EXPLANATION

SEDIMENTARY ROCKS

Artificial Fill (a)

Composed of heterogeneous materials such as: rock, unconsolidated sediment, slag, refuse, and dredge spoil. Only major areas of filled ground have been mapped and include areas such as: former quarry sites, filled tidal marshes, and reclaimed waterfront areas. Commonly overlies alluvial flats, and transportation corridors across topographically low areas. Three meters or more thick.

Alluvium (Qal)

Interbedded gravel, sand, silt, and clay of variable composition and sorting. Typically confined to flood plains of perennial streams, upland gathering areas, and tidal marshes. Deposits are commonly poorly sorted and crudely bedded; they are strongly controlled by the source geology and geomorphic setting. The quartzose sands and polymict gravels are typically well-bedded and moderately compacted; the silts and clays are often water saturated and poorly bedded.
Minor amounts of colluvium (unmapped) may interfinger with alluvium at or near the footslopes of valley walls. Alluvium is a commonly mapped unit since it is commonly overlain by artificial fill and/or has been extensively modified. Unit thickness is 0.3 to 6 meters.

Colluvium and Alluvium (Qac)

Unsorted, massive clays to gravels interbedded and interfingering with poorly sorted alluvial (?) sands and gravels. Defined on the basis of lithology, geomorphic setting and soil series around grade domes. The only region in which this unit has been mapped is the Towson and Cockeysville Quadrangles. Unit thickness 0.5 to 5 meters.

Alluvial Terrace Gravels (Qtg)

Very coarse quartz and quartzite gravel dominates volumetrically in this unit. Cobbles and boulders are commonly present in the upper part of the unit. Geomorphically, this unit is thickest about 3 meters above the present river flood plain. Unit thickness varies from 0.5 to 5 meters.

Talbot Formation (Qts, Qtc)

Qts Silt-clay facies. Typically buff to orange, poorly sorted, poorly bedded quartz silts with kaolinite, illite, and montmorillonite clays. Very sparse leaf and twig debris is bedded silts. In the Sparrows Point area, thick accumulations of peat are found in the upper part of the unit. Locally contains numerous leaf borings and water well logs. Silt and silty clays probably accumulated in alluvial flood plain-open marsh environments. Clays probably accumulated in an estuarine environment.

Qts Sand facies: Well-bedded, medium to coarse quartz sand, typically containing abundant pebbles and cobbles. Sand is commonly cross-bedded. The degree of sorting suggest a beach or shoreline as possible environment of deposition. The Talbot Formation varies from 0.5 to 10 meters in thickness.

Upland Gravel (ug)

Orange-brown, poorly sorted, fine sand to boulder size particles commonly with a clayey matrix. Clasts are typically subangular to subrounded. Crude and vertical sediment size changes with ferruginous mature zones along horizons of abrupt change. Deposits are occasionally well-bedded; fining-upward gravel to sand sequences are found in the lower part of the unit. Commonly contains large blocks of fresh to weathered mafic rock as diagnostic framework components. Thickness varies from 0.3 to 6 meters.

Patapsco Formation (Kps, Kpc)

Clay facies (Kpc) (0.5-10 meters thick): Typically buff, red-yellow, and mottled, kaolinitic clays with abundant quartz silt and sand filled burrows, pods and interbeds, dispersed throughout the clay. Rare occurrences of irregular siderite concretions and lignitized plant remains. Rare laminated silt-clay couplets are present in the clays. Deposition in sediment flood plains and clay environments is postulated.

Sand facies (Kps) (0.3-20 meters thick): Well-sorted, medium to fine-grained quartz sand with locally abundant quartz gravel and clay clasts. Minimal clay-silt matrix in sand interstices. Sands are planar to high-angle cross-bedded and commonly contain abundant clay pebbles and cobbles in the bedded and cross-bedding. Fining-upward sequences are typical on large scale. Ferruginous concretions are found as ledges of sand-clay boundaries or as concretionary pods within the sand. Tourmaline and zircon with minor staurolite and rutile constitute the heavy mineral suite. Deposition in and around channels of low gradient streams.

Arundel Formation (Kau, Kac)

Clay facies (Kac) (0.5-10 meters thick): Grey, brown, black and red mottled, kaolinitic clays with abundant quartz silt and sand filled burrows, sand lenses and pods. The clays are typically poorly bedded to massive with occasional color mottling. Sparse to abundant irregular siderite ledges or concretionary pods are commonly present in the clays. Rare occurrences of laminated silts and clays contain spores in abundant fern, cycadicad, and conifer remains.
Lithologically similar but stratigraphically distinct from Kac. Deposition primarily within a flood plain-back swamp complex.

Sand facies (Kau) (0.3-5 meters thick): Well-sorted, medium to fine-grained quartz sand with locally abundant lignitized plant remains. This sand beds are commonly cross-bedded and contain abundant high-angle tension and very thin clay beds. These pods of sand probably represent the influx of sand into an overbank complex during major flood events.

Patuxent Formation (Kps, Kpc)

Sand facies (Kps) (0.2-35 meters thick): Highly variable, interbedded sand, gravel, silt, and clay with kaolinite-dacrotic cements. Sands and gravels are primarily quartzose and well-rounded; a buff kaolinitic clay-quartz silt matrix is common throughout the Patuxent Formation. Sands are commonly cross-bedded and gravels are commonly imbricated with planar-bedded gravels and clay clasts. Fine-grained sands at the base to laminated or massive silt-clay at the top. Elsewhere vertical sequences show abrupt sediment size changes and erosion contacts. The heavy mineral suite is characterized by staurolite, zircon, tourmaline, and rutile.
Spore silicified and abundant iron oxide replacements or pseudomorphs of cycadicids and conifers are present throughout the Formation. These plant remains were deposited in a high-gradient braided and meandering stream complex.

Clay facies (Kcy) (0.5-5 meters thick): Light grey to black and brown clays containing variable amounts of quartz silt, gravel, local concentrations of lignite, partially pyritized wood, or macerated leaf and cone debris. Clays are commonly laminated. Lower beds of sand and/or gravelly clay are interbedded with massive clays.

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CRYSTALLINE ROCKS

LAUREL BELT

Pretty Boy Schist (ps)

Uniform, fine-grained plagioclase-chlorite-muscovite-quartz schist, commonly with magnetite and conspicuous white porphyroblasts that average 1 to 3 mm but may be as much as 10 mm in diameter. Spars, lineolitized pyrite cubes occur locally.

Peasant Grove Schist (pg)

Uniform, fine-grained plagioclase-muscovite-quartz schist, locally with magnetite. Commonly contains numerous thin veins and lenses of milky quartz and, locally, laminae and thin beds of quartzite imparting a seamed appearance to the rock.

Schenck Formation

*Sg Grain member. Poorly foliated to massive, fine- to medium-grained biotite-feldspar-quartz gneiss, deceptively granoblastic in appearance, with sparse to numerous clasts ranging in size from granules to cobbles and larger slabs. Clasts chiefly consist of biotite-rich schist and gneiss and vein quartz. Compositional layering is locally so abundant are quartz pebbles and granules suggestive of conglomerate; locally so abundant are quartz pebbles and granules suggestive of conglomerate; locally so abundant are quartz pebbles and granules suggestive of conglomerate;