

THE CHU CHUA SULFIDE DEPOSIT
presented at
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by
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LOCATION

The Chu Chua deposit is located on Chu Chua Mountain, on the east side of the North Thompson River, about 20 km north of Barriere, B.C.

DISCOVERY

Vestor Explorations completed a stream sediment survey in 1977 and located a sizable area of rusty soil, carrying about 1000 ppm copper, on the lower slopes of Chu Chua Mountain. They staked a 16 unit claim in February, 1968, and submitted the property to Craigmont that spring. Access was prevented by snow until June, when the gossan was located, and as it appeared to be transported, followed up slope. A small gossan, a few square metres in area, was located near the crest of Chu Chua ridge, more or less accidentally during this process.

A small grid was chained and VLF EM, magnetic and soil geochemical surveys done around the gossan in place, with essentially negative results. Lines were run north-south to accommodate the Cutler channel, as the strike was thought to be northwesterly.

Craigmont was contacted again early in August, by Mike Kenyon of Vestor, who reported a massive magnetite zone just west of the gossan. The showing was re-examined by Craigmont, and a northerly striking magnetite body confirmed. No VLF EM could be done, as the Seattle station was off. The property was, however, optioned, and a drill that was moving from a Craigmont property on the Adams Plateau to another at Clearwater, was diverted to drill one hole across the magnetite-gossan area. A subsequent EM-16 survey showed the zone to be an excellent conductor, with Fraser Reduction readings in percent to well over 100.

GEOLOGY

The deposit occurs conformably within a steeply dipping sequence of andesite, dacite and rhyolite, all of which are flows. The rhyolite is extremely siliceous, shows good flow breccia structure in places, and is quite free of banding. The dacites are massive or coarsely pillowed and the andesites form massive, rather thin, flow units. The dacites on either side of the sulfide zone are indistinguishable from each other. There are, however, areas of fairly strong alteration in the east wall, suggesting tops face west.

The sulfide zone occurs within or on the walls of the rhyolite unit, which thins to the south and disappears. The sulfides are then entirely enclosed by dacite. A plunge of about 40° to the south is indicated.

SULFIDES

The massive sulfide zone is massive indeed, consisting of about 90% sulfides. There is some rough banding, but no fine lamination, and fragmental sulfides, sometimes quite coarse, are common. Pyrite predominates, with lesser chalcopyrite and very minor sphalerite. Magnetite, where present, occurs as discrete beds up to 15 m thick, with very little sulfide. The sulfide zones, similarly, contain no magnetite or pyrrhotite and are completely non magnetic.

Wall rock contacts are very sharp, particularly on the west wall. The rhyolite is strongly altered and pyritized for distances up to 30 m from the massive zones.

REGIONAL GEOLOGY

The deposit is located within the Fennell Greenstone. The author considers the Fennell and Eagle Bay members to be part of the same volcanic sequence, with the Fennell greenstones conformably overlying the Eagle Bay rhyolites and tuffites which in turn conformably overlie the black, cherty shales and limestones of the Sicamous Formation.

The sequence is folded into a series of westerly trending anticlines and synclines, with the former cored by Late Cretaceous batholiths such as the Raft, Baldy and Fly Hills. A series of prominent white limestones occur in the upper part of the sequence and have been termed Tshinikin further east. These are by no means continuous, occur at several horizons, and are probably reefs.

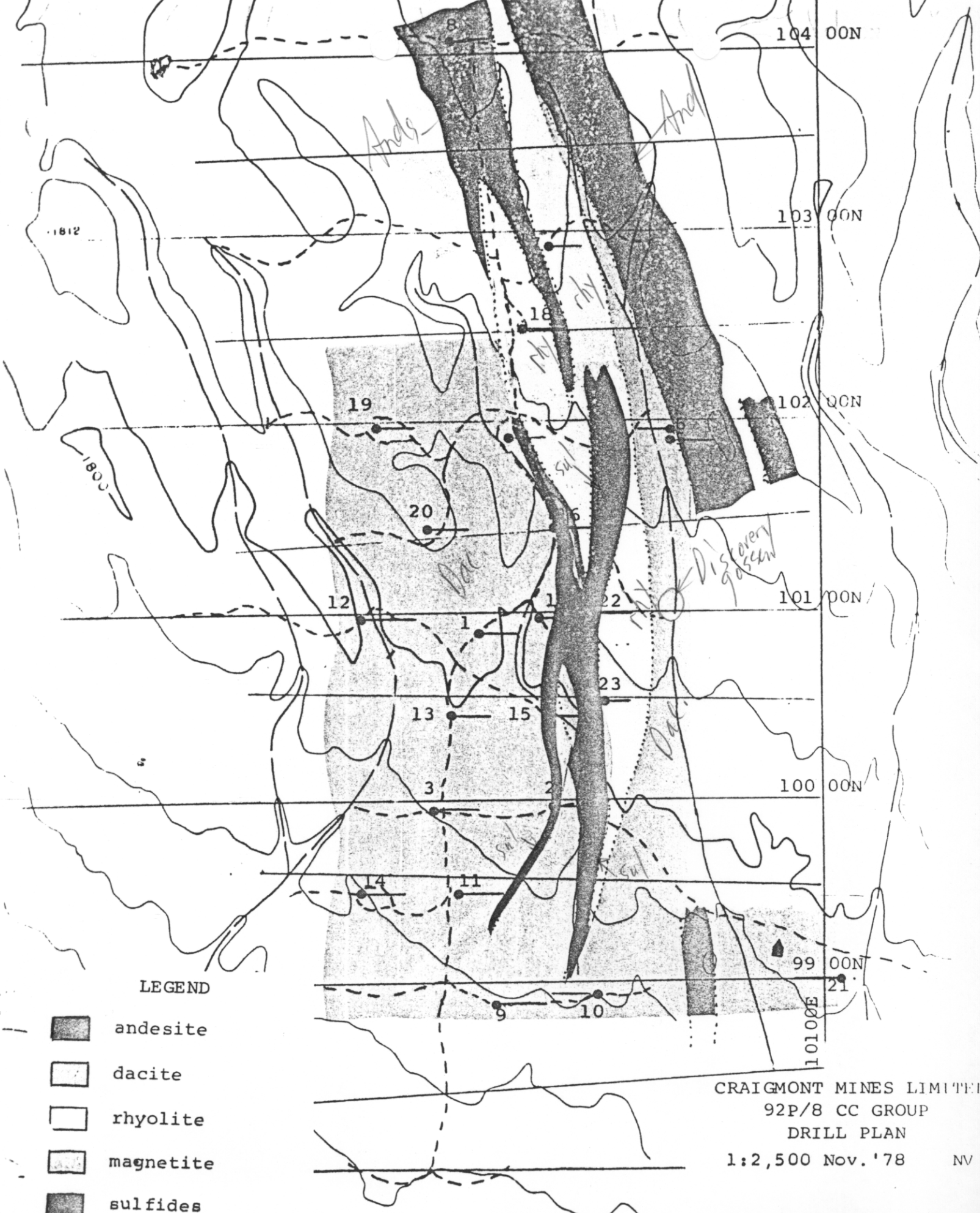
Figure 4 shows an idealized section through the volcanic sequence, before folding. Usually directly on, or even interbedded with the Sicamous Formation, is a thick, essentially rhyolitic, ignimbrite or ash flow sequence. In some areas basic flows or ultrabasic rocks are present at the contact. The ignimbrite flowed out of a caldera, which was probably roughly centered on the Adams Plateau, which then collapsed, with attendant avalanche breccias. The caldera was then filled by tuffites (bedded, siliceous, chemical sediments) and additional rhyolitic, andesitic and dacitic flows and fragmentals, discontinuous limestones and some detrital sediments, all of which were also deposited to some extent on the flanks. Finally the whole was covered by andesitic to basaltic flows with interbedded limestone reefs.

The Chu Chua deposit is located fairly high in the sequence, well up in the andesitic member. The age of these rocks is in some dispute; there seems to be some agreement that the Sicamous formation is Triassic and Preto has obtained a Lower Triassic age from the Rexspar deposit, which is fairly high in the sequence. They must be older than Upper Cretaceous since they are cut by batholiths of that age.






Geochem
Envelope ~ 1000 ppm Cu
2 m tons @ 2% Cu
up to 20 metres

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Plunge 40° South
No pyrrhotite!
Fragmental sulphides sometimes common
No gte~~x~~ eyes!
- Rhy ~ 15% PY (near sul. zone
pillows (+ selvages))

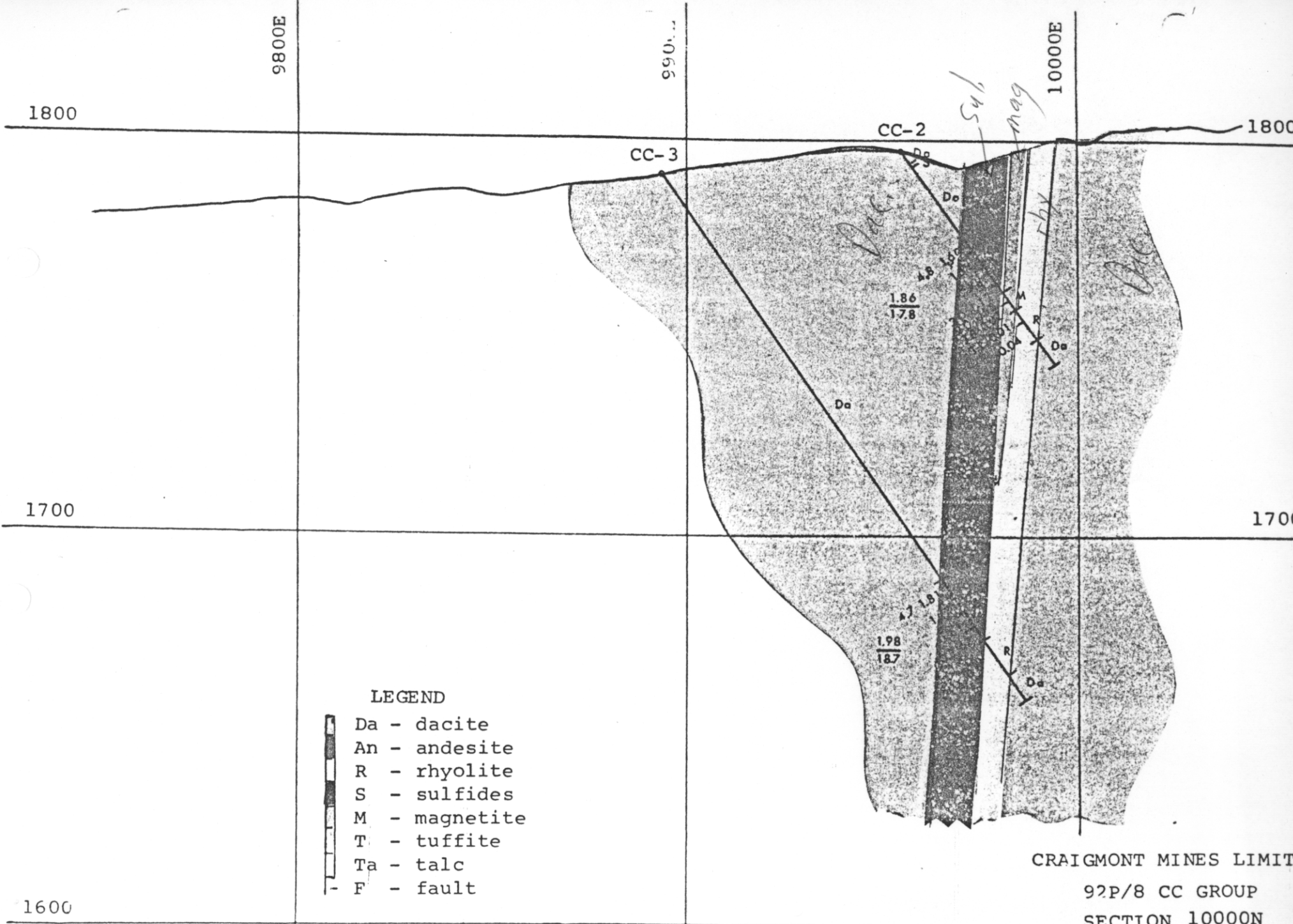


LEGEND









-  andesite
-  dacite
-  rhyolite
-  magnetite
-  sulfides

Contour int. = 10 m

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 DRILL PLAN
 1:2,500 Nov. '78 NV



LEGEND

-  Da - dacite
-  An - andesite
-  R - rhyolite
-  S - sulfides
-  M - magnetite
-  T - tuffite
-  Ta - talc
-  F - fault

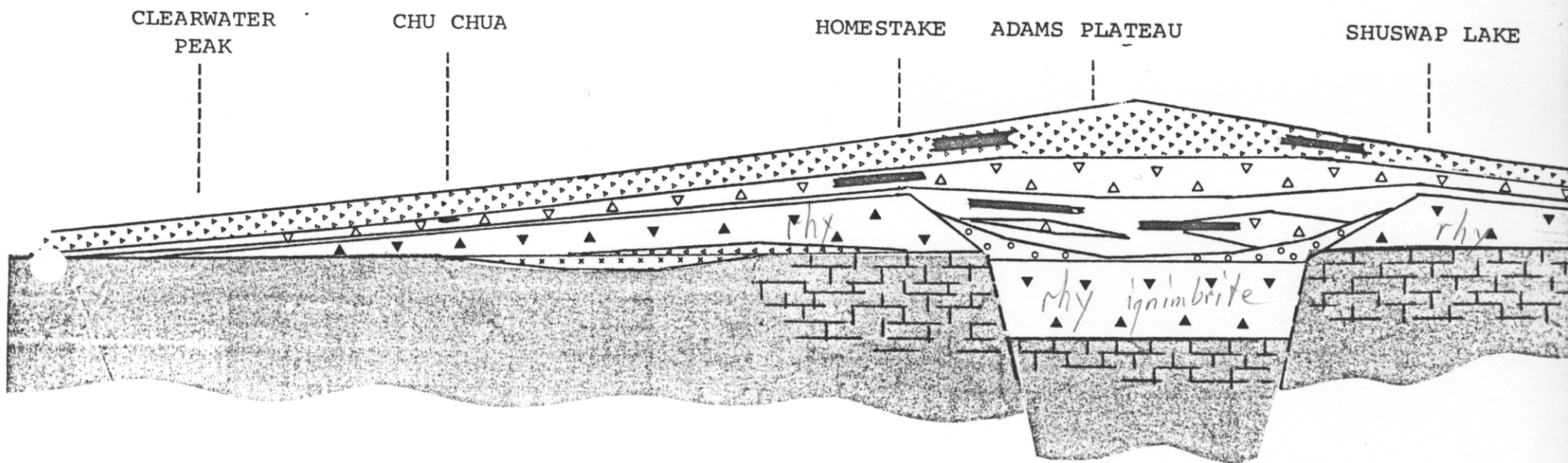
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





-  Andesite, basalt
-  Dacite flows, dacitic and rhyolitic volcanoclastics
-  Limestone (Tshinikin)
-  Tuffite
-  Rhyolite ignimbrite, tuffs / avalanche breccias
-  Cherty black shale / black limestone
-  Serpentinite, dunite

FIGURE 4

IDEALIZED SECTION - BARRIERE TO SHUSWAP LAKE
BEFORE FOLDING