Appendix I:

VW Deposit Geology Report, Cooper, C.

Chris Cooper, consultant geologist. Galloway Mineral Services.

Report on the VW Zone Nickel deposit, Junior Lake, Northern Ontario.

Observations based on core logging of the 2007 drill programme.

Prepared for Landore Resources plc.

By

Chris Cooper
Galloway Mineral Services.

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Kirkcudbright.

Executive summary.

In the VW Zone prospect at Junior Lake there are two important styles of mineralisation in the form of sulphide veinlets and breccias of nickel, [and cobalt] bearing pyrrhotite and pentlandite hosted in deformed mafic rocks and disseminated pentlandite and minor pyrrhotite in ultramafic volcanic and volcaniclastic rocks. The latter may be the proto-ore of the former and presently does not form a significant part of the resource.

The mineralisation is the result of hydrothermal sulphide-rich fluids depositing nickeliferous pyrrhotite, pyrite, pentlandite, chalcopyrite and arsenopyrite but only minor gangue calcite and quartz as replacement style net-veinlet, [pseudobreccia], veinlets and foliation-defined lamellae in permeable horizons of a mafic volcaniclastic and pelitic metamorphic assemblage. Nickel grades in excess of 1% Ni are frequently encountered. In the ultramafic sequence pentlandite and minor pyrrhotite are found as small, disseminated blebs with nickel grades of lower tenor, typically 0.1% to 0.3% Ni.

The pathways for high-grade ore deposition were governed by a sandwich of mafic meta-volcanic rocks enclosed by ultramafic rocks to the north and south. The mafic/ultramafic sandwich is cut by an anastomosing group of basic sills and dykes that range from strongly foliated to unfoliated fabrics and strongly recrystallised to intact mineralogies.

The origin of the mineralisation may be by scavenging of the original ultrabasic "komatiite" volcanic and simple deposition in the proximal and very accommodating meta-basic foliated assemblage. The mineralisation is a late event, [in terms of local geology], and post-dates the last important hard-rock unit seen at VW Zone, the injection of a suite of the aforementioned gabbroic sills, although minor basic dykes post-date the mineralisation. Continuation of regional tension during and following sill intrusion has greatly facilitated the opening of pathways in the foliation fabric of the host volcaniclastic units.

However due to the strongly deformed environment in which the mineralisation is hosted the current geometry reflects a strong pinch and swell both along strike and vertically. This is indicative of shear zone morphology. Some mineralised units are sigmoidal in section with a plunge to the west. Due largely to the closeness of drill sections and the number of holes on each section continuity along the individual mineralised structures is not a problem.

The identification of favourable lithologies for ore deposition and the different styles of mineralisation is a potentially important exploration tool in the Junior Lake district.

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1. Introduction.

The following is a summary of findings, conclusions and recommendations based on the writer's observations of the drill-core during the 2007 field season at Junior Lake.

The writer was invited to log the drill-core for the 2007 season drill campaign on the Junior Lake VW Zone project in Northern Ontario. Commencing in early April the drill programme consisted of 17,020.62m of NQ wireline double-tube diamond drilling.

Interpretation of the final drill sections commenced in November and was completed by early December 2007.

Background.

The VW Zone is a nickel project situated near Junior Lake at 112km from Armstrong along the Buchanan's logging road. A satellite nickel deposit called B4-7 is just 3km from VW Zone on the same structural trend. A short drill programme was completed on the historic B4-7 just after the conclusion of the VW drill programme.

The VW Zone is a Landore Resources discovery based on interpretation of anomalies on an aeromagnetic survey flown by the company coupled with geochemistry from outcrop sampling.

The VW Zone mineralisation is more properly characterised as Ni-Co-Cu-Pd with nickel being the principal tag. There is a suite of metals of which, in descending order of importance and value, we find nickel, cobalt, copper, palladium and minor silver and gold. In some parts there are also minor amounts of Pb-Zn. When during the course of the text for the sake of brevity only "nickel" is written it automatically includes the whole group of economic metals. Individual other metals are referred to separately.

2. Previous drill programmes.

The first hole collared on the property was 0405-35 on line 3275E in 2005. Fortuitously this was the discovery hole. Limited drilling followed during the rest of 2005, [holes 35 to 43, 46 & 47], but a larger programme was completed over the property in 2006, [holes 48 to 60, 71 to 88, 97, 98, 52A], to establish a mineralised zone stretching over 300m from line 3050E to line 3350E. If we include the thin intersection in 0405 44 on line 3550E that would mean a mineralised zone of 500m.

As we have slowly begun to assess the previous drill holes, [2005, 2006], it has become apparent that there are several issues that need to be attended to with respect to recording certain marker horizons and extending the sampling to lithologies now recognised as more prospective.

Since the discovery of the VW Zone nickel mineralisation the two drill programmes of 2005, [11 holes, 3620m], and 2006, [34 holes, 7487m], have established an inferred resource of 4.202 million tonnes grading 0.34% nickel at a cut-off of 0.2% Ni. [Scott Wilson Associates, Technical Report on the Resource Estimate, Jan 22, 2007]. At the conclusion of the 2006 drill programme the VW Zone mineralisation was open along strike both east and west and also unclosed down dip.

3. Scope and aims of the 2007 drill programme.

The stated aim of the 2007 drill programme was to provide infill drilling to enable the resource to be calculated to a higher category and, through step-out and deeper drilling, to enlarge the resource. These aims seemed to be eminently realistic, particularly due to the absence of step-out drilling.

The first core was drilled on 15th April and logging began on 16th April.

Drilling and logging continued over three spells of six weeks each with a shorter period of three weeks at the end.

Drilling was completed on September 26th, [04-07 161] and logging completed on 10th October. A metallurgical hole was completed later, before drill demobilisation, [0407-178].

A total of 17,020.62m of drilling for 71 completed drill holes was achieved during 2007 bringing a total of 28,127m for 116 drill holes for the project in the three programmes. The 2007 programme has more than doubled the holes and metres drilled on the prospect and we can confidently expect that the new resource, expected in early 2008, will have increased the total contained metal as well as the quality of the resource.

4. Geology of the VW zone, Junior Lake.

4a. Geological units encountered in the drill core at VW Zone.

In the section below the writer has attempted to define the major rock types found in the core and set out some basic criteria used in their identification. Codes adopted were the Landore Geological Legend Rock Codes derived from those of the Ontario Geological Survey. Since the log sheets have a graphic log column there are a series of symbols for each lithology, structure and intensity of mineralisation. These are reproduced in the appendix.

Fig. 1 will be found to be of use during the description of geological units and how the mineralisation is related to these.

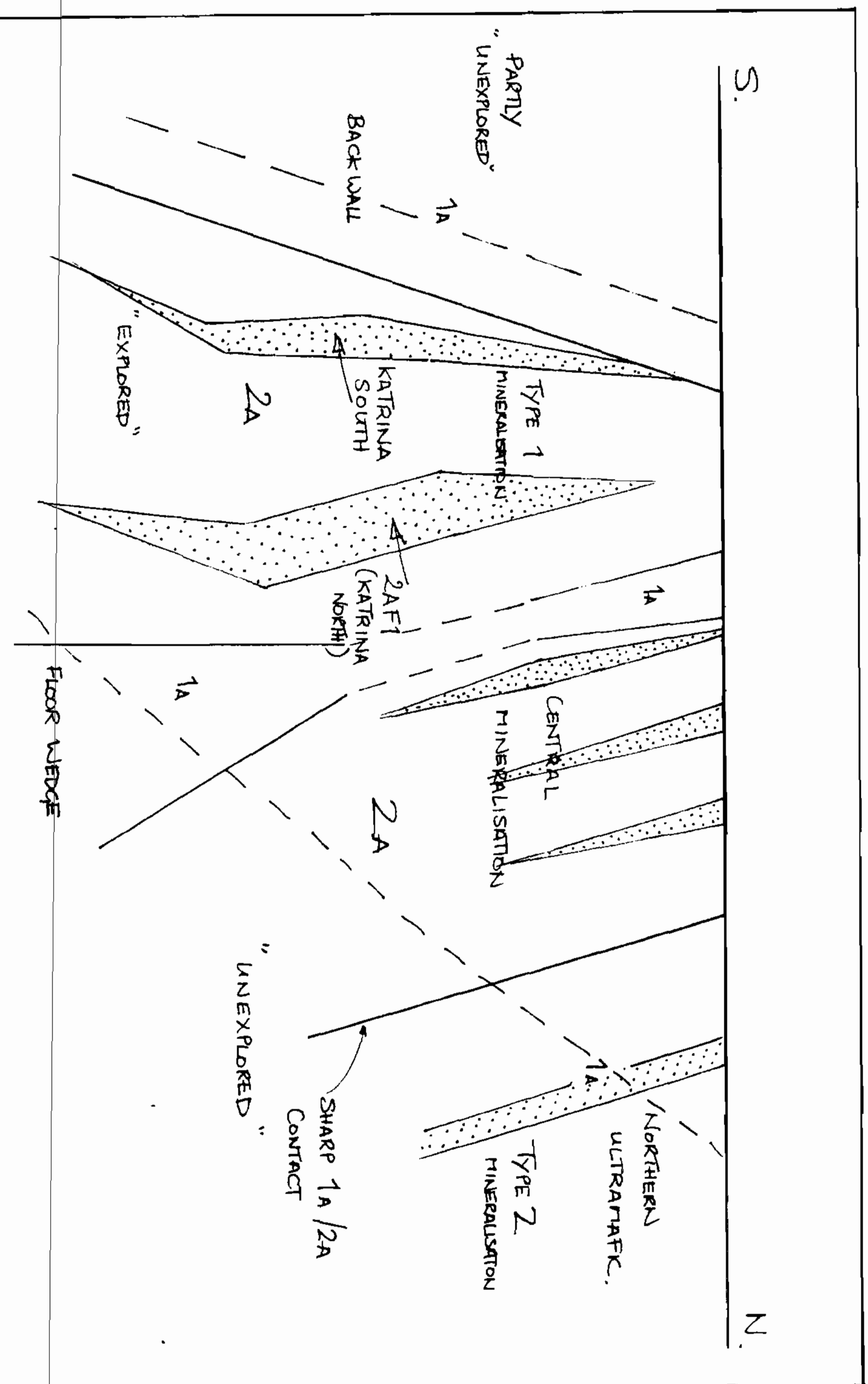


Fig. 1 IDEALISED SECTION SHOWING LOCATION OF ELEMENTS OF MINERALISATION AT VW ZONE IN RELATION TO BASIC/ULTRABASIC HOSTS

Post-foliation intrusive. 9, 9D, 9T, 9T39 etc.

These lithologies comprise an important swarm of sills of basic, gabbroic composition that have been described as melagabbro, essentially a field term. The coarse-grained members are melagabbro and the fine-grained members are micro-dolerites. They are probably all of the same chemistry

with grain size variations being a function of cooling history. Thus thin sills are nearly always fine-grained micro-dolerites and thick sills are always coarse melagabbro but with fine-grained chilled margins.
Other than the host rocks to the mineralisation this category is the most important. The lack of consistent identification in past programmes has caused problems in the present programme during section interpretation.
This lithological unit can be extremely challenging during logging usually due to thermal metamorphism of host rocks that are essentially similar compositionally. At other times the contacts seem very obvious.
The criteria used to define the intrusives are: chilled contacts, induration of host rock, isotropic, [undeformed], interior, calcite-epidote veinlet sets, unmineralised character. They are nearly all foliation followers and can be very difficult to pick if the margin is chilled and the host baked. In this case they will both have the same colour. Usually under a hand lens a knife-edge contact can be observed and sometimes this is seen to cut the cleavage very obliquely. The clearest cases, unsurprisingly, are where mafic sills cut ultramafic host. Here the contacts are very sharp and usually there is magnetite growth in the margins of the sills as a result of absorption of a small percentage of magnetic host rock.
Because of the difficulty in spotting contacts many have previously gone un-logged. Even in the current round of drilling we shall almost certainly slightly under-estimate the number of intrusives. In thickness they range from 5cm to 50m and the larger intrusives are multiple events with pulses of magma into the same fissure. The large units often show three pulses and the final pulse is usually Grassy Pond sill style, [logged as 9T39PF5]. The dip of the intrusives is on average north at about 60 to 65 degrees and they strike roughly east to west. In the south of the prospect the sills become vertical. The morphology of the intrusives is sill-like and they almost certainly weave about with the foliation, bifurcate and merge. Anastomosing might be a reasonable description of their habit.
True dykes are also seen in the drill core though they tend to be narrow and slightly darker, often porphyritic. Some have a sinuous habit and one was seen to cut the core three times over five metres. Some of these dykes are post-mineral. [See below].
Why are the sills so important particularly when other workers report that they are widespread in the district?
The suite of sills is of paramount importance to the interpretation. They are late dilational events and must be modelled first. Additionally they act as impermeable barriers to fluids and have helped channel the sulphide deposition. The vast majority of sills are unequivocally pre-mineral and, as mentioned above, form part of a major regional swarm. Their occurrence within the VW Zone may be of no material importance with respect to the mineralisation origin but they have had a remarkable effect

upon the final destination of the fluids. Where they are intimately in contact with the mineralised zones they represent waste rock that must be excluded from ore volumes or, if too thin to be separated, accepted as dilution. They are very easily differentiated from mineralisation and have excellent rock quality properties.

Grassy Pond Sill lithology. 9T39PF5.

This name has been borrowed from a lithology that occurs at Grassy Pond near km 100 on the Buchanan's Road. In that type-locality an intrusive with megacryts of feldspar shows a wide degree of variability as a result of clustering of the phenocrysts. [Plate DSCN 1989 and Fig.2].

In the VW zone the lithology is generally similar though less spectacularly developed. The sill is usually a single pulse of size range from a few centimetres to a few metres emplaced within an earlier pulse of mafic sill, either 9D or 9T. Very good contacts are observed in the drill core and the megacrysts are best developed adjacent to the contacts on both margins. Within the main body of the sill there may be a paucity of megacrysts, either of small size or totally absent. The parent sill is in this case a dark green fine grained mafic intrusive. There are three individual Grassy Pond Sills in the VW sections, one in the north cutting the ultramafic, the main zone in the centre of the sections and one or more very thin pulses in the south, usually seen at depth due to the drill level.

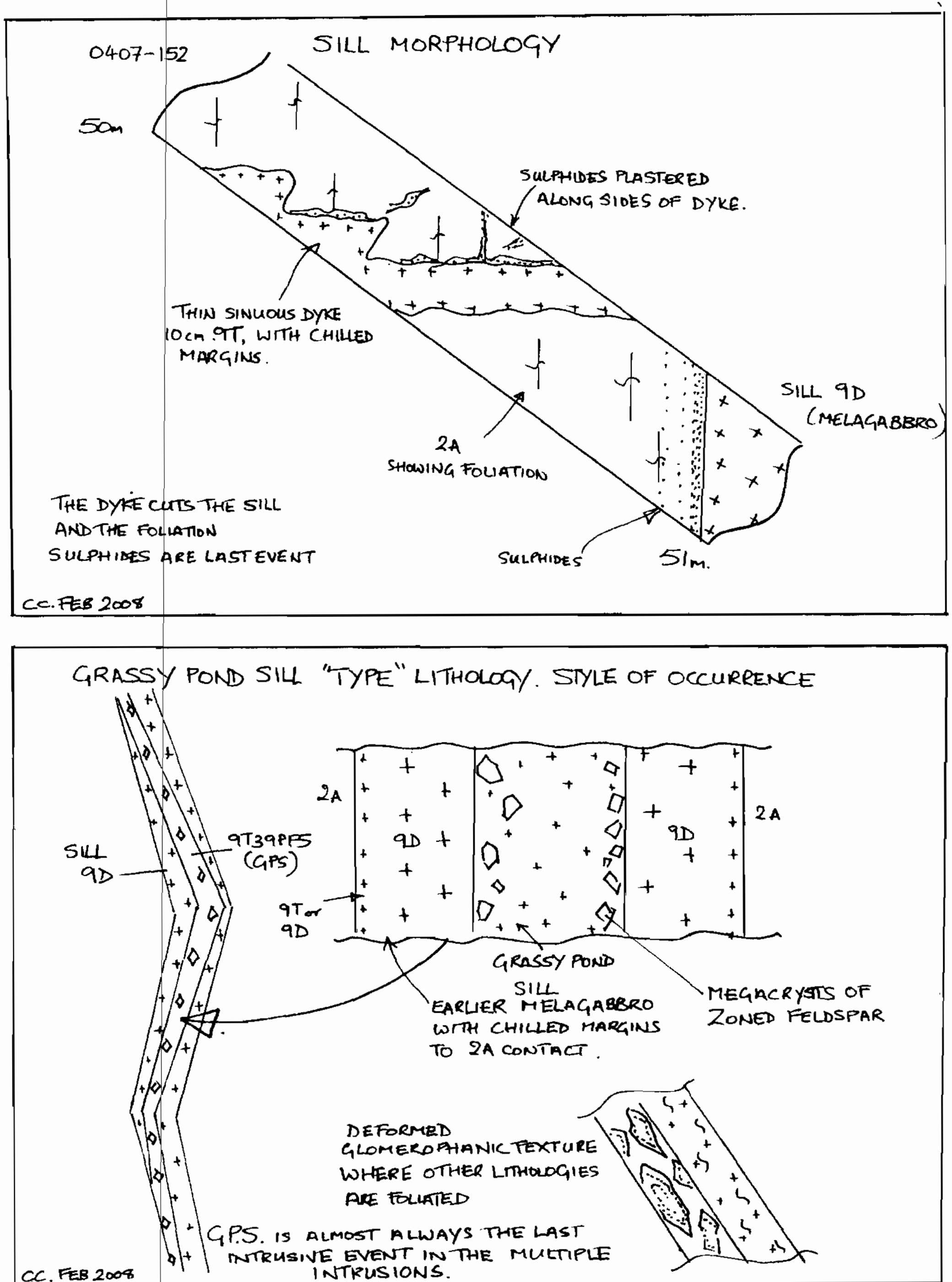


FIG. 2.

Post-mineral dykes. 9T

This is a minor class of thin, [less than 1m thick], dark green, grey or black, often sinuous, fine-grained basic dykes. They are particularly common in the 2AF1 unit often occurring in groups of three, almost certainly a traceable small swarm. They show only minor deformation.

During interpretation of the drill sections there was convincing evidence that a few of the larger melagabbro sills have cut across the mineralisation.

Pre-foliation intrusives. 9Fl

Same gabbroic-doleritic composition as the post-foliation intrusive but with a good pervasive fabric. These are often weakly mineralised. A foliation is an increase in permeability. There is a marked increase in the frequency of the pre-foliation intrusives in the deeper drill holes particularly in the footwall of the mineralisation. A possible explanation lies in the proximity to the ultramafic back-wall in the south. The increase in deformation may have resulted in foliation of the sills. This would make pre-foliation and post-foliation sills equivalents.

Lithology known as "grey rock". 2AF1

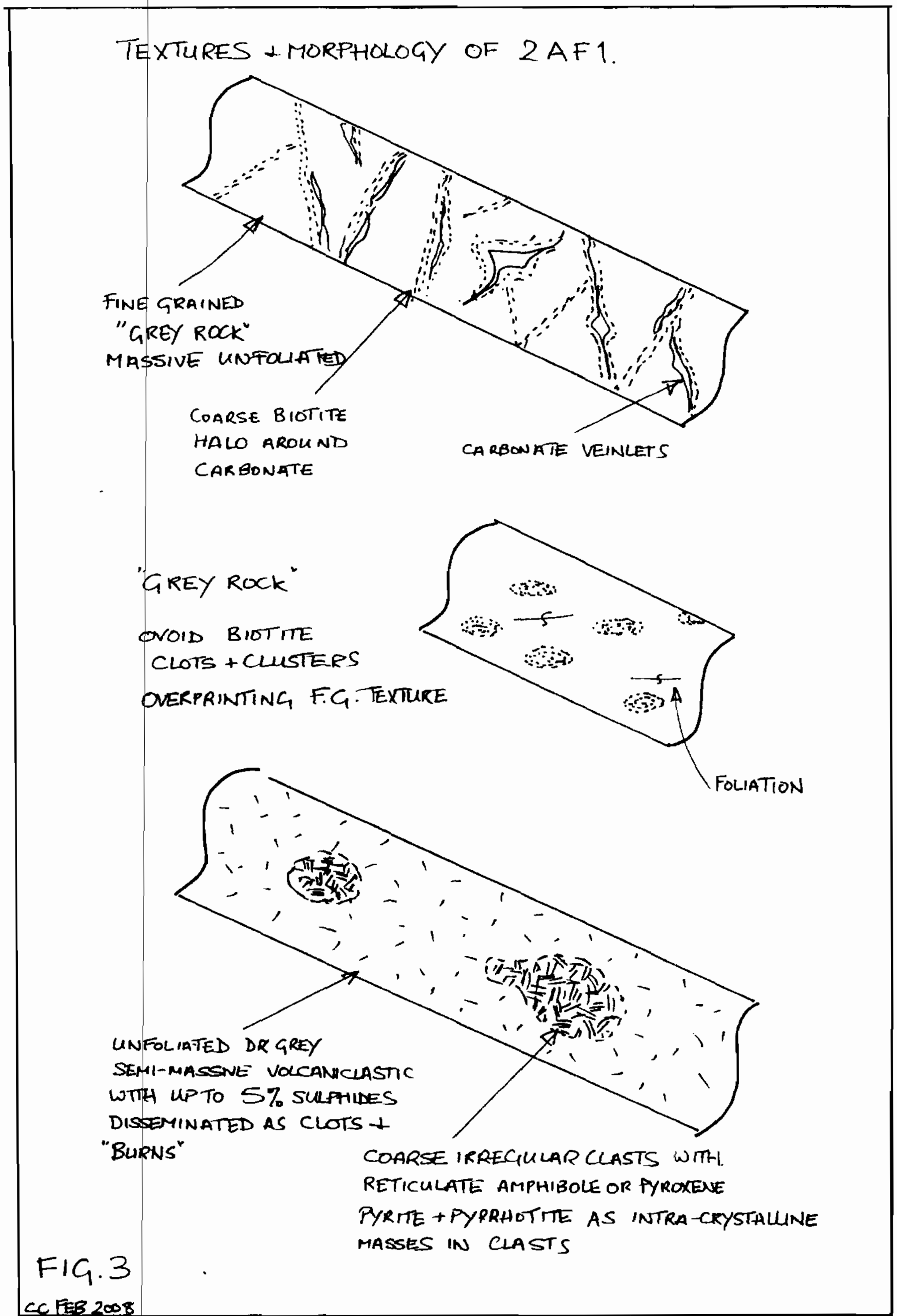
This is a pretty broad-brush term and really just means 2A that is "massive" i.e. lacking a foliation. [Plate DSCN2188]. When it was initially used the writer thought of it as a stop-gap descriptor, until a better sub-division could be made. But the unit tends to be extremely altered. The whole rock is often altered to tremolite-epidote-calcite and the entire unit heavily overprinted by calcite veinlets with strong biotite selvedges. This latter effect tends to mask the original texture and internal structures. Even less altered 2AF1 tend to show ubiquitous leucoxene development as irregular small brown blebs. Recently unaltered 2AF1 has been logged. It resembles coarse pyroclastic or autobrecciated lava.

See Table 1 in Appendix for a typical succession in 2AF1 showing the textural variations and Fig 3 for Textures and Morphology.

Having recourse to a new lithological unit is only of use if it can be recognised and traced from hole to hole, otherwise it is a pointless exercise. There are a sufficient number of characteristics of this unit to render it fairly readily identifiable and so we can use it. In any case it is cautionary to regard it as potentially mineralised and should be sampled. Once we reach as stage where we cannot follow it it has to be fingered into the regular 2A.

The recognition of 2AF1 was first made in 0407-110 and subsequently it has been identified in earlier holes such as 104 and 106. It was hole 0407-113 that really brought this lithology to the fore. Here a very thick succession of "grey rock" was identified that was relatively unfoliated and massive to semi-massive and, critically, it was not associated with intrusive sills. Above the 2AF1 had been mafic pelitic meta-sediments that graded over one metre into laminated and poorly foliated schist. Mineralogically there is distinctive coarse brown leucoxene sporadically disseminated in the whole and this then passes into "grey rock" with abundant carbonate veinlets with biotite alteration fringes surrounding the carbonate. The rock is texturally quite fine grained but also contains

rounded to irregular relict clasts or inclusions of much coarser crystalline material like pyroxenite. The distribution of sulphides in 2AF1 is even more remarkable and at variance with the usual MZ2A setting. There are areas of coarse intra-crystalline sulphides, [particularly in the clasts/inclusions], and clots and clusters of course sulphides irregularly scattered through the massive textured rock. [See fig 3]. It is almost as if the sulphide phase was immiscible within the "grey rock" and separated out in a sporadic manner. If this were to be the case then the sulphide would be an original constituent rather than introduced by hydrothermal fluids. The suphides are a mixture of pyrite and pyrrhotite with coarse chalcopyrite, the latter often in the clots. Drill-hole 0407-113 also gave the best reactions with nickel zap of any up to that time in 2007. It was also noted at this time that the nickel zap reaction could be speeded up by using dilute 10% HCl instead of water.
In 0407-113 the unit 2AF1 was logged from 246m to 295.72m with sulphide contents up to 10% but usually in the range 2% to 5%. At the base of 2AF1 from 295.72 to 302.66 there was a zone of MZ2A followed by a short section of 2A then a 3m sill of 9D. Grades in the MZ2A were spectacular, up to 1.3% Ni whilst the huge succession of 2AF1 returned grades up to 0.9% Ni and other values mainly over 0.3% Ni.
Therefore this was a major stand-alone thick mineralised unit that did not appear to depend on sulphides trapped against impenetrable sills. In exploration terms it is either a lithology favoured for deposition of sulphidic fluids or a lithology that was innately mineralised. In previous programmes much of what was interpreted as Katrina North may in fact be mineralised 2AF1.



Mafic volcanics/volcaniclastics. 2A.

A very broad-brush category that has been used ubiquitously in the past programmes to mean mafic volcanic rocks. This, as pointed out by James

Mungall, is quite erroneous. The group comprises everything from lava through to bedded ash, tuffs and probably re-worked pyroclastics. Clastic rocks that are particularly mafic are included. The unit name will stay but should mean mafic volcaniclastic rocks. Past logging has not differentiated the unit to any extent and if so certainly not on a systematic basis. This is for reason of practicality; the unit is very difficult to subdivide successfully. In the current programme clastic horizons have been hived off to the 6P unit, iron formation, [BIF], to 5D/5D9, and massive, altered, volcaniclastic to 2AF1.

Mafic amphibolites. 2F

Similar to 2A but primarily consisting of amphibolites. These horizons are very compact and dense with a near monomineralic composition and a foliated texture. They were probably lava flows. The principal mineral is now actinolite and they can also develop garnet.

A metamorphosed and strongly foliated sill, [9D], would share many features with mafic amphibolites and could well be indistinguishable.

This demonstrates the difficulty of ascribing an original lithology to a metamorphic rock whereby the same result may be derived from diverse roots

Pillow lavas. 2AP

This has been used during the logging in 2007 but only where there is little doubt that the lithology is pillow lava. Quite often the rind or chilled margin of a pillow can be mistaken for the chilled margin of an intrusive. The flow or fluxion foliation seen on the margins of pillow lavas formed under similar circumstances to small intrusions but in the case of pillow units the rind is usually thicker relative to the thickness of the flow than would be the case in a sill or dyke. Pillow lava successions can be mineralised but it is unusual and is normally weak. A lava succession is quite incompetent and resists formation of a pervasive foliation fabric.

Ultramafic meta-volcanic rocks.

Talc schist. 1A

These are talc schist with a mineralogy of +/- chlorite, tremolite>actinolite, biotite, fuchsite and ankerite/calcite. Peridotite and serpentinite are also included as members. Accessory magnetite is often present. The original lithology is believed to be komatiite lava although there is no evidence that this was so and it probably is not even necessary for it to have been so.

Peridotite. 8C

This has been recorded in 0407-133, [2950E], and is probably more widespread that just the one hole. It is found within ultramafic talc schist in the north of the VW Zone. Examples contain up to 50% olivine with abundant fine-grained accessory magnetite and up to 10% sulphides though usually less. The sulphides are pyrrhotite, pentlandite and pyrite, occurring as small, disseminated grains. Where sampled this has given grades of >0.2% nickel.

The peridotite/serpentinite appears far less leached and deformed than the talc and talc carbonate schist so was likely to have been the proto-lith. Where it has survived it contains disseminated grains of pentlandite and pyrrhotite and grades of up to 0.3% Ni. Talc schist is usually of lower grade, from 0.05 to 0.2% Ni, but mineralisation in the 1A succession has only recently been recognised as having economic potential so the sampling is far from representative. The sulphides react well to nickel zap.

Cusp of mafic/ultramafic. 1A/2A & 2A/1A.

This is a cusp lithology but frequently used in logging on this project. It is usually on the boundary between 1A and 2A and has features of both lithologies. Sometimes the differing lithologies are so thinly interbanded, either naturally or structurally, that it is too difficult to separate them out on the log sheets. It hosts some spectacular pentlandite mineralisation but it is not common.

Clastic meta-sediments and chemical precipitates.

Banded Iron formation oxide/sulphide/amphibolite facies. 5D9

Banded Iron Formation style cherts and amphibolites often accompanied by massive sulphides, usually pyrite, lesser amounts of pyrrhotite and magnetite both as euhedral form and fine grained disseminated bands.

The amphibolite is usually dense chlorite with poikiloblastic growths of actinolite and euhedral as well as banded magnetite.

The presence of cherts and jasperoid attests to the origin of this unit as chemical precipitates and explains the paucity of economic metals in the Iron Formation. Sometimes this unit contains coarse wine red garnet showing abundant internal fracturing often with alteration and pseudomorphs by magnetite.

Pelitic meta-sediments. 6P

Meta-pelites often with minor chert horizons. In parts they contain garnet. These are original mudstones, silt-stones and sandstones with fine conglomerate horizons. Metamorphism and deformation has destroyed the sedimentary fabric and recrystallised the rocks. Metamorphic grade of amphibolite facies is seen.

Graphitic schist. 6N

A metamorphosed graphite shale unit with common pyrite.

Structures. [Faults, shears, breccias.]

Faults.

These are not often clear-cut. Minor faults are seen, often showing healed contacts. Larger faults are often denoted by extensive fracture zones, clay gouges or core loss or a combination of all these. Faults observed with these characteristics are probably of post-metamorphic age.

Shear failure zones.

Much of the succession encountered in the drilling could be sheared but this is only obvious in the ultramafic succession where slip planes in the talc schist are ubiquitous. Stylolites are occasionally seen in thicker carbonate veins. These are pressure-solution planes but they have developed inequilaterally as sutured surfaces.

Alteration.

Depth of oxidation in fractures is recorded for each hole. If the overburden is thick then no oxidation will be observed. The rocks have been sealed against oxidation following the departures of the glacier by a thick cover of boulder clay. Where there is outcropping at surface or thin cover the fractures may show oxidation down to about 10m down hole. This has a dramatic effect on any mineralised zone that is even weakly oxidised and nickel bearing sulphide is partially unlocked from pyrite and pyrrhotite giving an excellent response to nickel zap. There must be some obvious metallurgical explanation for this.

Hydrothermal alteration is important and has caused weak to moderate silicification of the host rocks, 2A, particularly where sulphide mineralisation occurs.

Retrograde alteration, or more properly, retrograde metamorphism has overprinted the high-level amphibolite facies by greenschist facies resulting in extensive chloritisation. Garnet is pseudomorphed by magnetite so that little original garnet remains. Leucoxene has developed from original ilmenite

Mineralisation. Recording of.

The same nomenclature as previous programmes has been carried over into the 2007 drill programme.

MZ prefix is the main mineralised zone, MMZ. Example MZ2A.

Suffix MZ is the weak mineralised zone, WMZ. Example 2AMZ.

Textures, structures and additional information.

In addition to logging codes for basic lithology and mineralisation the logs record fractures, foliation shear planes fault gouge and breccia, contact dip, contact nature, alteration,

4b. Geological succession at VW zone.

From north to south the following is observed. [See also Fig. 1].

Ultramafic peridotite, serpentinite and talc schist cut by many, mainly small, sills and dykes. Dykes are magnetic due to absorbed magnetite.

Mafic volcanic/volcaniclastic cut by very large and many small gabbroic sills termed melagabbro.

Mineralised zones constrained in mafic volcanics by roofs and floors of sills.

Floor wedge of ultramafic schist. These may be several in number or absent.

Mafic volcanic/volcaniclastic succession with more mafic sills.

Mineralised 2AF1 equating to old Katrina North.

Katrina South

Banded Iron Formation.

Meta-pelites.

Lower and southern succession cut by many thick melagabbro sills becoming more foliated.

Ultramafic schist on the back wall. Sometimes in close proximity to Katrina South.

4c. Petrography.

During the course of the 2007 drill programme several samples were sent for petrographic analysis to consultants in Vancouver. The results are rather pedestrian descriptions which though worthy, add little other than the basis physical facts. In addition to this a suite of samples was taken away by James Mungall under the supervision of the writer and the results incorporated in a Petrographical Report, [December 12th 2007], are altogether more inspiring and informative.

4d. Structure.

From the surface outcrop and from the drill sections an interpretation of the geological structure has evolved. The primary site for economic mineralisation, the mafic volcaniclastic unit, is seen to be sandwiched between thick units of ultramafic volcanic rocks all of which trend east-west and are vertical or sub-vertical tending to an 80 degree plunge to the north. A series of basic intrusive sills and dykes has intruded all the above mentioned units but is better developed in the mafic volcaniclastic probably by virtue of being less deformed here as opposed to in the ultramafic rocks. These intrusive share both the strike and dip with the host mafic volcaniclastic assemblage.

A mappable unit within the mafic volcaniclastic referred to as 2AF1, [massive variety of 2A], has, for unknown reasons, also been the focus of the sulphide depositing fluids.
The ultramafic rocks forming the bread part of the sandwich and outcropping in the north part of the VW prospect and also in the south part adjoining Ketchican Lake are very strongly deformed and sheared.
These have been referred to in the text as the north section, the floor wedge, [as seen in the sections as slices of ultramafic schist within the main mafic section], and the southern back wall of ultramafic rocks.
[See Fig 1]
A review of all the drill sections clearly shows that the mineralisation has developed within a major lensoid shaped opening within the ultramafic sequence in which the mafic volcaniclastic sequence is hosted. [See Fig. 4 and Fig. 5]. To the west, as seen by 2900E, and to the east, as seen in 3550E, the lensoid dilation in the ultramafic is closing and the mafic sequence is thinning out. This could be either a real feature due to stratigraphy or it could be a result of structure similar to boudinage. The writer is in favour of the latter. [See below]. Should this be the case then similar lensoidal windows must also occur along strike in the same structural corridor.
There is a conspicuous plunge of the mineralised structures to the west. This is best shown in a long section. [See Long section 1 in appendix]. A similar plunge by both the roof and floor of the bounding ultramafic envelope is probably responsible for this. A discontinuity is apparent at 3075/3100E and another at 3275/3300E. These are due either to faults or attenuation of the mineralised structures.
Where we have the greatest density of drilling it is much easier to model the shape of the mineralised zones and also that of the basic sills. It is obvious that, particularly with respect to Katrina South, a sigmoidal shape is the main geometric form of the structure in cross-section. This is best seen in 3350E, but also in 3000E and 3025E. This may have been present in the host prior to mineralisation or it could be a post-mineral deformation event. Sadly it does require very close spaced drilling to give any confidence to this interpretation.
[See Fig. 6].

Summary of the structural morphology.

The VW mineralisation is almost entirely confined to a lens of mafic meta-volcaniclastic units enclosed within an ultramafic bounding unit of talc schist, peridotite and serpentinite. This belongs to the Marshall Lake Group of the Archean. On a wider scale the whole can be envisaged as sitting within a major shear zone trending 280 degrees and bounded to the south and north by Archean granitic rocks of possible younger age.

The mafic lens is thickest at approximately 3150E. At 2900E it has almost pinched out and remains only as vestigial mafic within the enclosing ultramafic units. On the east at 3550E there still remains a thick mafic succession but this section appears to be up-plunge and contains increasing thicknesses of iron formation meta-sediment.
If the mafic units are the favourable host lithology, [influenced by fluid channelling by gabbroic sills], then identification of other lenses of mafic units within the shear corridor must be a high priority.

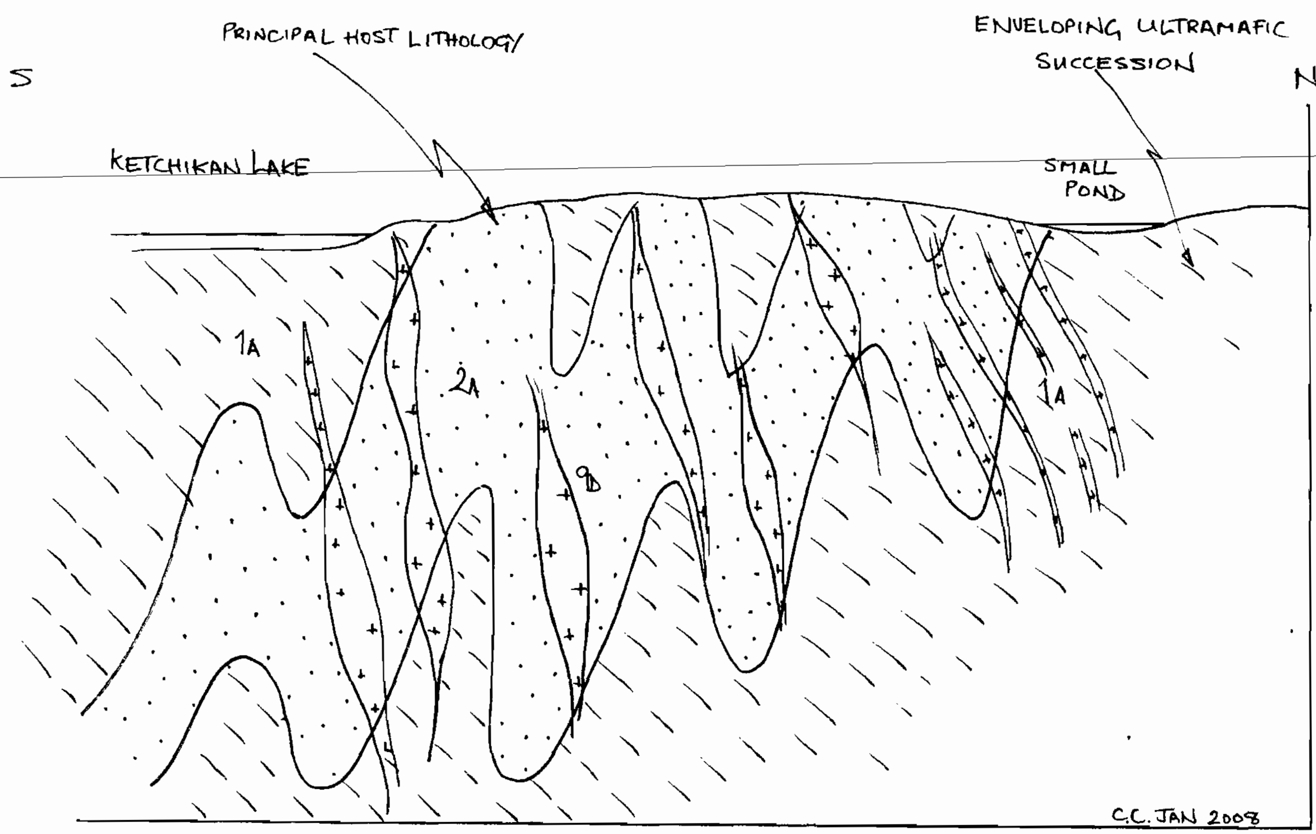


FIG.4 IDEALISED SECTION THROUGH HOST AT VW ZONE PROSPECT JUNIOR LAKE. THIS SANDWICH OF LITHOLOGIES PLUNGES TO THE WEST. (LOOKING WEST)

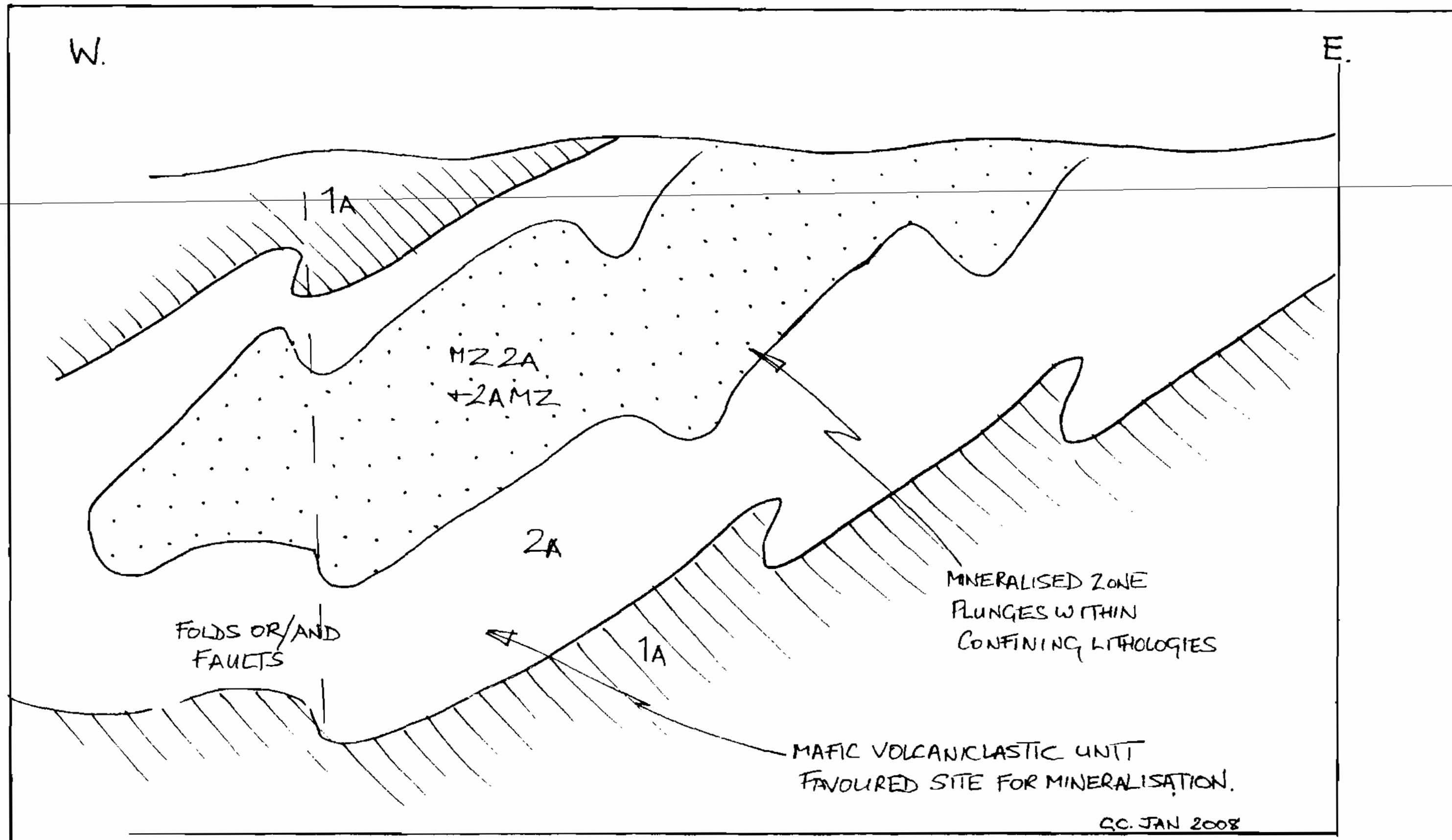
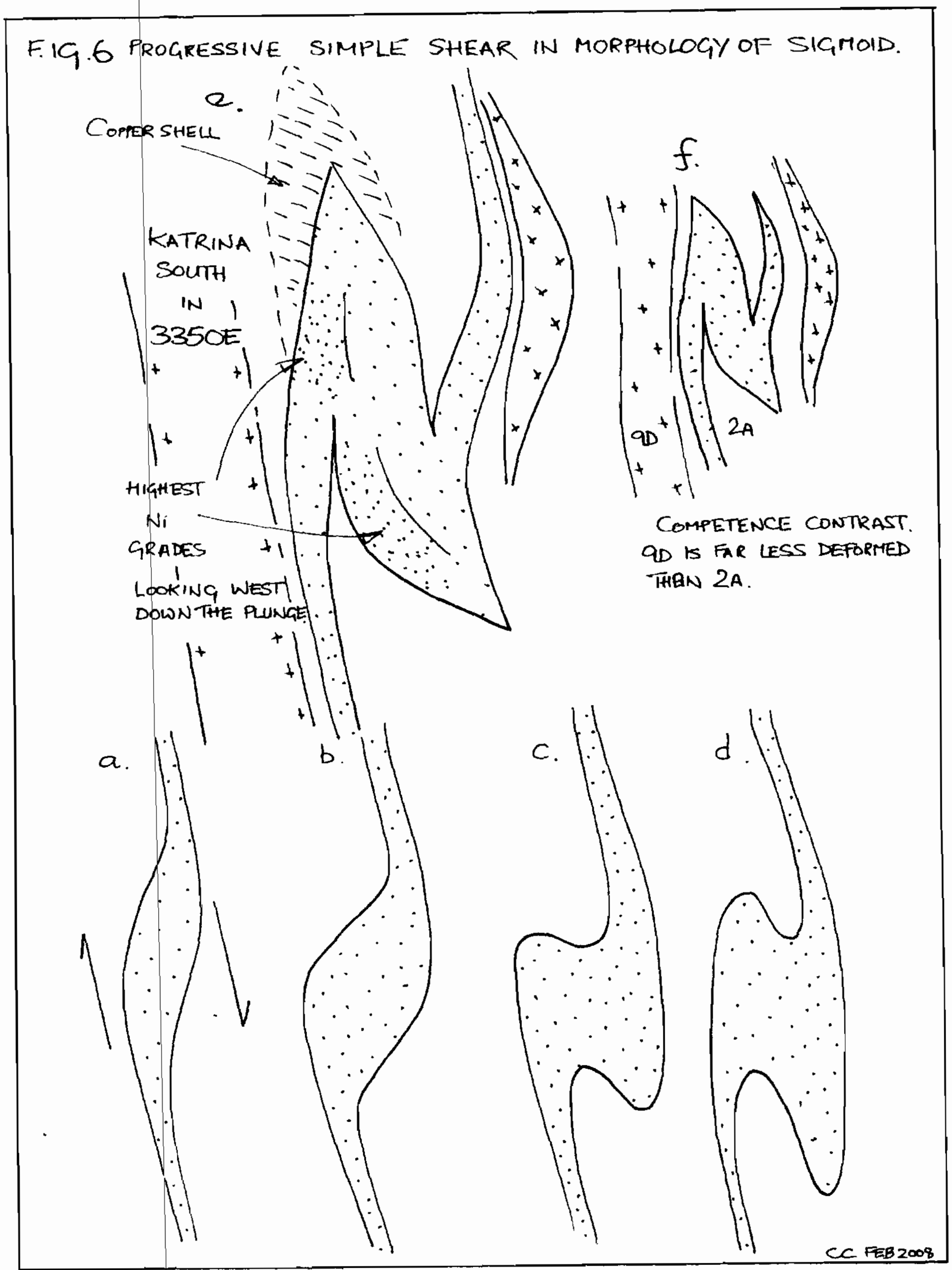


FIG.5. IDEALISED LONG-SECTION AT VW ZONE PROSPECT JUNIOR LAKE.
LOOKING NORTH



4e. Mineralisation.

Mineralised lithologies.

A diverse selection of lithological types are mineralised within the broad compass of mafic volcaniclastics], but they have one thing in common in that they are all rocks with a structural fabric, however crude. This suggests that accessibility to mineralising fluids is the governing criteria and not lithology. All the rocks with a foliation fabric are more permeable than the post-foliation sills or other intrusives. The majority of mineralisation, and almost certainly the nickel resource outlined so far, are hosted by mafic volcaniclastic rocks, 2A. The pre-foliation sills, 9DF and 9Fl, are also weakly mineralised and in fact even a slight foliation seems to allow passage of the sulphide bearing fluids.

Clastic, pelitic, meta-sediments, 6P, are mineralised but not to the extent of the unit 2A. The Banded Iron Formation, 5D9, is extensively mineralised but alas not with nickel, only pyrite and pyrrhotite with accessory magnetite and chalcopyrite.

The ultramafic talc schist and peridotite are also mineralised, containing a low concentration of blebby pentlandite. In any discussion of the origin of the hydrothermal fluids and the sourcing of the nickel, due consideration should be taken of the role played by the ultramafic units as an original source. They are now partially nickel depleted whereas the basic volcaniclastics are now nickel enriched.

Mineralogy.

The mineralised zones in the mafic volcaniclastic units host pyrrhotite, pyrite, chalcopyrite, and pentlandite, as the common species. Arsenopyrite is very uncommon and galena and sphalerite are rare.

In the Banded Iron Formation units [logged as 5D9], pyrite is the most abundant mineral followed by pyrrhotite, chalcopyrite. Magnetite is usually abundant.

In the ultramafic talc schist and serpentinite/peridotite units pentlandite and pyrrhotite are the main ore minerals. Pyrite is common and magnetite is abundant.

In the geochemistry of the VW zone the metals of greatest economic potential are nickel, cobalt, copper and silver. There is a very strong correlation between nickel and cobalt. There is a good correlation between nickel and silver and copper. These are qualitative observations. The assay database would have to be interrogated to provide statistical correlation. No doubt this can be achieved with a statistical programme but it would be useful to plot alternative elements on the new interpretations such as cobalt plus nickel and copper plus silver.

The following are qualitative analyses of the drill sections.

Katrina South. The highest grade of nickel and probably the best correlation with high copper, up to 6600ppm.

MZ2AF1/ old Katrina North. Lower copper than Katrina South but much higher lead and zinc.

9D. Locally very high copper, up to 1.2%, but these values tend to be in veinlets of late remobilised chalcopyrite.

MZ5D9. Banded Iron Formation. Low nickel, usually less than 500ppm, so uneconomic, but high copper, up to 0.4%.

1A/8C. The main surprise is high nickel, up to 0.35/0.4% but very low copper.

The differing metal profiles of the main mineralised zoned mean that they are not just one zone repeated by folding but reflect different hosts and fluids.

Mineral Paragenesis.

In the mineralised zones both pyrrhotite and pentlandite appear as fine veinlets, blebs and pseudo-breccia replacement of host mineralogy. Sulphide content can range from less than 5% to more than 25% in the richer zones. Remobilised pyrrhotite can be seen in discrete veinlets of solid mineral but this is less common than concentrated disseminations. Chalcopyrite is common as blebs and tiny veinlets, often as a late overprint.

The sulphide rich zones are several metres wide, and in the case of mineralised 2AF1 can be tens of metres wide. In typical MZ2A the sulphide zones show an increase in mineralisation from sparse to intense as the contact with the sill 9D is approached. [See Fig. 7 and Fig. 8]. Very often it is observed that there is a thin section of a few centimetres adjacent to the contact where little sulphide has been deposited. This can be explained as the effect of thermal metamorphism reducing the permeability of the mafic rocks in the thermal aureole. [See Fig 8].

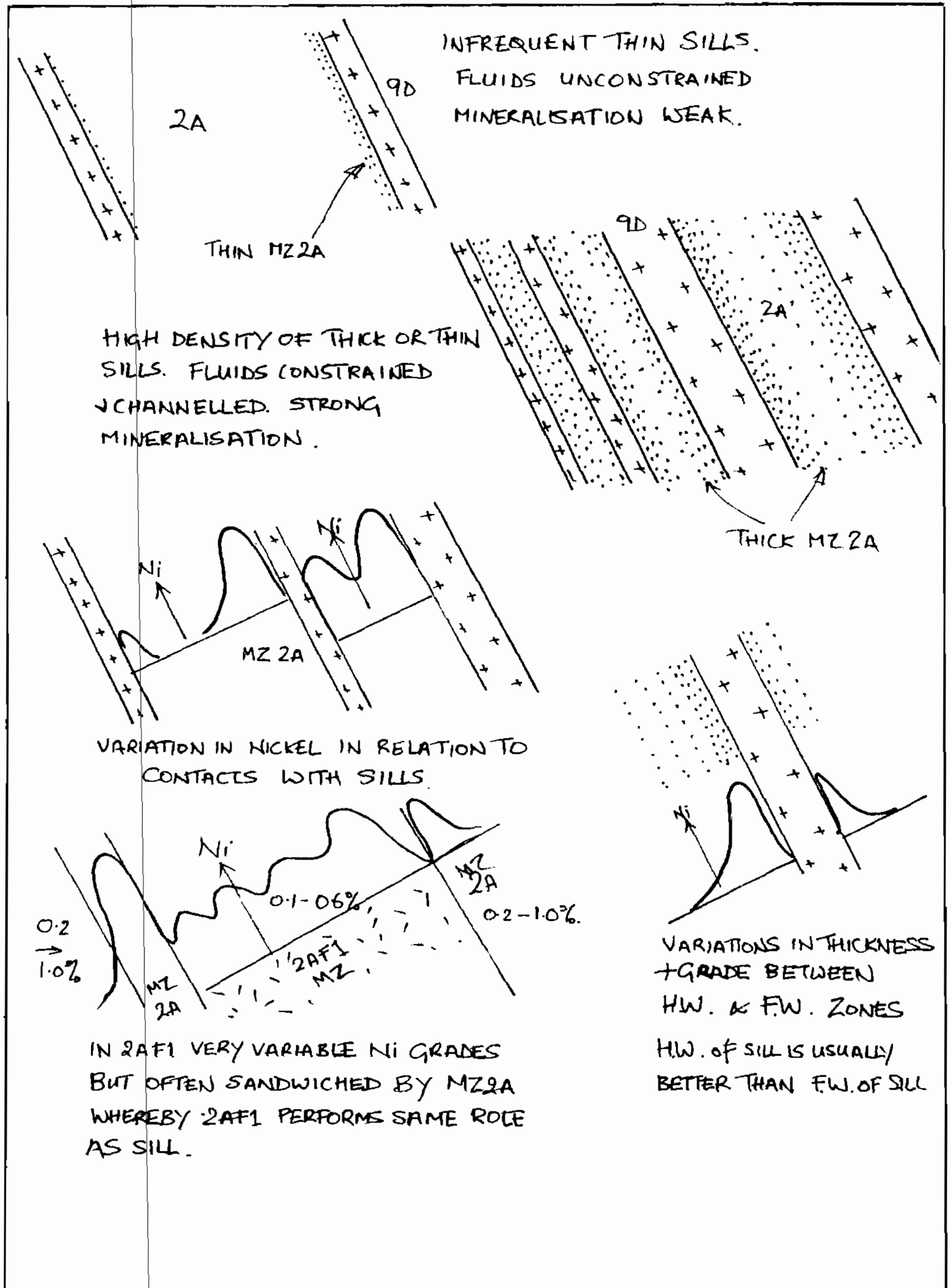


FIG.7 SILLS AND MINERALISED ZONES

C.C. FEB. 2008

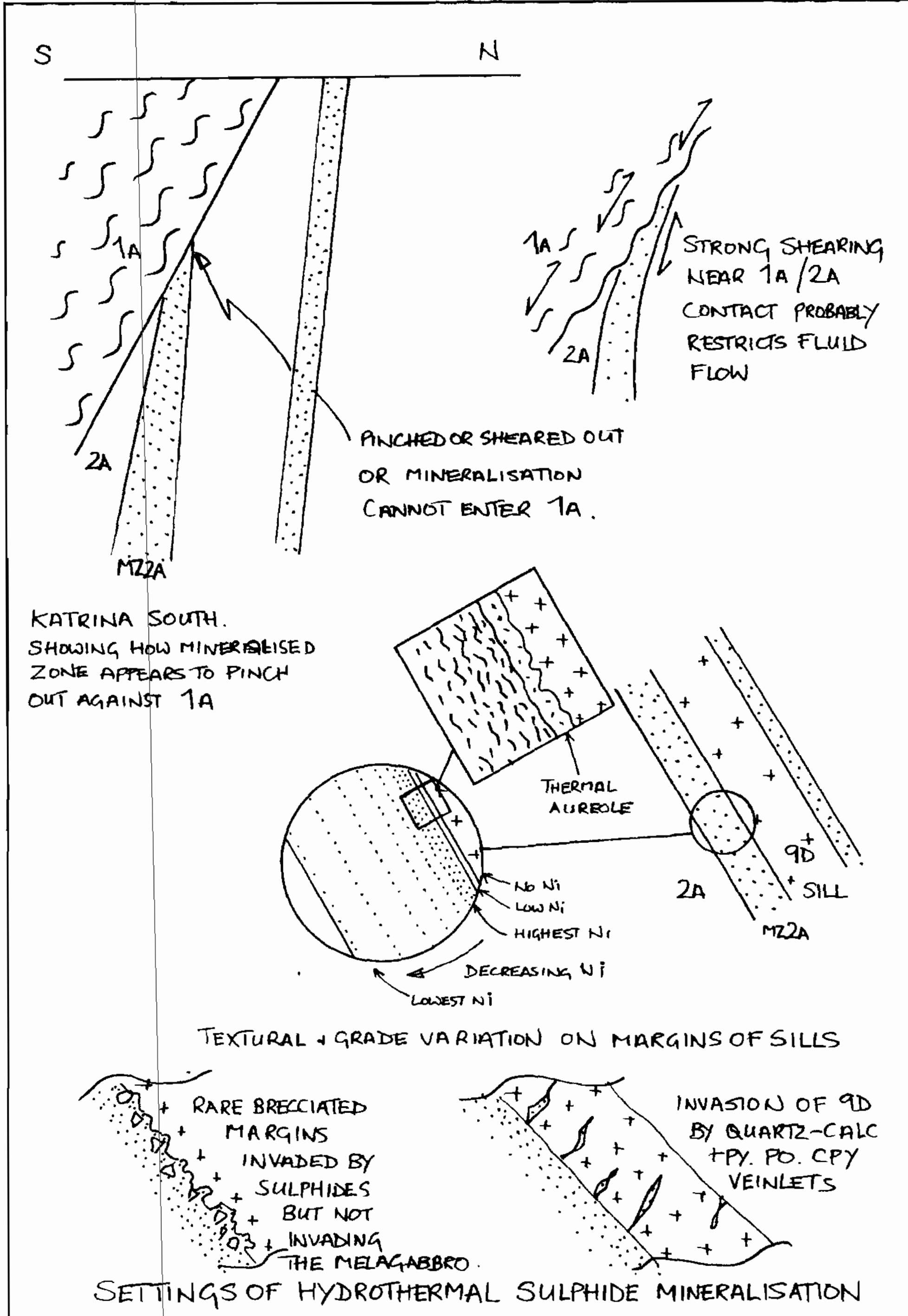


FIG.8.

In 2AF1 host the mineralisation is more diverse in morphology. [Fig.3]. The 2AF1 is a thick unit within the mafic volcaniclastic and not necessarily influenced by mafic sills. Sulphide deposition varies from disseminated coarse blebs and veinlets but is best characterised in the typical massive textured rock by large discrete clusters of blebby pyrite, pyrrhotite and chalcopyrite. These are often referred to as "burns" with due cause because they give the appearance of being caused by a localised fire. Some of these clusters can be up to 15cm across though they are more usually in the range 1 to 5 cm. This type of clustering of sulphide blebs has been observed in the field near the type locality of the Grassy Pond Sill and it may be the result of injecting sulphides into a compact, isotropic lithology.

By far the most impressive sulphide mineral textures are seen in the Banded Iron formation and meta-pelitic lithologies. These consist of coarse disseminated pyrrhotite growths, with coarse pyrite and marginal coarse magnetite. The sulphides are usually overgrown with spectacular fine veinlets and blebs of late chalcopyrite. The zones while spectacular are never particularly anomalous for nickel. In the meta-pelites there are usually one or two very predictable pyritic zones with coarse disseminations of pyrite and pyrrhotite as well as massive bands of both. Pyrite dominates pyrrhotite. Again these are not particularly anomalous for nickel. The sulphide deposition in the Banded Iron Formation may be derived from a chemical precipitate and thus is far removed from the hydrothermal sulphide solutions that have introduced the nickel mineralisation.

Mineralisation processes.

The geological setting of the hydrothermal mineralisation has been influenced by a tensional regime that had persisted from the period of sill intrusion. The last notable intrusive event in the VW area was massively dilational and the suite of vertical, gabbroic sills were emplaced during regional tension. It is suggested that the same regional tension persisted post-sill intrusion for long enough to allow relaxation of the local stress field in the mafic hosts permitting easy fluid flow along the foliation fabric. The centimetre scale sulphide morphology clearly shows small-scale tensional openings along foliation planes and minor cross-cutting cleavage giving a barbed appearance rather like a graptolite. When these occur with great intensity the clear implication is that multiple micro fissures were opened incrementally as a way of relieving high pore fluid pressures built up by the hydrothermal fluids. Minor sulphide flooding, producing "pseudobreccia", and intense net-veining where much greater fluid volumes were permitted into the mafic host very quickly. Individual solid sulphide veins and veinlets cutting earlier sulphide structures attest to healing and then rapid fracturing of the host.

Most of this sulphide was in zones of preferred fractures usually adjacent to the contacts of sills. These areas were already designated tensional zones when the sills were emplaced and during sulphide deposition they

continued in this role and also in the role of buffering fluids against the impermeable flanks of the gabbro sills.
Meanwhile outside the lensoid zone of mafic volcaniclastic the ultramafic lithologies appear to have been acting in a different way to hydrothermal fluids. Even though the same gabbroic sills were emplaced in the ultramafic schist they remained virtually impermeable to hydrothermal fluid flow. The only sulphides present are usually disseminated blebs of pentlandite and pyrrhotite and these may be relict sulphides. It has been argued by others that the ultramafic sequence provided the original nickel-cobalt-copper mineralisation as fluids leached a komatiite lava host succession. If this is the case then it must have happened simultaneously with fluid deposition in the mafic units. It is just not feasible to leach metals and then store them elsewhere for a while. If this is the model then it is suggestive of a large variation in stress and chemistry between mafic and ultramafic. These conditions could exist is a shear zone where two dissimilar major lithologies with vastly differing rock competencies are in contact.

4f. Sections.

All drill logs were transcribed in the Thunder Bay office of Landore and plotted out as ornamented and annotated drill traces on sections corresponding to individual drill lines. The drill traces show down-hole deviation from incorporation of Maxibor readings. Along the top of each section a plan of projected drill traces also depicts drill deviation.
Completed drill sections were printed out at a scale of 1:500 and interpreted by the writer.
No attempt has been made to produce a total geology interpretation, an aim that would probably entail months of work and would, in any case, be beyond the remit of the current project. The interpretation has focussed on just the main lithologies and the mineralisation. Extensive use was made of structural readings that were taken during the logging. These have proved to be invaluable.
The interpreted sections were then photographed on digital medium to provide a convenient colour A4 print and each section was photocopied life-size in black and white at a local architect office. The original sections were then sent to Thunder Bay office and digitised for final transmission on to Rick Routledge at Scott Wilson Roscoe Postle Associates in Toronto.
A narrative of the drill sections from west to east is appended at the end of this report.

Synthesis of drill-section geology and the issue of continuity.

The 2007 diamond drill programme made a significant extension to the VW deposit in the west and contributed more detail in the east.

The mafic volcaniclastic sequence is just part of a thicker unit containing both pelitic metasediment and black shale horizons as well as banded iron formation lithologies. All are bounded by an outer wall of ultramafic rocks as a sandwich. This has been extensively deformed with minor slices of ultramafic rocks emplaced in the mafic sequence but the overall ultramafic-mafic-ultramafic relationship is still preserved. There is a consistent plunge of the structural and lithological grain to the west and a local plunge of the sandwich of lithologies to the south on the cross-sections.

The problem of continuity from section to section and thus along mineralised structures was one that beset those given the task of producing a resource estimate. The 2007 drill programme should have addressed and solved these problems.

By using the sills and particularly the Grassy Pond Sill as marker horizons, [see long section Fig. 10], we should be able to follow each mineralised unit from section to section without difficulty. Mineralisation has, after all, been channelled by the presence of the sills so it would be remarkable were it not so.

5. Conclusions.

1. The main mineralisation by quantity consists of pyrrhotite-pyrite, pentlandite +/- chalcopyrite hosted in a sequence of basic volcanic and mafic volcaniclastic units. The mineralisation is hydrothermal in origin. Grades of nickel lie in the range of 0.2% to 2%. This could be called the Type 1 mineralisation. A sub-variety of this style is found on the 2A/1A margin and consists of concentrations of pentlandite and pyrrhotite disseminations and veinlets within coarse foliated host rocks. Here grades of nickel of around 1% are found. This sub-variety is called Type 1A mineralisation.
2. The second type of mineralisation by abundance, though not necessarily grade, is pentlandite and related nickel sulphides hosted in the ultramafic units as disseminated grains. In the latter situation they may represent the remnant of a depleted original source for the nickel. This relict style could be called Type 2 mineralisation. Grades of nickel lie in the range 0.1-0.3% for disseminated sulphide in ultramafic schist. Slightly higher for peridotite-serpentinite; up to 0.4%.

3. The main mineralisation events are focussed on or near the margins of post-foliation mafic intrusives of gabbro or dolerite. These are interpreted as sills. The underside, or footwall, of the sills is the favoured site for the mineralisation but often both margins are mineralised. Ponding of sulphides in close proximity to the intrusive margin usually results in the highest nickel grades. The unit Known as Katrina South is the most consistent mineralised structure and, though often thin, is high-grade. It is sandwiched between thin sills and close to the southern margin of the mafic host with the back wall of ultramafic schist. Other favourable sites are the margin of 2A with 1A possibly due to a change in permeability.
4. The mineralisation is a late, [in relation to the local geology], hydrothermal event that occurred during a continued period of relaxation, [lateral tension], following emplacement of a region-wide swarm of gabbroic sills. Nickeliferous sulphide-bearing fluids have been channelled and trapped between impermeable horizons. These are the sills and the south wall of the ultramafic volcanics.
5. The intrusives are important dilational elements in the block model and must therefore be modelled first and importantly, as waste.
6. A unit christened 2AF1 is found to be a significant nickel host in some holes. The general tenor is between 0.3% and 0.4% Ni over wide intersections but can range up to 0.9% Ni. However it is not always mineralised. [See note on this lithology]. This unit will contribute higher tonnage than Katrina South but at a lower grade. This is hydrothermal mineralisation of the Type 1 variety.
7. There is very good continuity of geology and mineralised structures along strike. There is a requirement for the odd hole where gaps exist on certain lines and more drilling will be required to fill these. Re-logging and extra sampling are also necessary for 2005/2006 drill holes.
8. There is considerable scope for adding to the resource by future drilling both along strike and as short step-back holes to intersect numerous shallow mineralised structures in the north of the sections.
9. Exploration for the Type 2 mineralisation is at a very early stage and might reasonably be expected to yield wider intercepts than we have at present by the expedient of further sampling of existing holes and also by drilling shallow holes to target the host for Type 2.

6. Recommendations.

We now know that economic style nickel grades occur at VW in both the mafic and ultramafic rocks. This gives a slightly different emphasis to the exploration of the property. Previously only the mafic units were believed to support economic mineralisation so this diversity is no bad thing.

Further drilling. VW deposit in general.

It may be useful to refer to the appendix section on Drill Sections where requirements of each section are dealt with individually.

There are some very obvious infill holes however these are few in number. The VW deposit is not closed off in the east or the west and given the pinch and swell nature of the local deformation we could run into "swells" of mineralisation in either direction. In view of the fact that the mafic core is the host of the hydrothermal sulphide mineralisation the exploration should be directed to where this is thickest. It is interesting to note that line 3550E has a small section of >0.2% Ni so obviously holes above and below this single hole should be completed. In the west line 2900E intersected three very skinny mineralised zones in a drill hole dominated by 1A and 9D, the wrong lithologies for the sulphide style mineralisation. This single hole should be supplemented by extra holes above and below.

Exploration for Katrina South unit.

In the west at line 2950E the high grade Katrina south structure was almost certainly intersected in 151b and 145 but was found to be weak in 139 and 158. The structure is almost certainly plunging steeply west and pinching out as in line 2900E there was only a very thin mineralised zone. Logic would suggest that if a hole deeper, [i.e. step-back], than 155 does not hit the structure then we shall have effectively closed off the mineralisation in the west, at least in that structural domain.

In the east the mineralisation in Katrina South is supposedly getting very close to surface, i.e. axis of the sigmoid exiting the surface. Further holes on line 3425E should, thus, be shallow.

If in the vertical sense there are more than one sigmoid or lens then anything is possible and drilling may uncover further lenses.

Other units.

There are numerous targets highlighted in the drill programmes where mineralised structures were cut near the top of the longer step-back holes, [i.e. in the north of the VW Zone, see Fig 9]. These can be explored via shallow depth step-back holes. Some of them are certainly worth following up.

Exploration for mineralisation in the ultramafic outer envelope.

There is the intriguing possibility that by drilling into the unit mapped as 1A but distal from the contact with 2A we might intersect less sheared and leached ultramafic rocks and potentially proto-ore nickel mineralisation. There are some encouraging signs to support this hypothesis in the less deformed ultramafic logged as peridotite/serpentinite, [8C/8B], which had granular pentlandite as disseminations along with minor pyrrhotite. The best place to try this approach is in the ultramafic envelope north of the main VW mineralisation. We have already intersected sections of several metres of a grade greater than 0.2% Ni in this area. The goal here is not spectacular grades, though that cannot be ruled out, but low grade with high tonnage. Furthermore the unit is amenable to access via shallow open pit mining.

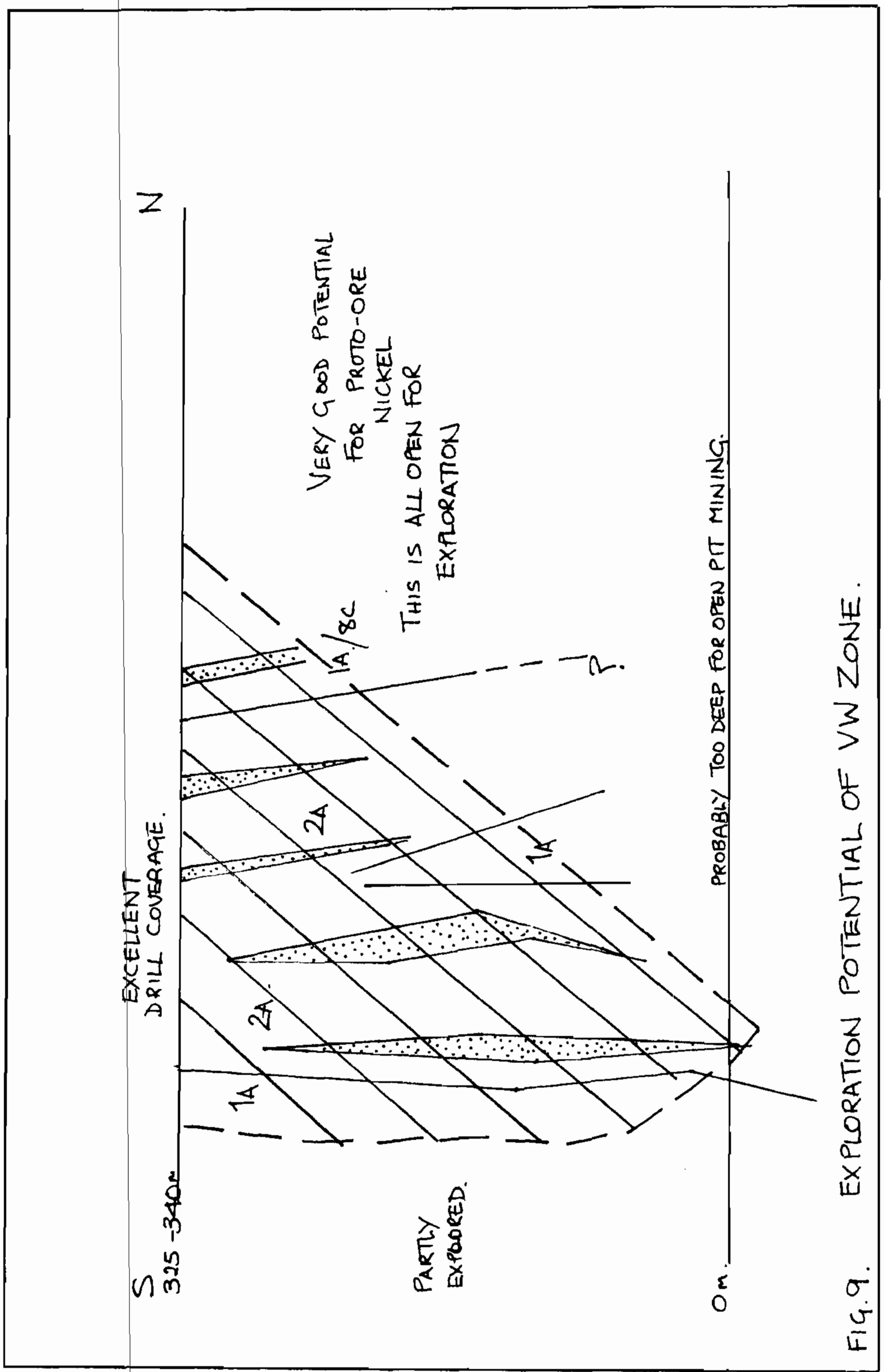


FIG. 9. EXPLORATION POTENTIAL OF VW ZONE.

Geological mapping at 1:500 scale.

During the 2008 field season a map of VW at 1:500 scale should be compiled from all exposures whether natural or artificial, [some of the latter may be temporary]. The map should then progress towards B4-7 at an appropriate scale, [such as 1:1000], and include the camp and the nearby gold mineralisation, [BAM deposit]. All trench geology should be incorporated on this map. This will form the basis of an "exploration map" to supplement existing geophysics and aid in the eventual goal of uniting two or three prospects into a much larger multi-faceted mineral deposit.

***Trenching*.**

There are currently three trenches on the VW Zone, T46, T47 and T48. These have been sampled with diamond saw and the sample locations have been surveyed. [2006]. The positions of the trenches have all been surveyed and their outline produced on a map from the survey company.

The writer spent just over half a day mapping the trenches in September 2007. More work needs to be done to complete this. The trenches are of excellent quality, very wide, and have been left open.

There is the potential for several other trenches where the overburden is sufficiently thin. They serve a very useful purpose in that they allow the resource to be taken to surface as well as supplying many structural details and aiding continuity.

***Whole rock geochemistry*.**

At some point during the next season one or two complete holes should be analysed for whole rock and trace element chemistry. The pulps should still be with the lab.

7. References.

Cooper C. 2007. Report on the VW Nickel project. Interim Report. July 13th 2007.

Mackay B. 2007. Report on drill programme at VW Zone. Internal report.

Mackay B. 2006. Report on drill programme at VW Zone. Internal report.

Mungall, J. E. Petrological report on samples from the VW zone of the Junior Lake Property. December 12, 2007.

8. Appendix.

Some notes on methodology and techniques.

1. ***Nickel zap.***

Dimethylglyoxime, [CH3C:NOH]2.

This white powder, produced by Fisher Chemical, New Jersey, can be used for nickel determinations in rock samples either by spreading onto a wet surface or by grinding a paste with the rock sample.

Some experiments with the use of zap on the drill-core may be worth detailing.

a. Sprinkled onto a surface wet with H2O.
b. Sprinkled onto a surface wet with H2O and followed by a spot of HCl.
c. Lay a trail of HCl and sprinkle onto wet surface.

Method (c) is found to get a reaction from very reluctant sulphides and method b also works very well. The tentative conclusion is that if the nickel is locked into pyrrhotite, as very fine pentlandite then use of only water may not unlock it. Pyrrhotite is soluble in HCl and produces the gas hydrogen sulphide. The HCl may just be enough to unlock the pentlandite. (b & c).

There are instances where method (a) has worked very well, and in examples such as #119, [113m, Plate DSCN 2141], spectacularly well in just under 10 seconds to produce a vivid crimson colouration of the powder. This example is thought to be because the sample contained a lot of free pentlandite.

Testing some high nickel content cut core produced an interesting result. The DDH 0406-50 contained samples up to 1.1% Ni. With the use of method (a) the result was a lilac colour, even after 24 hours, but on the addition of HCl a crimson precipitate was immediately produced.

It has also been observed that rapid crimson reactions can be produced in drill core close to surface, i.e. usually in the first box after the casing. This is probably a result of oxidation of the sulphides or perhaps just sufficient oxidation to make the nickel freer. In drill holes with shallow overburden oxidation of fractures has often been observed to as deep as 30m.

Where there is free pentlandite, even in tiny blebs of less than 0.5mm the zap is remarkably efficient at producing a reaction. This is seen in talc schists and at the interface between talc schist and basic volcaniclastics. Examples are also found on the junction with thin intrusives into the talc schist showing that even here the heat was sufficient to concentrate a small amount of nickeliferous sulphides. Recently fine blebs of

pentlandite were found in uncut talc schist in 0405-47. Again we await assays to be able to assess if this is indicating strong concentrations of nickel sulphide or just a few hundred ppm.
No use of this remarkably indicative chemical would be complete without an assessment of its performance Vis a Vis intensity of reaction and assay.
As well as the aforementioned DDH 50 there was a lot of zap used in the 2AF1 unit of 0407-113. We can see here that the bright crimson reactions [+HCl], often equated to a nickel value of 0.2% or greater and would pick out nickel down to a few hundred ppm. Here however we come to the rub. It is pretty difficult to use this technique quantitively and one suspects that even if the entire sample length were coated we would only derive a rough estimate. As a qualitative tool however it is excellent.

2. *Sample intervals.*

During the current programme the logger has attempted to take a uniform one-metre length sample except where important geological boundaries dictate otherwise. This means sampling to the contacts of all the larger intrusives and trying to respect major lithological boundaries such as mafic and ultramafic. Abiding by the usual custom all measurements are to the median line of angled contacts in the core. Shoulder samples have been taken around all the mineralised zones and these usually run into the intrusives for one sample. If there are important or large mineralised zones then any dead ground between them is also sampled. Because the core saws used here are not able to cut across the core at the sample intervals there tends to be a bit of smearing of assay values across the sample line. If such accuracy is required then buy a Norton Clipper Senior, the Rolls Royce of core saws.

3. *Core logging.*

Core logging takes place indoors in a bespoke facility that can house about 120m. The writer logs conventionally on 1:100 scale log sheets, 15m to the page using 0.3mm 2H pencil. The core is rotated so that the fabric lies face up in the tray and pieces are fitted back together. All core is marked up in metres prior to logging using a Pentil indelible marker.
After marking up the core is logged geologically. When this stage is complete the core is marked up for sampling using a red China marker. The start and finish points for the sample are marked with a line normal to the core axis and, as in the geological log, measurements are made to the median point
The primary goal in logging core in economic geology is to produce a geological framework on which to base intervals for half core sampling. This should always be paramount in the mind of the geologist as he or she

decides on lithological units and divides the mineralised from the unmineralised. In the writer's opinion all mineralisation, however sparse is worthy of a sample and should only be unsampled if one can give a guarantee that it contains no economic mineralisation.

4. Terminology.

The terms ultramafic and mafic seem to have been used synonymously with basic and ultrabasic. The latter two probably represent the true meaning of the rocks to which we refer but the former two terms seem to have been used in the reports to date on the property. The writer has therefore followed convention.

5. Drill holes logged.

During the first session 18 holes were logged in the following order: 99, 100, 103, 104, 101, 105, 102, 106, 107, 108, 109, 111, 112, 110, 113, 115, 116, 117A.
During the second session 20 holes were logged in the following order: 114, 119, 118, 120, 55R-E, 122, 55, 124A, 125, 123, 124, 127, 49, 126, 121, 50, 128, 130, 129, 131.
During the third session 22 holes were logged in the following order: 132, 138, 133, 134, 47ext, 136, 135, 137, 139, 145, 97, 140, 141, 142, 143, 144, 151b, 146, 147, 149, 148, 150.
During the forth session, [a period of 22 days inclusive], 10 holes were logged in the following order: 152, 153, 154, 155, 156, 157, 158, 159, 160, 161.
A total of 67 holes were logged of which 63 holes were in the 2007 programme for a total of 17,020metres. A total of 4 holes were re-logged from earlier drill programmes.

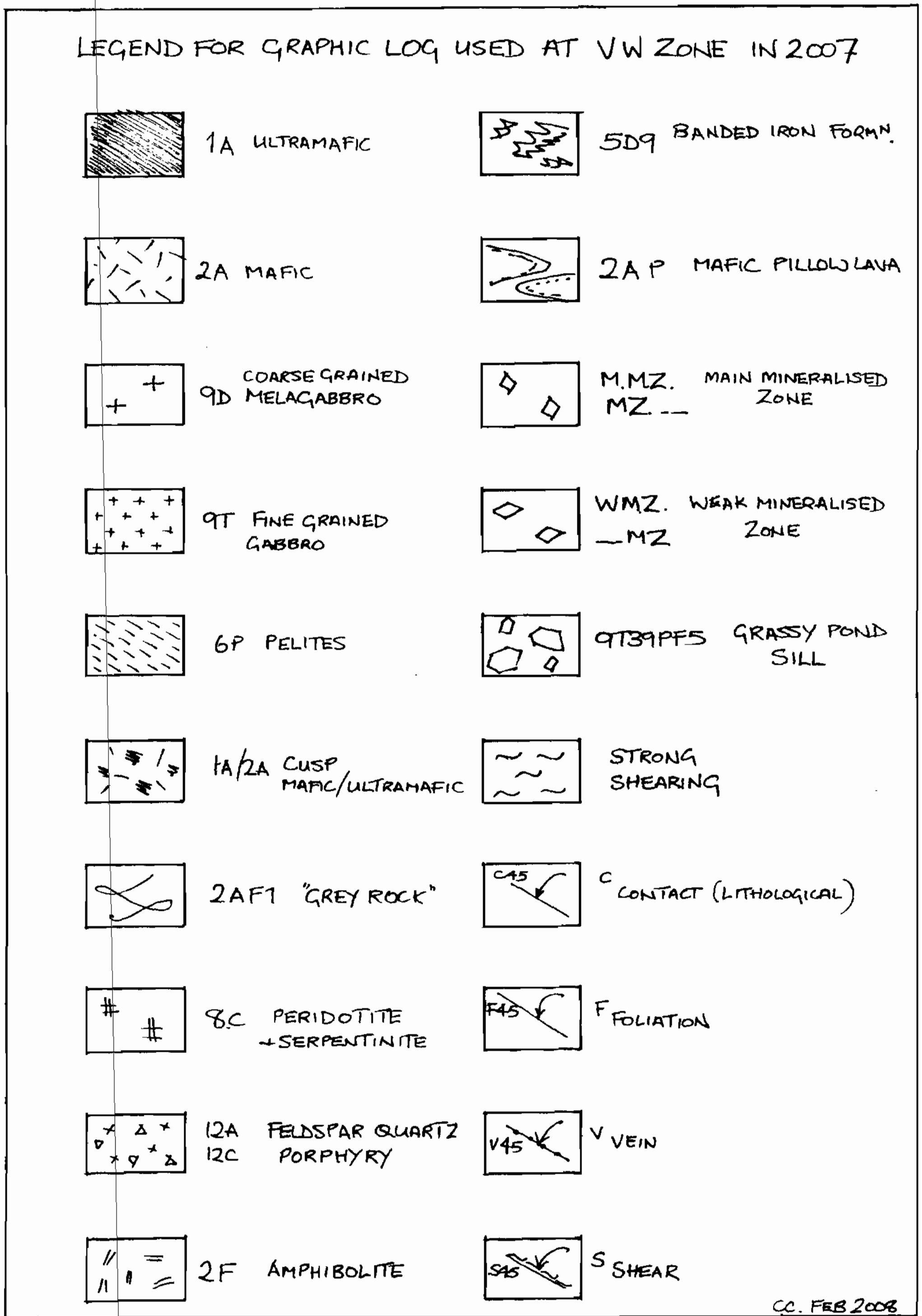
6. 2AF1. Example of a logged section.

Table 2. Drill hole 0407-126. Down-hole log.

Metres. From	To	
117.61	124.00	Dark possibly porphyritic intrusive
124.00	127.65	Light brown flecked coarse granular porphyry with relict feldspar phenocrysts.
127.65	129.40	Dark greenish-blue compact. No foliation.
129.40	130.70	Foliated grey with chlorite and possible igneous contacts.
130.70	141.00	Typical grey rock. Massive. Tremolite-epidote-calcite alteration and blebby sulphides.

141.00	143.00	Pale green and grey and foliated.
143.00	144.23	Creamy-brown, crudely foliated with fuchsitic veinlets.
144.23	152.76	Foliated, pale brownish-grey fine grained. With sinuous dyke.
152.76	158.18	Grey, massive calcite veined with biotite alteration haloes.

7. *Legend used for core logging 2007.*



APPENDIX FIG 1.

8. Long section of VW Zone showing outline of mineralised horizons. Fig. 10.

This figure was constructed as an aid to interpretation and shows the tops and bottoms of the mineralisation on each section. An attempt has been made to show Katrina South and the 2AF1 mineralisation separately.
The mineralisation can be split into three sections. This may be due to structural constraints such as pinch and swell or cross faults. The mineralised unit 2AF1 is seen to be a feature of just the western end of the VW Zone. Is this real or due to lack of identification on other sections where the majority of drilling was before 2007?
The main, central, pulse of Grassy Pond Sill is also shown. Here some of the absences may be due to non-recognition in earlier drilling and also the limits on the depth of the drilling.
We might also consider that although the top of the mineralisation is reliable this is not always the case with the bottom of the mineralisation where depth of drilling is a factor.

9. Narrative of drill sections.

The following description comprises notes on the individual sections at VW zone from West to East with a view to comparing drill sections, correlating major units and establishing what further work is required.

Line 2735E. [Approx].
0405-45.
One hole. No section. Not seen it. Well south of strike of Katrina so would not expect this to be very good.
Required action: Log it. This hole could be the starting point for a rake of fence exploration holes.

Line 2900E.
0407-155.
With just one drill hole this section has intersected three very thin mineralised zones within mafic volcaniclastic rocks. Ultramafic rocks are dominating the top of the hole with minor ultramafic bands cutting the mafics at depth. Grassy Pond Sill style intrusive intersected.
In 1A >0.1% Ni values.
Required action: More sampling of 1A.
Further drill-holes above and below 155.

Line 2950E.
DDH. 0407-139, 145, 151b, 158.

Reasonable definition of Katrina South zone, Grassy Pond Sill intrusive within a larger sill of 9D. 1A is present in north, at depth and in south as a back wall to Katrina.
Required action: Need more sampling of 1A/8C as a trial section returned values of 0.27% Ni over 7m.

Line 2975E.
0407-147, 149, 160.
Excellent 2AF1 mineralised zone and a thin Katrina south zone. None of the mineralisation breaks the surface. Thick sills do not penetrate 1A. GPS at shallow depth but not persistent in deeper holes.
Required action: 1A needs sampling in 160.
Could drill above and below the 2AF1 intersection of 160.

Line 3000E.
0407-114, 119, 120, 122, 125, 121.
This section demonstrates the effect of competence contrast on both mineralisation and sills. Neither the mineralisation nor the sills penetrate the ultramafic 1A in the upper south of the section. Both pinch out against it. The main Katrina mineralised zone is vertical, thin but high grade. The adjacent mineralisation is thicker with a modified sigmoid section and two thin apophyses. It has a lower grade and includes wide sections of 2AF1. The sole intersection in 119 is very high grade and mainly pentlandite. This may be the upper limit of the sigmoid. In 114 the mineralisation has been completely pinched or sheared out leaving only ultramafic rocks. The Grassy Pond Sill is present but at depth in two locations but does not cut any of the intrusives at shallow depth. There is a post-mineral dyke.
In summary all mineralisation is concealed and none is likely to breach the current surface. The mineralisation is very compact and demonstrates significant improvement over the preceding sections to the west.
Required action: Look for any 1A to sample in 114 and 119.
A step-back hole on this section would hardly be worth it. Mineralisation is thinning with depth.

Line 3025E.
0407-108, 109, 128, 178 [twin of 128, met hole], 110, 130, 113, 113A.
This shows the complete back wall of ultramafic 1A against which the Katrina mineralisation is brought hard up to. The Mineralisation begins to resemble a complex sigmoid with attenuation against the ultramafic. The centre of the main sigmoidal body is again 2AF1. Sills also show sigmoidal shapes in parts. The deep holes are collared in the north wall of the ultramafic. Two large pods of ultramafic have remained within the

mafic package. Although the Katrina mineralisation is buried it is shallower than in 3000E and some thinner zones breach the surface. Sub-economic grades, up to 1695ppm Ni occur in the ultramafic.
Grassy Pond Sill is only present at depth.
In summary the sigmoidal mineralised zone is thicker and longer than in 3000E but overall geometry is similar.
Required action: Sample 1A. Mineralisation not closed off with depth but if a step-back hole was completed the depth would be too great for the main mineralisation though shallow zones could be cut.

Line 3050E.
0407-99, 0406-97, 88, 98, 0407-102, 101.
This section is remarkably similar to 3025E. Katrina South high-grade mineralisation is hard up against the southern back wall of ultramafic. The adjacent mineralised zones are slightly sigmoidal but at depth are splitting into many mineralised zones including 2AF1. This deep mineralisation is very encouraging and, though it is deep, a step-back would be merited just to see if me have cut the maxima. Sections 3025E and 3050E appear to be where the mineralisation is thickest and deepest.
Grassy Pond Sill is only present at depth and there are two thin post-mineral dykes.
Required action: Sample 1A in 101 and 102. Drill step-back to 101.
Re-log the problem holes 88 and 98. These are a real let-down on this section with big gaps in the sampling. Hole 97 was re-logged by CC in 2007.

Line 3075E.
0407-100, 103, 104, 105, 106, 107.
Main high grade Katrina mineralisation is very thin though persistent to depth. There is still a back wall of ultramafics but the Katrina zone tends to stick very close to a thin sill. There is a central pod of 1A identical to that in 3050E and a north zones of 1A. Grassy Pond Sill style intrusives occur in 3 parts all as intrusives within larger 9D sills.
In summary the mineralisation is diminishing compared to 3050E but there is still a very chunky main zone with 2AF1 persistent from near surface to depth where it remains unclosed.
Required action: More assays of 1A.

Line 3100E.
0406-76, 77, 79, 0405-43, 46, 0406-74, 75.
This is one of the main problem sections and all the holes are poorly logged. A very thin Katrina South is persistent but split into several thinner zones. Sample intervals at this time were unrealistically small so

this may have contributed to the "split ends" appearance. There is a thicker section of mineralisation adjacent that resembles two sigmoids joined together. This should breach surface but pinches out at depth. It has the chemistry of 2AF1. The ultramafic back wall is less well defined but dips steeply south as in the previous sections. Grassy Pond Sill is impersistent but was not differentiated in logging despite having a unique texture. We may have lost the central pod of 1A though this is unreliable due to logging shortcomings. The northern ultramafic is present but only recorded correctly in 1 in 3 holes.
In summary, we rely on assays and neighbouring sections for the interpretation. Mineralisation is waning compared to 3075E.
Required action: Log all holes. Sample 1A and obvious gaps.

Line 3125E.
0407-111, 112, 115, 116, 117, 117A, 118.
No ultramafic back wall was intercepted and Katrina south is intimately associated with a thin sill. Katrina is persistent from surface to depth and remains open. The adjacent thicker zone is similarly persistent but does contain some waste that is difficult to portray on the section. A sill appears to cut the mineralisation so could be post-mineral. A third major mineralised zone is neatly sandwiched between two thick sills one of which has a Grassy Pond Sill from surface to depth.
In summary, it appears that the mineralisation is improving compared to 3100E.
Required Action: Sample 1A including the floor wedge that is intercepted in 118. Mineralisation is open so a step-back to 118 is possible. A trench from the collar of 111 south if the overburden allows. Similar trench north of collar of 112.

Line 3150E.
0406-55, 54, 53, 0407-127, 0406-52, 0407-124, 0406-51, 71, 72, 73.
The ultramafic back wall is once again present but it may be a thin veneer. Katrina South is persistent and intimately associated with two sills. The central main mineralisation is breaking up into individual bands but these are thick and persistent to moderate depths. Maybe even deeper but the logging and sampling are unreliable. Grassy Pond Sill is present but only where logged by CC so may be similar to that found in 3125E.
Required action: Log 51, 52, 53, 54, 71, 72, 73. Sample 1A in north and in gaps as found in earlier logging.

Line 3175E.
0407-123, 126, 129, 131.

Not enough holes on this section coming, as it does, next to a section with many unreliable holes.
The ultramafic back wall is present in 123 and 126 and a large floor wedge in impinging in 129 and 131.
The Katrina mineralisation is present in all the holes. Grassy Pond Sill intrusive is present in all holes.
Required action: A shallow hole 25m south of 123 and a fill-in hole between 126 and 129.

Line 3200E.
0406-50, 49, 48, 0407-134, 0405-40, 0407-135, 0406-56, 0405-42, 0407-137.
Plenty of activity on this section compared to 3175E as a result of greater drill density and the trench T46. It has much in common with 3150E with a similar intensity and distribution of mineralised zones. The ultramafic back wall is present dipping south at a shallower angle than in 3150E. There is a north section of ultramafic and a couple of floor wedges. This corresponds with that seen in 3175E.
The Katrina South zone is thin and feathers at depth to the base of 56 whereafter it hits a problem, [see below]. The other central mineralised zones continue the trend of 3150E onwards and are feathered into many thin zones. These are frequently influenced by the presence of many thin basic sills. In one of these sills of 9D the Grassy Pond Sill intrusive occurs. The Grassy Pond Sill and the mineralised zones encountered in 50 and 49 are all encountered in T46 and in the right place so we have no problems with dip and thickness of units and can take some encouragement in continuity.
Required action: Extra sampling will be needed in 48 to overcome the lack of continuity between 49 and 134. All the old holes need re-logging. There is a major inconsistency between the wide mineralisation at the base of 56 and the lack of it in the adjacent part of 42.
1A should be sampled in 42 and 137 to check for low grade but shallow bulk tonnage mineralisation. We already have a few assays where Ni is greater than 0.1%.
Assays and geology from T46 can be added to the section thus bringing the resource to surface.

Line 3212.5E.
0407-161, 154.
Just two holes to provide some infill continuity between 3200E and 3237.5E. Geology is similar to 3200E.
Required action: Infill drilling maybe. Short trench to cover the outcrop of mineralised zones.

Line 3225E.
0407-156.
Just one hole. There is a good Katrina South intersection with some high grade up to 1.7% Ni. The highest grade is again seen adjacent to the sill 9D. There are intersections of the central zones of mineralisation including 2AF1 and thin zones right up to the edges of larger sills. One of these sills has a late intrusive pulse of Grassy Pond Sill. The collar of the hole just nicks the ultramafic schist before intersecting the mafic volcaniclastic succession. There is a thin sliver of floor wedge ultramafic in the centre of the hole but the hole was stopped just beyond the Katrina zone so did not run back into ultramafic rocks. It would have been preferable to keep to regular spaced drill lines and have 154 and 161 on this line as well.
Required action: This hole was very successful as expected. The line should be completed with further holes.

Line 3237.5E.
0406-87, 60, 59, 58, 57.
Ultramafic is present in the north of section but it is missing from the southern back wall. Similarly no interstitial floor wedges have been recorded. The Katrina South structure is thin but persistent to depth and unclosed. It is sandwiched between several thin sills. The central mineralisation is represented by several zones from thin to thick but continuity is a problem here due to the logging. Remedy of some large holes in the sampling may improve the continuity of these central mineralised zones. Grassy Pond Sill was not recorded though it is almost certainly present in a thick sill dipping steeply north in the middle of the central mineralised units. Near the contact with the ultramafics in the north of the section there is a thick mineralised unit recorded only in hole 58 at shallow depth.
Required action: Log and sample all holes. Extra holes as infill between 59 and 58 and between 58 and 57 to test shallow and intermediate depth mineralisation.

Line 3275E.
0405-35, 36, 37, 0407-153, 0405-38, 0407-152, 0406-80, 0405-39. Trench T47.
Hole 0405-35, [assuming it was drilled first], must be the discovery hole on the VW zone and on this section we have a close spaced rake of holes as well as a scissor-hole and a trench.

Northern section of ultramafics and some thin wedges of ultramafics are present but there is only a small section in the southern back wall in hole 35.
Katrina South is impersistent and thinning with depth but the central mineralised zones are better and outcrop in trench T47. Grassy Pond Sill is present in two basic intrusives and outcrops in the trench. It would probably be more continuous were the logging of earlier holes better.
Mineralisation is becoming shallower and in hole 39 only three thin units were intersected.
Required action: Re-log all early holes. Plot trench assays and geology to take resource to surface. Assay shallow 1A in hole 39.

Line 3300E.
0407-146, 148, 150.
This is an incomplete section with just three holes. Mineralised zones are thin but numerous. The Grassy Pond Sill was intersected but with a very thin 9D intrusive. Host rocks are mafic volcaniclastic with increasingly thicker sections of meta-pelites.
Required action: Extra holes 25m south of 146 and 25m north of 150 would be merited on the numerous mineralised zones intersected in the current rake of three holes.

Line 3312.5E.
0406-84, 83, 82, 81.
A rake of 4 holes drilled in 2006 with unfortunate holes in the sampling.
The section begins with ultramafic schist in 81 and also intersects a thick floor wedge of ultramafic but none of the holes were drilled deep enough to intersect any back wall ultramafics.
Katrina South may be present but if so it is not very persistent. Near the base of 82 there is a thick intersection with some high nickel grades but it is not seen, [or sampled], in holes above and below, 83 and 81.
Required action: Much to do. Re-log all holes and sample the large gaps where merited. Possible intermediate hole between 82 and 81.

Line 3325E.
0407-142, 143, 144.
This section has some fortunate similarities to 3312.5E with a thick intersection near the base of 143 corresponding to a similar intersection in 82 on that line. This may be Katrina South but if so it is lens-like with small vertical extent. There are numerous other thin or impersistent mineralised zones but this line was only a 3-hole rake.
There is a thick ultramafic floor wedge and just to the south of this the Grassy Pond Sill is thin and impersistent within a thin 9D intrusive.

Required action: A shallow hole as a 25m step forward to 142 may be merited but a trench would be better here if possible. A 25m step-back to 144 since there were three shallow depth mineralised zones in 144.

Line 3350E.
0406-85, 0407-132, 0406-86, 0407-133, 0405-41, 0405/07-47.
This is a very good section since it has closely spaced holes allowing a better interpretation of the geometry of the mineralisation.
The short, wide Katrina South zone can be seen in this section to be a sigmoid. This explains the problems with this in the previous two sections. The shallow intersections in the north of the section, found in both previous sections are again present. The ultramafic northern boundary is present but can be seen from 47 to be a shallow south sloping wall with floor wedge. This is the bottom piece of bread in the sandwich.
Required action: A hole intermediate between 47 and 41 is essential but only to intercept the three central mineralised zones. There is no point going on to try and hit a pinched out sigmoid. Assay of more material in 47 may give us wide zones of low-grade nickel. When this core was laid out there were many nickel zap hits but just limited sampling. The only merit for a step-back to 47 would be similar low-grade in the ultramafic schist.
The very angular hummocky outline of the topography suggests that a trench would be possible on this line.

Line 3375E.
0407-136, 138, 140, 141.
A rake of four holes drilled in 2007. Section of northern ultramafic and thick floor wedge. Sampling has given grades greater than 0.1% Ni. Katrina south is an elongate lens that pinches out above and below. Central mineralised zones are very thin. Grassy Pond Sill is present but only at shallow depth in 138 as part of a larger sill 9D.
The copper credits seem more numerous in these eastern sections in and peripheral to the Katrina South sigmoid.
Required action: None.

Line 3400E.
0407-157, 159.
Just two holes in this rake drilled to intersect only southern part of the section. The hole 159 is collared in the central ultramafic floor wedge. Both holes intersect the main Katrina South mineralisation.
Required action: We cannot step forward of 157 due to slope down to Ketchican Lake. A step-back to 159 is possible to intersect lower,

thinning part of Katrina mineralisation. Further step-backs probably not merited on this section at this stage.

Line 3550E.
0405-44.
A single hole a full 150m east of the previous section yet still hit a thin zone greater than 0.2% Ni. It is difficult to correlate this to any other zone.
Required action: Log hole and sample 1A.

Chris Cooper. Mineral exploration consultant.
Galloway Mineral Services, Kirkcudbright, Scotland. 9th May 2008.

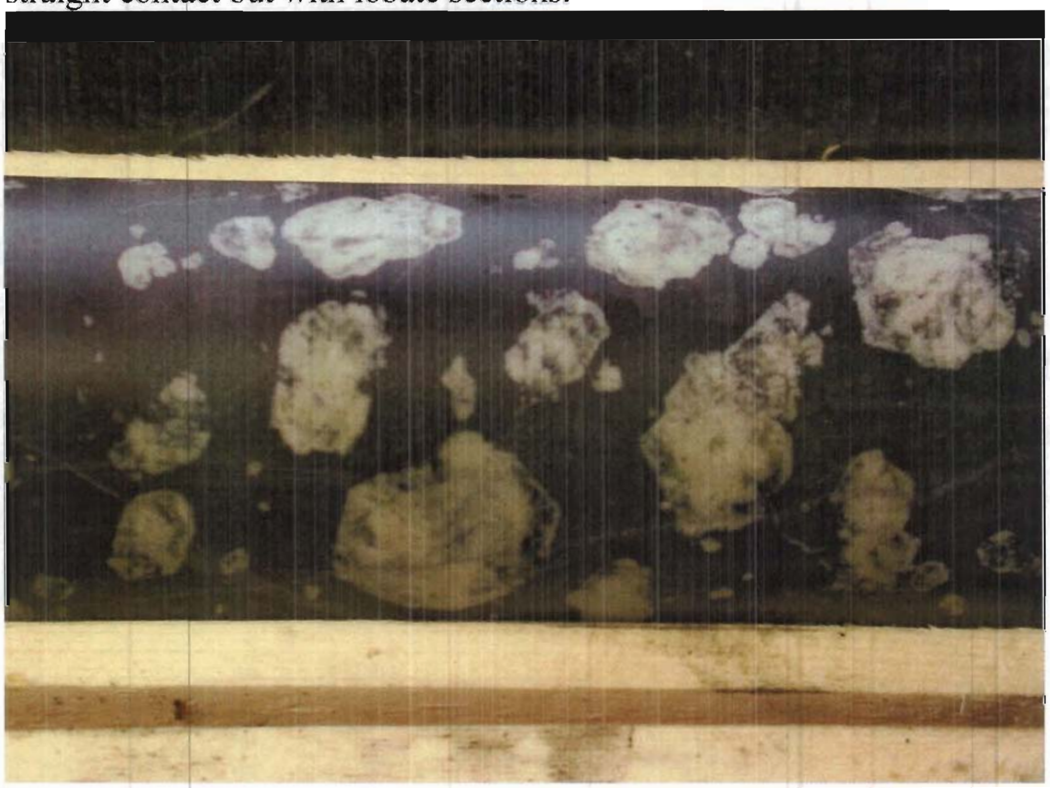
Appendix to VW Zone mineralisation report.

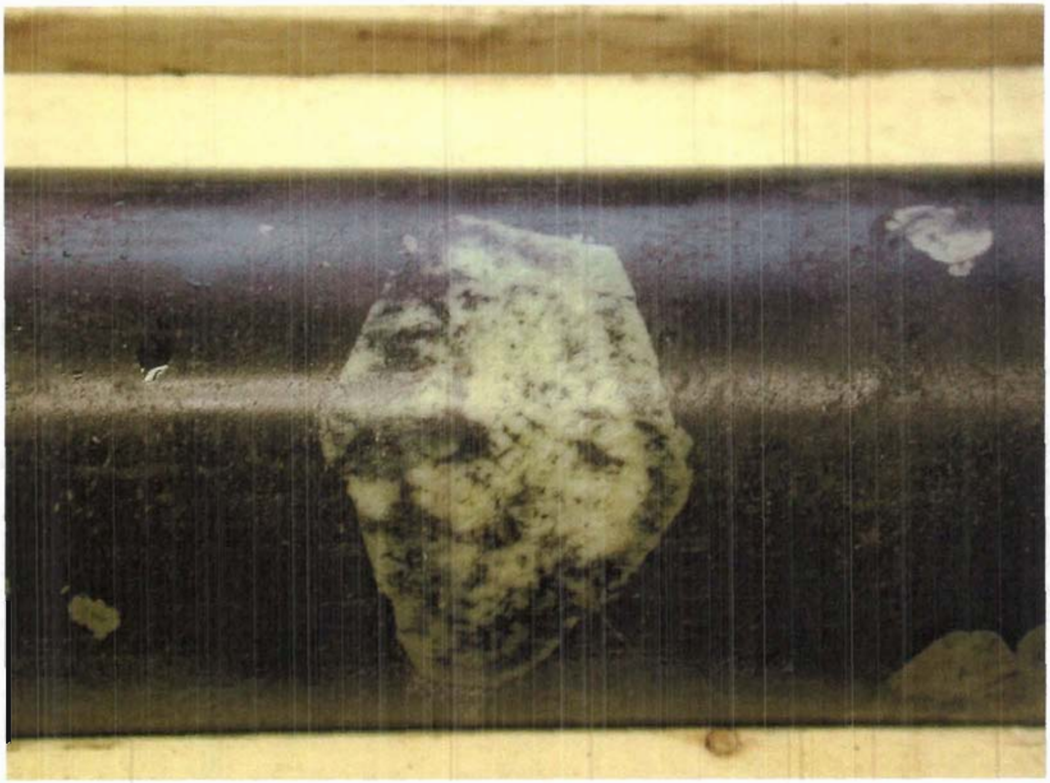
Photographs to accompany text.

This is a small selection of textural photographs available from the 2007 programme. The rest have been compiled onto a disc.

DSCN 1977. Contact of melagabbro sill 9D, [darker], with mafic rocks 2A. Note nickel zap reaction on pentlandite in foliated mafics on core above.

DSCN 1980. Inked in contact of the previous photograph. This is a straight contact but with lobate sections.


DSCN 1989 Grassy Pond Sill showing megacrysts in a very fine-grained mafic microgabbro groundmass.



DSCN1990 Individual megacryst of zoned feldspar.

DSCN 2006. Pyrrhotite and minor chalcopyrite in MZ2A.

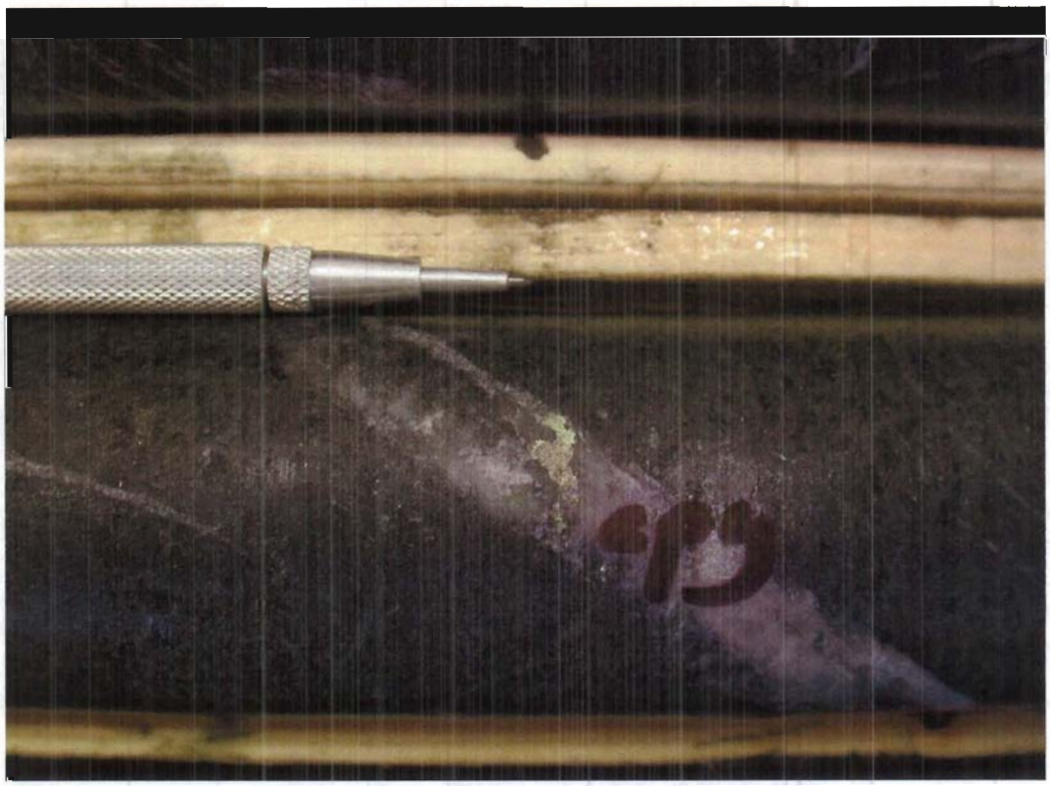
DSCN 2018. Cross-cutting contact of sill with mafic rocks.

DSCN2020. Quaint practices to denote lost core. This is not really the done thing in diamond drilling. Two core blocks would suffice.

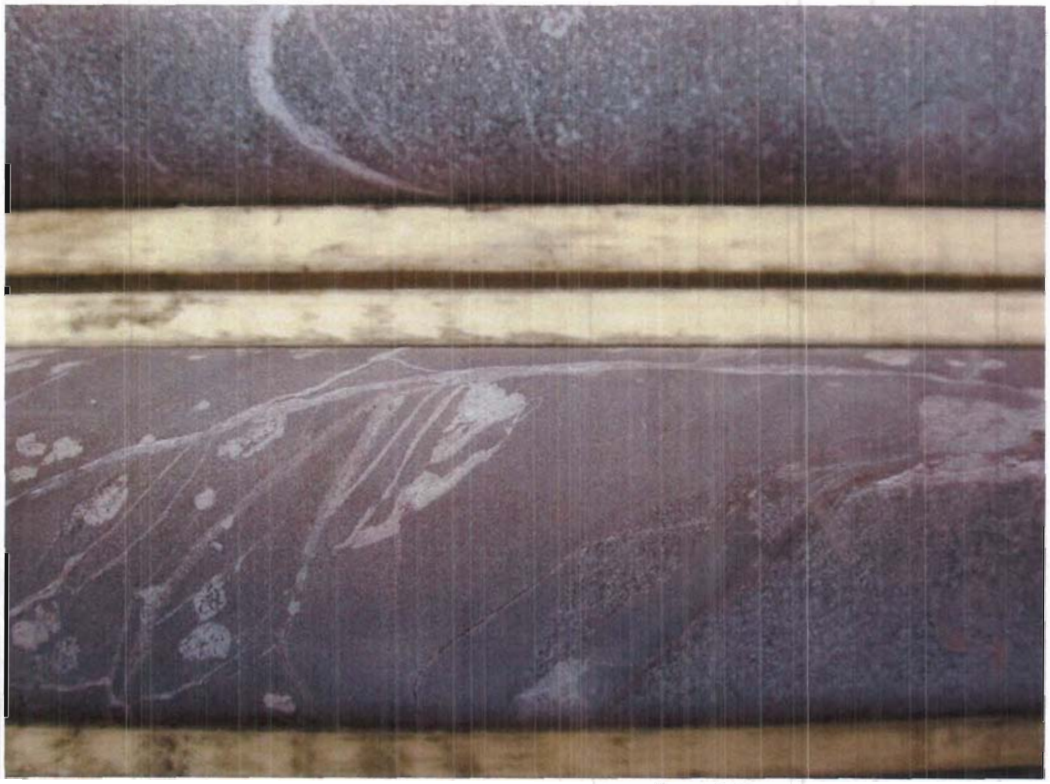
DSCN 2034. Core lost by grinding due to inexperienced drillers.

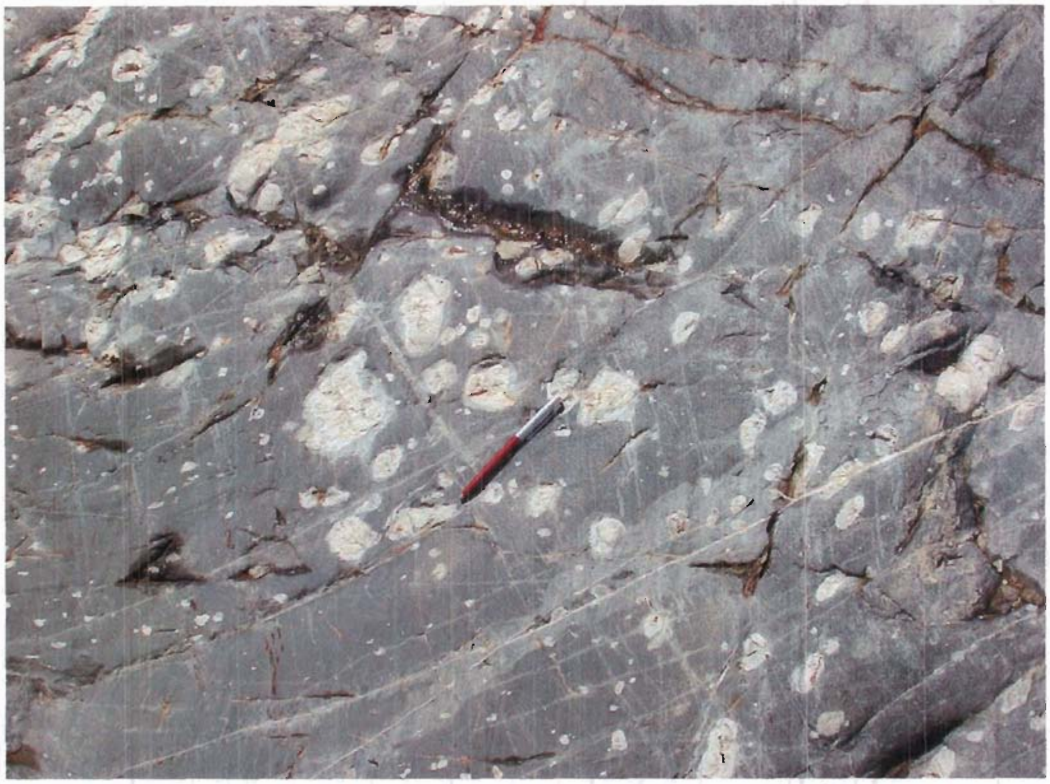

DSCN 2040. Blebby pyrite in finer grained pyrrhotite in MZ2A.

DSCN 2042. MZ2A with pyrrhotite and minor chalcopyrite.


DSCN 2045. Late chalcopyrite calcite veinlet cutting 9D.

DSCN 2046. Intense mineralisation in silicified mafic host. MZ2A.

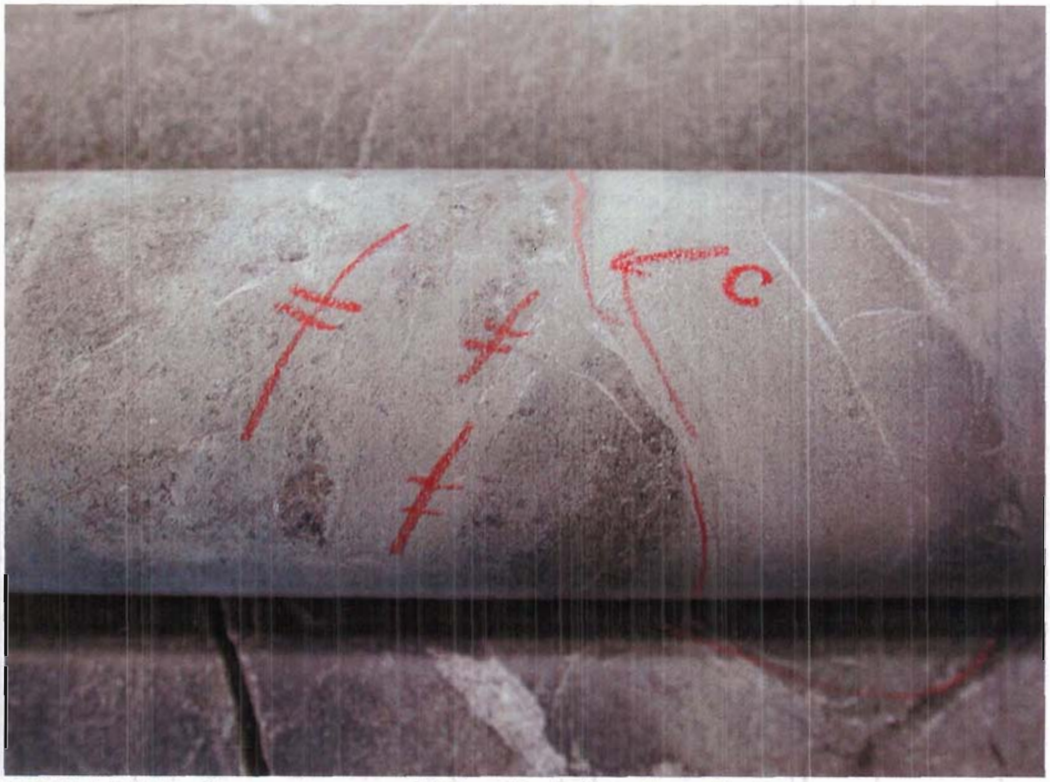

DSCN 2076. Late Grassy Pond Sill unit intruding 9D



DSCN 2084. Grassy Pond Sill megacryst unit at type locality.

DSCN 2089. Pillow lavas. Unmistakable in the field but very difficult to identify in drill core.

DSCN 2090. Relict partially digested zoned feldspar in 9D.



DSCN 2111. Contact zone of 9D with foliated mafic 2A.

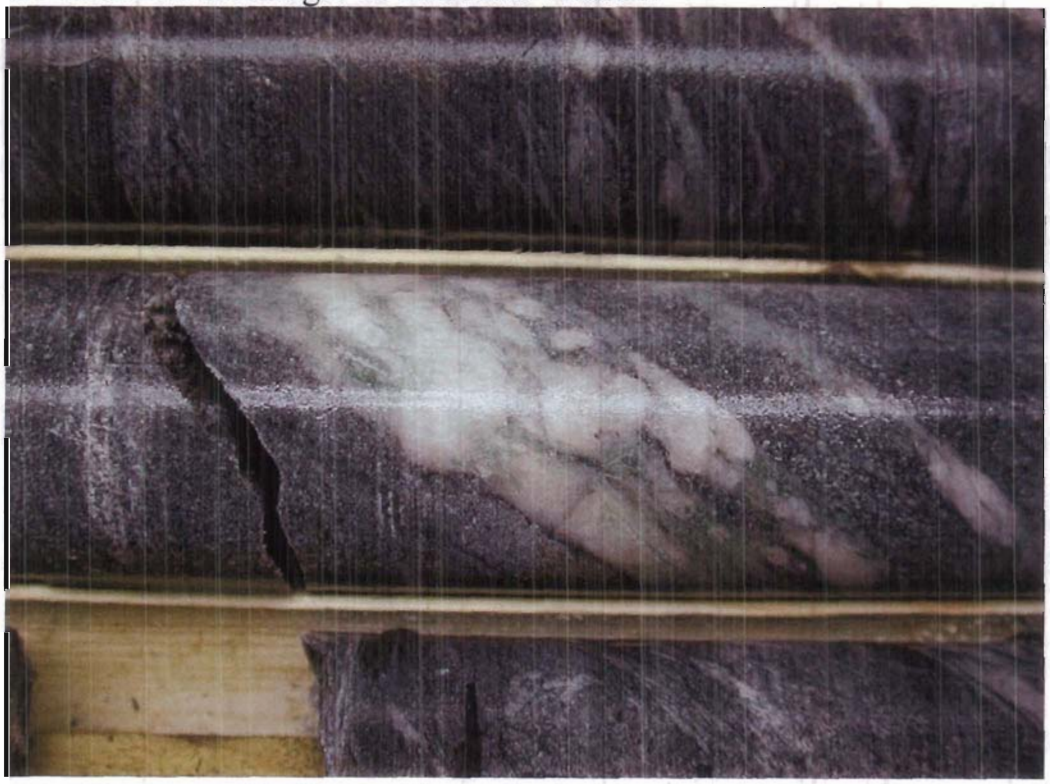
DSCN 2128. Late pulse 9T cutting coarser grained 9D melagabbro.

DSCN 2141. Pentlandite in 0407-119 at 113m. This is typical type 1A/2A mineralisation.

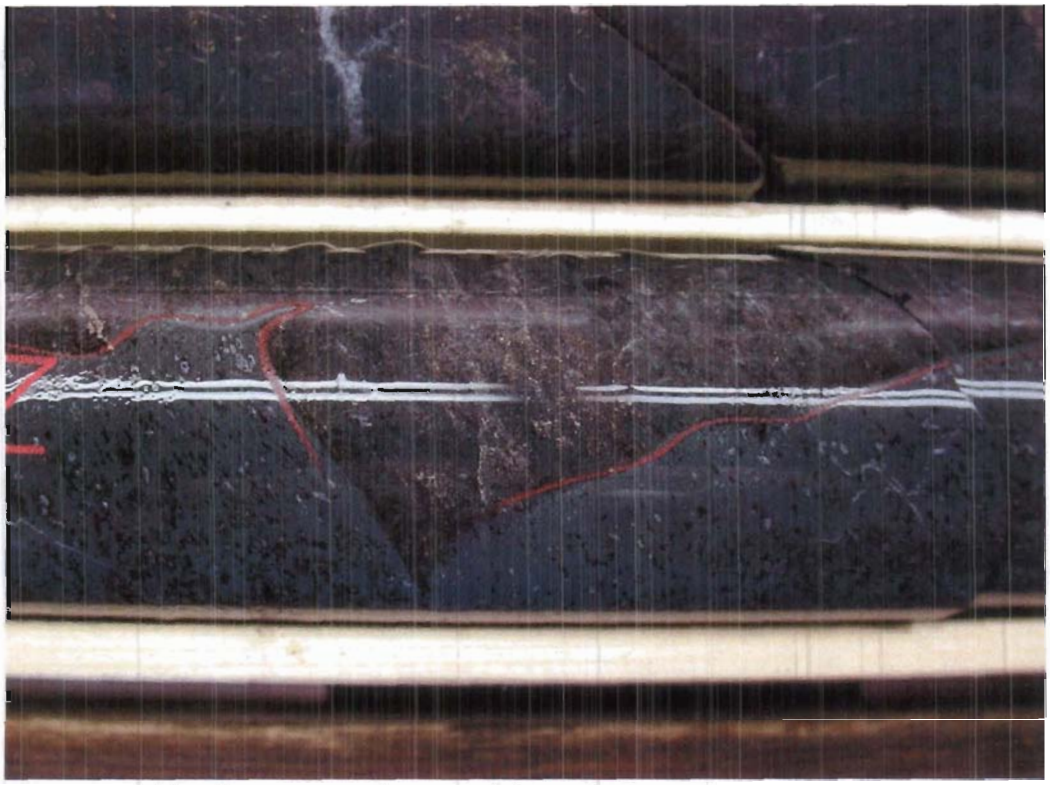

DSCN 2152. Coarse clusters of sulphides in MZ2AF1. Pentlandite and pyrrhotite picked out by nickel-zap accelerated with HCl.


DSCN 2181. Beautifully ground mineralised zone. This causes core loss and is often difficult to calculate.

DSCN 2188. 2AF1 Grey rock. Massive-foliated contact. The black lines are biotite on the fringes of carbonate veinlets.



DSCN 2190. Fuchsite-mariposite chrome mica with calcite in pelitic schist.



DSCN 2223. Cuspate and ragged intrusive contacts of late basic dyke with mineralised MZ2A.