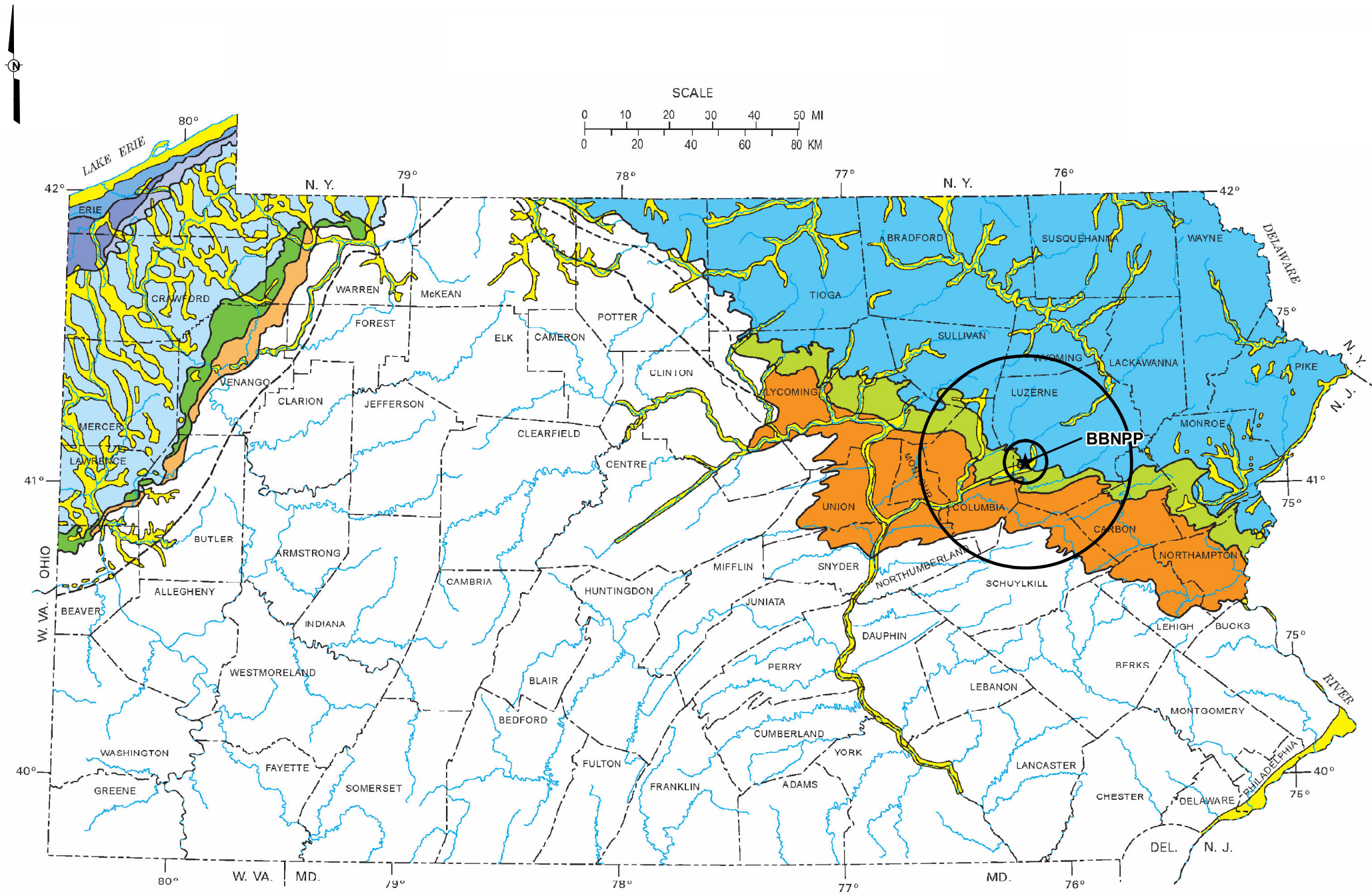
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Figure 2.5-183—{Physiographic Provinces of Pennsylvania with Sections 25 Mile (40 km) and 5 Mile (8 km) Radii}



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Figure 2.5-184—{Glacial Deposits of Pennsylvania 25 Mile (40 km) and 5 Mile (8 km) Radii}



★ Center Point of Proposed Bell Bend NPP (BBNPP)

NPP Reactor 5-mile (8 km) and 25-mile (40 km) Radii

Non-glaciated Area

EXPLANATION

RECENT TO LATE ILLINOIAN (0–198,000 yrs.)

STRATIFIED DRIFT

Sand and gravel in eskers, kames, kame terraces, and outwash, principally in valleys; silt and clay in lake deposits in formerly ice-dammed valleys; lake clays and beach sands and gravels along Lake Erie; thin (Recent) to thick (late Illinoian) soils.

LATE WISCONSINAN (17,000–22,000 yrs.)

ASHTABULA TILL

HIRAM TILL

LAVERY TILL

KENT TILL

Thick, gray, clayey to silty to sandy till covering over 75 percent of the ground; topography is mainly gently undulating, but there is also some knob-and-kettle topography; thin soil.

OLEAN TILL

Moderately thick, gray to grayish-red, sandy till covering 25 to 50 percent of the ground; very thin till covers an additional 25 percent of the ground; topography reflects the underlying bedrock; thin soil.

LATE ILLINOIAN (132,000–198,000 yrs.)

TITUSVILLE TILL

UNNAMED TILLS

Thin, gray (Titusville) to brown and grayish-red (unnamed), clayey to sandy till covering 10 to 25 percent of the ground; topography reflects the underlying bedrock; moderately thick, well-developed soil.

PRE-ILLINOIAN (>770,000 yrs.)

MAPLEDALE TILL

UNNAMED TILLS

Thin, gray, clayey to silty till in patches covering up to 10 percent of the ground; topography reflects the underlying bedrock; thick, well-developed soil, commonly having a yellowish-red color.

SYMBOLS

Southern limit of glacial advance

Approximate limit of Illinoian advance

Approximate limit of pre-Illinoian advance

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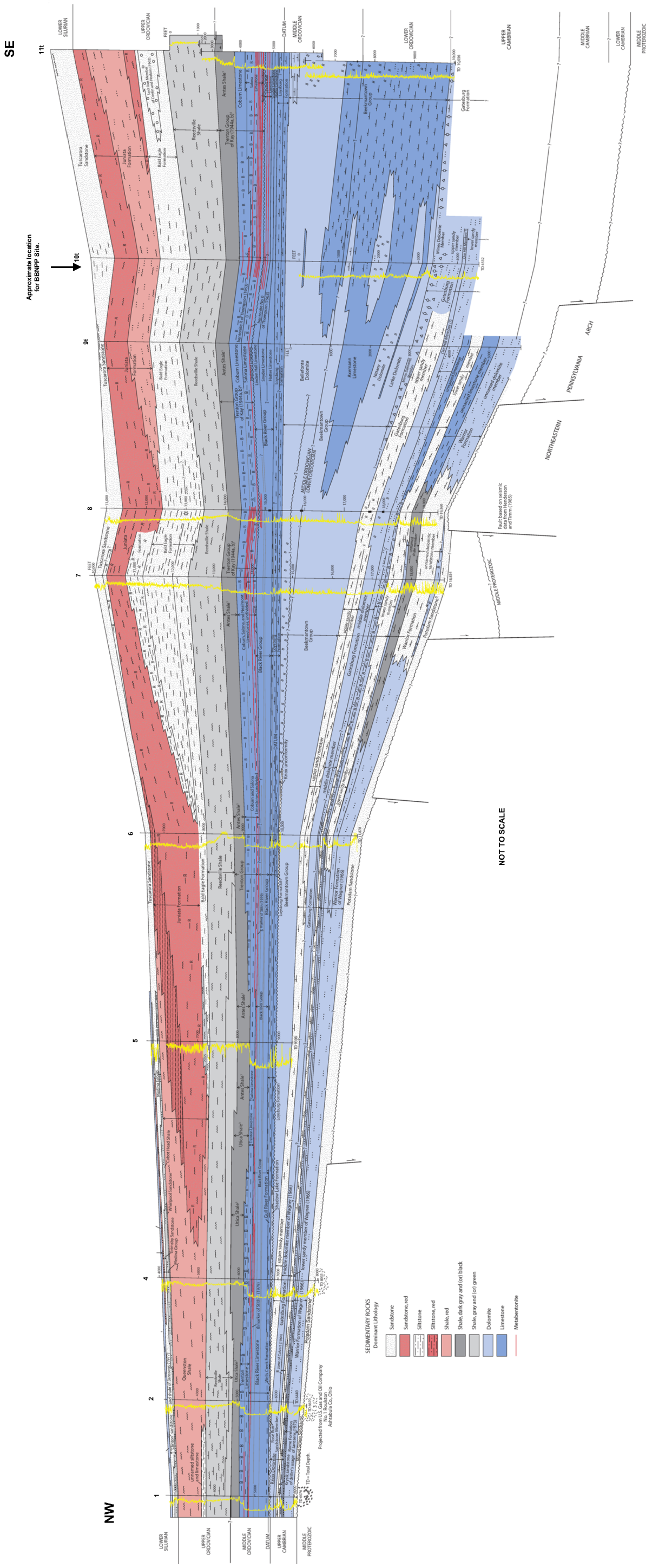
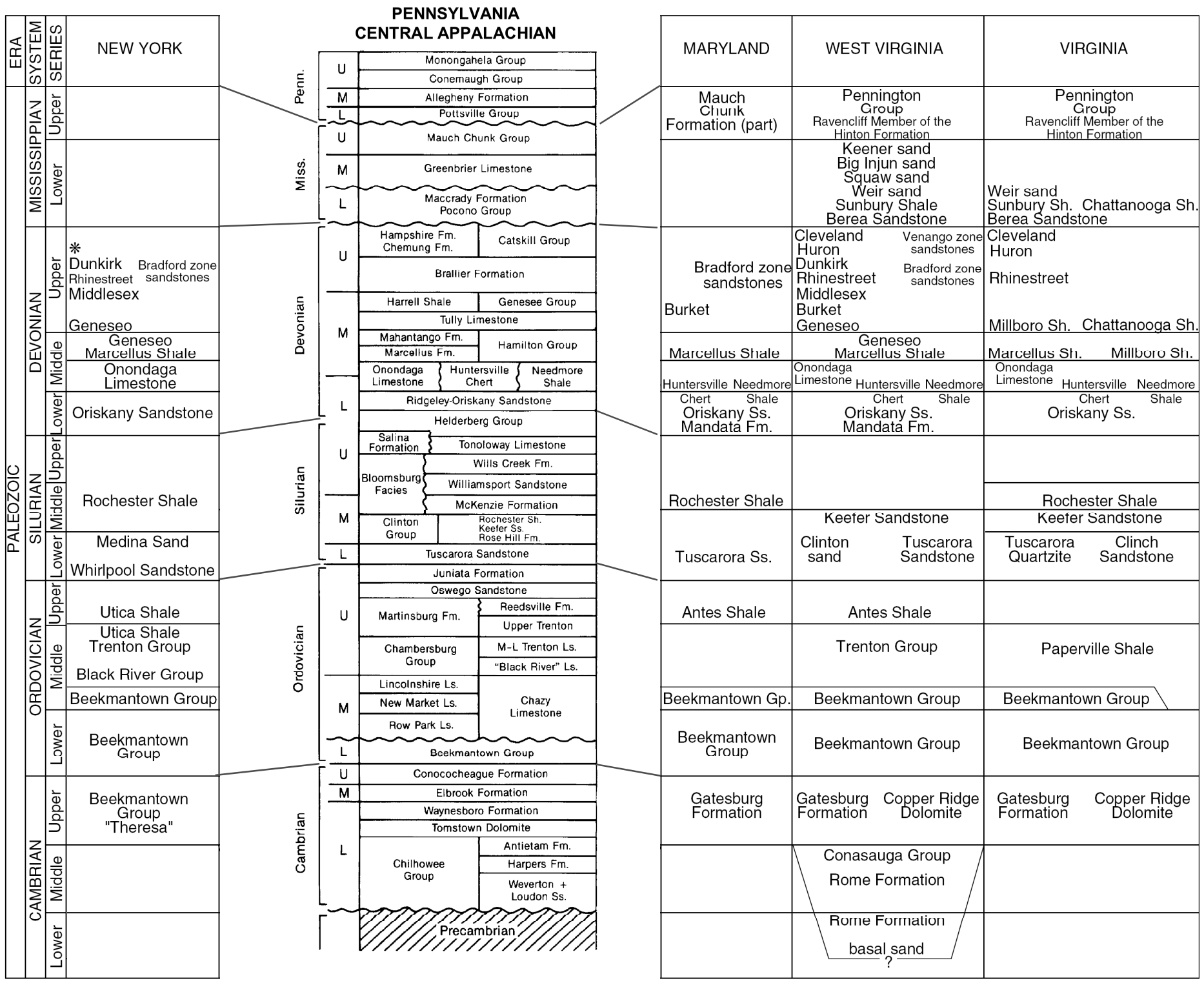


Figure 2.5-185—{Cross Section Showing the Cambrian and Ordovician Rocks of the Appalachian Basin}

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Figure 2.5-186—{Regional Generalized Composite Stratigraphic Column}



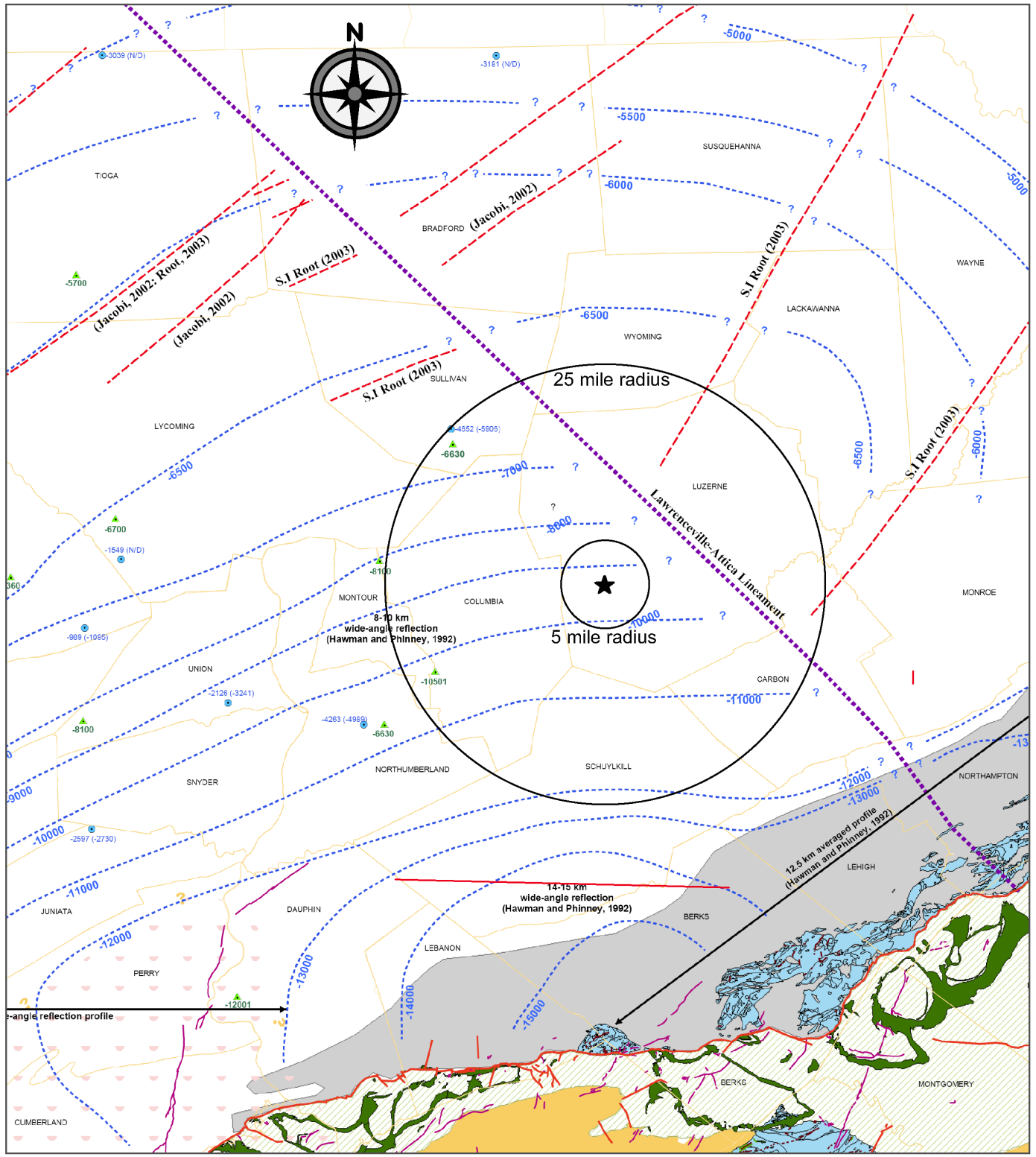
Reference: Ryder, 1995

Reference:` Mitra, 1988

Reference: Ryder, 1995

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Figure 2.5-187—{Precambrian Basement Map of Appalachian Basin 25 mile (40 km) and 5 mile (8 km) Radii}



Reference:
Modified from Gold, 2005

Note: Contours are in meters

Appalachian Basin (structure contours of Precambrian surface, 500 m interval)

- Paleozoic sedimentary rocks (undifferentiated)

Piedmont Physiographic Province (no contours shown)

- Tertiary and Cretaceous cover rocks
- Mesozoic cover rocks, with diabase sheets (dark green)
- Cambro-Ordovician sedimentary rocks; highly deformed, with nappes
- Lower Paleozoic metasediments
- Lower Paleozoic crystalline and metamorphic rocks
- Precambrian metavolcanic rocks (Catoctin); exposed/potential areal coverage
- Precambrian crystalline and metamorphic rocks

SYMBOLS LEGEND

Pennsylvania database

- Fault (tab indicates dip direction)
- Fault, inferred
- Fault, mapped
- Seismic fault (barb indicates inferred dip direction)
- Lineament
- -8000 Basement contours; depth in meters bellow sea level
- Structural trough, inferred
- Structural arch, inferred
- -1811 (-2086) Deep drill hole in Paleozoic cover rocks; bottom elevation of hole in meters below sea level (estimated depth to basement)
- N/D or N/A Elevation not determined or not available
- - 6150 Seismic depth in meters
- - 7550 Seismic depth in meters
- Oriskany absent
- Jurassic diabase dike
- Jurassic Kimberlite dike
- Lower Paleozoic granitic pegmatite dike
- PreCambrian metadiabase dike

West Virginia database

- Normal fault; tab on downthrown side
- Thrust fault; barbs on upthrown side
- (- 22000) - 6706 Basement contours; depth in feet and meters below sea level

Ohio database

- -1632 Drill hole, depth in meters below sea level
- Fault, inferred
- (- 6500) - 1981 Basement contours; depth in feet and meters

New York database

- Fault

0 5 10 20 30 40 50 km

0 5 10 20 30 mi

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