

**GEOLOGY OF THE JOHNNY MOUNTAIN AREA**

NTS 104B/11E

**BETSY A. FLETCHER AND  
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SCALE 1:10 000



COUNTOUR INTERVAL 500 FEET

MAGNETIC DECLINATION 27° EAST

**LEGEND**

**INTRUSIVE ROCKS**

**JURASSIC**

**C** FELSITE

**LOWER JURASSIC**

**B** K-FELDSPAR PORPHYRY

**UPPER TRIASSIC**

**A** DIORITE

**STRATIFIED ROCKS**

**LOWER JURASSIC**

**3B** UPPER ANDESITE AND BASALT: CRYSTAL AND ASH TUFFS; FLOWS

**3D** MIDDLE DACITE: LIGHT GREEN TO GREY ASH, CRYSTAL AND LAPILLI TUFFS, LOCALLY WELDED

**3A** LOWER ANDESITE: MEDIUM TO DARK GREEN ASH, CRYSTAL AND LAPILLI TUFFS

**UPPER TRIASSIC**

**2** SEDIMENTARY SEQUENCE: WELL BEDDED SEDIMENTS (S) WITH MINOR VOLCANIC INTERBEDS (V)

**PALEOZOIC**

**1** METASEDIMENTS: STRONGLY FOLIATED SEDIMENTS WITH MINOR VOLCANIC INTERBEDS

**SYMBOLS**

Contact (defined, inferred, assumed).....	
Bedding, tops known (inclined, overturned).....	
Bedding, tops unknown (horizontal, inclined, vertical).....	
Bedding, from other reports.....	
Shear zone.....	
Foliation (inclined, vertical).....	
Fault (assumed).....	
Lineament.....	
Mineral occurrence.....	
Gossan.....	
Fossil locality.....	
Geologic station.....	
Road.....	
Adit.....	

**ABBREVIATIONS**

RD	rhyodacite	tbd	turbidite
Fsparø	K-feldspar porphyry	arg	argillite
DR	diorite	st	siltstone
F	felsite	wk	wacke
A	andesite	sd	sandstone
B	basalt	cg1	conglomerate
D	dacite	md	mudstone
at	ash tuff	lst	limestone
xt	crystal tuff	()	phenocrysts
lt	lapilli tuff	pl	plagioclase
t	tuffaceous	px	pyroxene
v	volcanic	hb	hornblende
f	feldspar		

**MINERAL OCCURENCES**

Map Number	Name	Minfile Number	Commodity
1	Hemlo West 15	248	Cu, Au, Ag
2	Gold Bug	295	Au, Ag, Cu, Zn, Pb
3	Boot (Waratah)	297	Au
4	Chopin	298	Au, Cu
5	Handel	205	Ag, Zn, Pb, Au, As
6	Ridge	299	Au, Ag
7	Bronson	300	Au, Cu, Zn, Ag, Pb
8	Road Showing		Au
9	C-3	264	Au, Ag, Cu, Pb, Zn
10	Mike		
11	Snip (Twin Zone)	250	Au, Ag, Zn, Cu, Pb
12	Bonanza	4	Ag, Zn, Pb, Au, Cu
13	Johnny Flats		Pb, Zn
14	Windsock		Au
15	C-2	263	Au, Ag, Pb, Zn
16	Twin Creeks North		Pb, Zn
17	Twin Creeks South		Pb, Zn
18	Goldrush		Au, Cu, Ag, Zn, Pb
19	P-13		Au, Cu, Ag, Zn, Pb
20	Discovery		Au, Cu, Ag, Zn, Pb
21	16		Au, Cu, Ag, Zn, Pb
22	Pickaxe		Au, Cu, Ag, Zn, Pb
23	Wolverine	206	Zn, Pb, Cu, Au
24	C-1	262	Au, Ag, Pb, Zn, Cu
25	Grace	270	Au, Ag, Cu
26	Two Barrel	261	Ag, Pb, Zn, Au
27	Monsoon		Mo
28	Red Bluff	77	Au, Ag, Cu
29	McFadden	260	Au

**JOHNNY MOUNTAIN GEOLOGY**

**INTRUSIVE ROCKS**

**Hoodoo Basalt Dykes**  
Dark green groundmass, fine grained, olivine and plagioclase phyr. Underground at 16 vein, Johnny Mountain Gold Mine. Narrow, not shown.

**Lamprophyre Dykes**  
Biotite and pyroxene lamprophyres. Dark green to black. Rarely with pink carbonate blebs. Narrow belt cuts off south end of Twin Zone, Snip deposit. Narrow, not shown.

**Biotite Spotted Unit**  
Biotite porphyritic mafic dyke. Underground at Twin Zone, Snip deposit. Narrow, not shown.

**Felsite**  
**Stocks:** leucocratic, fine grained, white to pale grey to pale pink. Local quartz eyes and/or minor feldspar phenocrysts. May be weakly foliated.  
**Dykes:** fine grained white to pale grey to pale pink. Minor feldspar phenocrysts.

**K-feldspar Porphyry**  
**Stocks:** coarse grained monzodiorite with white or pink K-feldspar phenocrysts to 3cm, plagioclase and hornblende phenocrysts to 5mm. Light grey to green.  
**Dykes:** fine grained grey matrix with K-feldspar phenocrysts to 1cm, plagioclase phenocrysts to 5mm.

**Diorite**  
**Stocks:** medium to coarse grained hornblende, biotite, feldspar and quartz.  
**Microdiorite dykes:** fine grained, dark grey, plagioclase and hornblende phyr.

**STRATIFIED ROCKS**

**VOLCANIC SEQUENCE**

This sequence can be subdivided into three main units on the basis of lithology:

1. Lower andesites including the Johnny Mountain mine series
2. Middle dacites and
3. Upper andesites and basalts.

These three units are possibly overlain by an additional andesitic and dacitic package which is in fault contact with the upper andesitic unit on the peak of Johnny Mountain. Minor volcanic sediments occur as interbeds throughout the volcanic sequence.

**Upper Andesites and Basalts**  
**Ash tuff;** very fine grained black to dark green, interbedded with andesite crystal and lapilli tuffs  
**Crystal tuff;** medium to dark green with plagioclase and hornblende phenocrysts.  
**Lapilli tuff;** medium to dark green, 1 to 10cm clasts.

**Middle Dacites**  
**Ash tuff;** fine grained light grey to light green, minor hornblende crystals  
**Lapilli tuff;** light grey to green, 1 to 30cm clasts  
**Plagioclase porphyry;** light to medium green, locally orange weathering, commonly a fragmental with 1 to 30cm clasts  
**Welded tuff;** light grey to green to black, very thinly laminated, rhythmically bedded, siliceous, flattened clasts up to 3mm  
**Minor tuff breccias;** plagioclase phyr clasts up to 1.2m in ash tuff matrix.

**Lower Andesites**  
**Crystal tuff;** medium to dark green with plagioclase, hornblende and rare pyroxene phenocrysts.  
**Ash tuff;** very fine grained medium to dark green, occasionally brownish, local plagioclase crystals.  
**Lapilli tuff;** dark grey to green, 1 to 30cm clasts.

**Volcanic Sediments**  
Well bedded, poorly sorted, immature light to dark grey to green tuffaceous wackes and conglomerates. Locally with abundant broken plagioclase crystals. Clasts generally angular to subangular, may be very coarse, (up to 2m).

**SEDIMENTARY SEQUENCE**

This sequence consists of undeformed thin bedded (1 to 30cm) volcanic sediments with minor interbedded volcanics. It includes the Snip mine series. These sediments are underlain by a strongly deformed sequence of sediments and volcanics.

**Undeformed Sediments**  
Dark grey to black or brown tuffaceous sandstone, siltstone, mudstone, argillite, wacke and pebble conglomerate. Also tuffaceous conglomerate with angular argillite chips in a sandy matrix.

**Deformed Sediments**  
Dark grey to black tuffaceous sandstone, mudstone, argillite, wacke, conglomerate and minor limestone. Minor felsic and intermediate tuffs. Rare crinoidal limestone. Strongly foliated, micaceous to phyllitic. Minor folds visible. Primary textures and bedding obscured or destroyed.

**Acknowledgements**

Mapping was carried out by D.J. Alldrick, J.M. Britton, M.E. Maclean, K.D. Hancock and the authors. We are grateful to Paul Metcalfe, Dave Yeager, Jerry Blackwell and Jim Atkinson of Skyline Explorations Ltd for their hospitality and for sharing their information on Johnny Mountain.

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