



OPEN FILE 5481
SURFICIAL GEOLOGY
PESH CREEK
BRITISH COLUMBIA
Scale 1:50 000/Echelle 1/50 000

Kilometres 1 2 3 4 Kilomètres
Universal Transverse Mercator Projection / Projection transversale universelle de Mercator
North American Datum 1983 / Système de référence géodésique nord-américain, 1983
© Her Majesty the Queen in Right of Canada 2008 / © Sa Majesté la Reine du chef du Canada 2008

94 P13	94 P14	94 P15	94 P16
OF4825			OF4830
94 P17	94 P18	94 P19	94 P20
OF4846	OF5606	OF5605	OF5479
94 P5	94 P6	94 P7	94 P8
		OF5481	

LEGEND

This legend is common to GSC Open File maps produced for NTS sheet 94 P. Not all map units in the common legend appear on this map.

NOTE: In areas where the surficial cover forms a complex pattern, the area is coloured according to the dominant unit and labelled in descending order of cover (e.g. O-T). Where buried aggregate deposits (sand and gravel) commonly associated with Q1 or Q2 surficial units are known, or suspected, areas are coloured according to the overlying unit and labelled in the following manner: Lx/Qd.

QUATERNARY SURFICIAL DEPOSITS POST LAST GLACIATION

NONGLACIAL ENVIRONMENTS

ORGANIC DEPOSITS: peat and muck; 1 to 3 m thick on average; formed by the accumulation of plant material in various stages of decomposition; generally occurs as flat, wet terrain (swamps and bogs) over poorly drained substrates.

- O¹ Bog peat: sphagnum or forest peat formed in an ombrotrophic environment; wet terrain; may be treed or treeless; O¹h, hummocky, mounds and plateaus; area may be underlain by ground ice or shallow permafrost conditions; generally related to melting ground ice.
- O² Fen peat: peat derived from sedges and partially decayed shrubs in a autrophic environment; forms relatively open peatlands with a mineral-rich water table that persists seasonally near the surface; generally covered with low shrubs and sometimes a sparse layer of trees; O²h, thermokarst terrain related to melting ground ice.
- O Undifferentiated bog and fen deposits; O¹h, undifferentiated hummocky bog and fen deposits; area may be underlain by ground ice or shallow permafrost conditions; O¹h, undifferentiated bog and fen deposits with thermokarst terrain related to melting of ground ice; O²h, undifferentiated bog and fen deposits cut by numerous subparallel channels on gentle slopes.

COLLUVIAL DEPOSITS: mass wasting debris; poorly sorted, massive to stratified debris deposited by direct, gravity-induced movement; composition dependant on source material.

- Ch Landslide and slump debris: active and inactive landslides; hummocky topography; diamictic, generally 1 to 10 m thick, but may exceed 10 m near the toe of large landslides.
- Cv Colluvial veneer: thin and discontinuous cover of slumped and/or soliflucted material <1 m thick; overlies bedrock or till.
- C Undifferentiated colluvial deposits.

ALLUVIAL DEPOSITS: sorted gravel, sand, minor silt, and organic detritus deposited by streams; commonly stratified.

- Ap Floodplain deposits: sorted gravel, sand, silt, and organic detritus >1 m thick; forming active floodplains close to river level with meander channels and scoll marks.
- At Fluvial terrace deposits: inactive terraces above modern floodplain; >2 m thick; represents a potential aggregate source.
- Al Alluvial fan deposits: poorly sorted gravel, sand, and organic detritus >1 m thick.
- Av Alluvium veneer: <1 m thick; primarily as uniform sheets of slope wash on gentle slopes.
- A Undifferentiated fluvial deposits.
- L¹ LACUSTRINE DEPOSITS: sand, silt, and minor clay deposited in a former lake; >1 m thick; generally overlain by organic deposits; exposed by recent fluctuations in lake levels.

NONGLACIAL AND PROGLACIAL ENVIRONMENTS

EOLIAN DEPOSITS: wind-deposited medium to fine sand; derived from detrital or glaciolacustrine deposits; in some areas eolian sediments are thin or absent between dunes.

- Er Ridged eolian deposits: forming dunes; generally >2 m thick.
- Ev Eolian veneer: discontinuous veneer of eolian sediments; <1 m thick.

POSTGLACIAL OR LATE WISCONSINAN PROGLACIAL AND GLACIAL ENVIRONMENTS

GLACIOLACUSTRINE DEPOSITS: fine sand, silt, and clay, with minor debris-flow diamictic, deposited in glacier-dammed lakes in valleys and along the margin of the retreating Laurentide Ice Sheet; usually overlain by organic deposits in lowlands.

- Lb Glaciolacustrine blanket: >1 m thick.
- Lv Glaciolacustrine veneer: thin and discontinuous; <1 m thick.

GLACIOFLUVIAL DEPOSITS: well to poorly stratified sand and gravel; minor diamictic, deposited behind, at, or in front of the ice margin by glacial meltwater; represents a potential aggregate source.

- G Proglacial outwash: cross-stratified gravel and sand deposited in front of the ice margin; G₁, outwash plain deposits, generally 1 to 5 m thick, generally mantle valley floors and surfaces adjacent to glacial meltwater channel margins; G₂, outwash terrace deposits, generally associated with meltwater channels and canyons; 1 to 10 m thick; G₃, glaciolacustrine delta deposits; 1 to >30 m thick; G₄, glaciolacustrine fan deposits; >1 m thick; <1 m thick; G₅, glaciolacustrine fan deposits; >1 m thick.
- Gi Ice-contact stratified drift: poorly-sorted sand and gravel with minor diamictics; deposited in contact with the retreating glacier; 1 to >20 m thick; Gi₁, hummocky topography relating to melting of underlying ice; Gi₂, surface marked by kettle holes; Gi₃, esker ridges; Gi₄, kame terraces; Gi₅, ice-contact glaciolacustrine delta deposits; 1 to >30 m thick; surface marked by kettles.

TILL: diamictic deposited directly by the Laurentide Ice Sheet sandy to clayey matrix with assorted clasts of various lithologies, including many Canadian Shield, carbonate, and sandstone erratics; clast content is typically low (<10 %).

- Tb Till blanket: >1 m thick, continuous till cover forming undulating topography that locally obscures underlying units.
- Ts Streamlined and fluted till: >1 m thick, till surface marked by streamlined landforms including flutes and drumlins.
- Th Hummocky till: >1 m thick; hummocky till surface.
- Tr Ridged till deposits: >1 m thick, moraines or crevasse fillings forming a ridged topography.
- Tv Till veneer: <1 m thick, discontinuous till cover, underlying bedrock topography is discernible.

PRE-QUATERNARY BEDROCK

- R Sedimentary bedrock: Cretaceous Fort St. John Group shales (including the Shahebury Formation) and Duvvegan Formation sandstone exposed in highlands and along meltwater channel and canyon walls.

Geological boundary (defined)

- Meltwater channel or underfit channel, small (paleoflow direction known, unknown)
- Meltwater channel, large (paleoflow direction known, unknown)
- Kettle (large, small)
- Major moraine
- Minor moraine or crevasse filling
- Ice moulded form in till (direction of flow inferred, not inferred)
- Field observation site

NOTES

The surficial geology of the Pesh Creek (NTS 94 P18) map area is dominated by the effects of continental glaciation during the Late Wisconsinan (ca. 25 000–10 000 years ago). In general the ice sheet advanced from the northeast and occupied the broad Shellek River valley, but at some point, the ice flowed westward across the valley and onto the Eboho Plateau, which borders the western part of the map area. The Shellek River valley lies about 250 m below the plateau. During deglaciation, when the ice sheet thinned and separated into topographically-controlled lobes, an ice margin within the Shellek River valley migrated southwest and dammed a proglacial lake in the process. This lake migrated southward with the ice margin and eventually merged into glacial Lake Hay. Shellek River valley is underlain by Cretaceous shales, clayey till and fine glaciolacustrine sediments, which are all poorly drained, and thick organic sediments accumulated over most of the area. Currently, extensive muskeg forms hummocky peatlands which are probably underlain by permafrost and significant amounts of ground ice.

Author: J.M. Bednarski
Geology by J.M. Bednarski, 2003–2005, with additional data provided by V. Levason and T. Ferbey, Resource Development and Geoscience Branch, BC Energy, Mines, and Petroleum Resources
Airphoto interpretation by J.M. Bednarski, 2006
Compilation of geology was onto 1:40 000 orthorectified airphoto mosaic by J.M. Bednarski, 2006
Digital cartography by N. Côté, Data Dissemination Division (DDD)
This map was produced from processes that conform to the Scientific and Technical Publishing Services Subdivision (STP) Quality Management System, registered to the ISO 9001:2000 standard
Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada
Digital base map provided by the BC Watershed Atlas (1:50 000, TRIM base), modified by J.M. Bednarski
Shaded relief map prepared by DDD, derived from the digital elevation model supplied by J.M. Bednarski, based on SRTM imagery
Illumination: azimuth 310°, altitude 45°, vertical factor 4.8x
Magnetic declination 2008, 21°22' E, decreasing 23.4' annually

OPEN FILE PUBLIC DOSSIER PUBLIC 5481
GEOLOGICAL SURVEY OF CANADA / COMMISSION GÉOLOGIQUE DU CANADA
2008

Open file are products that have not gone through the GSC normal publication process.
Les dossiers publics sont des produits qui n'ont pas été soumis au processus officiel de publication de la GSC.