



Detroit River Group

The Detroit River Group is characterized by dolomite, sandy dolomite, sandstone, and limited shale. Four formations, listed in ascending order, are recognized in northwestern Ohio: Holland Quarry Shale, Sylvania Sandstone, Amherstburg Dolomite, and Lucas Dolomite. No attempt has been made by the ODNR Division of Geological Survey to map the individual formations of the Detroit River Group because of rapid speed of reconnaissance mapping, lack of good exposures, extensive burial under Quaternary-age sediments, and limited subsurface data. These rocks were deposited in shallow-offshore, shoreline, and lagoon environments as the tropical Devonian coastal regions met the shallow sea in northwestern Ohio. The rocks of the Detroit River Group typically are buried under Quaternary-age sediments except in quarries, larger streams, and rivers of northwestern Ohio. One of the better natural exposures of the group is located in the Maumee River adjacent to Otsego Park in Wood County. These rocks occur in a 0.1- to 5.0-mi (0.2–8.0-km)-wide band that arcs from Lucas County westward through Wood, Henry, Putnam, and Paulding Counties. Also this unit is mapped in the Bellefontaine outlier in Logan and Champaign Counties. The Detroit River Group was named for exposures along the Detroit River in Michigan. The thickness of the group ranges from 0 to 170 ft (0–52 m).



Thin to medium bedded, brown dolomite of the Detroit River Group underlying the thick bedded, gray Columbus Limestone capping the quarry highwall at Marblehead quarry located just south of Marblehead, Ottawa County.

Diagnostic features

- Dolomite, sandy dolomite, sandstone, and limited shale.
- Lucas and Amherstburg Dols: Gray to brown dolomite.
- Sylvania Ss: White, fine- to medium-grained sandstone with frosted, well-rounded quartz sand grains.

- Holland Quarry Sh: Gray to black, fossiliferous, sandy shale.

General features

- Color varies from white, gray, and brown to black.
- Microcrystalline to finely crystalline.
- Planar, irregular, and lenticular bedding.

- Some intervals laminated.
- Organic-rich laminae.
- Thin to thick bedded.
- Gypsum and anhydrite rare to common; chert generally rare.
- Fracture, moldic, vuggy, and intercrystalline porosity.
- Intervals of brecciated dolomite common.

Lithologic variations

- Holland Quarry Sh, known only from Lucas County, occurs in a depression fill located upon the paleokarst that developed in the pre-Devonian terrain of northwestern Ohio.
- Thickness of the Sylvania Ss is highly variable and ranges from 0 to an estimated 50 ft (0–15 m) with the greatest thickness located in western Lucas County and central Fulton County.
- Amount of sand grains increase in the basal portion of the Amherstburg Dol; where underlain by the Sylvania Ss, contact between these units is gradational.
- In those areas where Sylvania Ss and Holland Quarry Sh missing, the basal Amherstburg may or may not be sandy.

Fossil content

- Sparsely fossiliferous to fossiliferous.
- Algal laminations common.
- Brachiopods, gastropods, bivalves, and corals less common.

Weathering characteristics

- Resistant to weathering.
- Where exposed forms small cliffs, riffles, and rapids in rivers and streams.

Stratigraphic contacts

- Sharp upper contact.
- Sharp lower contact.

Stratigraphic context

- Underlain by Salina Gp.
- Overlain by Dundee Ls.

Engineering properties

- Unconfined compressive strength: Unweathered limestones, dolomites, and sandstone of the Detroit River Gp will have a medium to high compressive strength; weathered portions of theses units will have a medium to high compressive strength, depending on the degree of weathering. Holland Quarry Sh is rare and anticipated to behave similarly to the Antrim Sh.
- Slake durability: Generally, the carbonate and sandstone units of the Detroit River Gp are anticipated to have high to very high slake durability except where higher shale content is present.
- Rippability: Detroit River Gp resistant to ripping. Blasting, breaking or cutting is required for rock excavation.



Brown, finely crystalline dolomite