



# Bergvesenet

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## Rapportarkivet

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BP NORGE A.S MINERALS

SUBJECT: Tydal-Meraker Project 1985  
Results of Diamond-Drilling in  
the Gressli & As areas of Tydal.

PERIOD: 20.08.85-25.09.85

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BY: I. L. Ferriday

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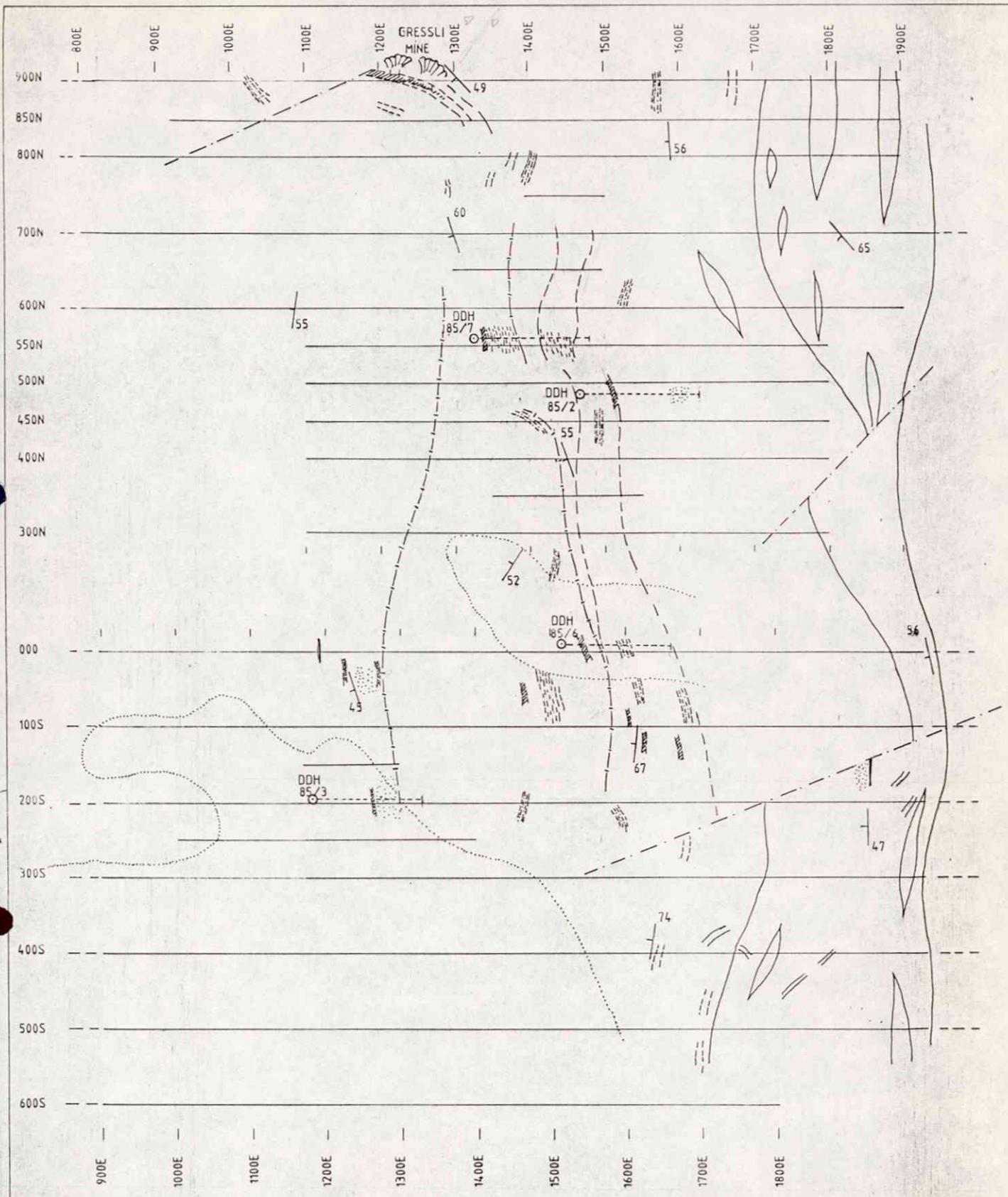
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1. SUMMARY

The target horizon at Gressli has been well defined by geochemistry and geology/drilling. Along a restricted section of this horizon, geochemistry and geology/drilling have also identified a highly favourable association of potential host rocks for massive sulphide mineralization with disseminated sphalerite-chalcopyrite mineralization. The overburden geochemical expression of this section of potential host horizon is of the same order as that over the Gressli mine mineralization but clearly separated along strike from the latter, such that it does not appear to be the case that one has merely defined 'the tail' of the Gressli mine mineralization. In fact the alteration observed in this section is much stronger and more extensive than that around the mine, such that it is conceivable that the case is the reverse of this. Surface geology and geochemistry have thus now reached the limit of their applicability. Geophysically also in this area, the limit has been reached using EM to that of identifying shallow targets. Considering the possible non-magnetic character of massive sulphide mineralization, susceptibilities at Gressli mine being only of the order of 10-100 SI, magnetic methods cannot be considered as totally conclusive.

One is therefore left with the problem of identifying possible deeper targets, which can only be accomplished by geophysical methods, the most applicable being gravity and downhole methods (IP). Taking into account the likely dimensions presented towards surface of an economic target - a 'ruler' plunging 500m steeply down foliation of  $10^7$  t - approx. 150 x 25m, thorough elimination of the area can only be justified following a short borehole IP Survey and two or three x 700m gravity traverses.

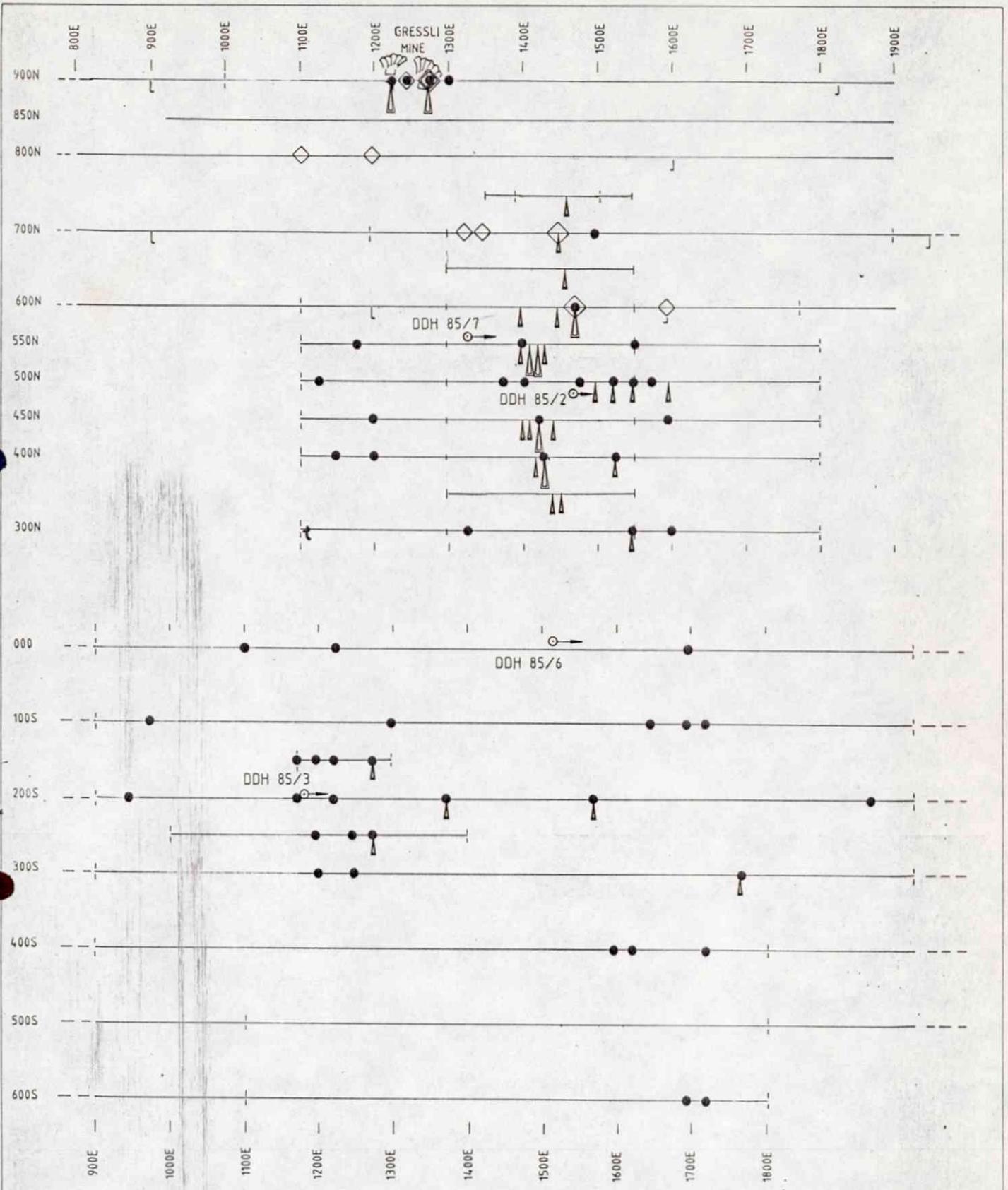
The conductor in the As area has been identified as formational - very fine pyrrhotite-impregnated chlorite schist - and does not warrant further attention.



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**GRESSLI GEOLOGY**  
 From mapping, borehole data  
 & overburden sampling

Author: ILF	Drawn by: ILF	Date: 09/10/85
Scale: 1:5000	Report No:	Drawing No:



- Soils Bloomtest anomaly (>9mls dithizone)
- ▲ Soils XRF Zn anomaly (>100ppm / >300ppm)
- ◇ DOB anomaly(filtered)
- ◇ DOB anomaly Zn > 300ppm
- Sampling limits: soils Bloomtest 25m spacing (XRF on anomalous spls)
- Sampling limits: soils, 10m spacing (XRF only)
- Sampling limits: DOB, 25m spacing (XRF only)

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**GRESSLI**  
GEOCHEMICAL  
ANOMALIES IN  
OVERBURDEN

Author: ILF    Drawn by: ILF    Date: 08/10/85  
Scale: 1:5000    Report No:    Drawing No:



Sulphide horizons : massive / disseminated



Graphitic schist / chert



Cherty & massive fine-banded acid pyroclastics

—|—|— Approximate boundaries of belt composed predominantly of acid pyroclastics.



Predominantly acid pyroclastics: cherty & biotite schist fragments +/- garnet, and quartz porphyries



Subordinate acid pyroclastics as above, commonly in biotite-actinolite and/or carb.-epidote rich basalts

----- Approximate E. boundary of belt composed of basic volcanics with thinner pyroclastic horizons.



Sericite-chlorite/chlorite-actinolite schist



Garnet-chlorite-amphibole-(dravite) schist



Basic volcanics: amphibolitic / carbonate-epidote rich



Garnet-sillimanite schist



Amphibolite & amphibole schist



Diorite porphyrite dykes



Trondhjemite dykes

----- Faults



Metagabbro

..... Areas with thick moraine cover (>5m)

Basic felspar-porphry dyke swarms are not included for clarity

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LEGEND : GRESSLI GEOLOGY

Author ILF Drawn by ILF Date 10/10/85  
Scale Report No Drawing No

## 2. RESULTS

### 2.2. Gressli Area

The results of ground geophysics (VLF, Mag, HLEM) and overburden sampling (DOB, B-horizon soils) which were carried out between March 1984 and August 1985, on which the final 1985 drilling program was based, are shown in Maps 1 & 2. The final program at Gressli was a modification of the preliminary 4-hole-program (DDH 85/1 - 85/4), following ground checks and XRF analysis of Bloomtest soil/geophysical anomalies where DDH 85/1, 85/4 were dropped (July monthly). Holes at 2 new localities based on geological-geochemical /geophysics were substituted - DDH 85/6, 85/7.

The resulting program in effect covered a 350km thick stratigraphic section lying 300-900m south along strike from Gressli mine. Borehole positions relative to geology are shown in Map 3. Borehole logs, geological sections and the geophysical/geochemical profiles over the borehole positions are included at the rear of this report.

#### DDH 85/3 (195S/1180E)

The drillhole was sited to test a stacked series of limited strike length (200m) magnetic conductors having neatly coincident Bloomtest soil anomalies, also occurring 200m to the south of a sphalerite-rich boulder find. XRF results on Bloomtest anomalous soil samples were not remarkable, but these were not considered to be reliable due to the thickness and nature of glacial drift (4m boulder moraine drilled).

The hole generally intersected 110m of the basic extrusive sequence structurally overlying the main Gressli acid pyroclastic belt, penetrating approx. 30m of the latter. The basic extrusives consist of amphibolites which increase in carbonate and epidote content towards the main acid sequence. They contain a thin (8-10m) horizon of acid pyroclastics with 3-4 dm-scale intercalations of graphite-pyrrhotite-(chalcopyrite) schist, structurally above which the metabasalts have been completely altered to biotite-carbonate schist. These contain a thin horizon of fuchsite-bearing acid pyroclastics at ~53m depth. Such Cr muscovite is probably responsible for the numerous Cr anomalies detected in DOB sampling directly south of Gressli mine.

These sulphide impregnated horizons are considered to be the source of the geophysical anomalies detected at surface. The underlying main acid pyroclastics are fine to medium fragmental biotite-rich, and contain garnetiferous intercalations. At their upper contact there occurs a 0.8m section of weak pyrrhotite-(chalcopyrite-sphalerite-pyrite) impregnation in carbonate-rich pyroclastics. This horizon

may well explain the Bloomtest/108ppm XRF soil anomaly detected at 1350E.

DDH 85/6 (010N/1514E)

This hole was sited to test a marked HLEM anomaly detected on-line 000N, 1575-1600E. No geochemical anomalies were detected over this conductor, but considering the thickness and nature of overburden - 8 to 15m of boulder moraine - it was concluded that even DOB geochemistry would be unreliable. However, the limited strike length conductor lay within the Zn-rich belt defined by Bloomtest/XRF) lying south along strike from Gressli mine.

The hole generally intersected the structurally lowermost horizons of the main Gressli acid pyroclastic belt, and the underlying sequence of mixed basic extrusives and chlorite-sericite schists/acid pyroclastics. In the uppermost 2.5m, a horizon of sheared acid pyroclastics with locally strong pyrite-pyrrhotite-sphalerite-(chalcopryrite) impregnation and veinlets was intersected. The structural base of the main pyroclastic sequence, consisting of medium grained biotite-garnet rich to cherty lithologies, was marked at 35m by a very thin (10cm) seam of graphite-pyrrhotite-(chalcopryrite). The geophysical anomalies detected at surface at 1575-1600E are considered to have their source above and below a 10m thick horizon of chlorite schist having 2m pyrite-(chalcopryrite) impregnation at its lower boundary and a 3m horizon of pyrite-pyrrhotite impregnated chloritic amphibolite at its upper boundary.

DDH 85/2 (485N/1472E)

This hole was re-sited approx. 50m further west from the original proposal in order to intersect an intense alteration lithology recently found at surface. The hole was sited primarily however, to test a combined HLEM/Mag/Bloomtest/XRF anomaly lying on 500N, 1550-1575E.

The hole generally intersected the basal section of the mixed basic extrusive-acid pyroclastic belt and the underlying sequence of exclusively basic extrusives. In the first 15.5m (including a 5m basic dyke), a remarkable horizon of chlorite-garnet-(dravite) schist was penetrated - this being considered to be a metamorphosed alteration assemblage. The lithology contained weak local chalcopryrite impregnation/veinlets throughout, with strong chalcopryrite-(pyrrhotite) impregnation over a 1.8m thickness which included pure chalcopryrite seams to 4cm thickness. This was underlain by mixed lenticular quartz-chlorite schist, fine banded garnet-epidote-pyrrhotite-(chalcopryrite) acid pyroclastics and basic extrusives containing acid fragments and biotite

alteration to 31m depth, representing the structural base of the Gressli acid belt.

The acid pyroclastics were underlain by an almost exclusively metabasic extrusive sequence, albeit cut by the ubiquitous felspar-porphyrty dykes, which were drilled for a further 85m. within this sequence there occurs a 2m section of very fine grained, sedimentary banded pyrite-pyrrhotite-(chalcopyrite) impregnation in chlorite schist which is almost massive at 78 to 79m depth. This mineralization would explain the anomalies detected at 1550-1575E. The horizon is underlain by carbonate-epidote-rich amphibolites with sporadic pyrite-pyrrhotite-(chalcopyrite) veinlets and impregnations which are closely tied to locally increased carbonate contents.

DDH 85/7 (560N/1330E)

This hole was sited primarily on geochemical/geological grounds, lying directly along strike from Gressli mine in the main acid pyroclastic belt, with four consecutive XRF Zn anomalies (137, 330, 444, 116ppm between 1400 & 1500E) in soils of local derivation.

No geophysical targets of note were detected apart from a mag. anomaly at 1350E and a VLF/weak HLEM anomaly at approx. 1450E.

The hole intersected the structurally lower horizons of the main Gressli acid pyroclastic belt, and the major part of the underlying sequence of mixed basic extrusives and chlorite schists/thin acid pyroclastics. Fracturing was more prevalent here than in any other hole, similarly the silica content of the upper acid pyroclastics was higher than that encountered elsewhere.

The first 15m consisted mainly of cherty acid pyroclastics with no apparent sulphide content but very high magnetic susceptibility. Very fine grained magnetite could therefore be present, this lithology obviously being the source of the mag. anomaly at 1350E. It is worth noting that the magnetic anomaly detected over the Gressli mine mineralization, which itself contains only minor microscopic pyrrhotite and no magnetite, could therefore be due to the presence of fine grained magnetite in the host acid tuffs ('mine quartzite'). The above are underlain by a thick (24m) sequence of sericite-chlorite schist - the likes of which have not been encountered in the other drillholes - which is itself underlain by quartz-chlorite sericite schist with cherty fragments/intercalations and pyrite-pyrrhotite-(chalcopyrite-sphalerite) impregnations between 51 & 59m depth. The latter horizon is considered to be the source of the geochemical anomalies at 1400-1450E.

Beneath an underlying zone of multiple felspar-porphry dyking, there occur chlorite-actinolite schists and massive dark amphibolites with local thin seams of cherty acid material around 100m depth. The chloritic amphibolites contain abundant fine grained pyrrhotite in seams and veinlets, these being the probable source of the geophysical anomalies around 1450E.

2.2. As Area (2700N/2334E; 2680N/2258E)

It was originally proposed to drill two holes at As (DDH As1, As2), one into each of the N-S conductors (?one horizon fault displaced) defined by VLF/HLEM.

As the conductors were considered to be of similar type from comparisons of their geophysical signatures, the most promising, northern conductor was to be drilled first, with drilling of the southern conductor being dependant on the results. Regarding drilling however, the area was a plague in terms of both access - across Tydal's most extensive peatbog, and water supply - the final water line being 1.2km in length, making drilling costs and any transport of the rig most expensive. The original proposal for DDH As1 was changed on these grounds to a siting 300m along strike to the south.

DDH As1 intersected a surprising thickness of metagabbro (78m) which was underlain by quartz-sericite-biotite porphyroblastic-(carbonate) schist (The Stuedal schist meta-marls). The Stuedal schists contained a 4m thick horizon of chlorite schists with very fine grained pyrrhotite impregnation. Due to the dip alternatives as measured in core combined with the low regional dip, it could not be clearly concluded whether the mineralization intersected was the source of the anomalies at 2200-2225E or that of the mag. anomaly at ~2150E. It was therefore decided to site a short hole approx. 75m up dip. DDH As 3 intersected approx. 17m of metagabbro which was underlain by Stuedal schist. The latter contained 9m of pyrrhotite impregnation of identical type to that in DDH As1, also geometrically correlating well with the latter. The formational conductor intersected is obviously the source of the VLF/weak mag anomalies at ~2200E, and the HLEM conductor at 2225E. It is interesting that although the HLEM and other anomalies do not coincide at surface, the depth estimate from the HLEM is accurate, (See borehole profile).

### 3. CONCLUSIONS/RECOMMENDATIONS

From mapping and drillcore, the stratigraphic horizon at which the Gressli mine mineralization lies, occurs at the structural base (?stratigraphic top) of a sequence consisting overwhelmingly of acid pyroclastics, and near the contacts of the latter with a structurally underlying (eastern) zone of basic extrusives/chlorite schists with thinner interbedded acid pyroclastics. The basic extrusives above the main acid belt are strongly altered to biotite-carbonate schist and contain fuchsite-bearing acid pyroclastics. The Zn-rich stratigraphic interval is also shown by soil geochemistry where drift is thinner than ~5m, where the highest Zn anomalies clearly cluster around this contact, having a very sharp west boundary and decreasing in magnitude and focus eastward. This stratigraphic interval of potential for Zn-rich massive sulphide mineralization can be followed geologically to approx. 300S (~1km from the mine), where it disappears beneath a ridge of thick moraine cover. It is possible that the horizon continues south of this as suggested by the DOB anomalies at approx. 1200E on lines 700S & 1100S (N.B: Only these lines sampled at this latitude: eastern sampling limit 1200E). North of 300S, this ~100m thick zone is geochemically most promising between 000 and 500N, and considering geological/structural data perhaps more specifically between 500N and 350N. In the latter area the following characteristics are anomalous and favourable:

- 1) The presence of notable thicknesses of strongly altered lithologies - sericite-chlorite/chlorite-actinolite schist and garnet-chlorite-(dravite) schist with abundant chalcopryrite veinlets/disseminations (?stringer zone) and increased silica content/silicification of the acid volcanics.
- 2) Increased total sulphides in the metabasic eruptives as well as acid pyroclastics.
- 3) A notable increase in the pyrite-pyrrhotite ratio, although pyrrhotite remains dominant resulting in increased background magnetic susceptibilities.
- 4) A parallel increase in the occurrence of sphalerite & chalcopryrite at certain levels in the acid volcanics.
- 5) A more complex structural pattern with increased fracturing, and by deflections in the foliation the suggestion that a cross fracture similar to that at Gressli mine may be present. Such fractures are considered to have had an influence in the localization/thickening of massive sulphide.

From a geophysical standpoint, there do not occur any notable anomalies in this area. However, due to the presence of powerlines, one is restricted in reliable EM coverage to that of 50m coil-spacing HLEM with a relatively high frequency which limits depth penetration (?20-25m).

Considering the most likely dimensions presented towards surface of a deeper massive sulphide - a ruler of 10<sup>7</sup> tons plunging steeply down dip of 500m - approx. 150 x 25m, all that remains for complete elimination of the area would be a geophysical survey using 2-3 gravity traverses (See L. Reed Visit Report, April 1985, p. 3-4), and downhole IP. Positive results would require a drill-program of the order of 2 x 200m holes.

The conductor in the As area has been identified as formational, consisting of 4-9m very fine grained pyrrhotite-impregnated chlorite schist, and does not merit further attention.

I. L. Ferriday  
Project Geologist  
Trondheim  
11.10.85

 Massive fine-banded/tuffaceous to cherty acid pyroclastics.

 Acid to intermediate pyroclastics : acid to biot. schist fragments in chlorite-qtz-(sericite) matrix.

 Sulphide impregnation > / < 25%

 Sections with up to dm.-thick seams of graphite-chert-sulphide

 Garnet-chlorite-(dravite) schist.

 Sericite-chlorite schist.

 Chlorite/chlorite-actinolite schist

 Biotite/biotite-carbonate schist : altern. of basic extrusives.

 Massive to schistose amphibolite extrusives+ high carbonate/epidote content

 Massive dark amphibolite extrusives, rarely amygdaloidal.

 Qtz-ser.-biot.-(carb.) schist (Stuedal schist metamarls) / chlorite schist with pyrrhotite impregnation.

 Stuedal schist hornfels

 Felspar porphyry dykes

 Fine to med.-grained amphibolite dykes

 Metagabbro

 Shear zones

 Measured dip alternatives : foliation

 Correlation between b.holes

 Extrapolation of sulphide zones in core to most likely surface anomalies (n.b. also subject to intervening fractures)

### Surface anomalies

G : Geochemical

V : VLF

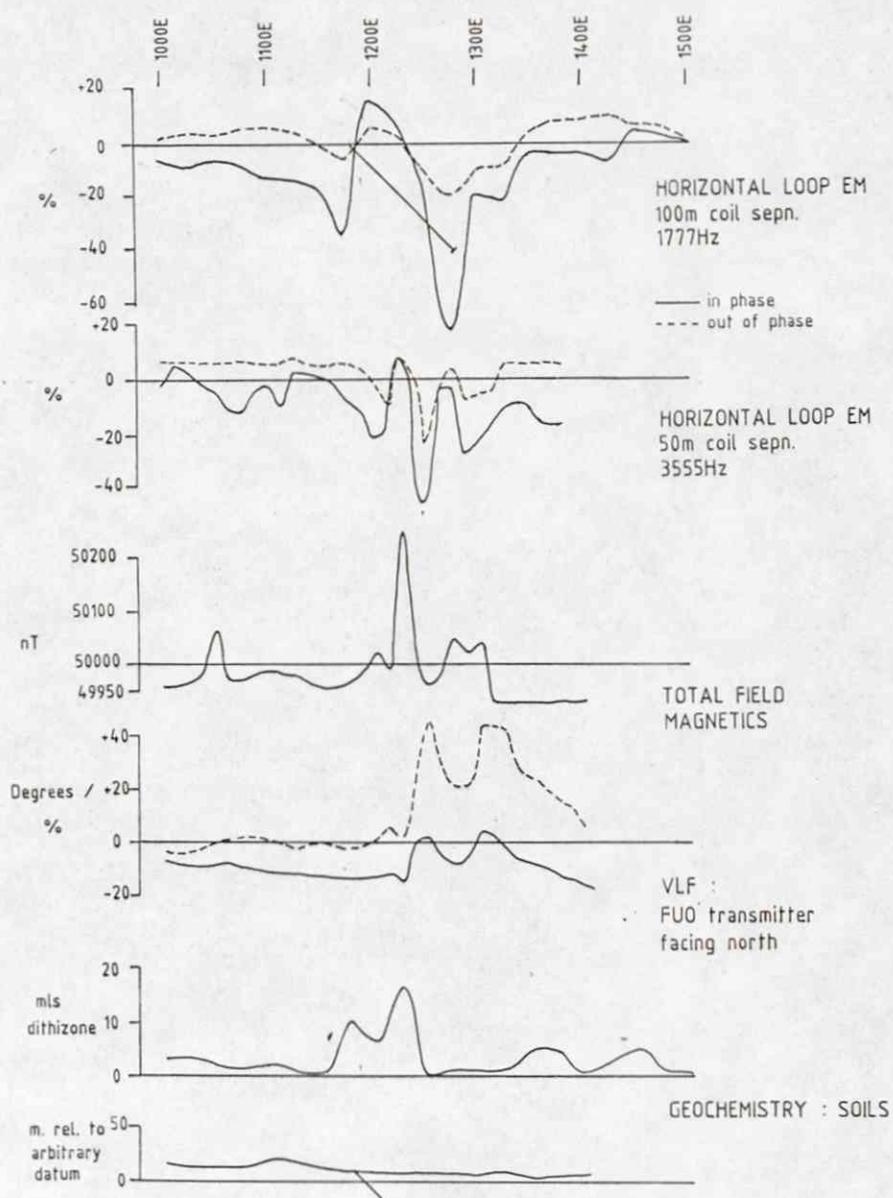
M : Magnetic

H : Horizontal-loop EM

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Tydal Project :  
Legend for  
Borehole profiles

Author: ILF    Drawn by: ILF    Date: 03.10.85  
Scale:            Report No:            Drawing No:



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DDH 85/3  
GRESSLI  
195S / 1180E

Author: ILF	Drawn by: ILF	Date: 07/10/85
Scale: 1:5000	Report No:	Drawing No:

1175E

1200E

1225E

1250E

1275E

1300E

1325E

1350E

DDH  
85/3

G  
H

M

H  
G

H

V

INPUT anomaly  
219 on 10301W (approx, position only)

10

20

30

40

50

60

70

80

90

100

110

120

130

1100

1000

900

800

700

600

500

400

300

200

100

0

Susceptibility  $\times 10^{-5}$

BP BP NORGE a.s Minerals

Tydal Project  
Borehole Profile 200S  
Gressli

Author: JLF    Drawn by: JLF    Date: 02/10/85  
Scale: 1:500    Report No:    Drawing No:

B O R E H O L E L O G		BP NORGE A.S. Minerals			
AREA: GRESSLI		HOLE NO: 85/3		DRILLED FROM: 09.85 TO: 05.09.85	
COLLAR COORD: 195S/1180E		DIRECTION: 090°		INCLINATION: 45°	
LENGTH: 138.4m		LOGGER: I. L. Ferriday		PAGE 1 OF 4	
DEPTH	LITHOLOGY	GEOL/ SPLS	MAG SUSZ	FOLN	REMARKS
0	0-4.30: Overburden				
5	4.30 Massive l. grained amphib. & thin ep-carbt veins.		30		
	Cpy-py-pyrr impregnation at 6.30. Probably weathered extrusive.		30		
			35		
10	6.30 Massive dark green amphib, f.gr. & ep veins - extrusive		40		
	6.80 Dark green amphib. with fine fsp laths - prob. intrusive.		50		
			50		
			35		
	11.30 Massive, rudimentary banded amphib + loc. very diffuse patches biot. altn. Thin py-cpy impregnation in seams at 12.95. Local carbt/biot banding		30		
15			40	10	
			40		
	15.30 Dense fsp porph. intrusive with broad chilled margins.		45		Very diffues/gradational contacts
	17.55 Massive l. green amphib. with local diffuse biot altn.; weak sulph. impregnation at upper contact.		45		tional contacts with extrusives
			60		Peaks to 2000
			100		
			45		
20	21.00 Massive dk. green amphib. extrusives, veins & patches biot. altn. & carbt veining		45		
			60		
			60		
			60		
25	24.40 Dk. blue green amphib. with very variable density of fsp. phenox. (Not up to dense type - or >50% phenox) ?Mixture of predom. dykes and digested extrusives (N.B.: Lack of carbt & ep in the intrusives). Contains thin graph-pyrr horizon 31.05-31.20		60		
			60		
			100		
			50		
			45		N.B: Gradational contacts
			45		
			55		
30			350		Peaks to 1500
			60		
			60		
			50		
			60		

## B O R E H O L E   L O G

BP NORGE A.S. Minerals

AREA: GRESSLI

HOLE NO: 85/3

DRILLED FROM: 09.85 TO: 05.09.85

COLLAR COORD: 195S/1180E

DIRECTION: 090°

INCLINATION: 45°

LENGTH: 138.4m

LOGGER: I. L. Ferriday

PAGE 2 OF 4

DEPTH	LITHOLOGY	GEOL/ SPLS	MAG SUSZ	FOLN	REMARKS
35	36.60	Epidote amphib. with weak py- pyrr-carbt impregnation	50	15	
	37.70	Dense fsp porph intrusives with 0.3m chilled margins.	40 20 20 30		
40	41.50	L. green amphib. (high epidote in ground mass) with carbt veining & weak patches biotite alteration (ext).	40 45	20	
	43.50	Dk. green amphib & abundant epidote veining. N.B: Change from biot altn. Sporadic carbt veining.	45 45		
45			40 40		
	47.50	Dk. green amphib. with biot altn. patches & sporadic carbt veining.	50 60		
50			60		
	50.40	Biot-carbt veined schist & few remnants rel. unaltered amphib. extrusives.	40 50		
	53.15	Volcanioclastic: cherty & acid clasts in chlor-biot matrix. Silicification associated with deformation.	40 70 200		
55		Zone. Loc. py-pyrr impregna- tion and fuchsite.	50		
	54.90	Intense deformation zone: Mixed with chlorite schists, cherty liths, biot-sulphide & quartz veins.	45 45	30	
60	55.70	M. gr. light green ep-rich amp sporadic carbt veining.	60		
	58.30	Biot-carbt schist	45		
	60.00	Carbt-veined amphib, with thick (dm to 0.5m) sections of carbt-biot schist	60 50	30	
			60 40		
65	64.65	Biot, carbt-veined schist	40 150 700 100		

BOREHOLE LOG		BP NORGE A.S. Minerals			
AREA: GRESSLI		HOLE NO: 85/3	DRILLED FROM: 09.85 TO: 05.09.85		
COLLAR COORD: 195S/1180E		DIRECTION: 090o	INCLINATION: 45o		
LENGTH: 138.4m		LOGGER: I. L. Ferriday	PAGE 3 OF 4		
DEPTH	LITHOLOGY	GEOL/ SPLS	MAG SUSZ	FOLN	REMARKS
69.15	F.gr. acid volcs. grading to near chert at top		400		
70 69.90	Mixed pyroclastics/fragmentals: Completely biot. altd. fragmetals in green chlor. & dk blue-grey (grph bearing) matrix		50 35 50		
75	Thin graph(?) bearing pyrr-cpy impregnation horizons at: 72.60-73.30; 74.60-74.65, 76.50-76.90 'Blue-eyed' qtz porphyry 73.10-73.50.	1)	200 1200 200 60	10	
76.90	Strongly epid. massive chlor. amphib & biot rich clasts. Dec. epidote downward.		200 60		
77.80	As above, less biot altn. & carbt veins.		45		
80	80.00 Dense fsp porph intrus.		50 60 50 60 60		
85	84.50 Massive f.gr. amphibolites.		55 50		
86.30	F.gr. qtz-chlor-carb-ep schist & dark carbt-graph-pyrr sections of <ldm thickness.		500 60	5	
86.70	F.gr. chlor-amphib + abundant carbt eyes/veins/laminae. Loc. py-pyrr impregnation in thin seams.		300 80		
88.90	Homogeneous massive l.green amphib. Abundant ep with py impregnation near acids below. Tends towards gabbroic texture but still probably extrusive.		90 60 60 40 55 35 35		
	97.75-98.55 chlor. fsp porphyry intrusive.		40 40		

## BOREHOLE LOG

BP NORGE A.S. Minerals

AREA: GRESSLI

HOLE NO: 85/3

DRILLED FROM: 09.85 TO: 05.09.85

COLLAR COORD: 195S/1180E

DIRECTION: 090°

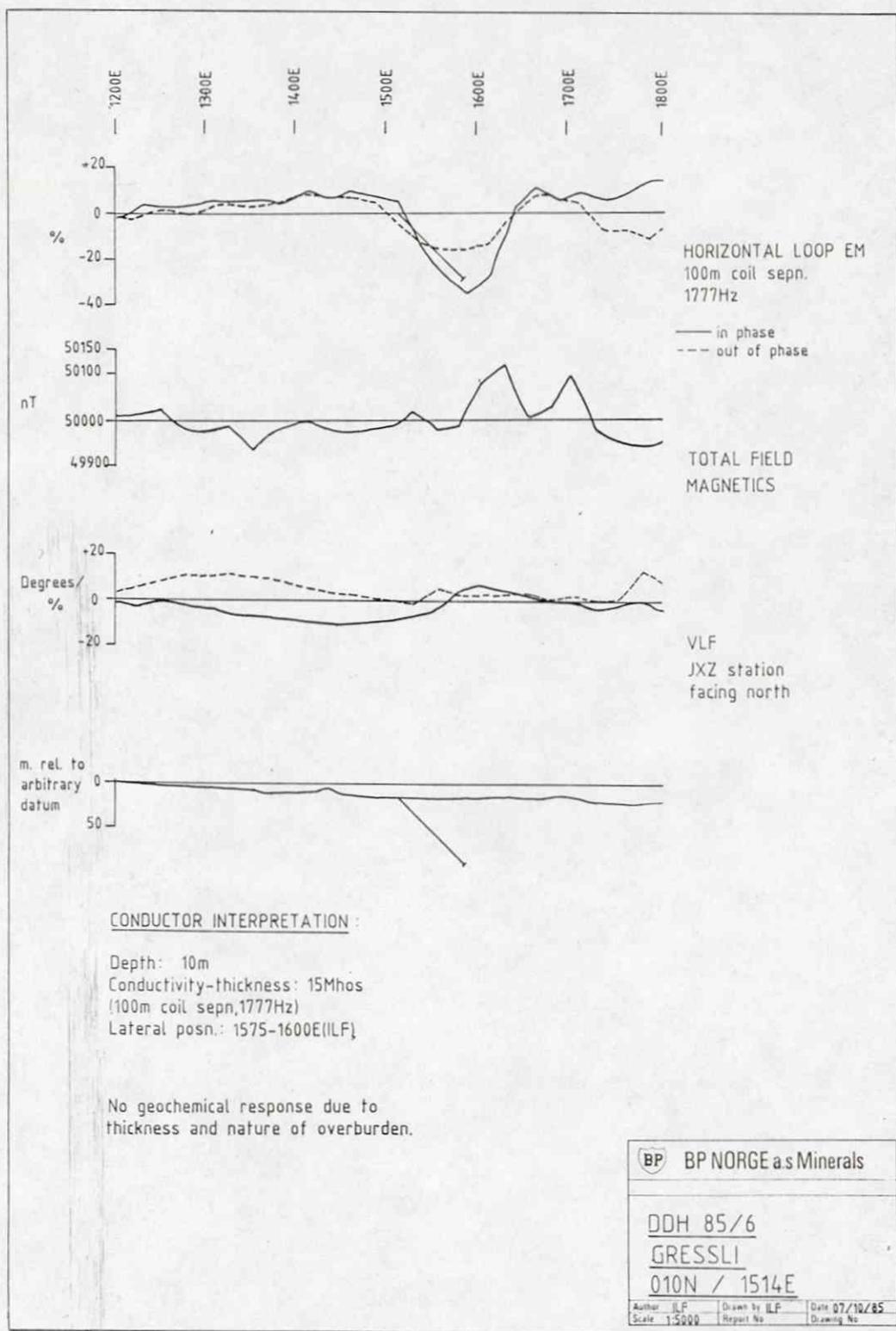
INCLINATION: 45°

LENGTH: 138.4m

LOGGER: I. L. Ferriday

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DEPTH	LITHOLOGY	GEOL/ SPLS	MAG SUSZ	FOLN	REMARKS
			30		
			30		
			30		
			30		
			35		
			30		
			30		
			35		
			35		
			40		
109.3	Pyrr-(cpy-sph-py) impregnation in carbt-rich chlor-biot acid pyroclastic.	2)	400	5-10	
			5		
110.1	F.-m. gr. purplish acid volcs (biot-qtz-fsp-garn) 'Blue-eye' qtz porphyry 110.10-110.75		5		
			5		
			5		
			10		
			15		
116.2	M.gr. massive amphib (?intrus)		40		
117.5	Acid volcanics as above		30		
118.4	Fsp porphyry intrus.		30		
			35		
121.1	F.gr. acid volcanics as above.		15		
122.3	Zone of multiple dyking: fsp (albite) porphyry in f.gr. amphib 123.75-124.70,		20		
			55		
			50		
			60		
	126.50-128.10,		55		
			50		
			50		
			70		
	129.50-130.80,		50	10	
			50		
	131.70-132.30		50		
			50		
			60		
134.6	Acid volcanics as above. Garn-rich bands.		40		
			10		
136.6	F.gr. amphib. extrusives.		20		
137.6	Acid volcanics gradational to sheared fsp porph.		30		
138.4	END		10		



1500E

1525E

1550E

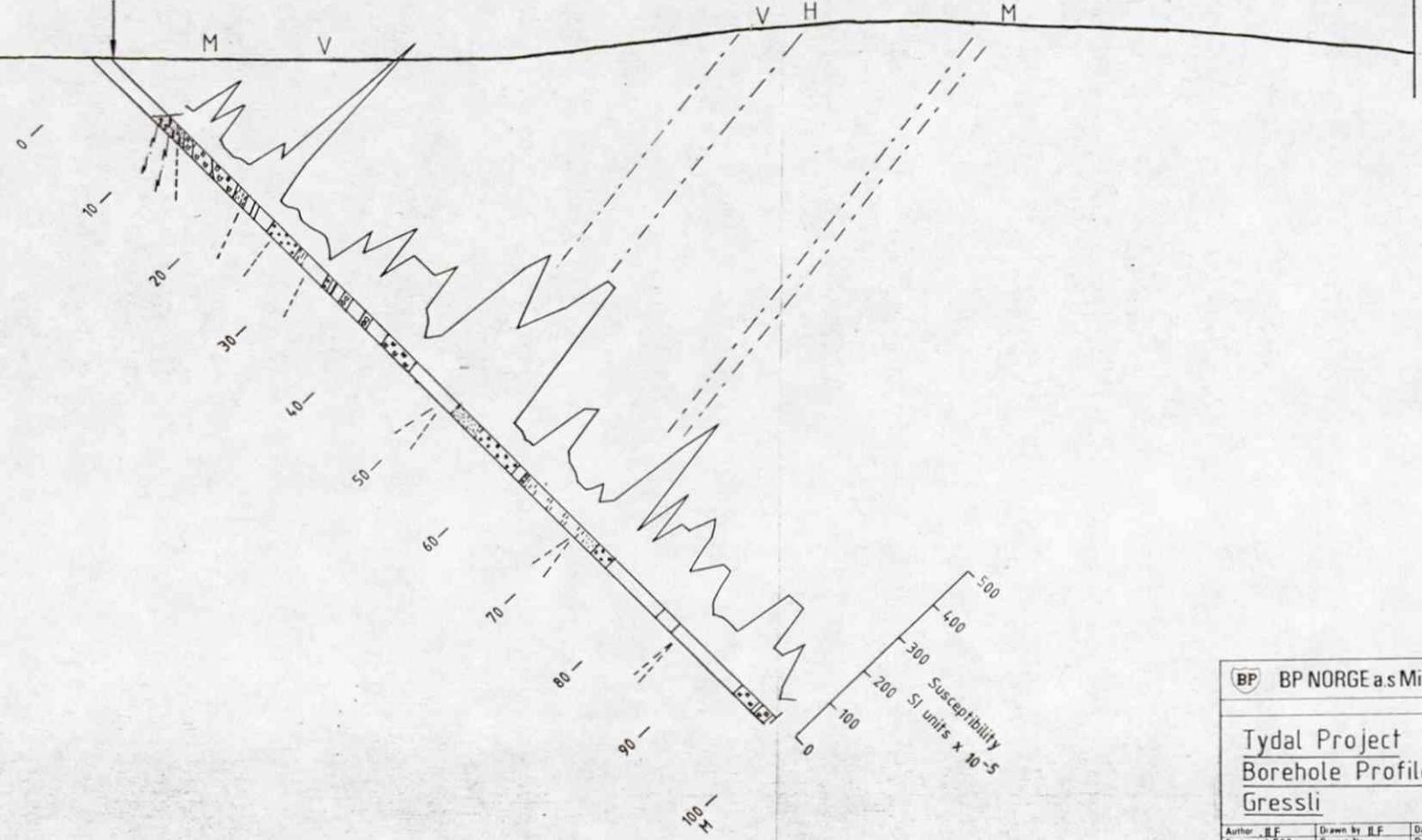
1575E

1600E

1625E

1650E

DDH  
85/6



BP BP NORGE a.s Minerals		
Tydal Project		
Borehole Profile 000N		
Gressli		
Author: JLF	Drawn by: JLF	Date: 02/10/85
Scale: 1:500	Report No:	Drawing No:

## BOREHOLE LOG

BP NORGE A.S. Minerals

AREA: GRESSLI

HOLE NO: 85/6

DRILLED FROM: 10.09.85 TO: 12.09

COLLAR COORD: 010N/1514E

DIRECTION: 090°

INCLINATION: 45°

LENGTH: 98.5m

LOGGER: I. L. Ferriday

PAGE 1 OF 3

DEPTH	LITHOLOGY	GEOL/ SPLS	MAG SUSZ	FOLN	REMARKS
0					
0-8.5	Overburden drilling - incls 0.5m for sampling of bedrock interface as below.	} (1) }			} 0.83% Zn }
5	Chlor. sch. + Qtz. in mat. + veins with py-pyrr-sph-(cpy) impgn.	(2) (3) (4) (5)			1.14% Zn 1.49% Zn 0.42% Zn
10.40	Fault plane, open.				
10.80	Amphib. intrus. not dense fsp. porph, multiple injection of 2-3 sheets with chilled mar- ginal zones.		40 40 150 50 125 40 35 30 40 45	45	
15	Rel. dense fsp. porph. 13.0- 16.20. Loc. veinlets pyrr-py.				
18.55	Chlor-ser sch. with sporadic thin (to dm) pyrr-py-(cpy) impgn and veinlets.		125 100	20	
20	20.30 Mass. v.f.gr. acid matl., sim. to mine quartzite? Relatively cherty with pyrr-py -(cpy) on X-cutting fract. 21.30-21.75: Chlor-ser sch + py-pyrr impgn.		450 125 40		Peak to 1500
25	24.00 Mass. to sch. grey-gn med-gr. lithology. Prob. f.gr. intru- sive?		40 50 40 40 45	10	
30	28.10 As above but with biot altn(!) partic strong 29.00.		50 40		
-29.40	30.25 M.gr. acid pyro with pyrr-py impgn, grad. cont. with above. F.gr. basic intrusive.		20 125 80	20	Peak to 200
-32.75	-33.50 As above pyro 10cm graph-pyrr- (cpy) at base.		140		Peaks to 400
33.50	Mixed biot-rich Qtz porphyry & garnet-acid matl. F.gr. pyrr. impregn. locally.		200 70		

## BOREHOLE LOG

BP NORGE A.S. Minerals

AREA: GRESSLI

HOLE NO: 85/6

DRILLED FROM: 10.09.85 TO: 12.09

COLLAR COORD: 010N/1514E

DIRECTION: 090°

INCLINATION: 45°

LENGTH: 98.5m

LOGGER: I. L. Ferriday

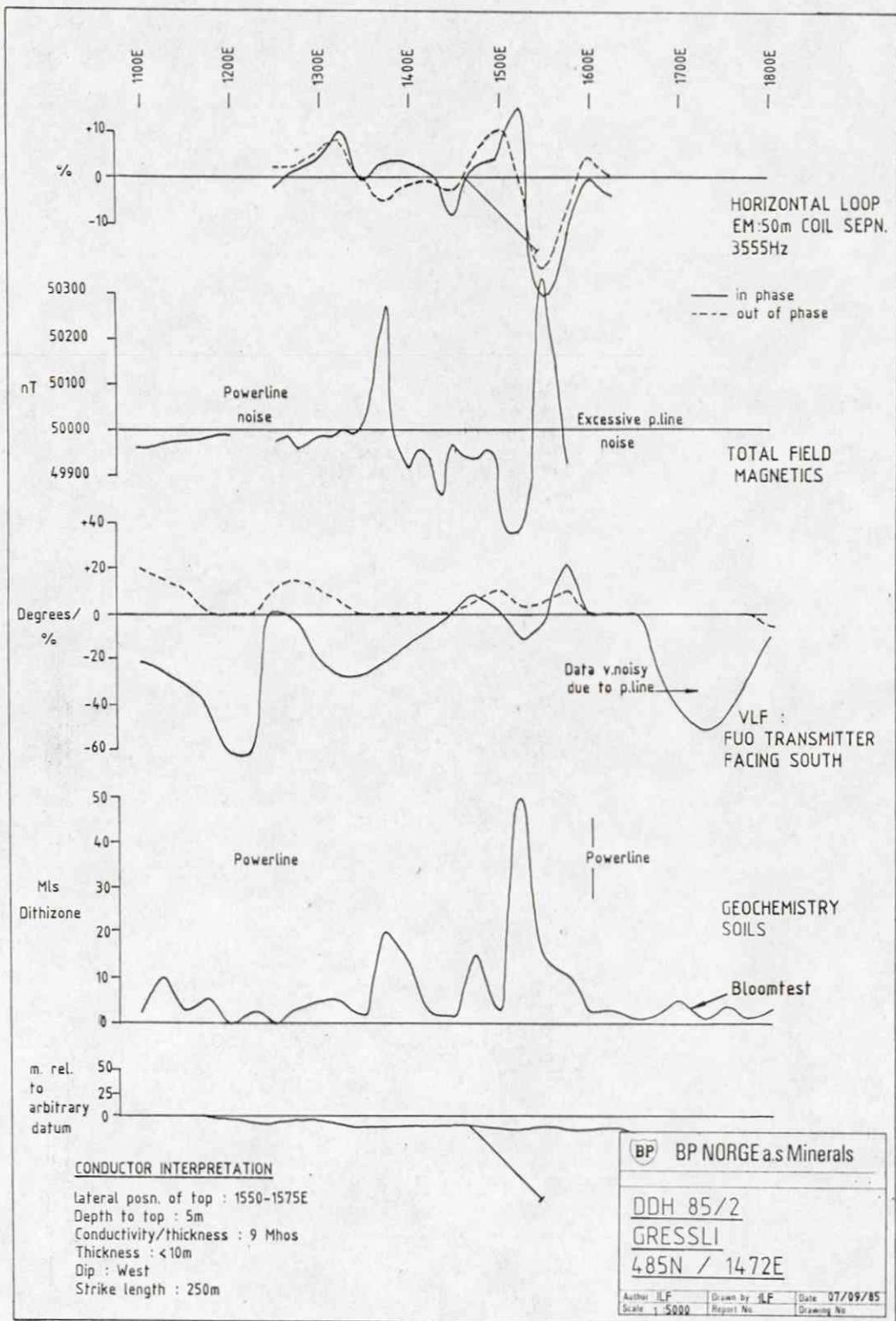
PAGE 2 OF 3

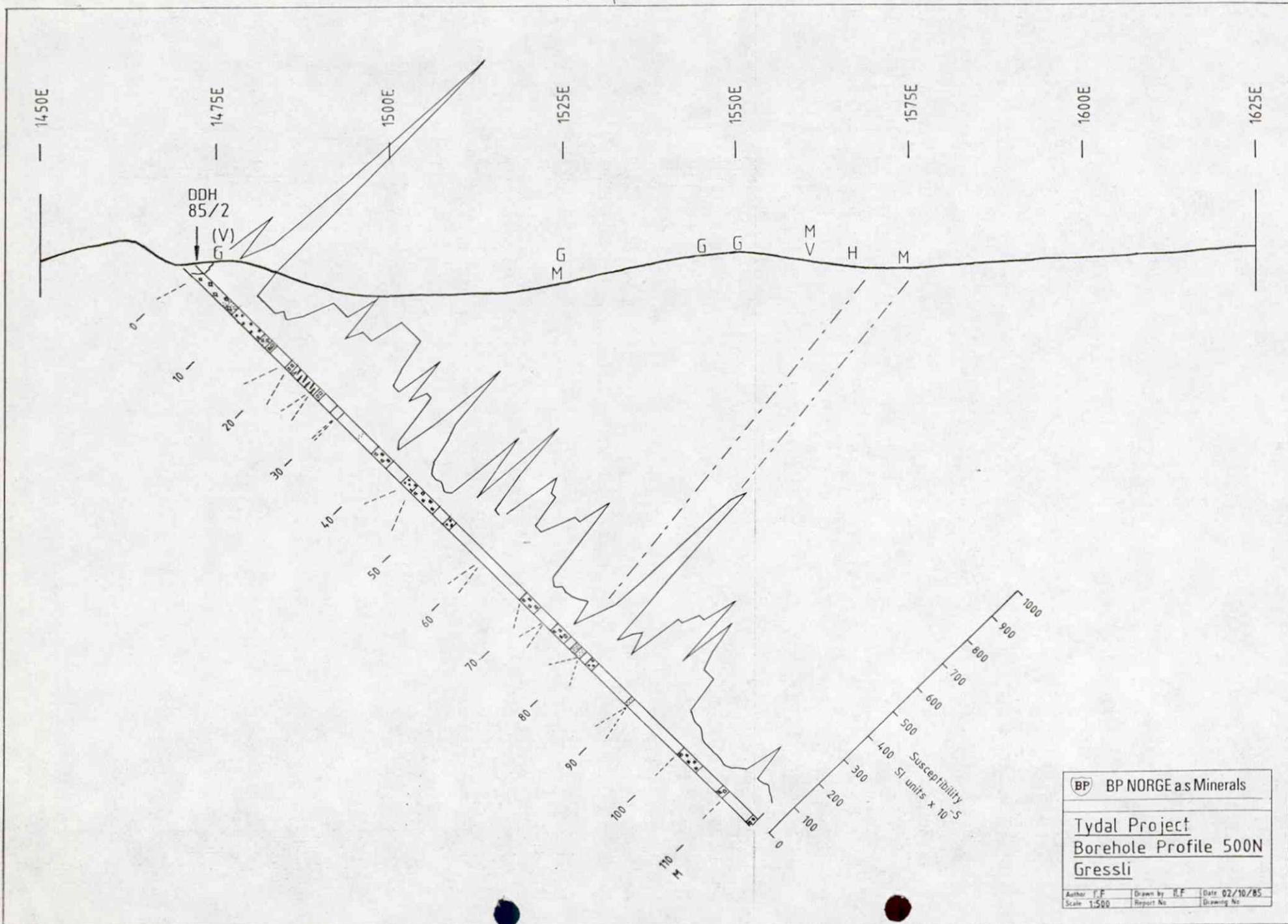
DEPTH	LITHOLOGY	GEOL/ SPLS	MAG SUSZ	FOLN	REMARKS
35	34.50 Fsp. porph. with chilled margins, loc. biotization(!).				
	35.75 Chlor. amphib. with rare thin biot. seams.		150		} Peaks to 700
	37.50 Fsp. porph. dyke.		150		
	38.60 Chlor. amphib. as above, with thin pyrr-py seams.		150	10	
40	41.00 Dense fsp. porph. with broad chilled margins (~1.5m thick margins).		150 200 90		
45	45.10 Chlor. amph. + py-pyrr. impgn.		75 50 75 300 350 300 250		
50	Strongly inc. py-pyrr from 51.50 downhole.		200 250 300 400 400	10	
55	54.90 M.-f.gr. basic (prob. intrusive) with v. fine peppery fsp phenox.		300 175 50 50 45 45		
60	60.45 Chlor. amph with py-pyrr impgn.		175	10	
	61.45 F.gr. ?intrusive amphibolite		200		
	-62.00				
	62.00 F.banded, rudimentary lenticular textd. chlor. schist.		90 75 70 60 60 90 60		
65			80		
70	Py-(cpy) impgn.		250 350	10	
	72.20 F.gr. amphib. with fine fsp. phenox, peppery - prob. intrusive.		200 70		

BOREHOLE LOG		BP NORGE A.S. Minerals			
AREA: GRESSLI	HOLE NO: 85/6	DRILLED FROM: 10.09.85 TO: 12.09			
COLLAR COORD: 010N/1514E	DIRECTION: 090°	INCLINATION: 45°			
LENGTH: 98.5m	LOGGER: I. L. Ferriday	PAGE 3 OF 3			
DEPTH	LITHOLOGY	GEOL/ SPLS	MAG SUSZ	FOLN	REMARKS
75	74.40		200		
			80		
			150		
			150		
			200		
80			175		
		(6)	90		
		(7)	120		Peaks to 600
	82.90	(8)	150		
		(9)	150	5	
85	84.30		80		
			60		
			70		
			70		
			70		
90			200		
			200		
			200		
			100		
	93.60		100		
95	94.20		150		
	95.80		100		
			50		
	96.50		30		
	-97.80				
	98.50		50		
100					

Analysed intersections:

- 
- (1) 8.1-8.6: 0310TY1502
  - (2) 8.6-9.1: 0310TY1503
  - (3) 9.1-9.6: 0310TY1504
  - (4) 9.6-10.0: 0310TY1505
  - (5) 10.0-10.4: 0310TY1506
  - (6) 82.0-82.5: 0310TY1507
  - (7) 82.5-83.0: 0310TY1508
  - (8) 83.0-83.5: 0310TY1509
  - (9) 83.5-84.0: 0310TY1510





B O R E H O L E L O G

BP NORGE A.S. Minerals

AREA: GRESSLI

HOLE NO: 85/2

DRILLED FROM: 16.09.85 TO: 18.09

COLLAR COORD: 485N/1472E

DIRECTION: 090o

INCLINATION: 45o

LENGTH: 115m

LOGGER: I. L. Ferriday

PAGE 1 OF 4

DEPTH	LITHOLOGY	GEOL	MAG	FOLN	REMARKS
0					
0-2.20	Overburden	(1)			
2.20	Chlor/coarse (to 1cm) garnet schist.	(2)			
		(3)	100	15	Minor cpy impg.
2.80-	L.grn qtz-chlor-(biot) sch	(4)	250		
5 3.50	with f. gr. pyrr. Chlor-garn schist as above.	(5)	100	5	
		(6)			Peaks to 800
	Sporadic cpy impgn to 7.0m, 7.0-8.8m rel. strong cpy-(pyrr) impgn & clots (to 4cm thickness at 7.60)	(7)	150		
		(8)	200		
		(9)	500		
		(10)			
10 8.80	F.-med. gr. mass. (peppery textd) prob. intrus., v. fine fsp laths.		1000		
			150		
			60		
			60		
			60		
			60		
15 14.15	Mixed chlor-garn sch. + light green lentic qtz sch chlor.		80		
			70		
15.65	Dense fsp porph dyke.		100		
16.50	Mixed lentic. qtz-chlor sch. Minor pyrr impgn. in loc. mm seams. (Prob. altered basic extrusive 19.8-20.4 fsp porph dyke.		150		
			200	17	
20			200		
			200		
	As above, more lentic textd, grey more acid frags with incd. biot. altn. in patches & seams. Sporadic pyrr. seams to 4-5mm thickness.		200		
			300		
			150		
25	Strong biot. altn. 25.2-27.0. Fsp-porph syke 25.5-26.5.		200	10	
			200		
	More mass. homog. amphib., with pyrr in fract.		300		
	Acid grey f. banded lith. w/ garn-ep-pyrr (cpy). Strong impgn. esp. around 30.5-30.8.		300		
30			300	0.5	
	Mass. amphib. Strong pyrr. impgn. 34.5-34.7.		200		
			150		
			150		
35			300		
			150		
			200		
			200		
			200		
			50		
37.50	Dense fsp porph intrusive with broad chilled margins.		200		
			50		

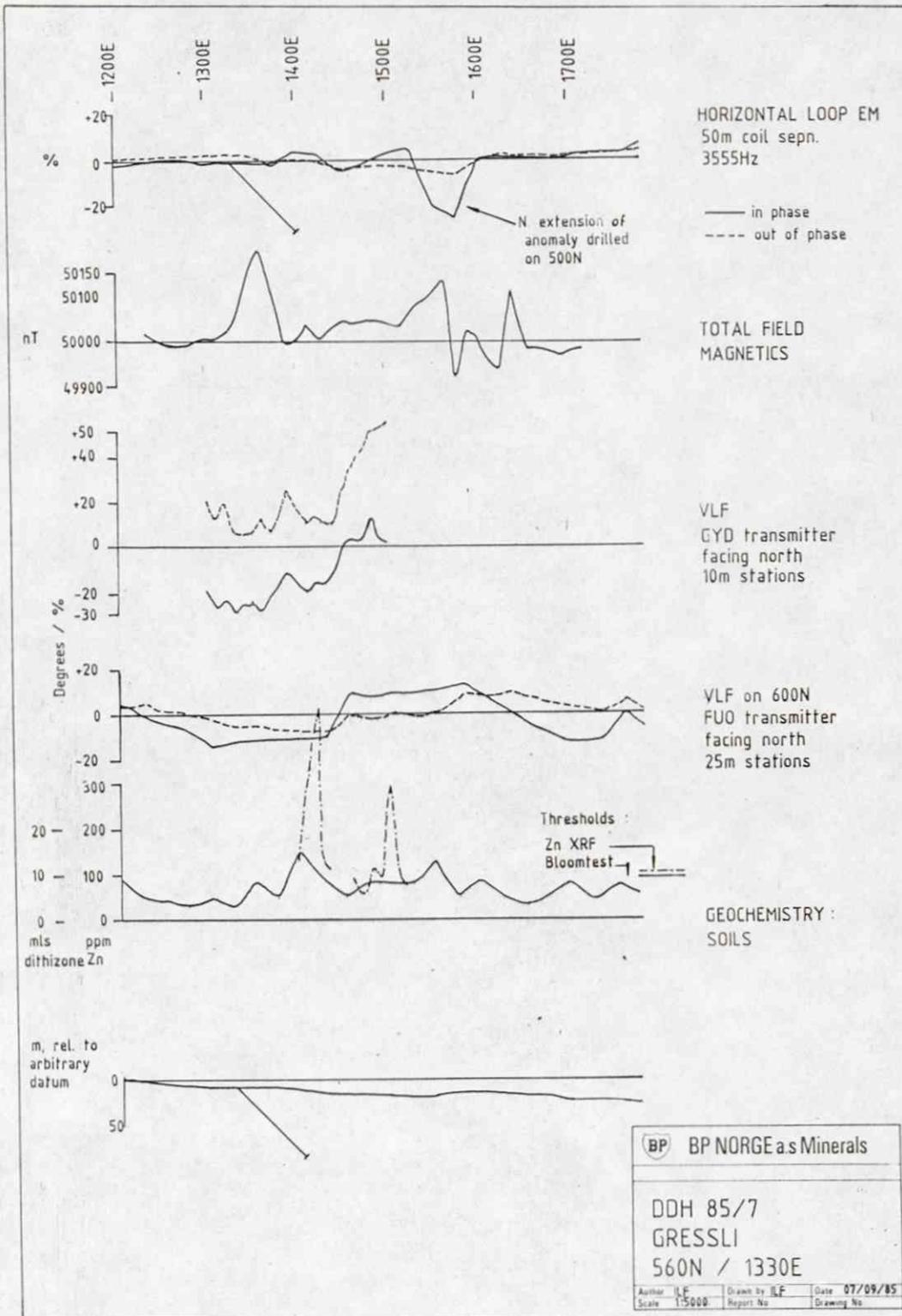
B O R E H O L E L O G		BP NORGE A.S. Minerals			
AREA: GRESSLI		HOLE NO: 85/2	DRILLED FROM: 16.09.85 TO: 18.09		
COLLAR COORD: 485N/1472E		DIRECTION: 090°	INCLINATION: 45°		
LENGTH: 115m		LOGGER: I. L. Ferriday	PAGE 2 OF 4		
DEPTH	LITHOLOGY	GEOL	MAG	FOLN	REMARKS
40			30		
40.60	F.banded amph (biot-chlor)sch with v. fine pyrr. impgn.		150		
	Fsp porph dyke 42.25-42.70		400		
43.55	Predom. f.-m. gr. intrusive with fsp laths - ?chilled marg to below.		200	20	
45			150		
48.50	Predom. dense fsp porph. intrusive.		75		
			50		
			45		
			50		
			40		
50	49.90 Mass. loc. f. banded amphibolite even v.f.gr. pyrr. impgn. in f. seams.		50		
			300		
			200		
	52.0 F.-m. gr. mass. amphibolite with f. fsp. laths (Prob. intrusive).		90		
			400		
55	53.25 Mass. amphib & pyrr imp. in more discrete bands as above		225		
	54.80 Mass amphib. Not banded.		100		
			100		
	56.35-58.10 Missing. (Not recovered).		-		
60			300		
			250	5-10	
			250		
	61.20 Amphibolite as above. More normal density impgn. in seams		150		
			150		
			200		
65	64.40 Mass. extrusive amph. with v.f gr. pyrr. dissem & minor seams.		250		
	66.70 Heavily biot. altd. amphib with pyrr impgn.		250		
			350		
	67.60 Intrusive of 'abnormal' type, strained fsp porphs of anhedral-'clotty' type + numerous v. fine ?stretched fsp laths.		200	30	
			80		
70	70.50 Rudimentary banded amphib. as prev. with mm-cm bands of sporadic pyrr. impgn. 1 band rich cpy.		65		
			80	20	
			75		
			80	10	
			90		



BOREHOLE LOG		BP NORGE A.S. Minerals			
AREA: GRESSLI		HOLE NO: 85/2	DRILLED FROM: 16.09.85 TO: 18.09		
COLLAR COORD: 485N/1472E		DIRECTION: 090°	INCLINATION: 45°		
LENGTH: 115m		LOGGER: I. L. Ferriday	PAGE 4 OF 4		
DEPTH	LITHOLOGY	GEOL	MAG	FOLN	REMARKS
110	109.3		200	0-5	
			90		
			85		
			90		
	113.5		80		
	114.2		65		
115	115.2				END

Analysed intersections:

- (1) 6.0-6.5: 0310TY1511
- (2) 6.5-6.7: 0310TY1512
- (3) 7.0-7.25: 0310TY1513
- (4) 7.25-7.5: 0310TY1514
- (5) 7.5-7.75: 0310TY1515
- (6) 7.75-8.00: 0310TY1516
- (7) 8.0-8.25: 0310TY1517
- (8) 8.25-8.5: 0310TY1518
- (9) 8.5-8.75: 0310TY1519
- (10) 8.75-9.0: 0310TY1520
- (11) 78.0-78.5: 0310TY1532
- (12) 78.5-79.0: 0310TY1533
- (13) 79.0-79.5: 0310TY1534
- (14) 79.5-80.0: 0310TY1535



1300E

1325E

1350E

1375E

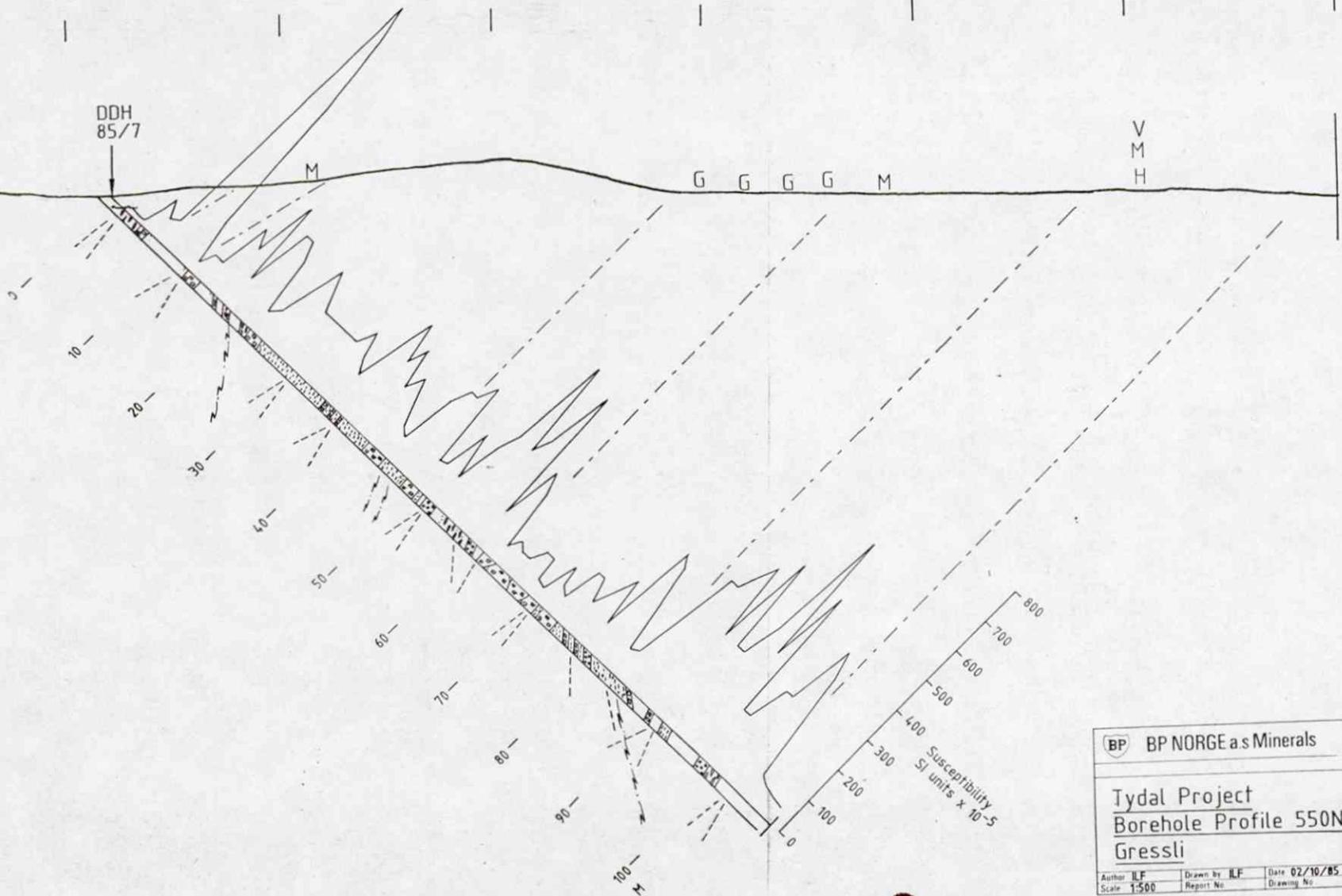
1400E

1425E

1450E

1475E

DDH  
85/7



BP BP NORGE a s Minerals

Tydal Project  
Borehole Profile 550N  
Gressli

Author ILF	Drawn by ILF	Date 02/10/85
Scale 1:500	Report No.	Drawing No.

## BOREHOLE LOG

BP NORGE A.S. Minerals

AREA: GRESSLI

HOLE NO: 85/7

DRILLED FROM: 23.09.85 TO:

COLLAR COORD: 560N/1330E

DIRECTION: 090°

INCLINATION: 45°

LENGTH: 108.5m

LOGGER: I. L. Ferriday

PAGE 1 OF 4

DEPTH	LITHOLOGY	GEOL/ SPLS	MAG SUSZ	FOLN	REMARKS
0	0-2m overburden.				
2.0	Fine lentic (clastic) textd. acid volcs: biot-qtz-(chlor-ep) schist.		15	8	
			15		
5			15		
	Fsp. porph. dyke 5.0-6.35m.		100		
			60		
			70		
8.20	F.gr. acid volcs, v.f. banding only v. sparse coarse (>0.5m) clasts. Qtz-rich (most acid lithol. yet drilled). Local silicification: acid tuffs-qtz-ser schists.		800		
10			700		
			500		
			140		
	Fsp. porph dyke 12.8-14.7		30	13	
	NB: high SUS: No vis. sulphs. ?magnetite.		70		00
15			70		
			200		
17.0	Less acid, appearance of minor garnet and increased		150		
	Increasing strain and inclusion of amphibolites at 17.55		300		0
	-18.60 & 19.4-19.85 ?biot. altd. & strained amphib. exts.		90		
			250		
19.85	Chlor-ser schist frac. zone & py-pyrr veins.		250	10-45	
20					
20.85	F.gr. chloritized amphibolite extrusive.		200		
21.60	Chlor-amph schist with amph. frags. (not recorded previously)		60		
22.70	Fsp. porph. dyke.		80		
25			150		
24.70	F.-m. gr. lentic chlor-ser schist and minor pyrr. on fracs. & in groundmass.		250		
			200		
			150		
30			150	10	
			150		
			150		
			150		

## BOREHOLE LOG

BP NORGE A.S. Minerals

AREA: GRESSLI

HOLE NO: 85/7

DRILLED FROM: 23.09.85 TO:

COLLAR COORD: 560N/1330E

DIRECTION: 090°

INCLINATION: 45°

LENGTH: 108.5m

LOGGER: I. L. Ferriday

PAGE 2 OF 4

DEPTH	LITHOLOGY	GEOL/ SPLS	MAG SUSZ	FOLN	REMARKS
35	35.25 Fsp. porph. dyke.		200		
	35.90 Chlor-ser schist as above, minor.		150	15	
	Fsp porph dykes 36.65-36.75, 37.80-38.20.		100		
			200		
			300		
40			200		
			250		
			150		
			200		
	42.60 Fsp. porph dyke, chilled margins.		150		
			80		
45			65		
	45.10 Chlor-ser schist as above but strongly sheared, strong pyrr- py impgn. & veins, particu- larly 48.50-48.75.		200		
			250		
			250		
	48.75 Fsp. porph dyke, of 'dense' type.		300		
50			70		
	50.84 Chlor-qtz-ser-(biot) schist & py-pyrr-(?sph) impgn.	1)	90		
	51.40 Qtz-(ser-biot) white acid, mass. (?mine quartzite)		200		
	52.00 Amphib. intrusive.		85		
55	53.65 Qtz-(chor-ser) schists with fragments and seams of the above with cherty lithology. Sporadic py-pyrr-(cpy-sph) weak impgn.	2) 3)	150	10	
			250		
	Agglom textured 55.50-55.75, chlor + cherty frags.		250	40	Peaks to 1000
			300		
	58.90 F.-m. gr. amphib. intrusive with fine fsp laths.		450		
60			90		
	60.30 Chlor. amphib. with minor seams biot/pyrr (cpy) impgn.		250		
	61.25 Fsp. porph. dyke		200	13	Peaks to 500
	62.30 ?Type fsp porph but with elon- gated-euhedral phenox.		45		Blue laths.
	63.20 Fsp. porph. of 'dense' type with chilled margins.		75		
65			60		

## BOREHOLE LOG

BP NORGE A.S. Minerals

AREA: GRESSLI HOLE NO: 85/7 DRILLED FROM: 23.09.85 TO:

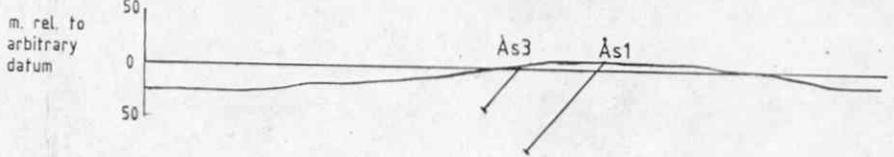
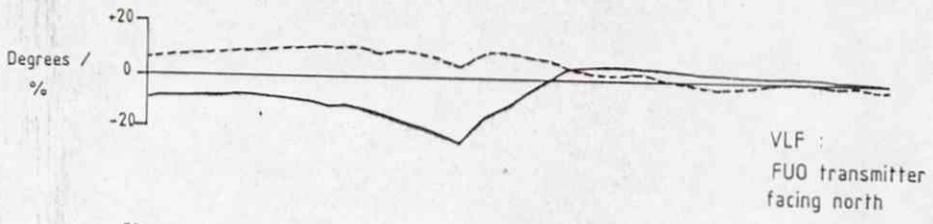
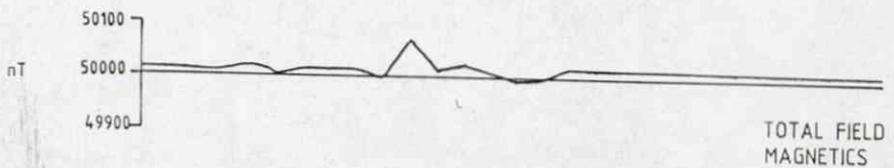
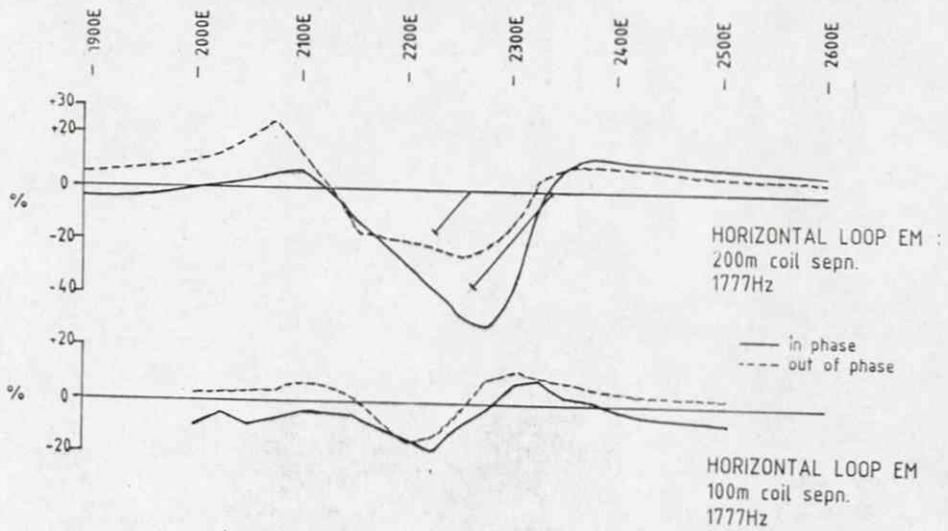
COLLAR COORD: 560N/1330E DIRECTION: 090° INCLINATION: 45°

LENGTH: 108.5m LOGGER: I. L. Ferriday PAGE 3 OF 4

DEPTH	LITHOLOGY	GEOL/ SPLS	MAG SUSZ	FOLN	REMARKS
65.95	Fsp. porph. of dense type with m. gr. margins with fine fsp laths.		60 100 100 40 35		
70			125	5-10	
70.50	Chlor. schists and minor pyrr.		70		
71.10	Fsp. porph intrusive grading to 'dense' type.				
73.45	Chlor. schist with biotite ric sections.		55 150		
75			150		
74.65	Fsp. porph intrusive.		90		
75.60	Chlor-amph schist		150		
76.50	F.-m. gr. amphib. intrusive.		200	45	
77.00	Chlor-amph schist and loc. minor py-pyrr veins.		80		
78.00	F.-m. gr. amphib. intrusive.		325		
79.15	Chlor (amph) schist and loc. minor py-pyrr veins.		300 200 70	60	
80	Strongly sericite and shearing - centre of frac. zone ~83.0 NB: Lower susc at focus of shear.		80 200 350		
85			350		Generally more massive lithols.
84.90	Fsp. porph. intrusive.		400		
85.70	Chlor-amph schist, more com- pact than previous.		450		
87.25	Chlor-ser-amph schist with py- pyrr veins - fracture zone.		250		Phenox highly extended
87.95	Mixed massive acid and chlor (biot) schist.		500		
88.70	Highly strained f.-m. gr. intrusive, few fsp phenox.		250	20	Rare pyrr.
89.50	Chlor-amphib and loc minor pyrr.		250 350 650 300		
91.10	Banded f.-m. gr. chlor. schist with clastic texture.				
92.50	Chlor. amphib, generally massive. Abundant f.gr. pyrr. in seams & fine veinlets generally sub-parallel to schistosity. Inc. content. of intermed & acid sections downward.				

BOREHOLE LOG		BP NORGE A.S. Minerals			
AREA: GRESSLI		HOLE NO: 85/7	DRILLED FROM: 23.09.85 TO:		
COLLAR COORD: 560N/1330E		DIRECTION: 090o	INCLINATION: 45o		
LENGTH: 108.5m		LOGGER: I. L. Ferriday	PAGE 4 OF 4		
DEPTH	LITHOLOGY	GEOL/ SPLS	MAG SUSZ	FOLN	REMARKS
96.95	M.-f. gr. amphib. intrusive.		500		Peaks to 2000
98.50	Acid (to cherty) sections in chlor. sch. Loc. v.fine seams pyrr (cpy).		150 150 250	10	
100.4	Massive dark grained amphib. Loc. minor pyrr. veinlets.		250		
			420 350 200 70 60 55		
108.5	END		50		

- 1) 1521: 50.5-51.0
- 2) 1522: 55.0-55.5
- 3) 1523: 55.5-56.0



**CONDUCTOR INTERPRETATION:**  
 Depth to top: 15m(100m coil sepn.)  
 20-30m(200m coil sepn.)  
 Conductivity-thickness: 7-9 Mhos  
 Thickness: 25m(444Hz)-<10m(1777Hz)

BP BP NORGE a.s Minerals		
DDH ÅS 1&2		
ÅS		
2700N: 2334E&2258E		
Author: J.L.F.	Drawn by: J.L.F.	Date: 07/09/85
Scale: 1:5000	Report No.	Drawing No.

2175E

2200E

2225E

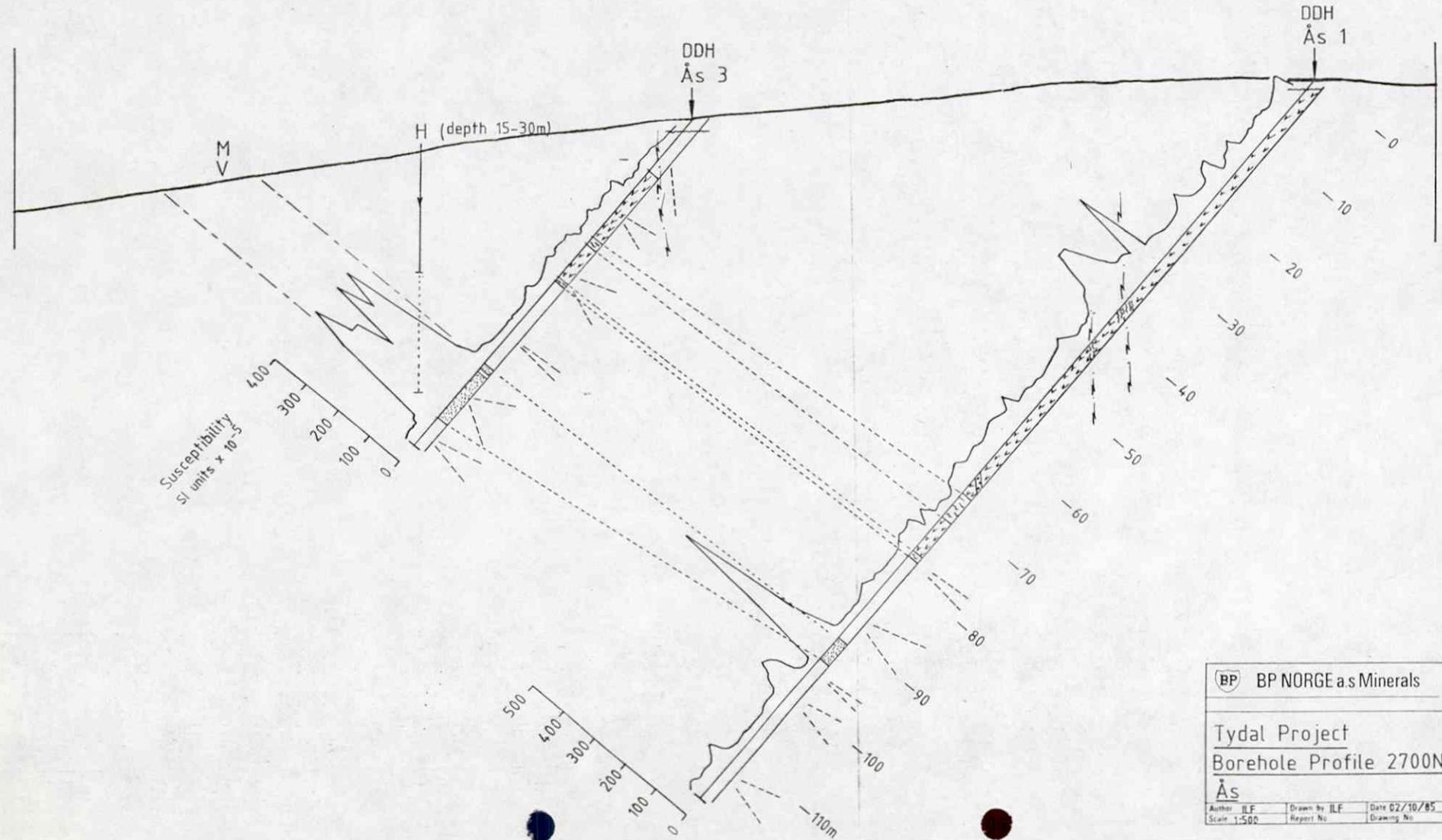
2250E

2275E

2300E

2325E

2350E



BP BP NORGE a.s Minerals		
Tydal Project		
Borehole Profile 2700N		
Ås		
Author: ILF	Drawn by: ILF	Date: 02/10/85
Scale: 1:500	Report No:	Drawing No:

## BOREHOLE LOG

BP NORGE A.S. Minerals

AREA: AS

HOLE NO: 1

DRILLED FROM: 20.08.85 TO: 23.08

COLLAR COORD: 2700N,2334E

DIRECTION: 270o

INCLINATION: 50o

LENGTH 117m

LOGGER: I. L. Ferriday

PAGE 1 OF 3

DEPTH	LITHOLOGY	GEOL/ SPLS	MAG SUSZ	FOLN	REMARKS
	0 - 1.8 Overburden				
	Metagabbro, med. to coarse		40		
	grained hblend and variable		80		Loc. highs to 200
	But genly minor epidote.		60		
5			50		
			40		
			45		
			50		
			45		
10			45		
			40		
			40		
			70		Loc. highs to 200
			50		
15			45		
	Increased sulphide content		30		? Fract. zone
	(cpy)+carb.		80		Loc. highs to 1-200
	Pyrr. on fract. surfaces.		75		
			40		
20			40		
			50		
	Weak pyrr. impgn.		80		Loc. highs to 1-200
			50		
	Qtz. carbt. veining + pyrr.		45		
25	(?sph) at 23.15		40		
			45		
			50		
			55		
30	Loc. pyrr. impgn.	(1)	55		
	Strong pyrr-(cpy) impgn.	(2)	250		Loc. highs to 400
	evenly distrib. in up to 2-3mm		70		
	clots.		80		
			80		
			100		Loc. highs 200
35	34.30 Start of zone of extreme de-		150		
	formation. Dip 45 to 0o most		200		
	deformed at 35.50. Abund.		200		
	biot. Underlain by strongly		100		
	foliated carbt. rich zone		80		
40	37.10 to 40.50.				
	Metagabbro contd.		50		
			40		
			40		
	Calcite-ankerite-biot veining		40		
45	42.10-43.10.		50		
			65		

B O R E H O L E L O G

BP NORGE A.S. Minerals

AREA: AS

HOLE NO: 1

DRILLED FROM: 20.08.85 TO: 23.08

COLLAR COORD: 2700N,2334E

DIRECTION: 270°

INCLINATION: 50°

LENGTH 117m

LOGGER: I. L. Ferriday

PAGE 2 OF 3

DEPTH	LITHOLOGY	GEOL/ SPLS	MAG SUSZ	FOLN	REMARKS
			50		
			50		
	Carbt. vein. 48.10-48.50.		45		
			40		
50			40		
			45		
			45		
			40		
55			80		Peaks to 100
			50		
			55		
			60		
60			55		
			45		
			45		
			50		
			45		
63.80	F. gr. amph., probably intru- sive w/ sharp contacts dipping		45		
65	64.80 45° to core axis. conts. f. gr. carbt. eyes underlain by c. gr. gabbro.		60		Gabbro cut by num. calcite-ankerite veins
			45		
	66.90 F.gr. chlor. ep., rel. massive ? metased.		45		?Hornfels contact zone
	67.30 Schistose variant of above w/ biot. & (chrome-mica) partings		20		
			20		
70	69.30 F. gr. chlor. rich massive. as at 66.90.		25		
			20		
	71.10 Metagabbro Qtz. v. at 72.25- 73.15. Qtz. veins cut at 45°		50		
			15		
			60		
75	75.00 40cm qtz. + ankerite v. at cont. of above w/amph. + fine carbt. eyes.		50		
			55		
	76.50 Trans. lith. to Stuedal schist		40		
	77.50 Stuedal schist.		25		
			25	5-10	Loc. peaks 400 w/v. f. pyrr. on fract.
80			25		
	Stuedal schist with garnets in dm thick zones.		25		Loc. peaks 150 due to above
			30		
			30	10	
			40		

BOREHOLE LOG		BP NORGE A.S. Minerals				
AREA: AS	HOLE NO: 1	DRILLED FROM: 20.08.85 TO: 23.08				
COLLAR COORD: 2700N,2334E		DIRECTION: 270o	INCLINATION: 50o			
LENGTH 117m	LOGGER: I. L. Ferriday	PAGE 3 OF 3				
DEPTH	LITHOLOGY	GEOL/ SPLS	MAG SUSZ	FOLN	REMARKS	
85	At approx. 85.50 transit to v. much incl. biot. cont (f.gr.) with dark brown colour to schist. Only rare garnet.		30			
			20			
			20			
				20	15	
90	Reverts to normal Stuedal schists. 89.10		20		Peaks to 700	
90.65	Dark Stuedal sch. without biot porphs. or garn., v.f.gr. pyrr. impgn evenly dist.		25			
			100			
			250			
			500			
95	94.10 Stuedal schist.		200	5		
			20			Peaks to 200
			15			
			25			
			75			
100			100			
			65			
			30			
			30	12		
			30			
105			20			
			20			
			20		Peaks to 100	
			20			
110			25			
			70			
			50			
	115 Stuedal schist with marcasite on fine fract. at a shallow angle to core axis.		35	15		
			35			
			35			
			40			
	117		30			
120						
	V					
	END					

Analysed intersections:

- (1) 29.0-29.5: 0310TY1524
- (2) 29.5-30.0: 0310TY1525

B O R E H O L E L O G		BP NORGE A.S. Minerals			
AREA: AS	HOLE NO: 3	DRILLED FROM: 26.08.85 TO: 27.08			
COLLAR COORD: 2680N/2258E		DIRECTION: 270°	INCLINATION: 50°		
LENGTH: 53m	LOGGER: I. L. Ferriday	PAGE 1 OF 2			
DEPTH	LITHOLOGY	GEOL/ SPLS	MAG	FOLN	REMARKS
5	0-2m Overburden Stuedal schist		20		
			20	20	
			25		
			30	45	
			30		
10	6.7-8.3 Fract. zone with qtz. veining.		30		
			30		
			25	15	
			20		
			25		
15	Loc. pyrr impgn. along fract.		25		
			55		
			40		
			40	17	
			35		
20	16.7 Amphib/f. gr. gabbro intrusive contact sharp, at ~90° to core axis. Coarse grained from 20.0.		50		
			35	0-5	
			35		
			30		
			50		
25	Stuedal schist. 0.5m contact hornfels zone.		45		
			50		
			45		
			50	20	
			40		
30	Qtz. veining 31.2-37.1		30	0-5	
			30		
			20		V. loc. peaks 100-200.
			20		
			20	5	

B O R E H O L E L O G		BP NORGE A.S. Minerals			
AREA: AS	HOLE NO: 3	DRILLED FROM: 26.08.85 TO: 27.08			
COLLAR COORD: 2680N/2258E		DIRECTION: 270°	INCLINATION: 50°		
LENGTH: 53m	LOGGER: I. L. Ferriday	PAGE 2 OF 2			
DEPTH	LITHOLOGY	GEOL	MAG	FOLN	REMARKS
35	Rapid transistion to garneti- ferous at 36.35		20 20 20 40 40 80	0	
40	39.60 Chlor. schist with f. gr. pyrr. impgn. 40.2-40.6. Biot. porph. Stuedal schist.	(1) (2)	250 400 300 400 200 300 300 400 300		Peaks to 700.
45			400 200 300 300 400	10 30 30	
50	48.5 Coarse grained Stuedal schist.		300 50 30 30	15	
	52.70 END.		25	10	
55					

Analysed intersections:

- (1) 41.0-41.5: 0310TV1526  
 (2) 41.5-42.0: 0310TV1527