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Maple Bay Silica Prospect, Stewart Area
Jennifer Pell, 1982

Introduction

Maple Bay is located approximately sixty kilometres south of the town of Stewart BC, on the eastern shore of the Portland Canal (fig. 1). It may be accessed from Stewart either by float plane or boat. (Boat charter is the most economical - a good person to deal with is Ron McFadden of Portland Charters).

Interest in the Maple Bay Area began in 1902 when copper mineralization was noted in quartz veins. Various properties were worked until the late 1920's, and one vein mined (the Outsider vein) produced 66 oz of gold, 4882 oz of silver and 5,266,430 pounds of copper (Grove, 1970).

General Geology

Country rocks in the Maple Bay area include intermediate to mafic volcanics, siltstones and some felsic lithologies, either tuffs or sheared cherty sediments. The package is of presumed Lower Jurassic age. (Grove, 1970).

The mafic volcanics are dark green, fine grained and chlorite rich, often containing disseminated sulphides such as pyrite, pyrrhotite, chalcopyrite and galena. Locally they are well foliated, possibly as a result of extensive shearing (Appendix 1, JPM IC, D & F). Medium green to greyish fine grained intermediate volcanics (andesites and/or dacites) occur

interbedded with mafic lithologies. They may be massive (Appendix 1, JPM-1E) or foliated (Appendix 1, JPM-1G) and locally exhibit colour banding, possibly indicative of an original tuffaceous nature (Appendix 1, JPM-1E). Some andesite porphyrys are also present, with a medium to dark green fine grained massive groundmass and white feldspar phenocrysts up to 5 mm in size (Appendix 1, JPM-5A).

Sediments in the area are primarily dark grey siltstones and silty argillites, interbedded on the millimetre to few centimetre scale with fine sands. Disseminated pyrite was noted in some samples (Appendix 1, JPM-2C). Fine bedded cherts or rhyolitic tuffs are also present in the Maple Bay area (Appendix 1, JPM-7E).

The above lithologies form an easterly dipping sequence (Grove, 1970) and are intruded by medium to coarse grained hornblende bearing diorites.

In the Maple Bay area a wide north-north easterly trending cataclastic zone cuts across the easterly dipping country rocks (Grove, 1970). Quartz veining is largely confined to this zone. The vein system has been traced along strike for about six kilometres (Grove, 1970).

Geology of the Quartz Veins

There are two types of quartz veins in the Maple Bay area. Firstly, there are the mineralized veins, many of which have been trenched or tunneled, eg. the

Star, Comstock, Eagle, Thistle, Anaconda & Princess Veins (fig. 2). They are dominantly north-north easterly striking veins (015° to 020°) and steeply east dipping. They consist of fine grained, granular textured quartz which varies in colour, from milky white (Appendix 1, JPM-4A, D, F etc) to rusty orange-brown and salmon pink in colour (Appendix 1, JPM-4B). Rust staining is common along fractures. Inclusions of country rock may be present anywhere in the vein, in the form of chloritic stringers (eg. Appendix 1, JPM 10, 6B etc). Sulphides such as pyrite, pyrrhotite or chalcopyrite are ubiquitous and may comprise 5 to 60% of any one sample (see Plate 1 & Appendix 1). Turquoise and steel blue copper weathering products are present, both on vein material (eg. Appendix 1, JPM 4D & 4E, from the Comstock Knob) and on the country rock (see Plate 2, and Appendix 1, JPM-7A, from the Princess Vein). Locally calcite may be a constituent of the veins (eg. Star vein, fig 2). The veins vary in thickness from less than $\frac{1}{2}$ m (eg. Star & Princess Veins) to over 10 m (Comstock Knob). Thickness along the length of an individual vein also varies, for example, in a strike length of less than 10 m the Princess vein varied in thickness from 10 cm to 1.5 m.

The second vein type is represented by the Friday vein (fig. 2). It strikes 350° and is nearly

vertical dipping. The vein quartz is coarse grained and milky white, with minor reddish brown rust staining along fractures, and locally some rusty weathering zones. Occasionally well formed prismatic crystals are present, lining voids. Only very minor amounts of sulphides (pyrrhotite) were noted (44%). Some country rock (siltstone) inclusions occur along the western edge of the vein.

The outcrop of the Friday vein is 4 to 5 m wide and approximately 50 m in length. The width of outcrop corresponds well to the true vein width. The extent to which the vein may be traced along strike in the subsurface is unknown.

Conclusions

It is unlikely that the majority of veins in the Maple Bay area will prove to be useful sources of silica. The "Friday" vein, in light of the apparent purity of ~~silica~~ the quartz and its proximity to the shore line (less than 500 m, see fig 2) could warrant further consideration.

References

Grove, EW (1970). BC Dept. of Mines, G.E.M. 1970, pp 77-81.

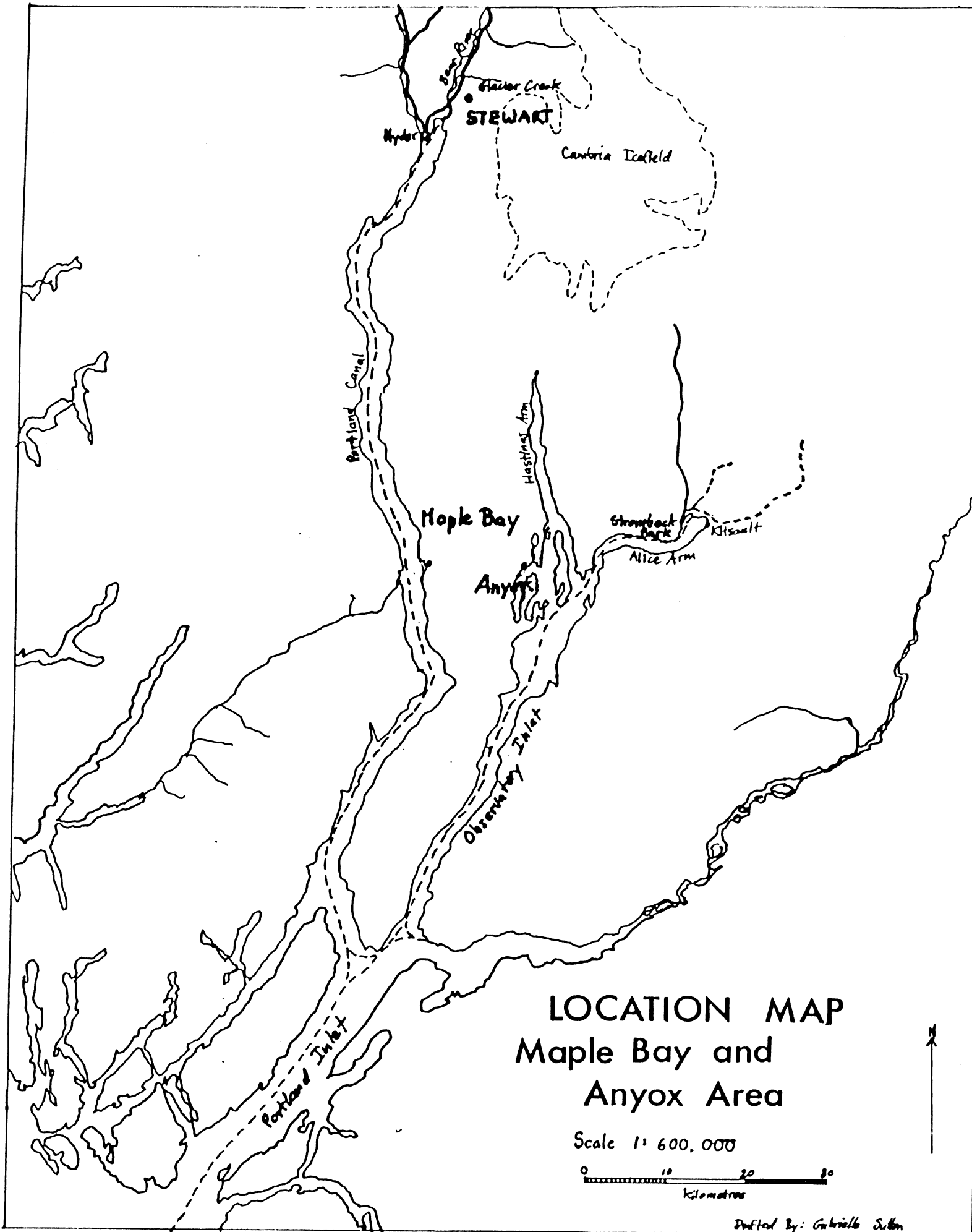
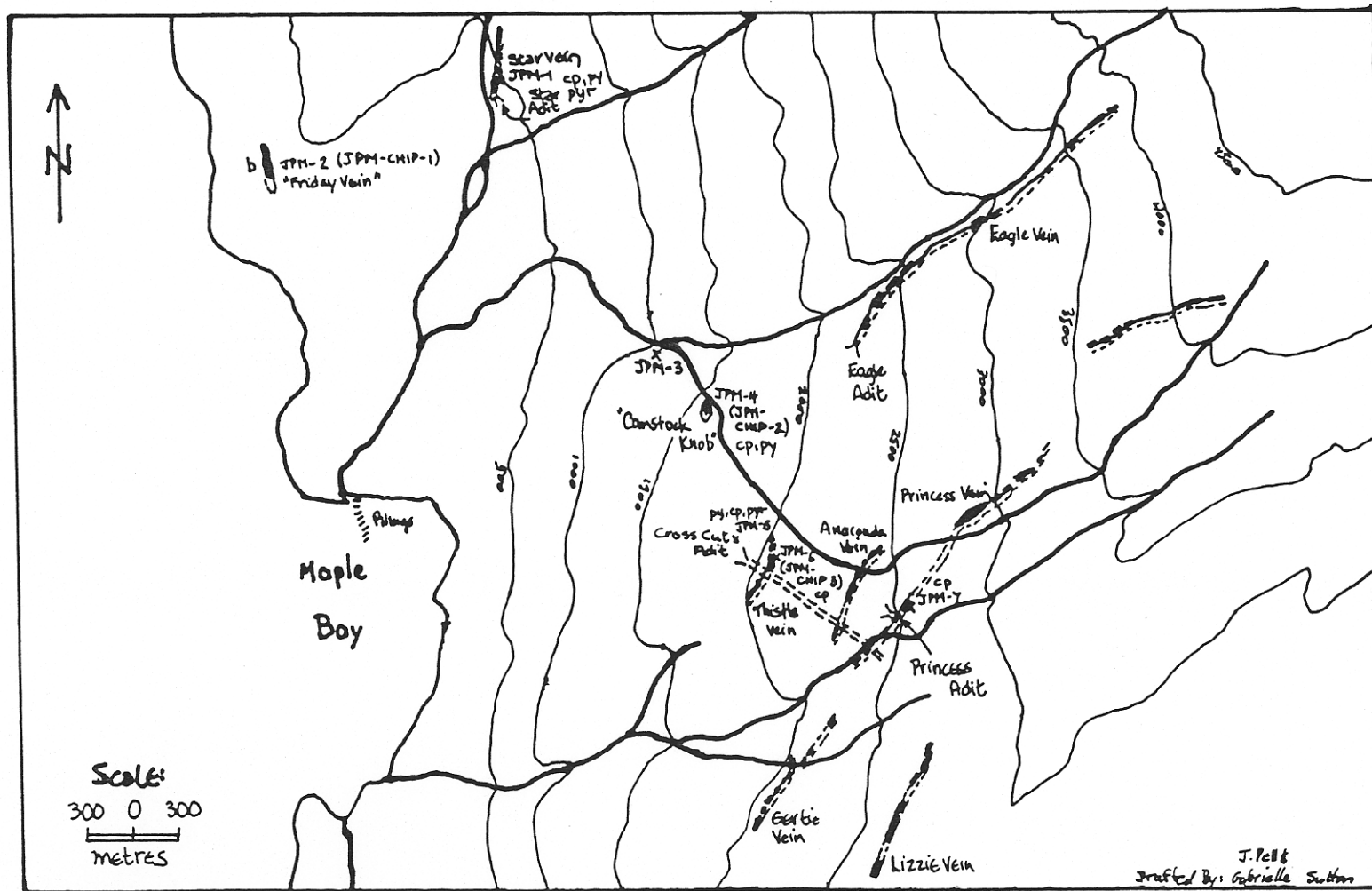


Figure 1.

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modified from Grove, 1970

Maple Bay - Vein and Sample Location Map

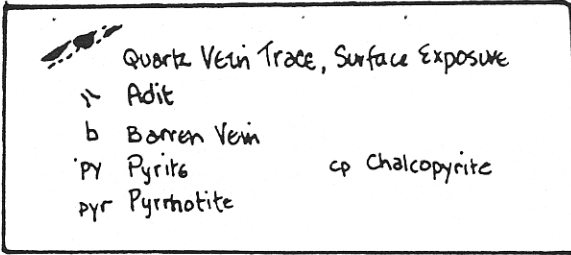


Figure 2.

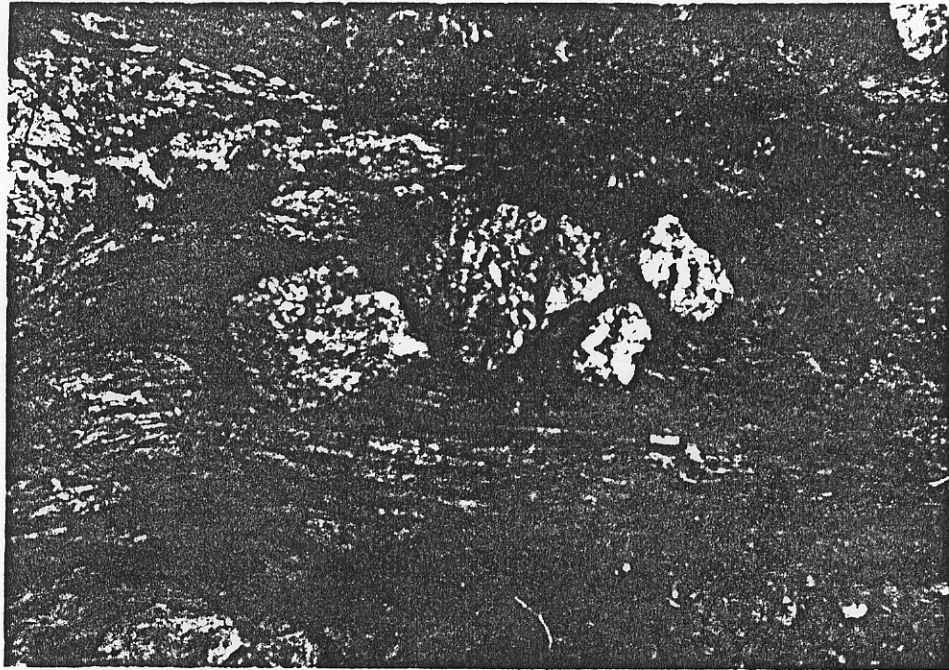


Plate 1. Hand samples from the Princess vein (station JPM-7) of quartz + chalcopyrite

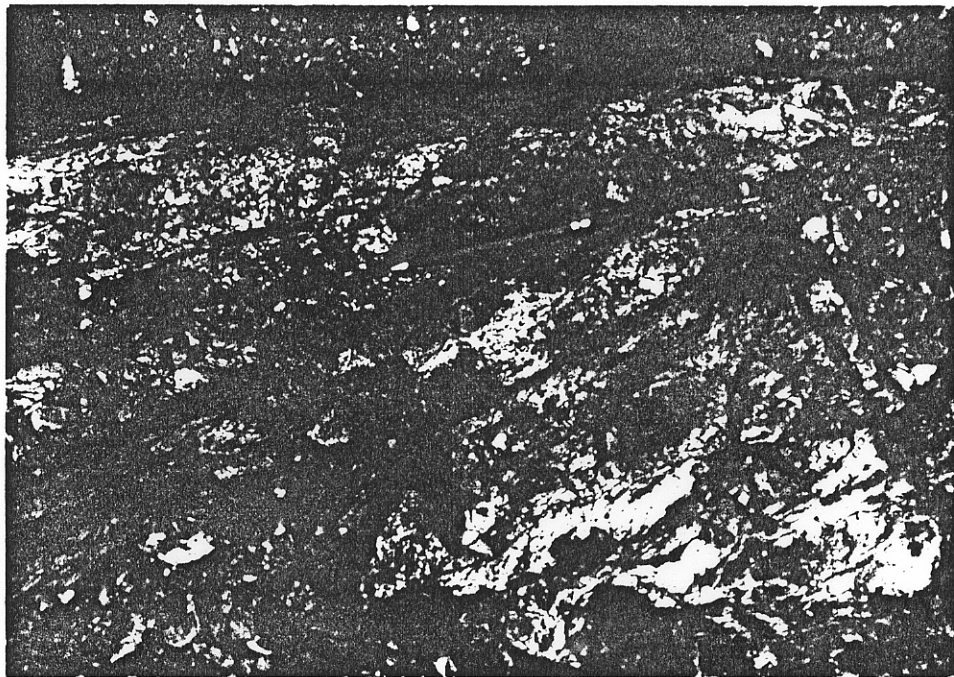


Plate 2: Turquoise copper weathering product on felsic tuffs which host the Princess vein (station JPM-7).

Hand Specimen Descriptions - Maple Bay

Sample #	Location	NTS	Description
JPM-1A	Maple Bay (Star Vein)	103 P/5	<ul style="list-style-type: none"> - quartz / sulphide vein material with a rusty red brown weathered surface - on fresh surface quartz is white to salmon pink & fine grained with a sugary granular texture - dominant sulphides present - ^{chalco-}pyrite & pyrrhotite - compose 25% of rock - ^{chalc-}pyrite >> pyrrhotite
JPM-1B	Maple Bay (Star vein)	103-P/5	<ul style="list-style-type: none"> Vein material similar to JPM-1A - higher % of sulphides present, \approx 50% sulphides - pyrrhotite > ^{chalcopyrite} > bornite (?) - quartz as is JPM-1A
JPM-1C	Maple Bay (Star Vein)	103 P/5	<ul style="list-style-type: none"> - silicified metavolcanic with sulphides - 20% sulphides, pyrrhotite > chalcopyrite, also some iridescent peacock blue staining - hostrock is composed of white to salmon pink granular qz vein material and chlorite rich metavolcanic - rusty orange to brown weathered surface
JPM-1D	Maple Bay (Star Vein)	103P/5	<ul style="list-style-type: none"> - quartz vein and silicified(?) metavolcanic with sulphides

			<ul style="list-style-type: none"> - vein qz as in other samples (eg JPM-1A), interfingering with chlorite rich mafic metavolcanic - 10% sulphides, dominantly pyrrhotite minor chalcopyrite disseminate throughout - 40% chlorite schist (metabasalt) or andesite - 50% vein quartz - rusty weathering
JPM-1E	Maple Bay (Star Vein)	103 P/5	<ul style="list-style-type: none"> - dacitic tuff - very fine grained, light to medium green fresh surface with colour banding, massive - light brown weathered surface
JPM-1F	Maple Bay (Star Vein)	103 P/5	<ul style="list-style-type: none"> - thin (10-15cm thick) vein in chlorite schist (metabasalt or andesite) - vein, cubes of pyrite, some chalcopyrite minor galena(?) - very fine grained dark grey metallic, may be something else) in calcite gangue - vein is ~40% pyrite, ~20% chalcopyrite minor ? galena, the rest calcite
JPM-1G	Maple Bay (Star Vein)	103 P/5	<ul style="list-style-type: none"> - greenish grey (medium) chlorite schist, fine grained, foliated - metamorphosed dacite or (cover)

JPM-2A	Maple Bay (Friday Vein)	103P/5	- 2 pieces of coarse, milky white quartz vein material - no impurities
JPM-2B	Maple Bay (Friday Vein)	103P/5	- coarse milky white quartz vein material with slightly silicified medium grey rusty argillite inclusions - minor disseminated pyrrhotite (42%) in qz vein material - rust staining along fractures in quartz
JPM-2C	Maple Bay (Friday Vein)	103P/5	- interbedded dark grey siltstone and fine sandstone, well foliated - minor disseminated pyrite (45%) - host rock in the vicinity of the Friday vein
JPM-3B	Maple Bay (veinlet)	103P/5	- milky white quartz vein material - some light orange rust staining along fractures - the vein quartz has a fine granular texture, sugary
JPM 3A	Maple Bay (veinlet).	103P/5	- coarse milky white vein material (weathered and gungy) in contact with fine grained dark grey argillite (host rock) - there is a small fold in the argillite - isoclinal

JPM-4A	Maple Bay (Comstock Vein)	103 P/5	<ul style="list-style-type: none"> - milky white vein quartz, with a fine sugary granular texture - minor orange rust staining along fractures
JPM-4B	Maple Bay (Comstock Vein)	103 P/5	<ul style="list-style-type: none"> - rust brown to burgundy weathering, pink (sugary) granular vein material - rust staining along fractures - minor disseminated py
JPM-4C	Maple Bay (Comstock Vein)	103 P/5	<ul style="list-style-type: none"> - white to weathering granular quartz vein material - some dark rust brown weathered surfaces and rust staining on fractures. - minor chloritic seams (45% chlorite) - minor rusted sulphides
JPM-4D	Maple Bay (Comstock Vein)	103 P/5	<ul style="list-style-type: none"> - white to grey weathering white granular vein quartz - chloritic seams (45%) - minor disseminate chalcopirite (1%) in some places with a pale green (malachite??) alteration
JPM-4E	Maple Bay (Comstock Vein)	103 P/5	<ul style="list-style-type: none"> - white to greyish, granular vein quartz vein material with a rusty weathering surface (rind). - 10% disseminated chalcopirite with some metallic ultramarine blue (bornite??) surface coating
JPM-4F			<ul style="list-style-type: none"> - fine grained, granular white vein quartz, some greyish zones

			<p>with a rust brown weathered rind</p> <p>±5% disseminated pyrite, and possibly some chalcopyrite</p>
JPM-5A	Maple Bay (Crosscut adit)	103 P15	<p>- samples taken from the tailings pile</p> <p>- andesite porphyry - medium to dark green, very fine grained, massive groundmass (chlorite rich) with white feldspar phenocrysts up to 5 mm size</p>
JPM-5B	Maple Bay (Crosscut adit)	103 P15	<p>- tailings from mined vein material</p> <p>- 3 pieces of granular quartz, white to orange in colour with sulphides (pyrite, chalcopyrite & pyrrhotite) in varying amounts from ~20 to 60% (or greater)</p> <p>- the sulphide rich samples resemble quartz-sulphide breccias</p> <p>- some associated carbonate</p>
JPM-6A	Maple Bay (Thistle vein)	103 P15	<p>- white to slightly brown weathering fine grained granular milky quartz, massive.</p> <p>- minor brown rusty zones internally</p>
JPM-6B	Maple Bay (Thistle vein)	103 P15	<p>- fine grained white quartz with chlorite stringers and very minor disseminated sulphides</p> <p>- 5-10% chlorite present.</p>
JPM-7A	Maple Bay (Princess vein)	103 P15	<p>- several pieces of rusty weathered rhyolite-dacite tuff with</p>

			various green and turquoise copper oxidation products - malachite, chalcocite??
JPM - 7B	Maple Bay (Princess Vein)	103 P/S	rusty weathering quartz-chalcopyrite breccia - quartz is fine grained and milky white to rusty orange fragments (rounded, 45mm diameter) in a sulphide matrix - at least 40% sulphides
JPM - 7C & D	Maple Bay (Princess Vein)	103 P/S	- sugary white quartz with rust staining in fractures and voids - 410% disseminated sulphides (chalcopyrite)
JPM - 7E	Maple Bay (Princess Vein)	103 P/S	- country rock - chalky white to buff weathering felsic tuff (by rhyolite or rhyodacite) - light grey to greenish grey fresh surface, massive, very fine grained - minor banding

Appendix 2
 Chip Sample Descriptions - Maple Bay.

Sample #	Location	NTS	Description
JPM-Chip-1	Maple Bay (Friday Vein)	103 P/5	<ul style="list-style-type: none"> - Sample taken across strike of Friday vein, representative of whole vein (N5 m). - Sample consists of clean white vein quartz.
JPM-Chip-2	Maple Bay (Comstock Knob)	103 P/5	<ul style="list-style-type: none"> - Sample taken across north end of Comstock knob, representative of whole vein. - Sample consists of some clean milky white quartz fragments, but also lots of orange and brick red to pinkish stained quartz. - Some contain chlorite fragments in quartz. - Some pieces with sulphide mineralization, chalcopyrite & pyrite.
JPM-chip-3	Maple Bay (Thistle Vein)	103 P/5	<ul style="list-style-type: none"> - Sample taken across strike of the Thistle vein where it outcrops due north of the Crosscut Adit. - Sample contains white quartz, pink stained quartz, minor disseminated chalcopyrite in quartz, and chlorite in quartz.