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**GEOLOGICAL SURVEY OF CANADA**  
**CANADIAN GEOSCIENCE MAP 252**  
**BRITISH COLUMBIA GEOLOGICAL SURVEY**  
**GEOSCIENCE MAP 2016-1**  
**SURFICIAL GEOLOGY**  
**MOFFAT CREEK AREA**

British Columbia  
Parts of NTS 93-A/3, NTS 93-A/4, NTS 93-A/5,  
and NTS 93-A/6

**Map Information  
Document**

**Preliminary**

**Geological Survey of Canada  
Canadian Geoscience Maps**

**2016**

**Canada**

## **PUBLICATION**



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### **Scale**

1:50 000

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## **ABSTRACT**

The Moffat creek area includes the Woodjam porphyry Cu-Au-Mo developed prospect. Between Moffat and Woodjam creeks, this prospect consists of six mineralized zones: Megabuck, Deerhorn, Spellbound, Southeast, Takom, and Three Firs. Till deposited during the Late Wisconsinan Fraser Glaciation is the predominant glacial sediment in the area. Landform-scale ice-flow indicators such as drumlins and crag-and-tail ridges, and outcrop-scale features such as striations, demonstrate that ice initially flowed south-southwest and later flowed north-northwest. Hummocky topography and eskers suggest

that deglaciation was, at least in part, via downwasting of stagnant ice masses. Important accumulations of glaciofluvial sand and gravel deposits in the Horsefly River valley, and in lower volumes in the southwest part of the study area, represent sources of construction aggregate. Retreat-phase glaciolacustrine sediments were deposited in the Horsefly area and Beaver Creek valley at elevations of up to 800 m above sea level. These deposits could be contemporaneous with, and related to, higher water levels in the Fraser or Quesnel river systems during deglaciation and the formation of glacial Lake Fraser. Alternatively, they could be related to local damming of the Beaver Creek and Horsefly River drainages.

## **RÉSUMÉ**

La région du ruisseau Moffat comprend le prospect mis en valeur de Woodjam qui est un gîte porphyrique de cuivre, or et molybdène. Ce prospect compte six zones minéralisées situées entre les ruisseaux Moffat et Woodjam : Megabuck, Deerhorn, Spellbound, Southeast, Takom et Three Firs. Le till mis en place pendant la Glaciation de Fraser du Wisconsinien supérieur est le sédiment glaciaire prédominant de cette région. Les indicateurs d'écoulement glaciaire à l'échelle des formes de terrain, tels que les drumlins et les structures en crag-and-tail, ainsi que ceux à l'échelle des affleurements rocheux, tels que les stries glaciaires, indiquent que le mouvement des glaces a tout d'abord été dirigé vers le sud-sud-ouest et subséquentement vers le nord-nord-ouest. Les formes de terrain bosselées et les eskers donnent à penser que la déglaciation s'est effectuée en partie par un amaigrissement sur place de masses de glace stagnantes. D'importants dépôts de sable et gravier fluvioglaciaires dans la vallée de la rivière Horsefly et en moindre quantité dans le sud-ouest de la région à l'étude constituent des ressources en granulats. Dans la région de Horsefly et la vallée du ruisseau Beaver, des sédiments glaciolacustres ont été déposés pendant le retrait glaciaire jusqu'à une altitude de 800 m au-dessus du niveau de la mer. Ces dépôts glaciolacustres pourraient être contemporains et une conséquence des hauts niveaux d'eau dans les bassins versants du fleuve Fraser et de la rivière Quesnel lors de la déglaciation et de la formation du Lac glaciaire Fraser. Selon une autre hypothèse, ils pourraient être reliés au barrage local des eaux du ruisseau Beaver et de la rivière Horsefly.

## **ABOUT THE MAP**

### **General Information**

Author: T. Ferbey, V.M. Levson, and A. Plouffe

Geology by T. Ferbey, V.M. Levson, and A. Plouffe (2011–2013)

Geology conforms to Surficial Data Model v. 2.1

Preparation of this map was completed with the field notes of V.M. Levson collected for Gold Fields Exploration Inc. in the region of the Woodjam prospect (south of Starlike Lake).

Geomatics by L. Robertson

Cartography by D. Viner

Joint initiative of the Geological Survey of Canada and the British Columbia Geological Survey, conducted under the auspices of the Intrusion-Related Ore System project as part of Natural Resources Canada's Targeted Geoscience Initiative-4 program

Map projection Universal Transverse Mercator, zone 10.  
North American Datum 1983

Base map at the scale of 1:50 000 from Natural Resources Canada, with modifications.  
Elevations in feet above mean sea level

Shaded relief image derived from the digital elevation model supplied by Natural Resources Canada. Illumination: azimuth 315°, altitude 45°, vertical factor 1x

Magnetic declination 2016, 17°02'E, decreasing 10.9' annually.

This map is not to be used for navigational purposes.

Title photograph: Two sets of striations and grooves on a Chilcotin Group basalt outcrop located 7 km southwest of Bells Lake. One set is oriented 150–330° (parallel to smaller marker) and a second set is oriented 132–312° (parallel to larger marker). An age relationship between these sets could not be determined at this site. Markers are 14 cm long. Photograph by T. Ferbey. 2015-097

The Geological Survey of Canada welcomes corrections or additional information from users.

Data may include additional observations not portrayed on this map. See documentation accompanying the data.

This publication is available for free download through GEOSCAN (<http://geoscan.nrcan.gc.ca/>).

Preliminary publications in this series have not been scientifically edited.

### **Map Viewing Files**

The published map is distributed as a Portable Document File (PDF), and may contain a subset of the overall geological data for legibility reasons at the publication scale.

## **ABOUT THE GEOLOGY**

### **References**

Hashmi, S., Plouffe, A., and Ward, B.C., 2015. Surficial geology, Bootjack Mountain area, British Columbia, Parts of NTS 93-A/5, NTS 93-A/6, NTS 93-A/11 and NTS 93-A/12; Geological Survey of Canada, Canadian Geoscience Map 209 (preliminary),

British Columbia Geological Survey, Geoscience Map 2015-02, scale 1:50 000.  
doi:10.4095/296029

Plouffe, A. and Ferbey, T., 2015. Surficial geology, Granite Mountain area, British Columbia, parts of NTS 93-B/8 and NTS 93-B/9; Geological Survey of Canada, Canadian Geoscience Map 223 (preliminary), British Columbia Geological Survey, Geoscience Map 2015-4, scale 1:50 000. doi:10.4095/296793

### **Author Contact**

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### **Coordinate System**

Projection: Universal Transverse Mercator  
Units: metres  
Zone: 10  
Horizontal Datum: NAD83  
Vertical Datum: mean sea level

### **Bounding Coordinates**

Western longitude: 121°40'00"W  
Eastern longitude: 121°10'00"W  
Northern latitude: 52°25'00"N  
Southern latitude: 52°10'00"N

### **Surficial Data Model Information**

The Geological Survey of Canada (GSC) through the Geomapping for Energy and Minerals Program (GEM) has undertaken the Geological Map Flow to develop protocols for the collection, management (compilation, interpretation), and dissemination of surficial and bedrock geology data and map information. To this end, a data model has been created.

The Surficial Data Model (SDM) was designed using ESRI geodatabase architecture. The XML workspace document provided can be imported into a geodatabase, and the geodatabase will then be populated with the feature datasets, feature classes, tables, relationship classes, subtypes and domains.

Shapefile and table (.dbf) versions of the data are included within the data. Column names have been simplified and the text values have been maintained within the shapefile attributes. The direction columns are numerical, to display rotation for points,

and the symbol fields will hold the correct values to be matched to the appropriate style file.

For a more in depth description of the data model please refer to the official publication:

Cocking, R.B., Deblonde, C., Kerr, D.E., Campbell, J.E., Eagles, S., Everett, D., Huntley, D.H., Inglis, E., Laviolette, A., Parent, M., Plouffe, A., Robertson, L., St-Onge, D.A., and Weatherston, A., 2015. Surficial Data Model, version 2.1.0: Revisions to the science language of the integrated Geological Survey of Canada data model for surficial geology maps; Geological Survey of Canada, Open File 7741, 276 p.  
doi:10.4095/296568

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