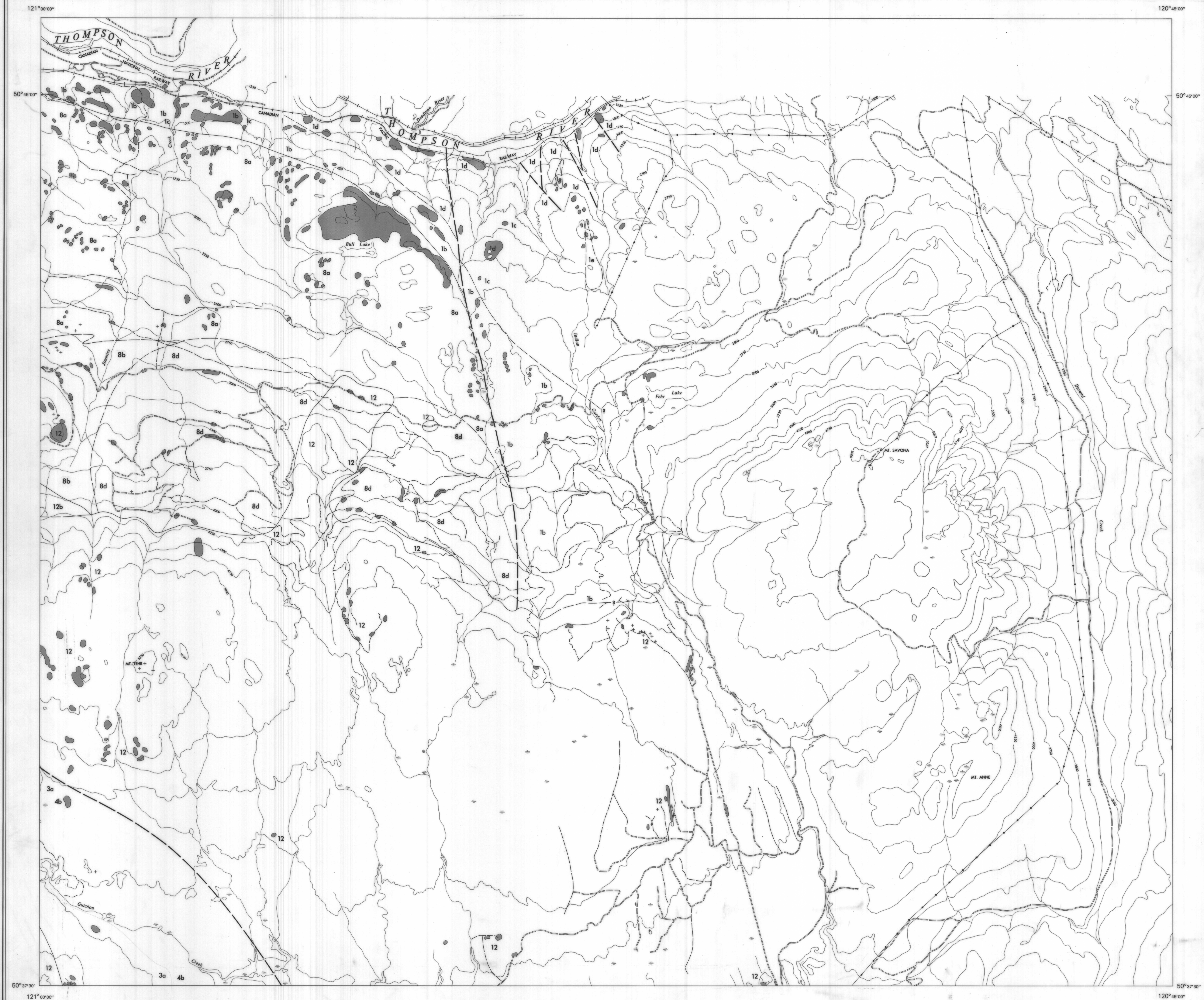


#30 (1)



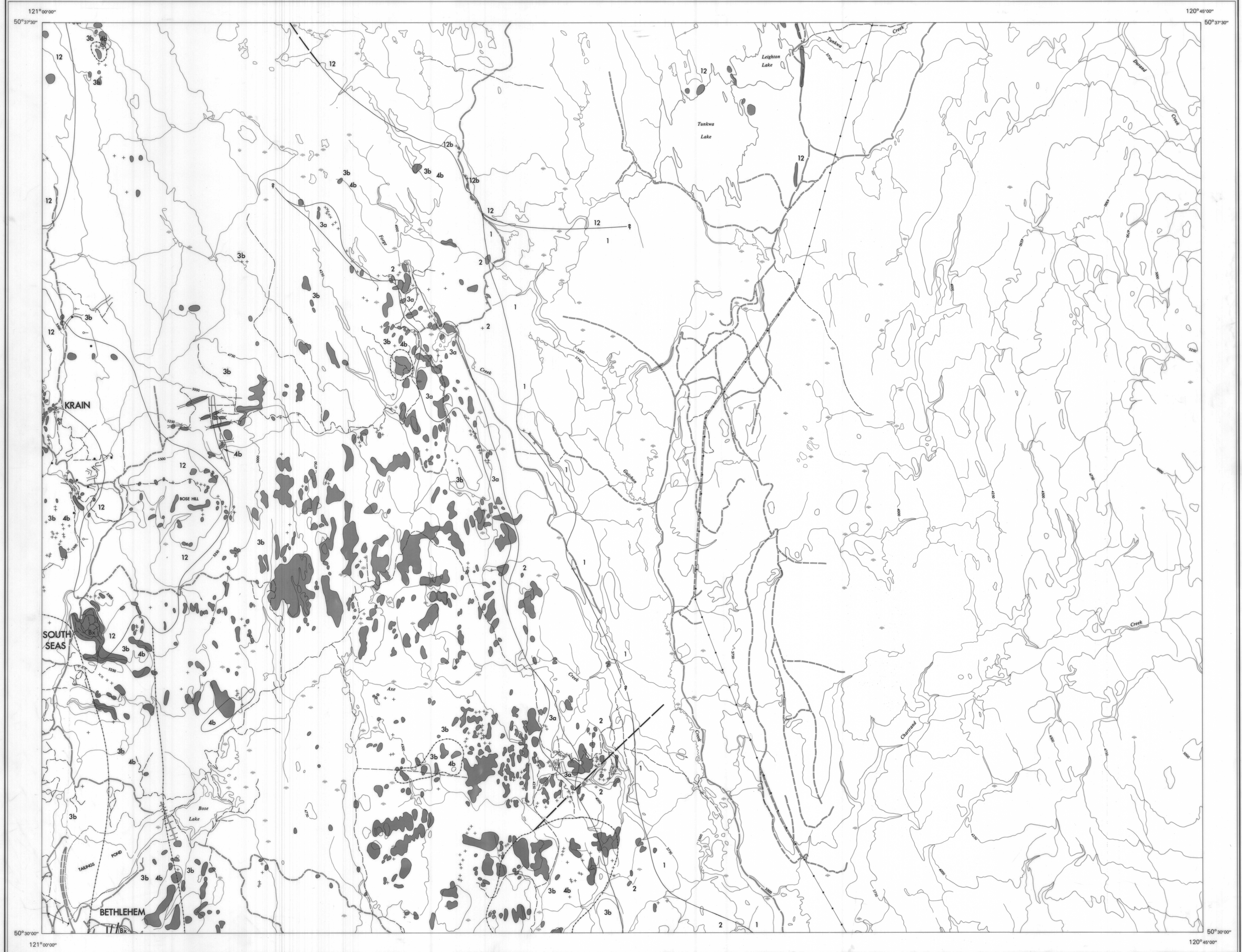




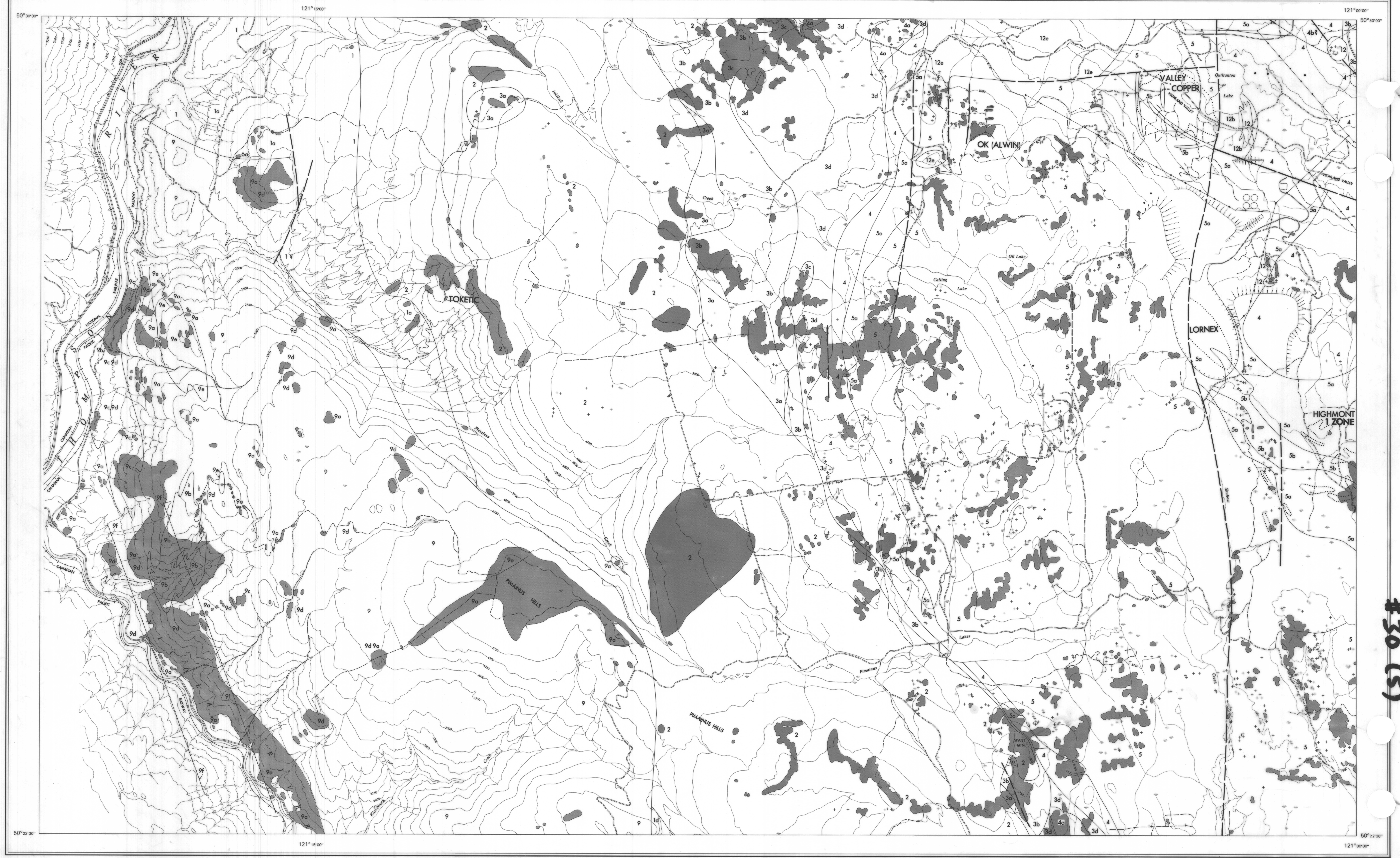


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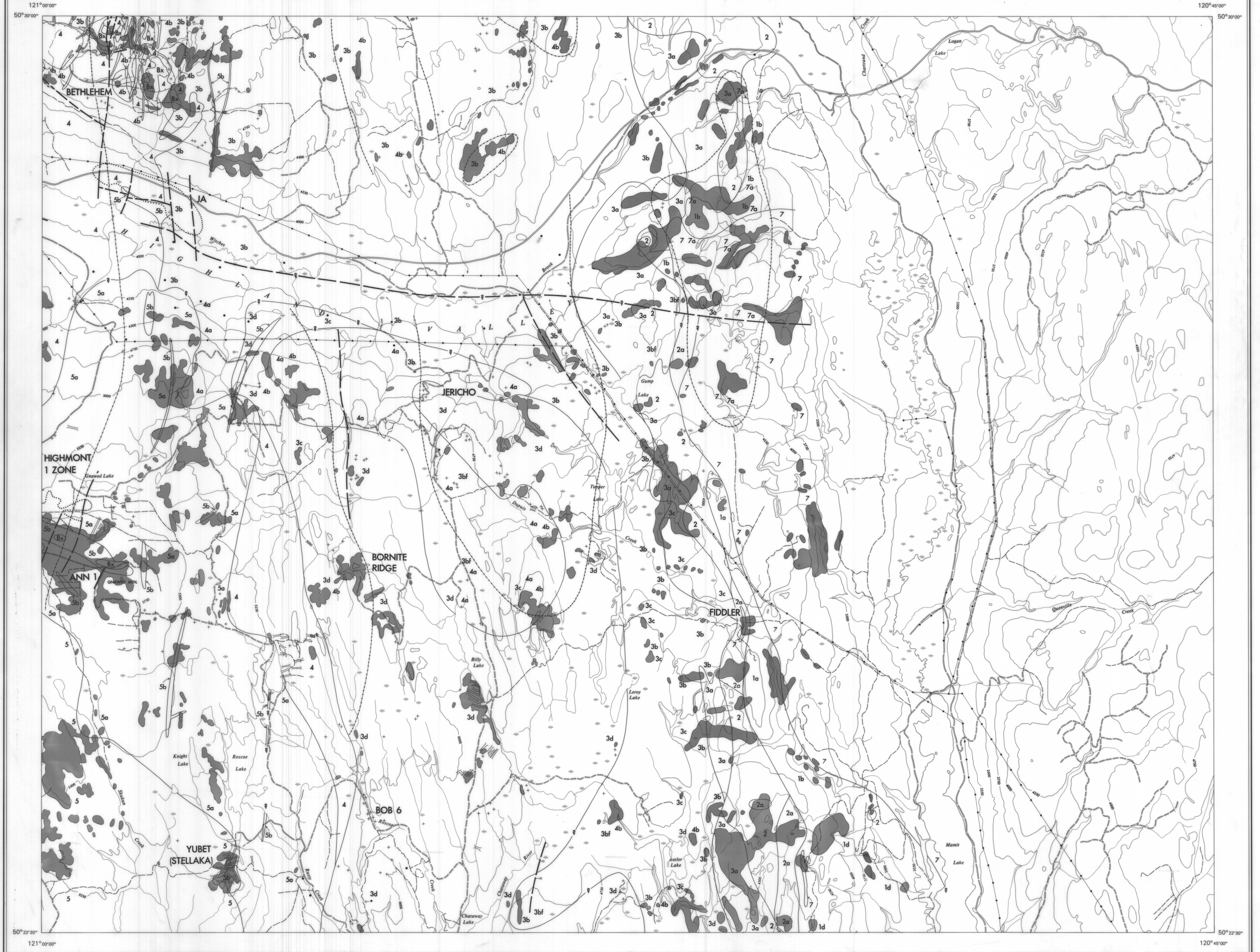




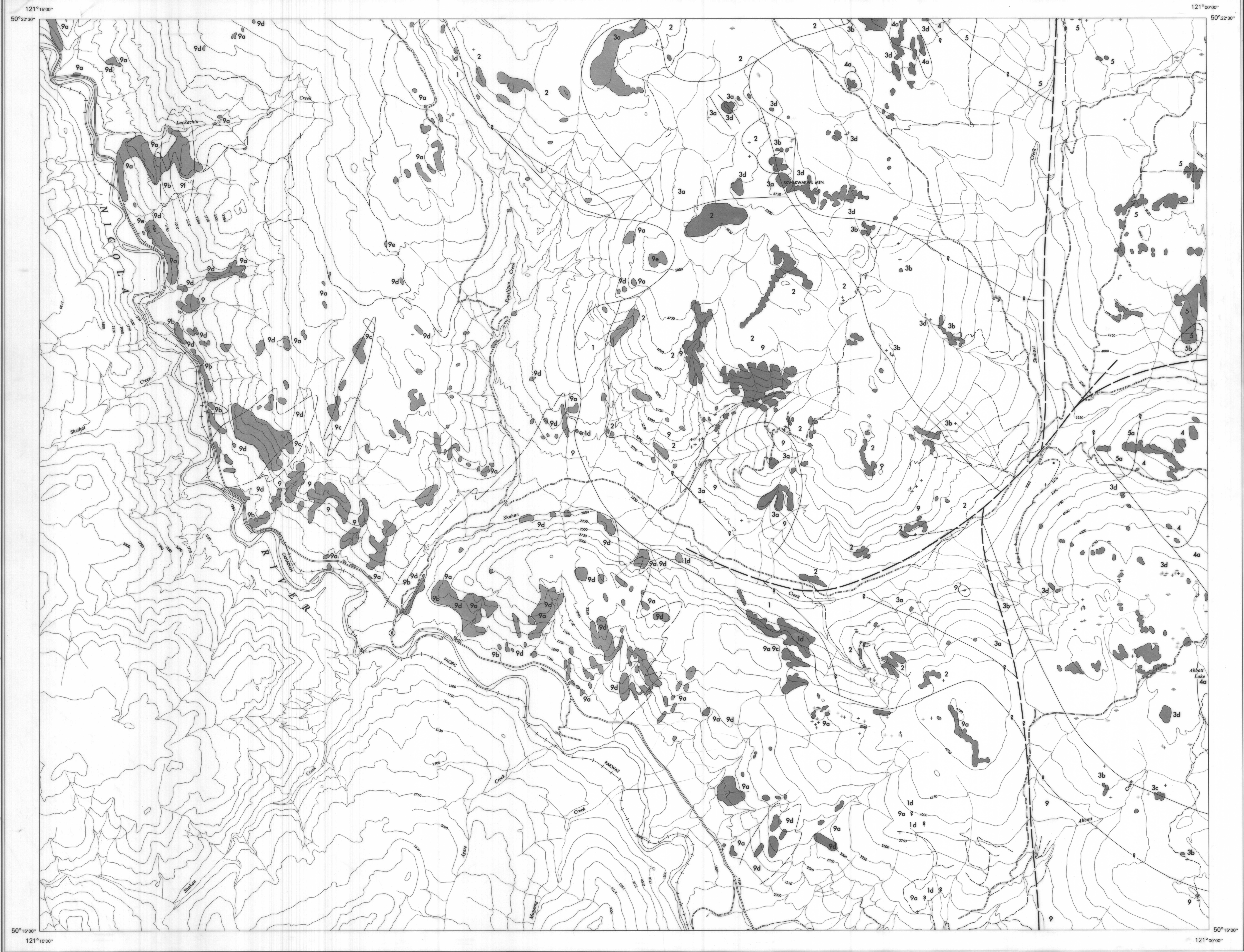




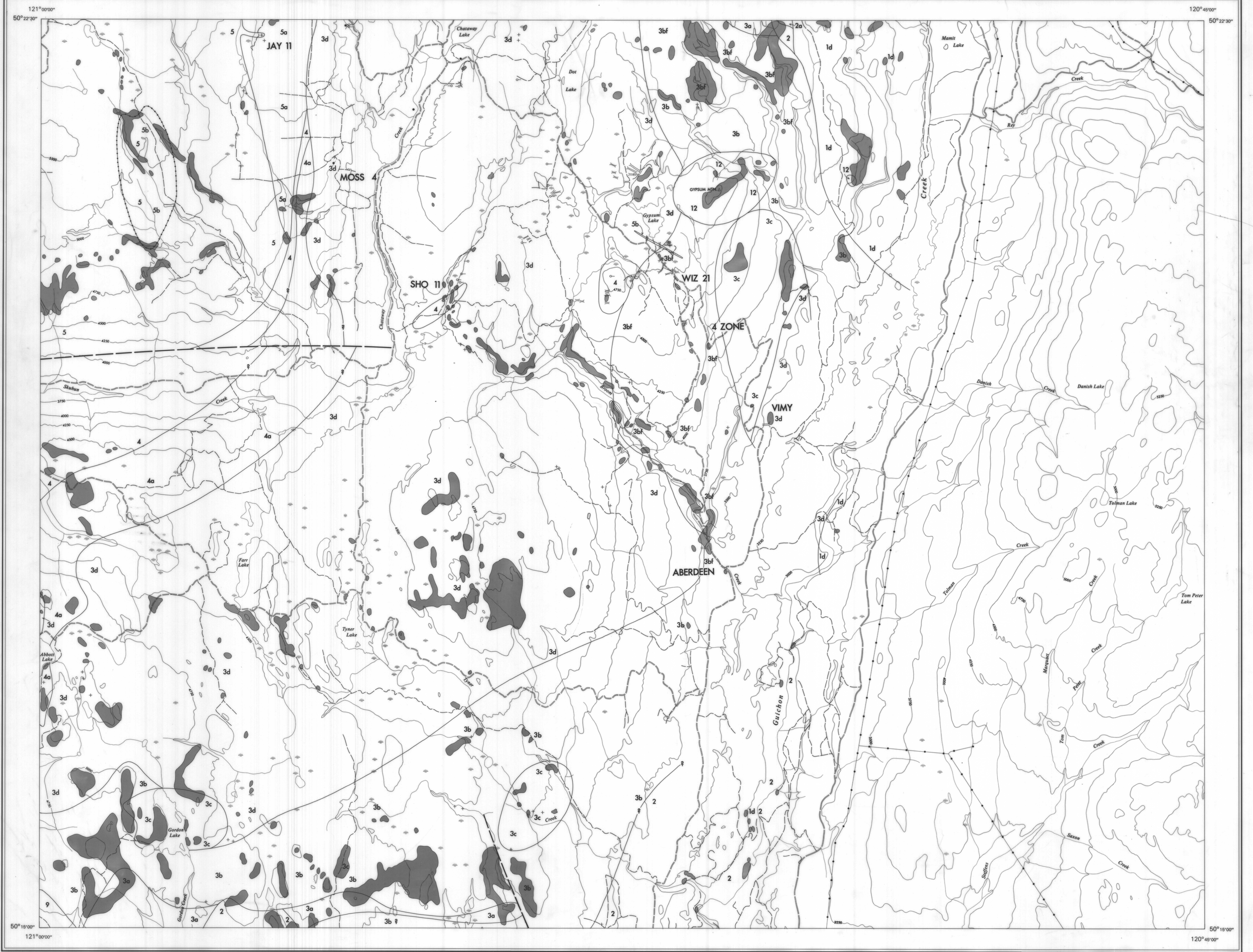














#30 (9)



Province of British Columbia  
Ministry of Mines and Petroleum Resources  
PRELIMINARY MAP NO. 30

SHEET 9 OF 10

121°07'30"

121°00'00"

50°15'00"

50°15'00"



50°07'30"

121°07'30"

50°07'30"

121°00'00"



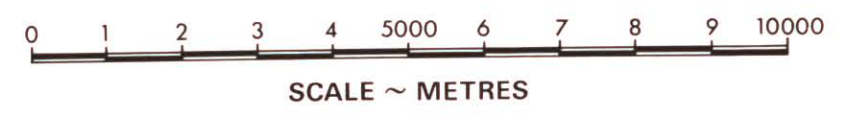






Province of British Columbia  
Ministry of Mines and Petroleum Resources

**GEOLOGY OF THE GUICHON CREEK BATHOLITH  
AND HIGHLAND VALLEY  
PORPHYRY COPPER DISTRICT,  
BRITISH COLUMBIA**



**LEGEND**

**EOCENE AND YOUNGER (?)**

**KAMLOOPS GROUP\***

- 12a ARLINGTON VOLCANIC AND INTRUSIVE ROCKS: BIOTITE QUARTZ PLAGIOCLASE PORPHYRY; INTRUSIVE AND EXTRUSIVE BRECCIA
- 12d STOCKS AND ASSOCIATED FLOWS OF BIOTITE HORNBLENDE PLAGIOCLASE PORPHYRY
- 12b, 12c VOLCANIC PEBBLE CONGLOMERATE, SANDSTONE, MUDSTONE, MINOR AMOUNTS OF DIATOMITE, AND SCATTERED LAVA FLOWS
- 12, 12a, 12b, 12c, 12d PREDOMINANTLY INTERMEDIATE, SOME ACID AND BASIC LAVA FLOWS; MINOR TUFFS AND VOLCANIC BRECCIAS

**EOCENE (?)**

**COLDWATER SERIES**

- 11 SEDIMENTARY ROCKS: SANDSTONE, SHALE, CONGLOMERATE, COAL MEASURES

**CRETACEOUS**

**KINGSVALE GROUP**

- 10 BASALT, ANDESITE, HORNBLENDE NEEDLE PORPHYRY (DACITE), VOLCANIC BRECCIA, LOCAL BASAL SANDSTONE AND CONGLOMERATE

**SPENCES BRIDGE GROUP**

- 9f SWARMS OF ANDESITE TO BASALTIC DYKES
- 9e RHYOLITE AND RHYODACITE FLOWS
- 9d, 9c VOLCANIC BRECCIAS, SOME AGGLOMERATE, TUFF, RED ANDESITIC LAVAS
- 9b SANDSTONE, PEBBLE CONGLOMERATE, SHALE (CARBONIZED PLANT REMAINS COMMON)
- 9, 9a MAINLY INTERMEDIATE LAVA FLOWS, DARK-COLOURED PORPHYRITIC PLAGIOCLASE ANDESITES, BASALT

**JURASSIC**

**ASHCROFT FORMATION**

- 8 BLACK SHALE, SILTSTONE, SANDSTONE, MINOR CONGLOMERATE AND LIMESTONE
- 8a PEBBLE TO BOULDER CONGLOMERATE

**TRIASSIC**

**GUICHON CREEK BATHOLITH\*\* AND ASSOCIATED INTRUSIONS**

**INTRUSIONS OF POST-BORDER PHASE AGE**

- 7 GUMP LAKE PHASE - GRANODIORITE TO QUARTZ MONZONITE
- 6 SPATSNUM QUARTZ MONZONITE; BARNES LAKE PLAGIOCLASE APLITE

**GUICHON CREEK BATHOLITH**

- 5, 5a BETHSAIDA PHASE - QUARTZ MONZONITE TO GRANODIORITE AND SLIGHTLY YOUNGER (?) PORPHYRY DYKES AND PLUGS
- 5a SKEENA VARIETY - GRANODIORITE, INTERMEDIATE IN COMPOSITION AND TEXTURE BETWEEN BETHLEHEM AND BETHSAIDA PHASES
- 4, 4a BETHLEHEM PHASE - GRANODIORITE AND SLIGHTLY YOUNGER PORPHYRY DYKES AND PLUGS
- 4b BRECCIA BODIES OF EXPLOSIVE ORIGIN
- 4c ROCKS WITH TEXTURES AND COMPOSITIONS TRANSITIONAL BETWEEN HIGHLAND VALLEY AND BETHLEHEM PHASES OR AREAS WITH SWARMS OF BETHLEHEM PHASE DYKES IN HIGHLAND VALLEY PHASE

**HIGHLAND VALLEY PHASE**

- 3d CHATAWAY VARIETY - GRANODIORITE
- 3c GRANODIORITES WITH TEXTURES AND COMPOSITIONS TRANSITIONAL BETWEEN GUICHON AND CHATAWAY VARIETIES
- 3b GUICHON VARIETY - GRANODIORITE, INCLUDES AREAS OF FINER GRAINED GRANODIORITE NEAR CHATAWAY LAKE WHICH HAVE TEXTURES AND COMPOSITIONS LIKE THOSE OF NORMAL GUICHON VARIETY
- 3a GRANODIORITE TO QUARTZ DIORITE WITH TEXTURES AND COMPOSITIONS TRANSITIONAL BETWEEN BORDER AND HIGHLAND VALLEY PHASES
- 2 BORDER PHASE - QUARTZ DIORITE TO GRANODIORITE
- 2a DIORITE TO QUARTZ DIORITE WITH COMPOSITIONS AND TEXTURES TRANSITIONAL BETWEEN NICOLA GROUP ROCKS AND BORDER PHASE QUARTZ DIORITE

**INTRUSIONS OF POST-NICOLA, PRE-SPENCES BRIDGE GROUP AGE**

- 1f, 1g COYLE STOCK - DIORITE TO QUARTZ MONZONITE, LOCAL ALASKITE AND MAFIC QUARTZ PLAGIOCLASE PORPHYRY PLUGS; PROBABLY RELATED TO LATE-STAGE NICOLA VOLCANISM

**NICOLA GROUP**

- 1e ACIDIC VOLCANIC FLOWS AND PYROCLASTIC ROCKS
- 1d MAINLY VOLCANIC ROCKS OF INTERMEDIATE TO BASIC COMPOSITION
- 1c VOLCANIC BRECCIAS AND FLOWS, FLOW BRECCIA AND DEBRIS SLIDES
- 1b MIXED VOLCANIC AND SEDIMENTARY ROCKS
- 1a MAINLY SEDIMENTARY ROCKS, SANDSTONE, LIMESTONE, ARGILLITE, SOME CHERT

\*SUBDIVISIONS UNDER MAIN HEADINGS ARE BASED ON LITHOLOGY, NOT RELATIVE AGE.  
\*\*TERMINOLOGY FOR PHASES AND VARIETIES OF THE GUICHON CREEK BATHOLITH MODIFIED SLIGHTLY AFTER K. E. NORTHCOTE, BRITISH COLUMBIA MINISTRY OF MINES AND PETROLEUM RESOURCES, BULLETIN 56, 1969.

**SYMBOLS**

- GEOLOGICAL**
- OUTCROP
  - GEOLOGICAL CONTACT
  - FAULT
  - DYKE
  - DYKE SWARM AREA
  - ORE OUTLINE
- WORKINGS**
- OPEN PIT
  - MINE DUMP
  - SHAFT
  - ADIT
  - TRENCH
- GEOGRAPHICAL**
- HIGHWAY
  - TWO-WHEEL-DRIVE VEHICLE ROAD
  - FOUR-WHEEL-DRIVE VEHICLE ROAD
  - TRAIL OR OVERGROWN ROAD
  - POWERLINE
  - CONTOUR, INTERVAL 250 FEET

GEOLOGY BY W. J. McMILLAN, 1969 TO 1974; J. D. BLANCHFLOWER, 1970 TO 1972; P. McANDLESS, 1970; D. COOMBS, 1970, 1971; P. GARVIN, 1971; ASSISTED BY N. JORGENSEN, D. HENDRY, B. LEE, J. CORDONIER, S. LANE, A. SEMENCHUK, AND W. ISHERWOOD.

50° 30'

121° 00'

ASHCROFT RIVER  
THOMPSON RIVER  
ALYN RIVER  
YALONIA RIVER  
CRAIGMONT RIVER



NO OUTCROP