
Sediment Mapping Introduction

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Potable groundwater in the GWMA is found predominantly in Miocene to Holocene (<7 million years old to recent) suprabasalt sedimentary units and underlying Miocene (17 to 6 million years old) continental flood basalt and intercalated sedimentary units. The Columbia River Basalt Group (CRBG) consists of continental flood basalt flows that form laterally extensive sheets that record the eruption and emplacement of several hundred basalt flows that covered much, or all, of this region. Suprabasalt sedimentary units which are the focus of this report, and the sedimentary units interbedded within the CRBG, typically consist of clay, silt, sand, and gravel deposited in eolian, alluvial, lacustrine, and cataclysmic flood environments. Pre-Pleistocene suprabasalt sediments generally accumulated in structural basins bounded by basalt cored uplifts, typically folds of the Yakima Fold Belt. Pleistocene and younger suprabasalt sediments (2 million years old to recent) accumulated in these basins in addition to coulees, upland areas, and along modern stream and river courses.

Suprabasalt sediments in the GWMA are divided into a series of formally defined and informal map units. These units include:

- Gravelly to sandy alluvial deposits, muddy gravelly colluvium, and wind blown deposits (generally consisting of sand dunes) ranging from very recent in age to possibly as much as 2 million years old. These strata typically are identified on maps using such names as Quaternary alluvium, Quaternary colluvium, and Quaternary sand dunes (stabilized and un-stabilized, or active), to name the more common ones.
- Pleistocene Cataclysmic Flood deposits, ranging from boulder gravel to interbedded silt and fine sand. Although no formal name for these flood deposits has been defined, they may be found referred to on maps as the Pasco gravel (for gravel dominated deposits), Quaternary flood gravel, Quaternary flood sand, and Touchet beds (for interbedded silt and sand).
- Loess, commonly mapped as Quaternary loess or Palouse Formation, consisting of wind deposited silt to very fine sand found comprising the rolling hills of the eastern part of the GWMA and capping the higher ridges found in the western GWMA.
- Plio-Pleistocene clastic deposits and caliche-rich strata. The clastics probably commonly are included in other Quaternary units. The caliche is rarely if ever, mapped.
- Mio-Pliocene Ringold Formation, including gravel-dominated conglomerate strata of the member of the Wooded Island, interbedded fluvial sand and paleosol clay and silt comprising the member of Taylor Flat, and thinly interbedded fine sand, silt, clay, and diatomite strata of the member of Savage Island.

Suprabasalt sediment stratigraphy. u/c - unconformity