G.E.P. Eastwood

Author G.E.P. Eastwood

Sept. 8/70

OGZL 161) 111, 183,

The Bon mineral occurrences are in predominantly volcanic rocks(which were assigned by H.C. Cunning to the Karmutsen group See Figure E') (now known as the Karmutsen Formation). These rocks are mostly light to dark green in colour, and consist of alternating layers of MASSIVE BASKET or andesite amygdaloidal and maeroscopically featureless rock) The amygdules are from 1 to 10 millimeters in diameter, and are/filled/with consist of quartz, epidote, or both. Locally they also contain chalcopyrite. Pink feldspar phenocrysts occur in a few places, but porphyritic phases are uncommon, and visible feldspar is ED IN PART normally light yellowish-green <del>desprea</del>d alterat<del>ion</del> to epidote.

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East of the "Discovery" trench (see Figure £2) a band of silicified rock about 5 feet thick dips 30° SW and is traceable for about 350 feet. The weathered surface is mottled light and dark grey or brownish-grey, suggesting replacement of limestone. The sawn surface however shows irregularly reticulating veins of quartz cutting silicified greenish-grey rock. In thin section the greenish-grey rock is seen to consist of quartz, chlorite, epidote, and possibly a little pyroxene. A highly reflective

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praphite. Scattered hematite grains are pseudomorphous after pyrite. Quartz veinlets pass up from the silicified band into overlying epidosite. The epidote and pyroxene could have been formed during metasomatism of impure limestone or a volcanic rock, but the presence of chlorite alad would tend to suggest a volcanic rock. The band may be a silicified tuff.

A band of limestone is reported to occur in the volcanics along the creek north of the "Discovery" trench.

A short distance to the southwest of the showings the volcanic rocks are intruded by the Nimpkish batholith, which is (in Hoad by 1953, p.30) described by Gunning as predominantly granodiorite. Around the head of the logging road it is reddened and altered to epidote, but eastward to the contact it is fresh and increasingly fine grained, reflecting a broad chilled marginal zone. Hornblende needles are conspicuous in this zone. Near the showings the contact lies/whder/& is followed by a small creek gully, and the rocks on either side show no contact effects. To the northwest, however, intrusive breccia is reported to occur along the contact. The contact near the showings may be a fault.

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F. Holcapek of Agilis Exploration Services reports that the volcanic units dip southwest at low to moderate angles, flattening near the contact with the Nimpkish batholith. He infers several strike and dip faults dislocating these units.

SHOW COS.

The principal mineral deposits on the property are replacements

of parts of certain volcanic layers by skarn and either magnetite or s or consider to occur in a few of the shawings. They are strung out along a slightly curved line pyrrhotite. trending N 75° W close to the divide between the drainages of the Bonanza and Nimpkish River systems (see Figure E2). dip can be determined, it is about 30° SW, and the deposits are roughly concordant with the enclosing volcanics. Since the apparent dip of the deposits to the west along the line is slightly steeper than the topographic slope in this direction, the deposits are apparently progressively lower stratigraphically from west to Repetition by dip faults is a possibility, but it is not east. Minor pyrite and chalcopyrite occur suggested by the topography. in some of these showings, and minor chalcopyrite was observed It is reported that some along a section of Friendly Creek. chalcopyrite occurs in the intrusive breccia along the contact of

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the Nimpkish batholith; this occurrence was not visited. The individual showings are described below under their Mineral Inventory Property Nos.

### No. 2149

A large pod of reddish, platy magnetite lies on a shear zone of dipping about 40° SW. Light green volcanics in the footwall and down-dip in the hangingwall are not mineralized. The pod is about 25 feet wide down the dip of the shear zone and has a maximum thickness of 10 feet. It is exposed intermittently for about 60 feet, and it is reported that the corresponding magnetic anomaly has been traced for 250 feet. In colour and form the mineral resembles hematite, but it is strongly magnetic and has been confirmed as magnetite by X-ray diffraction. It is pocked with small limonite-bearing holes which probably represent oxidized pyrite crystals.

## No. 2150

Diamond drill hole No. 4 was drilled on the steep flank of a magnetic anomaly, and encountered both magnetite disseminated in andesite and a few sheared magnetite veinlets.

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#### No. 2151

In trench No. 1 a volcanic stratum 3.5 feet thick has been replaced by skarn and magnetite, the magnetite being concentrated in the lower foot or so of the stratum. Pyrite veinlets cut the skarn, and pyrite pockets occur in mixed skarn and magnetite and in The stratum dips 13° SW and is exposed for 25 feet. magnetite. Diamond drill hole No. 8, collared 60 feet south of the trench and 20 feet higher, cut 2 inches of garnet-epidote skarn, then 8 feet of magnetite containing disseminated pyrite and chalcopyrite; from the geometry this mineralization would appear to be a continuation of Diamond drill hole No. 10, collared still that in the trench. farther south and 16 feet higher than No. 8, cut 3 inches of massive pyrite then a foot of massive magnetite. A rough geometrical construction indicates that this mineralization is in a higher stratum, and that No. 10 was not drilled deep enough to intersect the mineralized stratum of the trench.

## No. 2152

Trench No. 2 exposes for 50 feet a 6-foot stratum consisting mostly of pyrrhotite, with some magnetite and less pyrite. No

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chalcopyrite was seen, but it is reported that assays as high as 0.4% copper were obtained.

#### No. 2153

Trench No. 3 has been cut in black material consisting of vertical and horizontal veins of magnetite in dark skarn. The veins are 2 to 3 inches thick, and the vertical ones strike northwest. Diamond drill hole No. 6, 15 feet to the southwest and about 50 feet from trench No. 2, cut neither magnetite nor pyrrhotite, but at the bottom encountered epidote alteration containing minor copper mineralization.

## No. 2154

The "Discovery" trench exposes an apparently stratiform band of massive magnetite for about 30 feet. The apparent dip down this westerly trace is 5.5°. The footwall is formed by little-altered volcanics and the hangingwall, 6 feet above, is the erosion surface. The only impurity in the magnetite is a little limonite along fractures.

## No. 2155

Magnetite is associated with the silicified band described

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above, and sporadic exposures of magnetite continue 150 feet beyond the most easterly exposure of silicified rock, indicating a possible magnetite band 500 feet long. At the most westerly exposure of silicified rock the hangingwall is covered and the footwall consists of skarn containing minor magnetite. A few feet to the east, 5 feet of massive magnetite is exposed for a length of 10 feet between little-altered volcanic rock below and the silicified rock above. 50 feet farther east, the silicified stratum overlies fresh greenishgrey andesite, but it is laced with epidote and magnetite and passes up into massive epidosite. The epidote in the silicified rock contains disseminated pyrite and galena. A few small scattered exposures over the next 280 feet show magnetite along the hangingwall of the silicified stratum. A trench near the northeast corner of the 3,500-foot contour exposes 12 feet of massive magnetite with a few feet of skarn to the northeast; the contact appears to be The southwest contact of the magnetite was not nearly vertical. exposed.

# No. 2147

Friendly Creek flows through an area that analysis of fracture

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patterns taken from aerial photographs indicates as an area of intense tensional fracturing.

The volcanic rocks exposed along the creek in this area appear to be more fractured and sheared than elsewhere, and contain narrow quartz veins along some of the fractures. Some of the veins contain pyrite and chalcopyrite. A sample was taken, from an area measuring about 10 by 15 feet, consisting of chips containing vein quartz. The copper content determined by atomic absorption spectrophotometry was 51 ppm.

No. 2148

A few hundred feet down Friendly Creek from the above sampled tensional fracturing area, but probably still within the area of tectoric collapse, a 4-foot section of an amygdaloidal flow contains chalcopyrite in the The remainder of the flow, above and below this section, amygdules. Within the 4-foot section the chalcopyrite is apparently barren. forms small pockets, 1 to 2 mm across, in some of the larger amygdules and constitutes most or all of some of the smaller ones. It occurs mostly near the outer surface, but in one or two amygdules it appears to follow fractures in the quartz. The mineralized section was not sampled but is visually estimated to It is exposed for about 100 feet. contain 0.2 to 0.3% Cu.

The Bon mineral occurrence are in prodominantly vole. rox which were congred by H. C. Genning to the Kasmatan In (now known as the Kasmatan Fren) These rox are mostly byt to do gra in colour & consist of attereting dayers of in I are filed with go, E, or both. Totally they also the xor them with the Sw of the short was are intruded by the ning fish totalith, which is described by Gurning as predom vd. chrown the head of the logging road it is reddened 4 alt d. to E, but E ward to the ct. it is pred I inversingly the reflecting a troad chilled marginal gove. He needles are correjuences in this good. The at is shory or the spany, In at effects are apparent. To the NW, however, inturine V is rept'd to occur along the at, and it is possible that the ct. or the shops my be a fault. A send of to is rept 'd to occur in the notes cloy the ch Not the "Discovery" trench. E of the "Sincovery" tranch a hard of silveified rock att 5' this hijo 30° SW & is traccaple for aft 350'. The meath'd must is nottled by t I dk gray or houning my reticulating relicities greatly silicities greatly received greatly relicities greatly gray rock 2 x TS the grain gray rock is seen to correct of granty, allowite, existe, and you a little pyrocene. is highly reflective the dust direct in the gy around some tobs my be grapher test & few grains are greend of 11. Or alto pass up for the sile book into overlying epidosite. The E & P could have been found during netwometers of injure to that the chi sugar that the origin rock was vale. The fact my to a will

F. Holeapel of Agilio Expl. Services has regarted that the wole units dig SW at low to mad his, flattering or the ct. with the Winghish. He also inferred a number of stripe and by faults dislocating these units.

a number of stripe and by faults dislocating these units.

The grincipal mind dayon on the property are replaced to of parts of certain toles begin by share I may or a day a linear trend close to the stripe to live the tripe to the Barraya I rimphish these systems. Minor T & X occur in some of these shape, I minor X was obsert along a seen of triently the It is rept if that some se occurs in the internet along the ct. of the minghish bathlit, this occurrence was not visited. The individual shape are described below under their mind I mo. Property non.

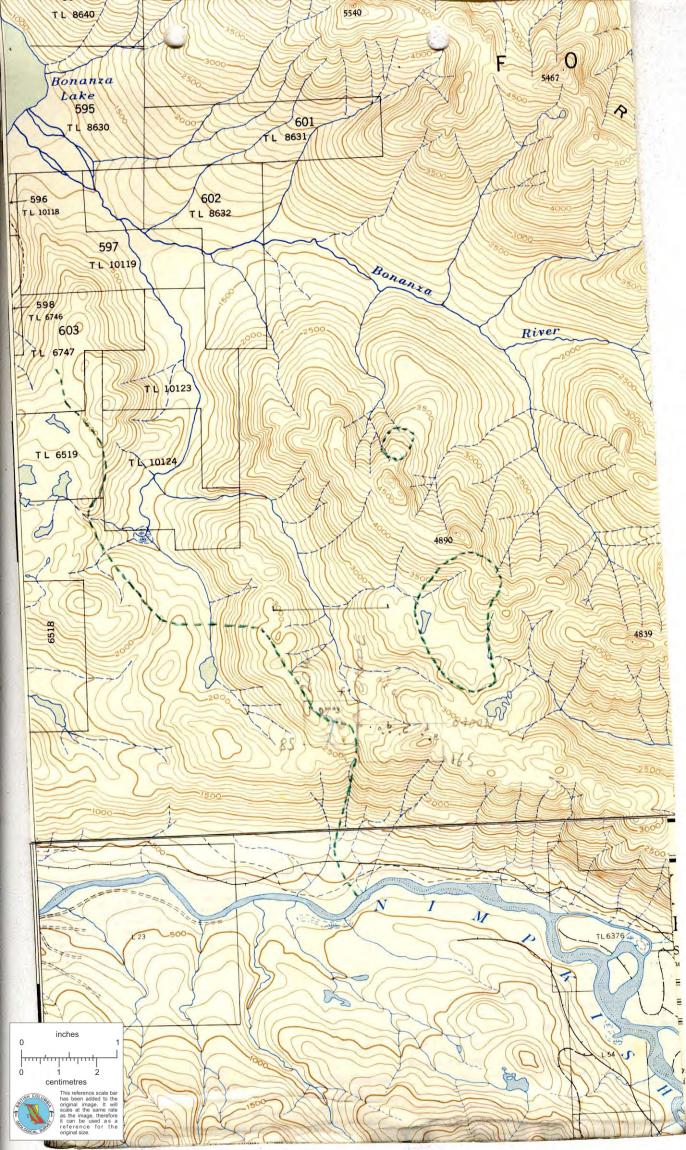
(Since the experient dip of the depos to the Walong this line is aly steeper than the topo alone in this direce, the depos are apparently progressively lower stratigraphically from W to E. Repetition by dip faults is a possibility, but it is not suggested by the topography.)

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water in the FW A down dig in the HW are not orgh. The mag is pocked with small himomite hearing toles which property. oxidized IT xth. The god is att 25

wide down the his of the size & Land max thicken of alt 10: It is expended with that intermittently for est 60', & the corresponding amonely the sear traced for thickness of alt 10. It is exp. DDH "4 was drilled on the steep flank of a nagnetic asom, & encountered hoth may dissen in underite & a few sheared may with. may being com'd in the lower post or so of the stratum IT alts cut the share # is exp for 25'. DDH #8, tollared 60's of the trench \$ 20' higher, cut 2" of GE speru the 8' of reg otg diesem TI &x; from the geometry this would appear to be a ctuation of that in the trend. DDH "10, collared still farthers \$ 16' higher than 8, wit 3" of navine IT the att a fast of navine mag of rough geometrical construen indies that this runge is in a figher stratum, & that 410 was not directed deep any to interest the night stratum of the trend Trench ro. 2 exposes for 50' a 6- foot stratum consisting mostly of P. with some may & less TI. No x was seen, but it is regt of that askays as high as 0.4% Cu mere atter. Trend no. 3 has been cut in blk mill coming of nort. I having vein of may in back sharm. The view are 2.3" the 2 the next ones ats. NW. DDH # 6, 15' to the su fast 50' for trans no. 2, cut weither may nor P, but at the follow 2154. The "Siscovery" travel exposes an apparently stratiform tand of marrive regretite for aft 30. The apparent dip down this Why trace is 5.50 The FW is formed by little alt'd volen & the HW, 6' above, is the erosion wif. The only impority in the ray is a little liminite along fracts. may in arrowd with the silicipied sent descriped about, & intermittent example may the 150' beyond the nort Edy exp. of sil rock, indeg a pass, may tool 500' long . At the nost why any of ail rock the MW is covid & the FW consist of spare to wines way . If few fit to the E, 5' of messive way is exp for a langth of 10' setur little . alt. volc. rock selow I the il rock afere. 50' faster E the il stratum overlies fred graid-grey anderte, but is laced with E I may & garrer up into massing exidente. The E in the sil rock eta, diesen. It & galere of few rest'd expo ones the ment 280 store my along the HW of the vil. stratum. et trend we the NE co. of the 3500 conteur exp 12' of marrise mag with a few ft of strum to the NE; the ct appears to be why west. The SIV ot. of the nag was not exp.

Friendly the flows then an weathet analysis of pasture rather for arried plates indicates as an area of testonic colleges. The vale non exp along the ch in this area appear to be one fruit & heard therebewhere, and to nave gy veins day -one of the fracts. Some of the nein at 17 A X. of simple was taken from an over nearly aft 10 x15', comis's of this of voin 97. The corper content det'd by A-A yesterophotometry was 51 ppm I few hundred It down I rically the for the above complet area, but god. still within the area of tectoric colleges, a 4-ft seen of an any flow story in the anygodales. The most of the flow, above & tales the seen, is apparently nome of any & constitute most or all of some of the moller one. It ocurs nothy or the outer surf, but in one or two anygo it appears to follow fracts in the gg. The mys near was not sampled, but is visually lest'il to the 0.2 to 0.3% Cu. It is exposed for aft 100'. to to 0.2 to 0.3% Cu. It is exposed for aft 100'.





#### DEPARTMENT OF MINES AND PETROLEUM RESOURCES **VICTORIA**

ADDRESS Mineralogical Branch								
LABORATORY No.	SUBMITTER'S MARK		LABORATORY REPORT					
10620 M	2596	Assays: Cu	51 p.p.m.					

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DATE July 17th 1970

/ Thelealfe
CHIEF ANALYST AND ASSAYER.



# DEPARTMENT OF MINES AND PETROLEUM RESOURCES VICTORIA

SAMPLE RECEIVED FROM.....

Dr. J.E.P. Bastwood,

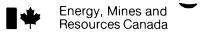
Mineralogical Branch ADDRESS..... LABORATORY No. SUBMITTER'S MARK LABORATORY REPORT 10620 M 2596 Semi-Quantitative Spectrochemical Analysis: > 10 Sí > 10 A1 0.42 - 3.75Mg Ca 2 - 18Fe 2.3 - 21Mn 0.06 - 0.510.007 - 0.06Ti 0.22 - 1.95> 2 Na 0.08 - 0.75K Traces: Cu, Ni, Co, Ga, Zr, Sr, Cr, Ba The above results are qualitative analyses, with estimates of percentages, and should not be used for publication without prior permission of the Chief Analyst Cu 51 ppm by A.A.

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July 16th 1970

S. Michaele

CHIEF MALYST AND ASSAYE



Science and Technology

Énergie, Mines et Ressources Canada

Science et Technologie

Your file Votre référence

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Our file Notre référence

23 September 1974

Dr. G.E.P. Eastwood British Columbia Department of Mines and Petroleum Exploration Victoria, B.C. V8V 4S2

Dear Dr. Eastwood:

I have recently examined the polished section of the magnetite from the No. 2149 showing of the BON claims that you kindly sent some months ago. However, contrary to my expectations, I have found no evidence of maghemite. There is considerable oxidation to hematite, chiefly very fine, and the magnetite, which is platy, shows some zoning commonly following the edges of the plates. Possibly this reflects the oxidation, or it may be due to slight changes in the composition. The enclosed Polaroid print shows both the fine hematite and the zoning. Some goethite has also formed, presumably near the surface.

Again my thanks for sending the sample, and please say hello to Doug.

Yours sincerely,

Roy Mcheod

C.R. McLeod

CRM/jb

ey of Canada Commission géologique du Canada 601, rue Booth Ottawa Canada K1A 0E8

Geological Survey of Canada 601 Booth Street Ottawa Canada K1A 0E8



X275 oil immersion

indicative of tuff. A few grey grains with moderately strong biref. have inclined extinction-as high as 450 - \$ may be pyroxene. The dominant direction of inclusion strings persists throw most of the TS & some individ strings con across xtl boundaries. Some of the large, anhedral 92 grains contain enhedral 92 xtls.



#### DISCUSSION OF RESULTS

The total intensity isomagnetic plan is presented as Figure 5 and general interpretation as Figure 6. The X-Y scale is 1 inch: 1000 feet and Z increment 100 gammas. The plotted values are the last four digits of the total field reading in the 50,000 gamma range. The magnetic data ranged in amplitude from 56,383 to 58,130 gammas. The largest portion of the area flown exhibited response between 57000 and 57400 gammas.

Isomagnetic trends are predominently northwest directed but rotate slightly from the north map area (more northerly) to the south map area (trends more westerly). This direction is believed to reflect the overall attitudes of the lithologic units.

One of the most noticeable features of Figure 5 is a magnetic complex situated along, and close to the south west boundary of the survey area. There are a number of magnetic ridges and troughs trending northwest, and this complex response is believed to coincide with the intrusive - Bonanza group contact. A sub-parallel feature is noticeable to the north, and is a very linear magnetic low cutting obliquely through the claim group. It is possibly due to the presence of major faults. The magnetic low decreases in amplitude to the southeast, which may indicate splaying

Regional mapping has indicated that a micropegmatitic sill is present near the northeast claims area, and the accompanying magnetic response is readily observable on Figure 5. In this case the response is predominately negative.

Several areas exhibiting above 57,700 gamma response are designated as anomalous with respect to amplitude in Figure 6.

Respersion titled,

D. R. Scopping, P. Eng.

James Cerne, M.S.

Hownite, B.Sc.

Tath of such mag 12 tool 2 +005 bikn rusty volc. chdips 40°5 W beneath mag. O fresh D DD H 10 DDH 8

July 10 Alt. rdg. 2700' camp 9.35 AM. " 2918 at mag shug. @ 2 +005, 12 +00 W. + 20 photo #7. 2660' at camp 235 PM. 2535' at trib. of Friendly Ck on B.L. at abt 1800' N. This area desig a collapse struct by Chapman. Rock 20' W of B.L. is well-from'd amyg. lara, with amygs comprising Esless ge. Amy g. lavas the aways down oh Than gap in olc. Atjan with 1st left trib rock is non-any & sly sheared. It grows more sheard I some alt. down it. In mest frac'd falt. areas many narr go vite follow fracts pt. f \$ some ctaris IT & less se - take composite samp for area abt 15 x 10.







