

GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF MINES AND TECHNICAL SURVEYS

SHEET 92 ^H/₄ (West Half)

LEGEND

PRELIMINARY SERIES

PLEISTOCENE AND RECENT

POST-GLACIAL

- 7** SALISH GROUP (4-7)
Swamp Deposits: 7a, lowland peat, clayey peat, and peaty clay up to 35 feet thick, in most places resting on silty clay and clayey silt, or locally on sandy silt and sand; 7b, similar to 7a except in most areas the peat is overlain by up to 10 feet of clayey silt, silt, and sand of alluvial origin; 7c, peat and marl overlying sand and gravel
- 6** Slopewash Deposits: 6a, fan gravel and sand up to 25 feet thick resting on FRASER FLOODPLAIN DEPOSITS (5a); 6b, slide deposits of sand and gravel overlying SUMAS TILL (2) and HUNTINGDON GRAVEL (1a)
- 5** FRASER FLOODPLAIN DEPOSITS (floodplain and channel deposits): 5a, channelled deposits with ridges of silty sand and silt standing 5 to 10 feet above hollows of clayey silt, and all normally less than 15 feet thick resting on sand and gravel; 5b, channelled deposits similar to 5a, but both ridges and hollows consist of sand with only minor silt
- 4** Stream Deposits: 4a, gravel and sand up to 50 feet or more thick, commonly with gravel at the surface; 4b, undifferentiated stream deposits (4a) and lacustrine sand and silty sand; 4c, undifferentiated stream deposits (4a), lacustrine deposits (4b), and FRASER FLOODPLAIN DEPOSITS (5a)

GLACIAL

- 3** SUMAS GROUP (2-3)
ABBOTSFORD OUTWASH (glacio-fluvial deposits): recessional outwash and ice-contact deposits; gravel and sand with minor lenses of till and glacio-marine stony clayey silt
- 2** SUMAS TILL (glacial deposits): sandy till and substratified drift 5 to 35 feet thick

NON-GLACIAL

- 1** PRE-SUMAS
HUNTINGDON GRAVEL (channel and floodplain deposits) and Older Deposits: 1a, HUNTINGDON gravel and sand; 1b, HUNTINGDON GRAVEL and sand, and pre-HUNTINGDON gravel, sand, silt, and clayey silt

TERTIARY AND EARLIER

- R** Bedrock at or within 25 feet of surface. Where bedrock is not at surface it is overlain by glacial and glacio-fluvial deposits (For bedrock geology see G.S.C. maps 737A and 8-1956)

- Geological boundary, mainly gradational.
- Sand and gravel pit.
- Rock quarry.

Geology by J. E. Armstrong, 1953-1955

- Main highway.
- Other roads.
- Railway.
- Post Office.
- Power transmission line.
- International boundary.
- District boundary.
- Municipal boundary.
- Provincial Park boundary.
- Indian Reserve and Military Reserve boundary.
- Intermittent stream.
- Marsh.
- Foreshore flats.
- Contours (interval 100' below 500' level; interval 500' above 500' level).
- Height in feet above mean sea-level.

Cartography by the Geological Survey of Canada, 1960

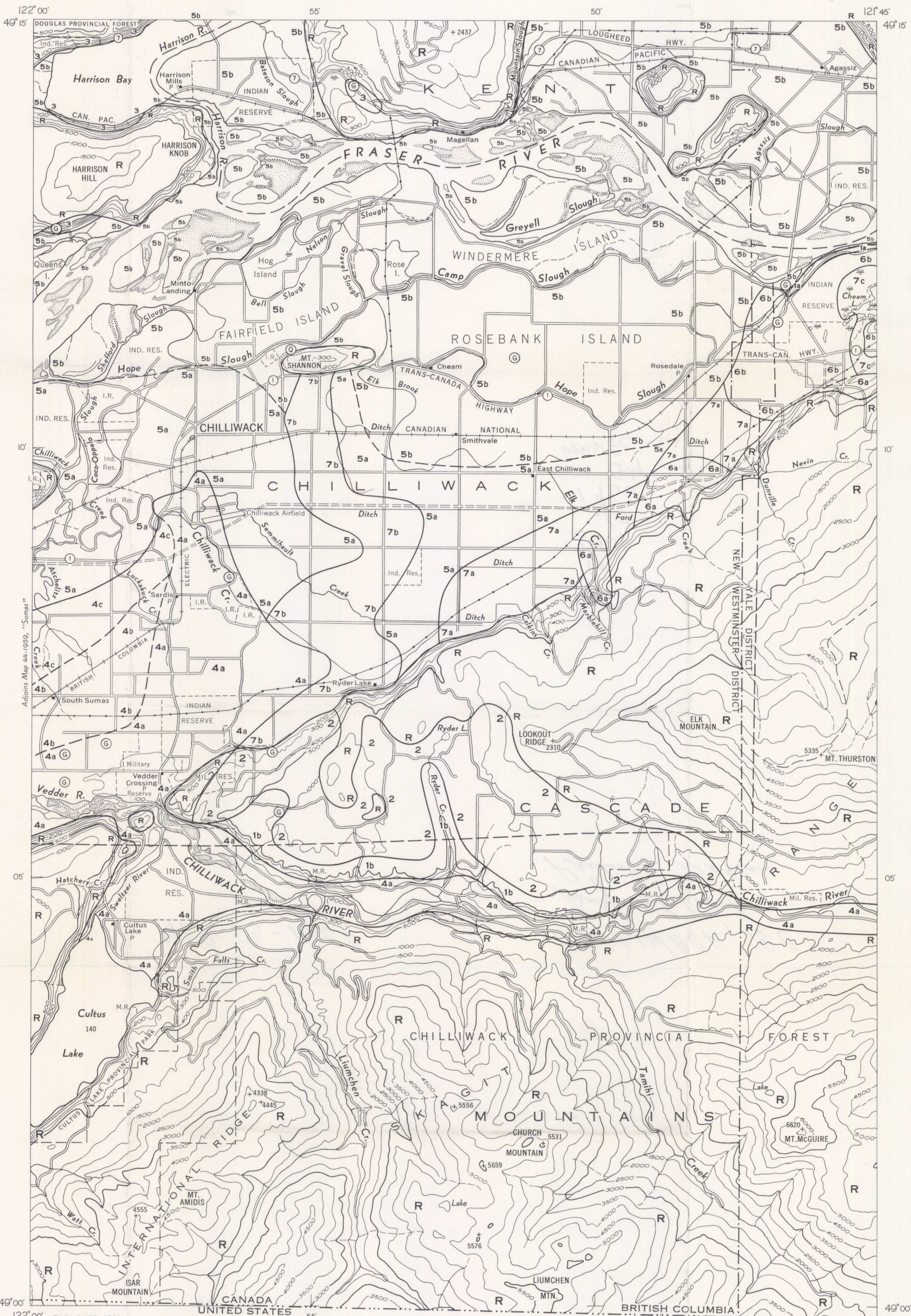
Approximate magnetic declination, 23° 25' East

Air photographs covering this area may be obtained through the National Air Photographic Library, Topographical Survey, Ottawa

In response to public demand for earlier publication, Preliminary Series maps are issued in this simplified form and will be clearer to read if all or some of the map-units are hand-coloured



INDEX MAP

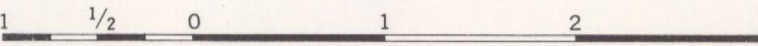


PUBLISHED 1960
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DIRECTOR, GEOLOGICAL SURVEY OF CANADA, OTTAWA

53-1959

MAP 53-1959
SURFICIAL GEOLOGY
CHILLIWACK
(WEST HALF)
NEW WESTMINSTER AND YALE DISTRICTS
BRITISH COLUMBIA

Scale: One Inch to One Mile = $\frac{1}{63,360}$
Miles



DESCRIPTIVE NOTES

The southeastern half of the map-area is occupied by the Cascade Mountains, where the relief may exceed 6,000 feet. The westward-flowing Chilliwack River, in a deep, U-shaped, narrow valley, provides the main drainage for this part of the Cascade Mountains. Along the northern border of the map-area, isolated hills up to 2,000 feet high, constitute the southern limits of the Coast Mountains. Between these hills and the Cascade Mountains is the flat-bottomed valley of Fraser River, averaging 7 miles in width.

Except for the Ryder Lake district - a rolling hilly area east of Vedder Crossing and north of Chilliwack River - the Cascade Mountains have bedrock at the surface or are covered by only a thin mantle of drift, generally less than 25 feet thick. The same is true for the front hills of the Coast Mountains. Glacial deposits (2, 3) and older non-glacial deposits (1) are well exposed only in the Ryder Lake district and along the north wall of Chilliwack River valley where they reach a thickness of at least 400 feet.

The Chilliwack River valley is underlain by stream deposits (4a) up to 50 feet or more thick, and the Fraser River valley is underlain by post-glacial Salish deposits (4-7) at least 600 feet thick in places.

A Cordilleran ice-sheet is known to have covered the area more than 12,000 and probably less than 25,000 years ago. The only deposits exposed in the area that are believed to be related to this ice-sheet form a thin mantle on bedrock in the higher mountains. The oldest known deposits in the lower mountains and the lowlands are the Huntingdon gravels (1). They appear to be stream deposits laid down following the retreat of the Cordilleran ice-sheet. These gravels and related deposits are overlain by sediments (2, 3) transported by the Sumas ice-sheet. The westward advance of this glacier was restricted to the Fraser lowland east of Abbotsford. It was apparently a valley glacier that originated in the Cascade Mountains about 11,000 years ago. A more detailed discussion is contained in the report on Sumas map-area, (Geol. Surv., Canada, Paper 59-9). The Salish deposits (4-7) are still in the process of formation.

Adequate data on the nature and distribution of surficial deposits aid the engineer, planner, and contractor in solving many problems pertaining to foundation materials, sewage disposal, flood control, slides, drainage, and construction materials. For a more detailed treatment of these subjects see the paper referred to above. The peat bogs (7) and some of the slopewash deposits (6b) are unsatisfactory foundation materials. Septic-tank sewage disposal systems will not operate satisfactorily in areas where the ground-water level is up to or nearly up to the absorption tile, or in areas that are periodically flooded. These conditions exist in much of the lowland areas.

At least ten gravel and sand pits now operate in the area and as may be seen from the study of the map the potential supply of gravel is very large.

The geologist is able to help the soil scientist by outlining the distribution of parent material and advising on the geological environment under which they were formed. The soil profiles in most of the Chilliwack map-area are poorly developed and the texture and composition of the parent material is still dominant. The writer believes that when the agricultural soils of the area are remapped the broad divisions of the completed soil map will show a very marked similarity to the divisions on the geological map.

A paper dealing with ground-water resources of the area is to be published separately.

MAP 53-1959
CHILLIWACK
BRITISH COLUMBIA
SHEET 92 ^H/₄ (West Half)

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