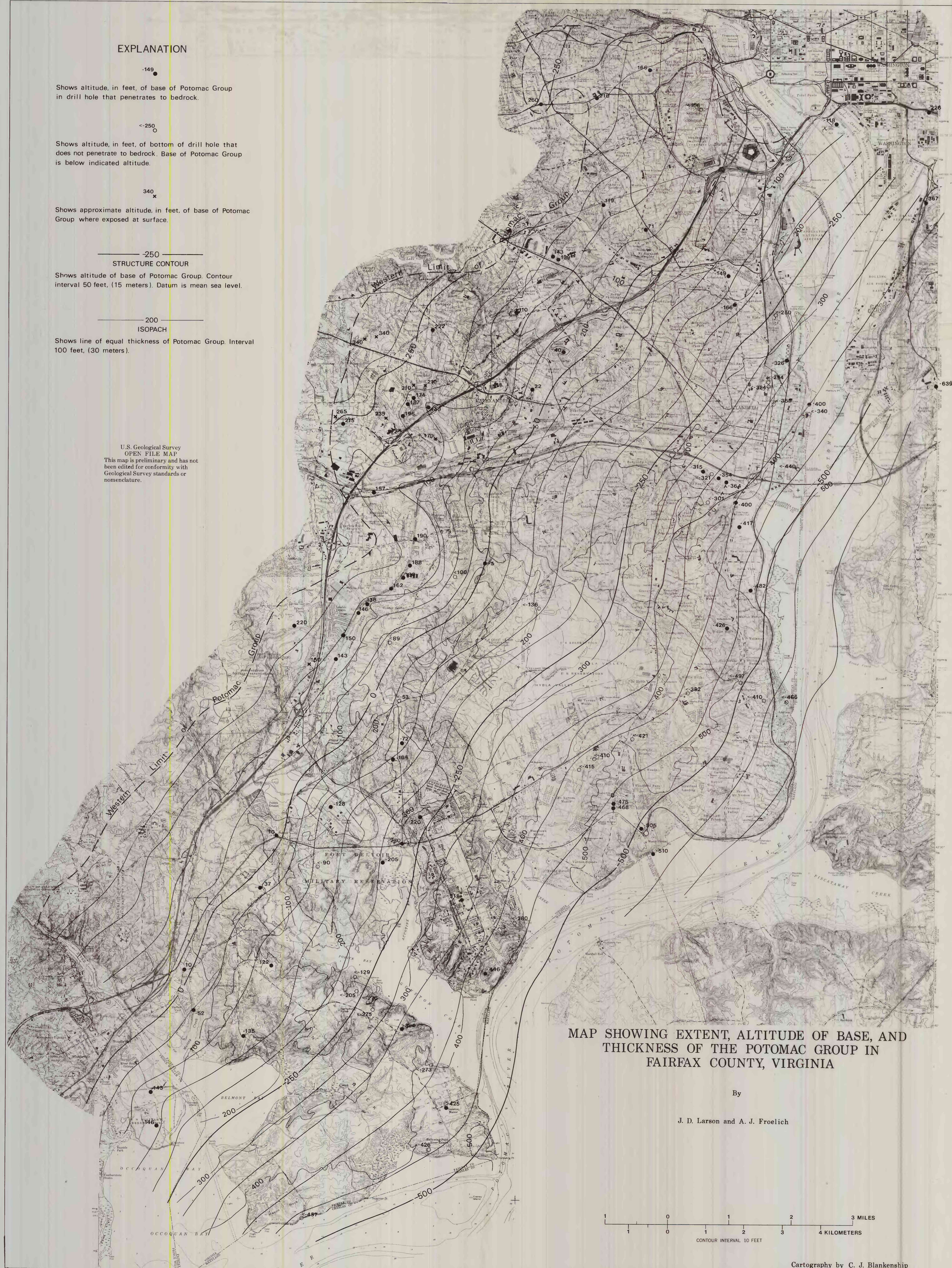


EXPLANATION

- Shows altitude, in feet, of base of Potomac Group in drill hole that penetrates to bedrock.
- Shows altitude, in feet, of bottom of drill hole that does not penetrate to bedrock. Base of Potomac Group is below indicated altitude.
- Shows approximate altitude, in feet, of base of Potomac Group where exposed at surface.
- STRUCTURE CONTOUR
- Shows altitude of base of Potomac Group. Contour interval 50 feet, (15 meters). Datum is mean sea level.
- ISOPACH
- Shows line of equal thickness of Potomac Group. Interval 100 feet, (30 meters).
- U.S. Geological Survey
OPEN FILE MAP
This map is preliminary and has not been edited for conformity with Geological Survey standards or nomenclature.



MAP SHOWING EXTENT, ALTITUDE OF BASE, AND THICKNESS OF THE POTOMAC GROUP IN FAIRFAX COUNTY, VIRGINIA

By J. D. Larson and A. J. Froelich

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The structure contours on Plate 1 show the elevation of the base of the Potomac Group at the contact with decomposed crystalline bedrock. The Potomac sediments overlie the weathered bedrock at an unconformable contact which dips southeasterly at about 100 feet per mile (19 m/km).

The isopachs are lines of equal thickness of the Potomac Group between the underlying bedrock and the overlying upland gravels, or the land surface in areas where the upland gravels are absent. Thus the scalloped pattern of the isopachs reflects removal of part of the Potomac Group by erosion along the major tributaries of the Potomac River. The thickness varies from a feather edge at the western contact with Piedmont rocks (Fall Line), to more than 600 feet (180 m) along the Potomac River.

The map (plate 1) provides information on the thickness of the Potomac Group and on the altitude of bedrock in eastern Fairfax County. By determining the altitude of the land surface at any point and subtracting the altitude of the bedrock, the depth to bedrock and approximate thickness of Potomac Group sediments at that point are readily estimated. Used in conjunction with the lithofacies

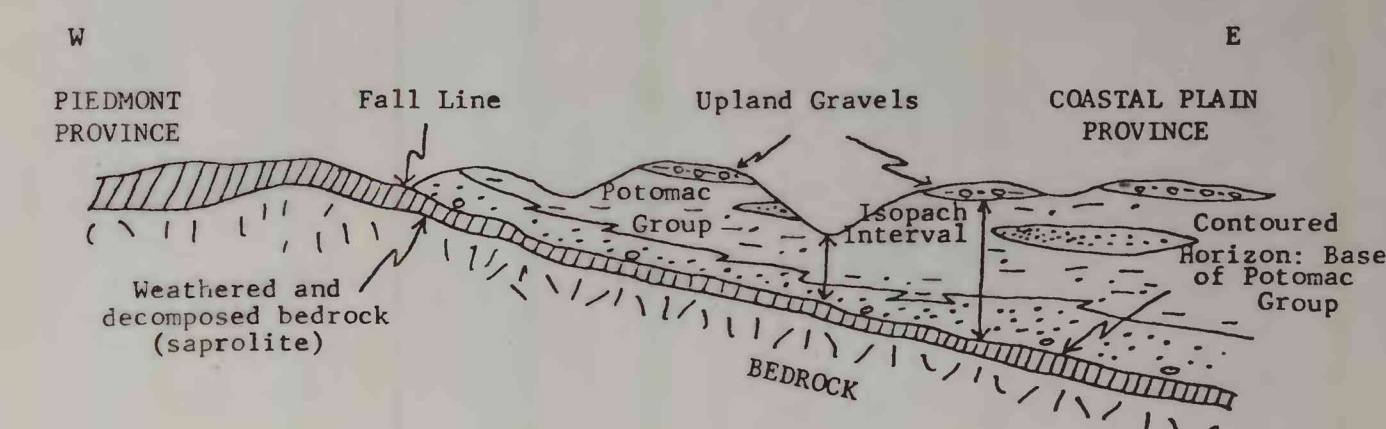
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The isopach and structure contour map (Plate 1) is part of a series of hydrogeologic maps of the Potomac Group in Northern Virginia in preparation by the authors and R.H.Johnston. The Potomac Group is a sequence of unconsolidated sediments of Cretaceous age that forms most of the Coastal Plain in eastern Fairfax County. The configuration of the surface on which the Potomac Group was deposited and the thickness of the Potomac Group deposits are shown on this map.

The Potomac Group consists of lenticular deposits of interbedded sand, silt, clay and gravel of non-marine origin (Force, 1975). As shown diagrammatically in Fig. 1, the eastward-thickening wedge of Potomac sediments overlies decomposed bedrock (saprolite) and is overlain by Upland Gravels.

Figure 1

Diagrammatic cross-section showing relations of the contoured horizon and isopach interval to the wedge of Potomac Group sediments.



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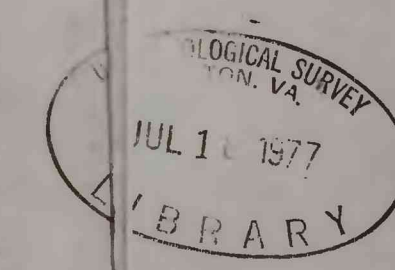
(1977) and aquifer transmissivity maps (in preparation) of the Potomac Group, the map is an aid in ground water exploration. Used with the preliminary geologic map (Force, 1975) showing the surface distribution of sands and clays in the Potomac Group, Plate 1 is useful to consultants and planners in their initial evaluation of proposed sites for sanitary landfills, residential development, and recreational and industrial sites. Power companies and municipalities may utilize these maps for the installation of underground utilities.

REFERENCES

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