

Terminology

The Grom Deposit is thought to ~~be~~ have formed as a stack of ^{bedding parallel} one lenses spread throughout a 150 m stratigraphic interval. At Grom the number of one lenses is still uncertain but there are at least three major lenses or horizons. The bulk of the ~~deposits~~ reserves come from one particular horizon which will be termed the Main horizon. This horizon ^{is lithologically distinguishable because it} has a calcareous phyllite and graphitic phyllite ~~to~~ stratigraphic hangingwall and a non calcareous phyllite stratigraphic footwall. As the stratigraphy is locally interpreted now at Grom this puts the Main horizon at the Mt Mye/Vangorden formation boundary. ~~The Main horizon~~ ^{The Main horizon} is intended only to be a local Grom deposit term since the main, and only significant, horizon at Fav is ~~deeper~~ deeper in the stratigraphy ~~and~~ and the exact stratigraphic positions of horizons at other deposits ^{are} not well known.

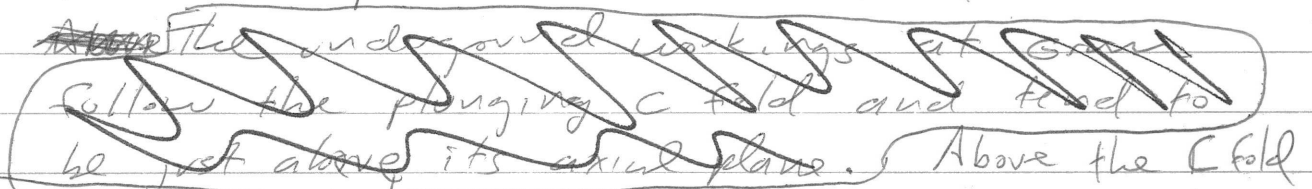
The horizon(s) ^{stratigraphically} above the main will be termed the upper ~~horizon~~ and are lithologically distinguished by having ^{generally} calcareous hanging and footwalls. ~~These~~ horizon(s) stratigraphically, below the main will be called the lower ~~horizon~~ and are lithologically distinguishable by having non calcareous hanging and foot walls.

The ore horizons at grum form a complex fold structure whose present day geometry is the result of the superposition of two deformations (fold events) D_1 and D_2 (Fig. 3).

The first deformation D_1 produced a large Z (or N) shaped fold ^(isolating ~~the~~ in profile towards the northwest) whose outline is definable by the distribution of Vangorda formation calcareous phyllites and ^{the} one lenses. This large fold was later deformed ^(D_2) by a series of smaller ^{recumbent} folds (F_2) ~~with flat axial planes~~ whose outline is S shaped. The result is a complex crumpled looking N shape ^{in cross section} (Fig. 3).

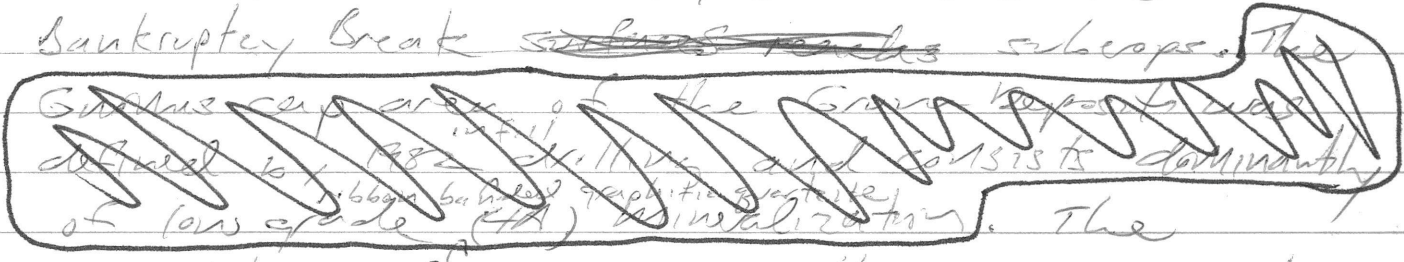
on most cross sections ^{a clear} S shaped D_2 fold ~~is~~ ^{is} apparent (see for example fig 7).

The northeast convex fold in the main horizon at 2North ~~is~~ is the upper portion (hinge) of the S fold and will be referred to as the C fold ^(for its shape in section looking NW). Below the C fold forming the lower portion of the S is the D-fold.

~~The~~  The underground workings at grum follow the plunging C fold and tend to be just above its axial plane. Above the C fold is a very poorly worked out structure which results from the D_2 overprint on ^{the} F_1 ~~hinge~~ anticlinal hinge. on some sections this appears to be a northeast convex D_2 fold and will be referred to as the B fold but the location of its axial plane is not well known. Limbs will be referred to by giving the letters of the bounding hinges i.e. upper limb of C fold will be BC limb.

The last bit of terminology needed to place most ore zones into a conceptual framework is the horizon defining a given hinge or limb. Thus the "main C fold" the "main D fold" or the "main C-D limb" will be the main horizon in the hinge of the C fold the D fold or on the limb between the C and D hinges respectively. We thus have a system for naming the major ore lenses that relates to the overall structure of Gorn.

Due to poorly understood local structure two additional names ~~are~~ are used in respect to ore lenses at Gorn: Upright panel (URP) and Gornes cap. The Gornes cap is the D₁ hinge where it is overprinted by the B fold. ^{The Gornes Cap} is defined to be floored by the Bankruptcy Break ^(F5⁺) or major low angle fault - as such the Gornes cap only exists northwest of section 24W where the Bankruptcy Break ~~submits~~ ~~reaches~~ subseeps. ~~The~~



The upright panel occurs on the lower limb of the D₁ z fold. ~~and a sequence of quartzite sulphides overlain by massive sulphides with a baritic cap.~~ It is a large upright Annul cycle which appears to be the lower horizon and may be partly a fault ^(Doal Lake fault - another major low angle fault) bounded lens.

The underground workings at Grum consist of two ^{inclined} drifts one at 2-3 N and the other at 6-7 N connected by a number of crosscuts. The drifts follow individual ore horizons down ~~to~~ the plunge of the Grum structure. The ~~main~~ ~~2-3 N~~ ~~drift~~ workings are ^{in or} just above the axial plane of the C fold. The southwest drift follows the main horizon and the northeast ~~one~~ of the major lower horizons.

Previous workers have named zones as follows

<u>This proposal</u>	<u>Paxton & Po (1977)</u>	<u>Carson (1976)</u>	<u>Simpson & Adamson (1982)</u>
Upper	H zone	upper zone	— not used —
Main	Layer 1	3N zone	upper and lower panels and extensions
Lower	Layer 2	6N zone	70W-86W orange
URP		lower zone	upright Panel working

Further equivalencies are

<u>Paxton & Po (1977)</u>	<u>This proposal</u>
nose X	main in C
nose U	main in D
nose S	lower in C
axial plane M	C fold axial plane
axial plane N	D fold axial plane

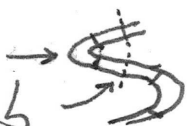


Simpson + Adamson, 1982

This proposal

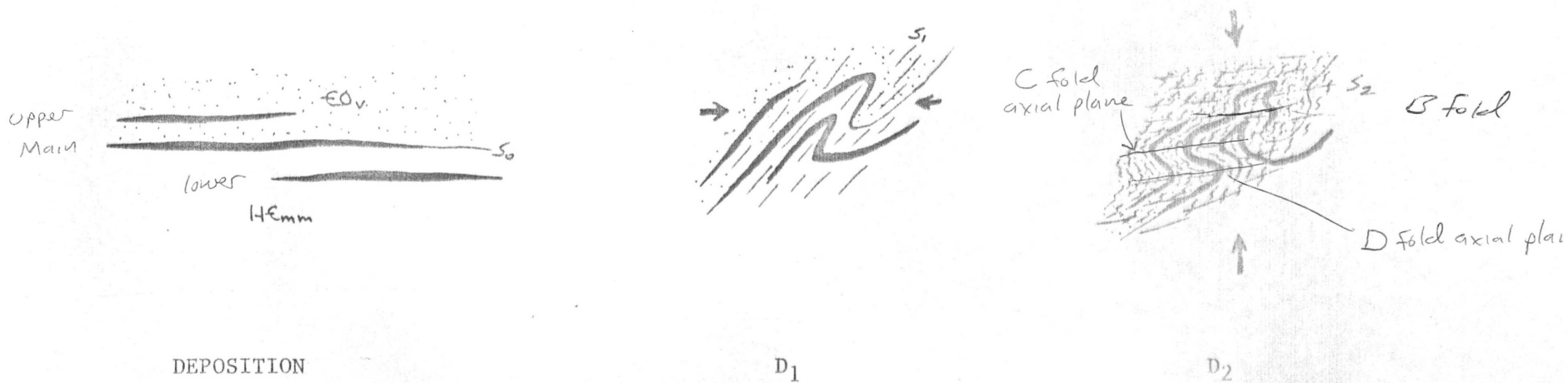
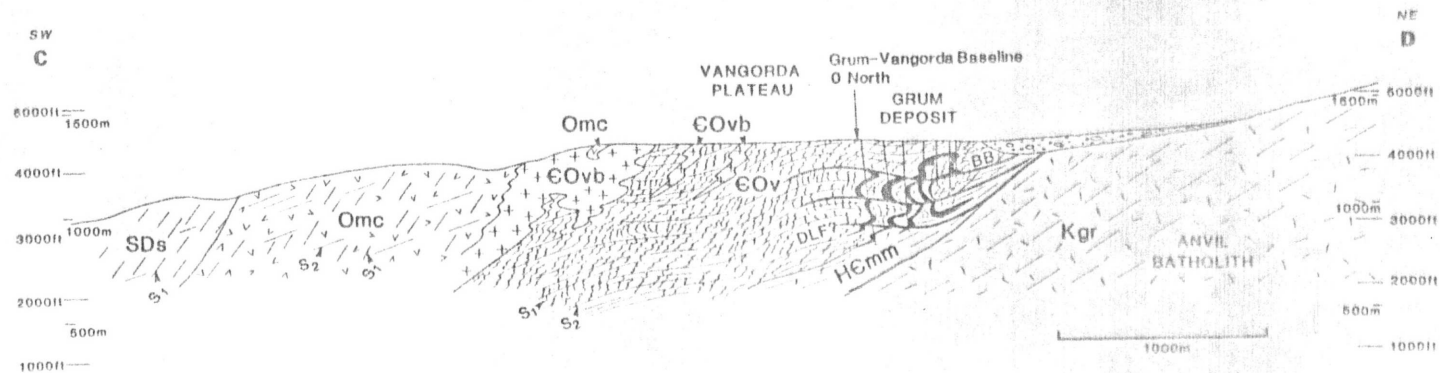
upper panel (yellow) [A]	main in C and in BE limb
lower panel (green) [A]	main in D and CD limb
east extension of upper/lower (orange) [B]	chiefly main in C
orange 70W-86W [C]	chiefly lower in C
upright panel orange stripe [D]	upright panel

Following this terminology the historic use of the term *champ zone* refers to the upper in C fold where it is near the surface.

have to add:

- how to subdivide a hinge from a limb
- main in C hinge → 
main in C-D limb → 
main in C fold
we use fold or hinge 

c) mining implications
d) summarize met sites
in this terminology



DEPOSITION

D₁

D₂

Figure 6. Cross section through Vangorda Plateau and Grum deposit (86 W). The Grum deposit provides the best example of the D₁/D₂ interference pattern in the district. The deposit is involved in a large Z (or N) shaped D₁ fold refolded by S shaped D₂ folds. The steeply dipping S₁ crenulated by shallowly dipping S₂ is typical of the structural relations on the Vangorda Plateau where greenschist facies rocks dominate. Post D₂ folds gently warp the S₂ foliation. The inserts show the sequential development of Grum from a sequence of stacked en echelon ore layers parallel to S₀ through D₁ and D₂ to produce the geometry observed today.

SW

ON

ION

NE

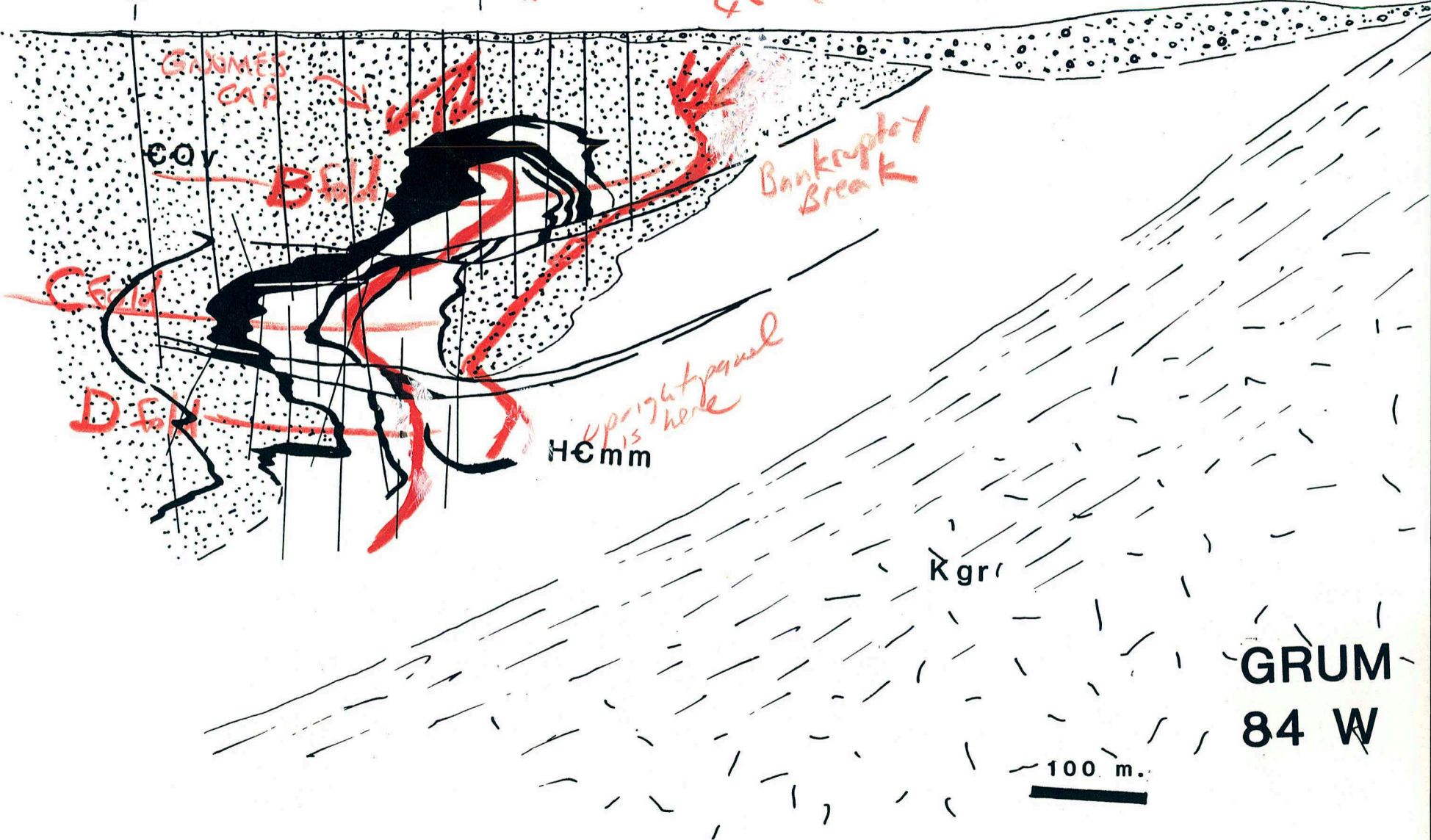
upper
F₁ Z limb
(long limb)

F₁ anticline

F₁ S limb
(short limb)

F₁ syncline

lower
F₁ Z limb
(long limb)



GAMES
CAP

COV

B.S.L.

C.S.L.

D.S.L.

Bankrupt
Break

Hcm

upright
is
here

Kgr

GRUM
84 W

100 m.