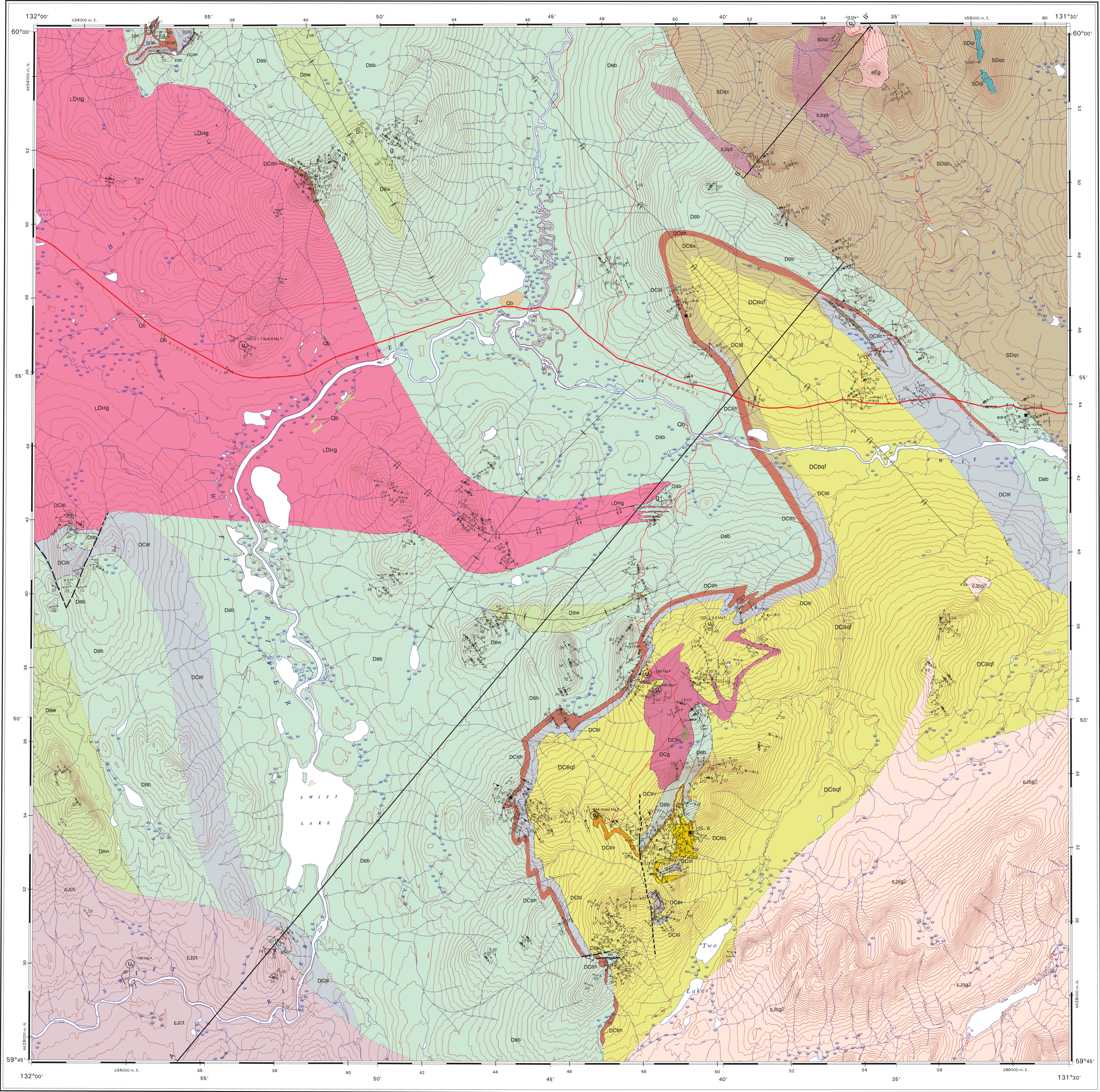




GEOLOGICAL SURVEY BRANCH

OPEN FILE 2000-6

GEOLGY OF

SMART RIVER AREA

(NTS 1040/13)

Geology by Mitchell G. Mihalynuk, JoAnne L. Nelson, Tom P. Gleeson, Charles F. Roots and Martin de Keijzer

Digital cartography by Bern Orest and Roger Macleod (Geological Survey of Canada), and Mitchell G. Mihalynuk
Digital base map compiled by the Province of British Columbia, Ministry of Environment Land and Parks, modified by the Geological Survey of Canada
TRIM 71,72,73,81,82,83,91,92,93

Scale 1:50 000

Universal Transverse Mercator Projection
North American Datum 1983

Magnetic declination Jan 2000, 28° 52' 5" E, decreasing 16.2 annually.
Centre of the map
Elevations in metres above mean sea level

LEGEND

POST ACCRETIONARY UNITS

QUATERNARY

Qb Tuya Basalt: olivine basalt, tuff

Eocene

EEg Hornblende granodiorite > hornblende diorite, quartz and biotite hornblende quartz monzonite and monzonite; circa 58Ma

LATE SYN - TO POST - ACCRETIONARY INTRUSIONS

EARLY JURASSIC

EJqd Hornblende diorite, quartz diorite, lesser biotite hornblende quartz monzonite and monzonite

EJsg2

Non-foliated K-feldspar porphyritic, Simpson Peak granodiorite, quartz monzonite

EJct

Foliated, syntectonic? Coconino biotite-hornblende quartz diorite/tonalite

PRE-ACCRETIONARY UNITS

BIG SALMON COMPLEX - PERICRATONIC SEDIMENTS AND OVERLYING ARC COMPLEX

PRE-DEVONIAN TO CARBONIFEROUS

DCg Strongly deformed granitoid gneiss; includes 354Ma Logjam intrusion

DCB

Devonian - Carboniferous Big Salmon Complex (undivided)

DCBq

Orthoquartzite with minor pelitic interlayers

DCbv

Dacite and andesite tuff and marble

DCbc

Polymictic conglomerate

DCbl

Marble, limestone, dolomite

DCBa

Carbonaceous schist and quartzite, blue quartz granite conglomerate

DCbh

Crinkle chert, commonly containing plectonites (manganiferous - epidote); traces of chalcopyrite are common

DBw

Wacke in metabasite

DBb

Metabasalt, tuffite, locally metagabbro or metadiorite as denoted by 'g'

DCBqt

Quartzite, phyllite, biotite - muscovite - garnet schist, lesser tuff and marble

LDHg

Mount Hazel granitoid gneiss; 362 Ma[±], may include felsic extrusive equivalents

SILURIAN TO DEVONIAN

SDqc

Impure quartzite and conglomerate (<422Ma[±])

SDqt

Pale green-gray to white arenite with a calcareous matrix and abundant limy layers, very well laminated

SYMBOLS

Bedding, tops unknown: inclined, vertical

Bedding, overturned

Foliation, generation unknown, vertical

Foliation: inclined, 1st phase, 2nd phase, 3rd phase

Foliation, vertical 1st phase

Fold, axial surface (no fabric)

Dike: inclined, vertical

Lineation: 1st phase, 2nd phase, 3rd phase

Clast elongation

Fold, unspecified, 1st phase, 2nd, 3rd, 4th

Crenulation cleavage intersection lineation:

(in 1st phase, 2nd phase, 3rd phase folds)

Mineral lineation: horizontal, plunging

Fault Plane

Joining: inclined, vertical

Shear band cleavage, dextral, sinistral, top up, top down, unspecified

Axial cleavage, 2nd phase fold; 3rd phase fold: inclined, vertical

Vein

Geological contact: defined, approximate, assumed

Outcrop with observations

Normal Fault: defined, approximate, inferred

Folds: overturned synform, overturned antiform,

phase noted if known

Folds: antiform, synform, phase noted if known

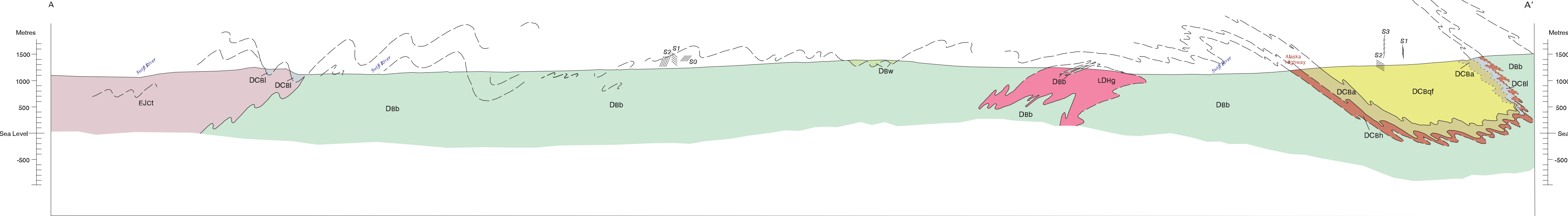
Facies boundary

Topographic contour (20m, 100m interval)

Esker (flow unknown, known)

Isotopic age date sample site, U-Pb zircon (age in Ma)

Schematic Cross-section, Smart River Area
British Columbia (scale 1:50 000)



COMPILATION SOURCES:

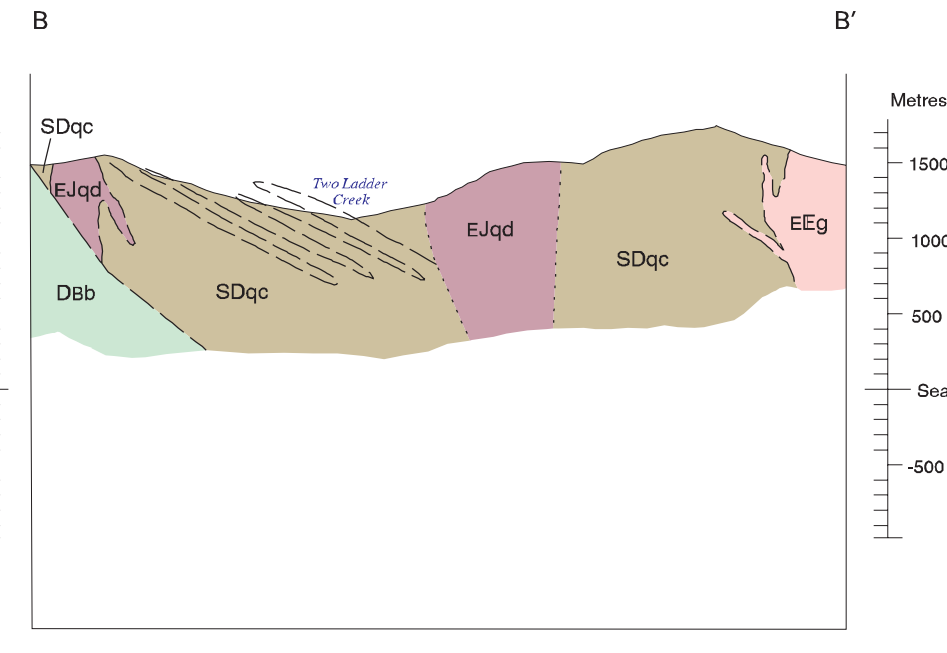
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Sources of Isotopic Age Data
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1 Mihalynuk, M.G., Nelson, J.L., Roots, C.F., Friedman, R.M. and de Keijzer, M. (2000): Ancient Pacific Margin Part III: Regional Geology and Mineralization of the Big Salmon Complex (NTS 104N/9E, 16 & 104O/12, 13, 14W); in Geological Fieldwork 1999, B.C. Ministry of Energy and Mines, Paper 2000-1, pages 27-46.
2 Unpublished data from Larry M. Heaman, 2000, University of Alberta
3 Gleeson, T.P., Friedman, R.M. and Wahl, K. (2000): Stratigraphy, structure, geochronology, and provenance of the Logjam area, northwestern British Columbia (NTS 104O/14W); in Geological Fieldwork 1999, B.C. Ministry of Energy and Mines, Paper 2000-1, pages 287-306.
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Dixon-Warren, A. and Hickey, A. (2000): Surficial Geology of the Swift River Area, NTS 104N/9, 16 and 104O/14W; B.C. Ministry of Energy and Mines, Open File 2000-5.
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105001	105004	105003
104N16	104O13	104O11
OF 2001-4	OF 2000-6	OF 2001-6
104N09	104O12	104O11
OF 2001-5		

Mineral Occurrences

Name	Status	Commodities
Logjam	Developed prospect	Mo, W, Bi, Cu, Be, F
Crinkle chert	Showing	Cu, Ag, Zn, Au
Alaska Highway	Showing	Cu, Co, As, W
Crinkle chert - Arsenault	Showing	Cu
Arsenault	Prospect	Cu
Arsenault - East	Showing	Cu, Zn, Ag, Co, Cd, Bi



NATMAP
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Le Programme national de cartographie géoscientifique du Canada

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Mihalynuk, M.G., Nelson, J.L., Gleeson, T.P., Roots, C.F. and de Keijzer, M. (2000): Geology of Smart River (NTS 104O/13); British Columbia Ministry of Energy and Mines, Open File 2000-6, scale 1:50 000.