Box 13

Insp. CK. Geology

Inspector Ck Grid - Geology

REPORT ON INSPECTOR CREEK GRID

1:2500 MAPPING

MAID OF ERIN PROPERTY

Atlin, M.D.

NTS 114P/10E

Lat. 59° 33'N, Long. 136° 35'W

Tom Heah
Jim Oliver

December, 1982

TABLE OF CONTENTS

LIST OF FIGURES

I. INTRODUCTION

J. Oliver and the writer spent 7 days in July and August 1982 mapping the Inspector Creek Grid on a 1:2500 scale.

The map area is in the Maid of Erin Property, 18 kilometres northwest of Pleasant Camp on the B.C.-Alaska border, in the Coast Mountains. Access to the area is via a gravel road branching off the Haines cut-off road linking Haines, Alaska with Haines Junction, Y.T. (fig. 2 and 3).

Inspector Creek Grid is a metasedimentary package (with minor volcanic rocks) intruded by intermediate intrusives and mafic, hornblende-diorite gneiss.

The Inspector Creek Fault, which trends in a northerly direction, separates lithologies on either side of it. In addition, several westerly trending faults are present.

The metasedimentary package has a moderate dip to the northwest. No tops could be determined, but at numerou outcrops, isoclinal, recumbent folds indicate that some sections may be overturned.

Fossil corals of Devonian(?) age were found near L900N, 100W.

Mineralization is scattered, and recognised by extremely rusty, gossanous outcrops. Pyrite is most common followed by pyrrhotite, malachite, chalcopyrite, and chalcocite. Bornite, found at the old Maid of Erin Mine, at the Victoria adit, and at the State of Montana Mine, was not found in the grid.

.../4

II. GEOLOGY

4 intrusive and 5 stratified units were defined in the course of mapping(Figure 1). Unit 9, the skarn unit, was not mapped as a separate unit in an attempt to show original lithologies.

(A) Intrusive Units

Unit 1 is a porphyritic dacite. It is grey-green weathering unfoliated and contains plagioclase laths up to 2mm long set in an aphanitic, grey-green dacitic matrix. It is unmineralized.

Unit 2 is a grey weathering, massive, medium to coarse grained, hornblende biotite granodiorite.

Unit 3, hornblende diorite gneiss, is probably equivalent to B.W. Downing's "amphibolitic calc-silicate". It is grey weathering, blocky, and layered with epidote, hornblende, biotite, feldspar and quartz in varying proportions. Contacts between this unit and surrounding rocks are usually discordant and irregular. Mafic phases are hornblendite dykes and stringers. Its gneissic and/or skarnified nature indicates that it is an older intrusive than others present in the area.

Unit 8, a diorite, is dark grey and rusty weathering, fine to medium grained, and massive. Hornblende is the usual mafic mineral. This unit is present as dykes and stringers.

(B) Stratified Units

Unit 4, argillite, is rusty weathering, black, very fine grained, and locally schistose. Finely disseminated pyrite is common, causing rusty coatings on fractures and weathered surfaces. It is locally interbedded with units 5,6, or 7.

(B) Stratified Units (Cont'd)

Unit 5, marble, is grey weathering, bedded, medium to coarse grained and locally fetid. Layers are defined by grain size differences or by biotite flakes and layers.

Unit 6, quartzite, is grey and white weathering, and medium to fine grained. It is easily confused with white, hard, calc-silicate rocks, and some rocks mapped as quartzite may actually be calc-silicate rocks. Quartzite is often skarnified, and usually biotitic. It is locally interbedded with units 4 and 5.

Unit 7, quartz biotite schist, is grey and often rusty weathering, medium to fine grained, and well foliated. It often displays minor folds, and contains locally biotite-rich layers.

Unit 10 consists volcaniclastics which are rusty weathering with pyrite boxwork. Green, aphanitic, rhyolitic tuffs are interlayered with volcanic breccia containing anguàr schistose fragments up to 2cm long.

III. STRUCTURE

A major northerly trending fault, the Inspector Creek Fault, follows Inpsector Creek and separates lithologies on either side of it. Smaller east-west trending faults are also present.

Bedding and schistosity are generally conformable, and have moderate to gentle northwest dips. Isoclinal to tight folds are common, especially in the quartz-biotite schists. Post-metamorphic deformation is indicated by the folded schistosity and the lack of axial planar schistosity.

The measured fold axes and axial planes of isoclinal and tight folds (Figure 4) are generally scattered, probably due to a second phase of deformation. The averaged, calculated fold axis for the isoclinal and tight folds plunges 29° to 345°.

STEREONET PLOT FOR ROCKS FROM THE INSPECTOR CREEK GRID

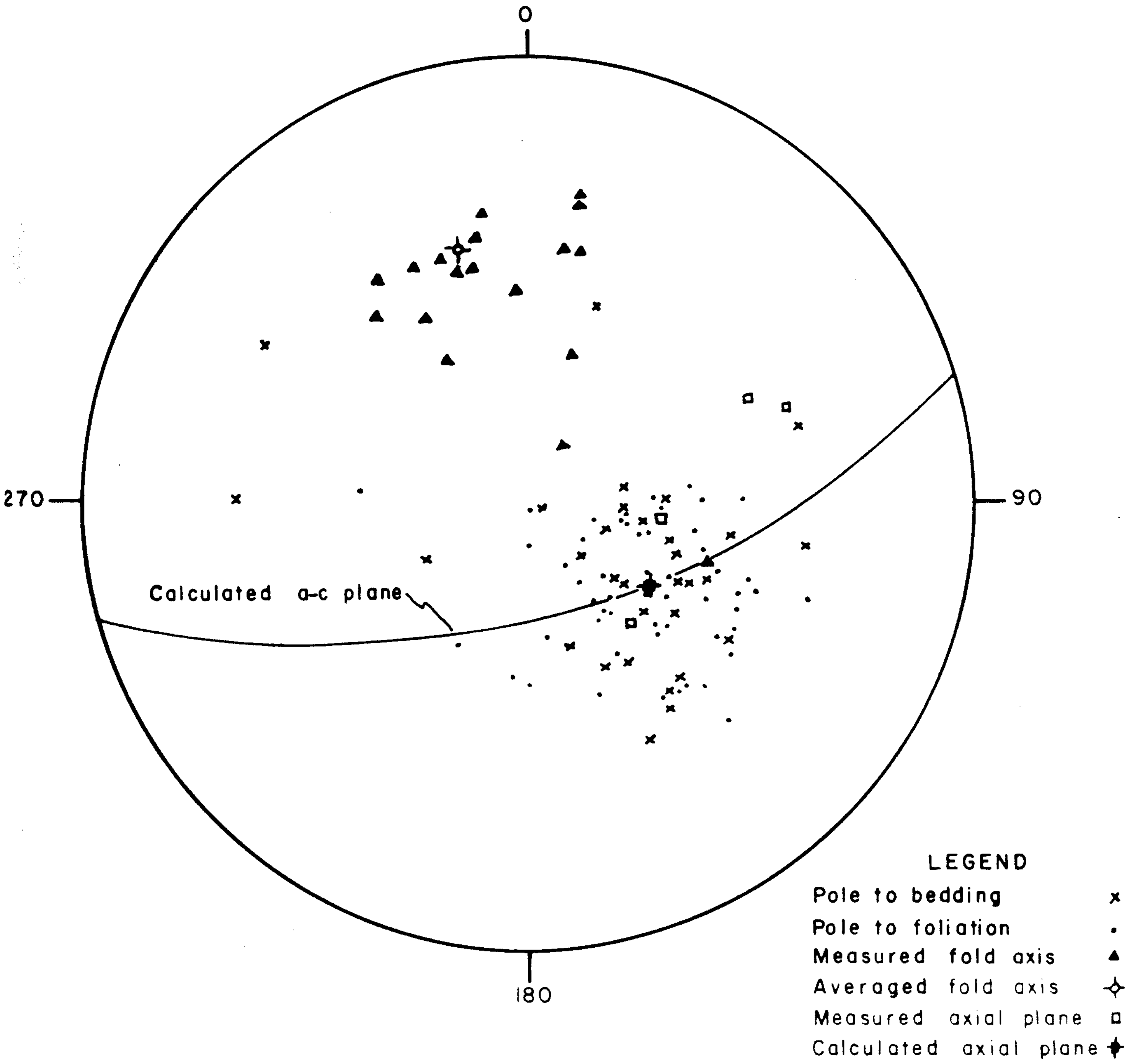

fig no. 4

III. STRUCTURE (Cont'd)

The a-c plane, calculated from the averaged fold axis, has an attitude of 074/60 SE, and the calculated axial plane trends 034 and dips 36° NW.

IV. FOSSILS

Recrystallised fossil corals of possible Devonian age were found near L900N, 100W in grey crystalline limestone. Conodont dating by the Geological Survey of Canada offers the best chance of an age estimate due to recrystallization to coarse calcite of the macroscopic samples.

V. MINERALIZATION

Very scattered mineralization is recognised by rusty, gossanous outcrops (FeOx in Figure 1). The principal minerals are pyrite (most common), pyrrhotite, malachite, chalcopyrite and chalcocite, in decreasing abundance. Bornite, present elsewhere in the property (eg. at Maid of Erin Mine, Victoria adit and State of Montana Mine), was not found during mapping.

Mineralization is related to skarnification, and skarn minerals such as andradite ± grossular ± tremolite ± actinolite ± epidote ± wollastonite are associated with sulphide and carbonate mineralization.

Though mineralization is intense where developed, zones are small and discontinuous, making along-strike and down-dip extrapolations difficult. The only generalization that can be made is that mineralized zones occur in metasediments near or along limestone-metasedimentary contacts.

VI. CONCLUSION

The area mapped seems to offer little economic potential.