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Råstofftype	Emneord	
Malm/metall	Cu, Au	

Sammendrag

BIP-project (Bidjovagge prospektering) vas based on the agrement between Norsulfid a.s., Bidjovagge Gruber and Outokumpu Finnmines OY and financed by Norsulfid a.s., Næringsdepartement and Finnmark fylke. The appointed time for the project was three years and started in 1991.

The main exploration target was the Mine Area, where there was drilled 102 drillholes, inn all 17 130m. Targets outside the Mine area were Cabardasjokka, Uccavuodas, Sukkesmaras, Hoallumaras, Jalgescårot, Riednjavri, Gæssemaras, Dæljadas and Area 57.

As a result of the exploration work in the Mine Area it is possible to present a geological in situ ore estimation:
Total resources are 778 000 tons with 1,5% Cu and 3,3 g/t Au (North Field, D- Laura-, Mini-, H-, and C-ores).

Outside of the Mine Area som marks of mineralizations have bin found in in the Cabardasjokka area (Uccavuodas, Sukkesmaras, Hoallumaras).

The mMine Area is still the most promising target to find new ore deposits in the Kautokeino Greenstone Belt. The problem for further investigations is that the most obvious places for new discoveries of ore deposits are the deeper part of the formation, which means deeper hole or underground drilling (higher costs).

outokumpu mining
FINNMINES

BIP-project 14.12.1993

BIDJOVAGGE-PROJECT

ACTIVITIES AND RESULTS 1991-93

Osmo Inkinen

Pertti Hakanen

Distr.

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Johann Heim
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Rauno Hugg

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1 INTRODUCTION

1.1 Commission of the project

BIP-project was based on the agreement between Norsulfid A/S/Bidjovagge Gruber and Outokumpu Finnmines Oy (both partners belonging to Outokumpu Mining Oy). The proposal for the first exploration program of BIP-project was made in May 1991 by Rauno Hugg and Osmo Inkinen.
A renewed exploration program for the year 1992 was made by Osmo Inkinen as well as the proposal for the exploration program for the year 1993.

1.2 Organization of the project

The management group of the project was composed of two representatives of Norsulfid A/S and Outokumpu Finnmines Oy and one representative of Finnmark Fylke.
The representatives of Norsulfid A/S have been Johann G. Heim (14.06.1991-), Torvald Östby (14.06.1991-Sept.1992) and Helge Tysland (Sept. 1992-).
The representatives of Outokumpu Finnmines Oy have been Juhani Nuutilainen (14.06.1991-16. 05.1992), Harry Rosenqvist (14.06.1991-) and Rauno Hugg (16.05.1992-).
As the representatives of Finnmark Fylke have been Sigmund Johnsen (15.10.1991-May 1993) and Harald Karlström (May 1993-).

The operator of the BIP-project has been Outokumpu Finnmines Oy/Exploration and the representative of the company in Norway has been Tuula Lahdenperä, who has also been the book-keeper for the project (TL-Regnskap in Alta).

Project group:
- Osmo Inkinen project manager/geologist,
- Leiv Nessvoll technical assistant,
- Risto Anttonen, geologist (15.8.-30.9.1991),
- Markus Ekberg, geologist (15.3.-15.6.1992),
- Henrik Ask, geologist (13.7.-9.12.1992),
- Kjell Nilsen, geologist (24.8.-26.9.1992) and
- Pertti Hakanen, geologist (1.3.1993-).

Consultants
- geology:
  Arne Björlykke, University of Oslo
- geophysics:
  Aimo Hattula, Outokumpu Finnmines Oy
- geochemistry:
  Erkki Ilvonen, Outokumpu Finnmines Oy

1.3
Works of contractors

Geophysical survey:
- NGU/Helicopter geophysical survey in Finnmark 1991 (NGU Rapport 91.256)
- SMOy/Slingram-magnetic measurements at Uccavuovdas, Kautokeino, August 1991 (SMOy report 9.9.91)
- SMOy/Slingram-magnetic profile measurements at Cabardasjokka and Riednjajavri, 1992 (SMOy report 9.4.1992)
- SMOy/Slingram-magnetic profile measurements at Cabardasjokka and Jalgescårot, 1993 (SMOy report 7.4.1993)

Geochemical survey:
- GSF/Geochemical survey at Cabardasjokka 1992 (GSF report 5.6.92)

Diamond drilling:
- Terje Holmen/1991/Uccavuovdas and Area57/ tot. 1293 m, 1992/Mining zone and Cabardasjokka/tot 9917 m and 1993/Mining zone and Hoallumaras-Jalgescårot/tot 8470 m.

Trenching:
- J. Penta/1991/Daelljadas and Gaessamaras.

Geology:
- NGU and UO/Interpretation of geodata for estimation of ore potential in KGB, Finnmark (NGU Rapport 92.255).
- UO/Prof. Arne Björlykke/1993/ Malmundersökelser i Bidjovagge og Kautokeino Grönnsteinsbelte- notat i forbindelse med avslutting av BIP-prosjektet (including a list of reports and publications handling Bidjovagge ore deposit and exploration on Finnmarksvidda)

Laboratories:
- Bidjovagge gruber A/S,1991/Au- and Cu-analyses
- Saattoporan Kaivos, Rautuvaara/OMF/Au- and Cu-analyses
- GAL/OMS/Au- and Cu-analyses/petrographical and mineralogical study of six samples from gold-copper exploration program in Bidjovagge area, Northern Norway

Evaluations:
- OMS/Preliminary evaluation of the Bidjovagge Au-Cu-deposit (10.11.1993)

1.4
Time table of the project

The appointed time for the project was three years which has been divided into two phases so that the phase one was finished at the end of the year 1992 and the phase two at the end of 1993. Exploration work in the project has done in following chronological order:

5/91
- Proposal for the exploration programme in the Bidjovagge area

7/91
- 1.Leading Group meeting at Rovaniemi

8/91
- Operator agreement
- Ordering the slingram-magnetic measurement to Uccavuovdas, the helicopterborne geophysical measurement to Cabardasjokka and Riednjajavri, the trenching work to Daelljadas and Gaessemaras and making the diamond drilling agreement with Terje Holmen.

9/91
- Slingram-magnetic measurement and diamond drilling at Uccavuovdas
- Helicopterborne geophysical measurements in Cabardasjokka and Rienjajavri
- Trenching and sampling at Daelljadas and Gaessemaras
- Geological meeting at Bidjovagge

10/91
- Diamond drilling at Area -57
- Leading Group meeting at Bidjovagge

11/91
- Re-drawing and revising the drilling profiles of the Mine Area

12/91
- Conclusion of the results and plans for 1992

1/92
- A renewed exploration program for the year 1992 in the Bidjovagge area
- The report of the results from helicopter geophysical measurements
- A consultation agreement with prof. A.Björlykke

2/92
- Leading Group meeting at Kautokeino
- Ordering an interpretation work over Kautokeino greenstone belt from NGU/UO
- Processing and interpreting of the EM data for choosing the exploration targets
- Preparations for diamond drilling at the Mine Area

3/92
- Ordering the geophysical profile measurements and geochemical deep till sampling
- Start of diamond drilling at the Mine Area

4/92
- Geophysical profile measurements at Cabardasjokka and Riednjajavri and deep till sampling at Cabardasjokka
- The consultation visit of A. Björlykke at Bidjovagge
- Diamond drilling goes on at the Mine Area

5/92
- The interpretation of the geophysical profiles
- Diamond drilling at the Mine Area

6/92
- Leading Group meeting at Kautokeino
- Preliminary report of the geological interpretation work of NGU/OU

- Diamond drilling at the Mine Area

7-8/92
- Diamond drilling at the Mine Area
- Planning for the drilling at Cabardasjokka

9/92
- Diamond drilling at the Mine Area and Cabardasjokka
- Receiving reports from NGU (Rapport 92.255) and prof.A. Björlykke (Notat om malmletning i Bidjovagge/Kautokeino)
- Leading Group meeting at Kautokeino

10/92
- Finishing of the diamond drilling and starting to concentrate the results for the report

11/92
- A consultation visit of prof. A. Björlykke
- receiving reports from OU and GAL
- Doing the report from phase one

12/92
- Leading Group meeting in Trondheim
- Presentation of the report from the phase one and the proposal of the exploration program for year 1993

1-2/93
- Planning and preparations for the exploration work
- Revising of the old drilling reports, analyses and maps

3/93
- Geophysical profile measurements at Cabardasjokka
- Start of drilling at Hoallumaras

4/93
- Diamond drillings at Cabardasjokka and the Mine Area
- Consultation visit of A.Björlykke
- Receiving the report from OU

5/93
- Diamond drillings at the Mine Area
- Information and discussion meeting at Bidjovagge

6-7/93
- Leading Group meeting at Bidjovagge
- The drilling goes on at the Mine Area
- A consultation visit of A.Björlykke and the presentation of the first LHC-analyses

8-9/93
- Last drillings at the Mine Area
- Receiving the report of hydrocarbonrich fluid inclusion made by OU
- Leading Group meeting at Bidjovagge

10-11/93
- A geological meeting in Alta
- The preliminary evaluation of the Bidjovagge Au-Cu-deposit, made by OMS
- Preparations for the end-report have started

12/93
- Presentation of the end-report to the Leading Group at Rovaniemi
- The end of the BIP-project

1.5 Costs of the project

After "TL-Regnskap" the total costs of the BIP-project from September-91 to December -93 have been 18.346.407 NOK, which are divided as:

Bidjovagge prosjekt - BIP Outokumpu Finnmines Oy

MALMLETING	KOSTNADER I FINLAND		KOSTNADER I NORGE	
GEOLOGI	509300:	443.392	509310:	440.094
GEOFYSIKK	509301:	1.503	509311:	0
GEOKJEMI	509302:		509312:	0
DIAMANTBORING:	509303:	298.482	509313:	0
BASER	509308:		509318:	0
FELLES	509309:	278.938	509319:	0
1993		1.022.315		440.094
1992		1.011.767		777.913
1991		333.527		82.957
TOT.		**2.367.609**		**1.300.964**

MALMLETING	ANDRE KOSTNADER BIP I NORGE	
GEOLOGI	509310:	96.906
GEOFYSIKK	509311:	71.152
GEOKJEMI	509312:	
DIAMANTBORING	509313:	4.231.960
BASER	509318:	
FELLES	509319:	202.848
LÖNN		310.135
REPRESENTASJON		11.900
TELEFON		4.417
REISEKOSTNADER		4.225
BILGODTGJÖRELSE		19.272
DIETT OPPG PL		30.240
SOSIALE KOSTN		752
BILUTGIFTER		34.195

SUM NOK		
	1993	5.018.002
	1992	5.510.428
	1991	2.481.768
	TOT	**13.010.198**

TOTAL SUM ALLE KOSTNADER	-93 u/fee	6.480.411
TOTAL SUM ALLE KOSTNADER	-91/92 u/fee	10.198.360
TOTAL FEE FAKTURERT	-91/92/93	1.667.636
SUM PROSJEKT BIP	**-91/92/93**	**18.346.407**

2 EXPLORATION TARGETS AND RESULTS

2.1 Targets outside of Mine area

The exploration targets in the Kautokeino greenstone belt are presented on the new geological map made by NGU/92 (app.1). The targets as Riednjajavri, Uccavuovdas, Daelljadas, Gaessemaras and Area-56 have been reported already in the phase one ("Bidjovagge-project/The activities and results of the phase one/1991-1992") and no any new investigations are done in those targets.

2.1.1 Sukkesmaras (CII)

During the phase one targets CI-CIV from helicopterborne geophysical measurement-area of Cabardasjokka were chosen for geophysical profile measurements and geochemical deep till sampling objects (app.2). Check-drilling of geophysical and geochemical anomalies at Sukkesmaras indicated marks of a thin mineralization (UV-19:1m breccia/Cu 2.46%, Au 1.65 g/t), but also that the measured area was too small. The enlarging of the measured area at 1993 gave a very clear slingram-anomaly east of the drilled area and it's still unchecked (app. 3).

2.1.2 Hoallumaras (CIII)

Five drill holes were drilled in order to check geophysical and geochemical anomalies, which were interpreted to situate in connection with local fault system (app. 4).
A thin mineralization in the albite felsite under the black schist (1.3m/Cu 4.84%, Au 2.98 g/t) was penetrated (drillhole HM-1, app. 5).

2.1.3 Jalgescårot (CIV)

The results of the deep till sampling pointed that the measured area also at Jalgescårot was too small. After enlarging of the profile measured area in 1993 two drill holes were drilled in local geophysical and geochemical anomalies (app. 3), but the results were no promising.

2.2 Targets in the Mine Area (including North and South Fields)

102 drill holes (17130 m) were drilled in the Mine Area and its surroundings. The distribution of the drill holes and their depths between the targets is shown in table 2.2.

The coordinates, lengths and other details of all the holes also those drilled outside the Mine Area are listed in appendix 6.
All the drill cores are stored at Bidjovagge.

The locations of the targets are seen in appendices 7, 8 and 9.

TABLE 2.2. DRILLING IN THE MINE AREA

target	number of holes	meters in total	average /hole
North Field	6	925	154
D-ore	27	6500	241
Laura	19	3570	188
South Field (incl. mini)	24	2046	85
North of B	3	473	158
Franciska	3	424	141
C-2	9	1010	112
H-tunnel (Hilde)	10	1929	193
Eva	1	253	253
	102	17130	168

2.2.1 North Field

Six holes (925 m) more were drilled at this previously known deposit in profiles x=2880...3040.
The mineralization lies 40-100 m below the surface.
Rather high gold values has been found in this part of the formation.
The deposit can be regarded to be quite well known and the possibilities to increase the ore reserves to be limited.
Vertical sections of the deposit are presented in appendix 10.

In situ Resource estimation for the North Field deposit

56 kton @ 1.6 1% Cu, 15.3 ppm Au, 7.7 ppm (red)

Cutoff: 2.5 Cu-eqv
Cu-eqv = 1*Cu % + 1*Au ppm.
Reduction: Au>25 ppm to Au=25 ppm.
Density: 2.85.

2.2.2 D- and D-west ores

27 holes (6500 m) were drilled in profiles x= -340 ... -600.

Now investigated D-ore body is a deeper continuation for the D-ore, which was previously mined at the surface. The D-ore body is divided into two separate lense systems, the D- and D-west-ore bodies.
Drilling restricted the northern continuation of the D-ore and showed that the mineralization continues to the south and to the depth.
The deepest parts of the D-ore so far known are 250 m below the surface.
The D-orebody is quite well known but anyway it may have deeper continuations more southwards.

D-west is mainly a few meters thick and it also seems to be divided into small lenses. It is located a few tens of meters west from the D-ore.
The D-west orebody is not so very well known, but it should be regarded as a possible resource.
It may have slight possibilities to have continuation northwards and also southwards.

The location of the D-orebodies is shown in appendices 7, 8 and 14.

Horizontal and crossing sections are shown in appendix 11.

In situ resource estimation for the D- and D-west ore bodies

555.5 kton @ 1.3 % Cu, 2.9 ppm Au 2.5 ppm Au (red)

Cutoff:	2 Cu-eqv
	Cu-eqv = 1*Cu % + 1*Au ppm.
Reduction:	Au >15 ppm to Au 15 ppm.
Densities:	Cu<1 % density = 2.7
	2.5 %>Cu>1 % density = 2.85
	Cu>2.5 % density = 3.0.

2.2.3
Laura-ore

19 holes (3570 m) were drilled between profiles x=-1740 and -2000.
The Laura ore body is a new significant discovery. It is mainly less than ten meters thick and a few tens of meters high and at least 100 meters long lens shaped deposit. Towards the south it is separated into two limbs and seems to have deeper continuations in that direction too. Laura ore body lies approximately 100 m below the surface. Its location is shown in appendices 8 and 14.

Horizontal and crossing sections are shown in appendix 12.

In situ resource estimation for the Laura ore body

98 kton @ 2.3 % Cu, 3.6 ppm Au 3.2 ppm Au (red)

Cutoff: 2 Cu-eqv
Cu-eqv = 1*Cu % + 1*Au ppm.
Reduction: Au >15 ppm to Au 15 ppm.
Densities: Cu<1 % density = 2.7
2.5 %>Cu>1 % density = 2.85
Cu>2.5 % density = 3.0.

2.2.4
South Field (incl. Mini-ore)

The South Field is an immediate continuation of the Laura ore field towards the south.

24 holes (2046 m) were drilled here between profiles x=-2230 and -4540.
The drilling objects in the South Field were selected mainly on the basis of geophysical interpretation (appendix 9) and results were in general encouraging.

The Mini deposit is very small, but it lies immediately beneath the 2-10 m thick soil overburden between profiles x=-3710 and -3770. The host rock of the mineralization is altered (albite-quartz) and in places very crushed and weathered diabase. The locations of the drill holes and the Mini deposit are shown in appendix 9.

In situ resource estimation for the Mini ore body

8 kton @ 2.3 % Cu, 1.1 ppm Au

Cutoff: 1.2 Cu-eqv
Cu-eqv = 1*Cu % + 1*Au ppm.
Density: 2.85.

2.2.5
Other objects

The locations of objects are given in appendix 8.

North of B

Two holes were drilled in profiles x=1500 and x=1850 after geophysical interpretation.
No clear solutions for the geophysical anomalies were found.
One hole was drilled in profile x=1120 in a zone which was found to contain hydrocarbon-rich fluid inclusions. A few meters thick mineralised zone with 1 % Cu was penetrated in this profile.

C-ores

Five holes (644 m) were drilled above C-2 ore in profiles x=-1320, -1340, -1400 and -1440 for checking its continuations closer to the surface. No continuations were found.
A small Cu-Au-mineralization was penetrated above C-3 ore in profile x=-1600.
It consists of two a few meters thick lenses, the western one of which is situated close to the surface and the eastern one may have deeper continuations towards C-3 and/or C-4 ore bodies. As high as 8 % Cu- and 22 ppm Au-values were analysed in this eastern mineralized zone (3.9 m/1.3 % Cu, 9.3 ppm Au).

In situ resource estimation for C-3/-1600 -lenses

5 kton @ 1.0 % Cu, 10.4 ppm Au 7.9 ppm Au (red)

Cutoff: 2 Cu-eqv
Cu-eqv = 1*Cu % + 1*Au ppm.
Reduction: Au >15 ppm to Au 15 ppm.
Densities: 2.85.

The ore resource estimations of the previously discovered C-4-ore body are presented on the table 2.3.1. Its approximate situation in seen in appendix 14.

Eva

Eastern and deeper continuation for the Eva-ore was checked with one drill hole in profile x=120. Only a few meters thick mineralization with more than 1 % Cu-value was penetrated. The penetration lies at least 100 m apart from the neares marks of the Eva-ore. There seems to be room enough for Eva to continue towards the depth.

Franciska

Three holes were drilled in profiles x=540 and x=580 in order to check the continuation of a small mineralization close to the F-pit.
No marks of continuation were found.

H-tunnel (Hilde-ore body)

Ten holes (1929 m) were drilled in profiles x=-760 ... -960 in order to check the continuation for a previously known mineralization below the H-tunnel and eastwards of it.
The northernmost holes (in prof. x=-760) come close to the southern parts of the continuations of the D- and D-west-ores. Slight penetrations made by these holes may represent continuations

of both D- and H-ores (appendix 14).
The southernmost holes (in prof. x=-960) are close to the northernmost lenses of the C-ores. The mineralizations penetrated here might coincide the C- and H-ores.

There can be found ore lenses containing almost only gold ore as well as lenses with only copper ore in connection with the H-ore. Also lenses containing both gold and copper can be found (appendix 13).

The ore resource estimations of the ore bodies drilled earlier from the H-tunnel are presented on the table 2.3.1.

2.3 Estimations

2.3.1 Geological in situ ore estimation

Some of the ore reserve estimations presented here have been done during the phase one and also earlier. A few additional estimations were done after the drillings 1993.
Various limits in cut off values as well as in Au reduction have been used depending on local conditions. The density values have depended on the copper content of the ore in the way as is seen in descriptions of the various ore types earlier in this report.

The results of the estimations are presented in table 2.3.1.

TABLE 2.3.1 IN SITU ORE ESTIMATIONS

Target	Kilo-tons	Cu %	Au ppm	Au ppm/red	cut off Cu+Au
North Field	56	1.6	15.3	7.7	2.5
D-orebody	556	1.3	3.0	2.5	2.0
Laura	98	2.3	3.7	3.2	2.0
Mini	8	2.3	1.1	1.0	1.2
C-3/-1600 ore lenses	5	1.0	10.4	7.9	2.0
C-4	16	2.1	5.2	4.7	2.5
H-tunnel	39	1.8	2.4	2.4	2.0
Total resources	778	1.5	4.0	3.3	

2.3.2
Technical and economical evaluations

Technical and economical evaluations in order to find out the possibilities to reopen the Bidjovagge Mine was made by Outokumpu Mining Services Oy on the basis of the above mentioned in situ ore reserve estimations (Preliminary Evaluation of the Bidjovagge Au-Cu-deposit. Outokumpu Mining services Oy. Report 10.11.1993).
The amount of ore used in this technical and economical evaluation report is 802 kton instead of 778 kton, which is the total resource amount in the table shown above.
The differences between the amounts of tons in various estimations are due to differences between the ore blocks usen in the calculations. Also there has been differences in the densities. The densities used in the in situ estimations have depended on the Cu-values as mentioned. In the technical and economical evaluations the only density value used has been 2.85.

2.4.
Conclusions

The Bidjovagge ore field as a whole is situated in a sequence of black schists, carbonates, tuffites, diabases and more or less albitized and metamorphosed and altered variations of these. This rock sequence is cut by a few hundred meters wide and several kilometers long network of shear zones.
Ore bearing hydrothermal fluids have found their paths in this network. In more details these ore forming stages as well as other geologigal stages are described in report written by prof. Arne Björlykke (Malmundersökelser i Bidjovagge og Kautokeino - en vurdering av mulighetene. Oslo 25/11-93).

Because of the unregular structure of the network the location and the shape of the ore bodies also is unregular.
Ore lenses may therefore be rather difficult to trace and connect to each others. Even between two thick penetrations not very far from each others may not be found any connection. On the other hand close to a drill hole without almost any ore there may be found rather rich and thick penetration.

The North Field deposit is regarded to be rather well known. Anyway there might be slight possibilities to find continuations for the discovered ore lense in the nearest profiles towards north and south.

The D-ore body and its continuation to the south and to the depth has been and will be the most promising object.
To some extent copper and gold seem to form ore zones together or separately also in the D-ore. There are copper-ore-zones almost totally without gold and gold-ore-zones without copper as was described in connection with the H-ore.
This may be due to the various stages of the influence of the ore bearing fluids, which was described in the previously mentioned report of prof. Arne Björlykke.
Anyway most commonly there seems to be ore-zones with both copper and gold.
Gold content seems to be higher at higher depths.
The D-orebody is the biggest orebody in Bidjovagge - including the mined parts of it its tonnage would be almost 600 kton.

The D-west-ore is rather thin and it is divided into several small lenses. Anyway it might have some possibilities to have deeper continuation northwards and somewhat better possibilities to continue southwards from the profile x=-500.

The Laura ore body is a significant new discovery in the Mine Area. The possibilities of increasing ore reserves here however are rather restricted. On the eastern side of the Laura mineralization there is a crush zone in black schist. It has been difficult to penetrate this zone with a drilling machine.

In the **South Field** has been discovered the small **Mini ore body** and some weak Cu-Au-mineralisations close to or in connection with fracture zones. The Mini orebody is situated between profiles x= -3710 ... -3770. In addition in profile x=-2740 there is rather high graded Au-mineralization. This mineralization seems to situate in connection with a shear zone going through the footwall diabase.

Results on objects **North of B**, **Franciska**, **C-2** and **H-tunnel** have not been encouraging. Drillings done above **C-3-ore** have given promising results quite close to the surface.
The eastern and deeper continuations of **Eva-ore** remained open.

3 Recommendations for the further activities

3.1 Targets outside the Mine Area

In the reports of prof. Arne Björlykke ("Malmunder

sökelse i Bidjovagge og Kautokeino Grönsteinsbelte..") and NGU/Rapport 92.255 ("Vurdering av malmpotensialet etter samtolkning av geodata..") there are fine ideas and concrete targets for further exploration. The results of BIP-project exploration indicated marks of Au- Cu- mineralization in Cabardasjokka area at Sukkesmara and Huollumaras as well as in Uccavuovdas. It's good to remember that the best anomalies at Sukkesmaras, Uccavuovdas South and Jalgescårot are uncheched .The methods as deep till sampling, trenching and drilling are suitable to test the ore potentiale of those targets. Also helicopterborne geophysical measurements together with profile SL-M- measurements and well done interpretation is good method to make the structural picture more clear on the area from West anticline to the Mine Areas N-side as well as at Suovrarappat, which were mentioned in those repports. The theoretical starting point of exploration in those areas as well as in Masi area is an epigenetic model of gold ores.

3.2 Mine Area

D-orebody
There are lots of drillings done in the vicinity of the D-ore bodies. Anyway there seems to be some slight possibilities to find continuations for the lenses in the depth for instance in profiles x=-460, -480, -500, -520, -600 and -620. Investigation requires drillings to the level as deep as z=-400, that means drill holes deeper than 250 m.
It has been found to be difficult to drill succesfully through the chrushed black schist zone east of the D-ore. Therefore it would be better to use the opposite direction, drilling from west to east.

D-west
ore body seems to have its best possibilities to continue to the depth in profile x=-340 on level z=-450. Room for continuations might be found also in profile x=-460 on the level z=-600, less than 100 m beneath the surface.

South Field
There might be possibilities to find continuations for the gold-bearing zones in and around the profile x=-2740 as well as around the **Mini-ore**.

Other objects
The southern continuations of the **Laura-ore** should be checked with few holes if possible. There also are difficult crush zones especially on the eastern side of the deposit. They have

restricted drillings done from that direction.
Next drillings should be done from the opposite direction, that is from west to east.
The continuations of the **Eva-ore** also would be worth of checking.

ABSTRACT

BIP-project was based on the agreement between Norsulfid A/S/Bidjovagge Gruber and Outokumpu Finnmines Oy and financed by Norsulfid A/S, Näringsdepartement and Finnmark Fylke.
The management group was composed of two representatives from both partowners and one from Finnmark Fylke. The operator for the project was Outokumpu Finnmines Oy/Exploration, which has used best specialists as consultants and useful contractors in the prospecting work.
The appointed time for the project was three years and it started 1991. The first phase ended 1992 and the second phase on the end of 1993.

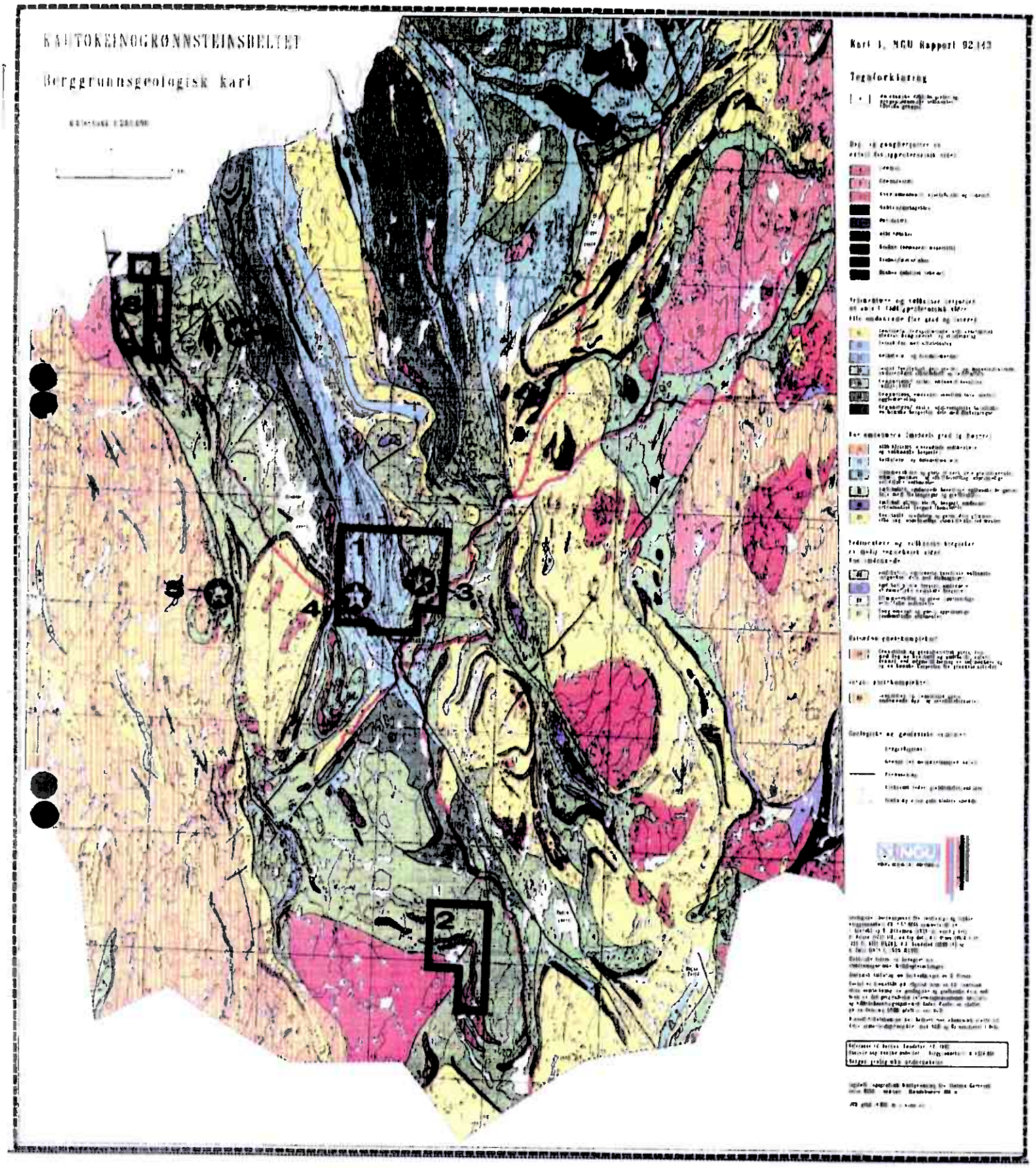
The main exploration target was the Mine Area (including South and North Field), where was drilled 102 drill holes, in all 17 130 meters. Targets outside the Mine Area were Cabardasjåkka (with Uccavuovdas, Sukkesmaras, Hoallumaras and Jalgescårot), Riednjajarvi, Gaessemaras, Daelljadas and Area 57. Of them Cabardasjåkka and Riednjajarvi were objects for regional helicopter geophysical measurements by NGU.

As a result of the exploration work in the Mine Area it is possible to present a geological in situ ore estimation: total resources are 778 000 tons with Cu 1.5 % and Au (red) 3.3 g/t (North Field, D-, Laura-, Mini-, H- and C-ores). Outside of the Mine Area some marks of mineralizations have been found in the Cabardasjåkka area (Uccavuovdas, Sukkesmaras and Hoallumaras).

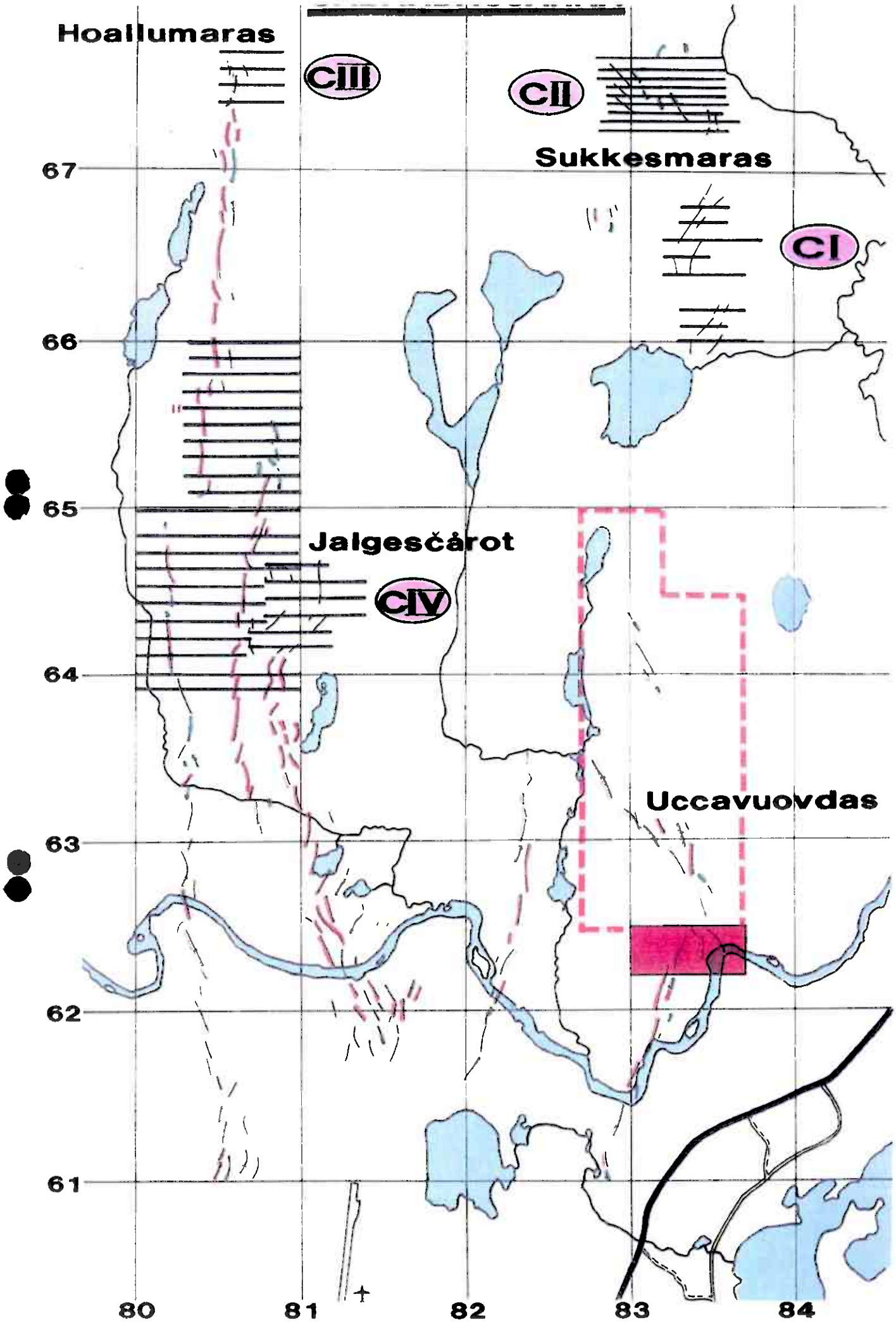
The Mine Area is still the most promising target to find new ore deposits in the Kautokeino Greenstone Belt. The problem for further investigations is that the most obvious places for new discoveries of ore deposits are the deeper parts of the formation, which means deeper holes or underground drilling (higher costs). This makes the use of indirect exploration methods (for example light hydrocarbons) notable. On the other hand the modern model of Bidjovagge ore body and ore forming prosses is ready to use in West Anticline or other analogical places.

APPENDICES

EXPLORATION TARGETS



1.CABARDASJOKKA
2.RIEDNJAJAVRI
3.UCCA–VUOVDAŠ
4.GÆSSEMARAS
5.DÆL'LJADAS
6.AREA 57
7.NORTH FIELD
8.MINE AREA
9.SOUTH FIELD


Hoallumaras
CIII
CII
Sukkesmaras
CI
67
66
65
Jalgesčárot
CIV
64
Uccavuovdas
63
62
61
80
81
82
83
84

7668

HM-2
HM-3
HM-4,-1
HM-5

C III

C II

UV-20
UV-18
UV-19

C I

JAL-2

7665

C IV

JAL-1

REPORT OF PHASE 1/1991-92

BIP Project
CABARDASJÅKKA
1:20 000

SUMMARY OF GROUND EM INTERPRETATION

conductive / zones conductivity
high
medium
low

Base line

7661

580 000

585 000

D:\DS\CABAR02.DRW 25.11.1993 AH/RAT

App. 3

KAUTOKEINO
Cabardasjåkka III
Slingram interpretation

Cu ppm

Au ppb

drill hole

X 68.0

X 67.5

661 482 663 21.4

HM–2

410 446 813

HM–3

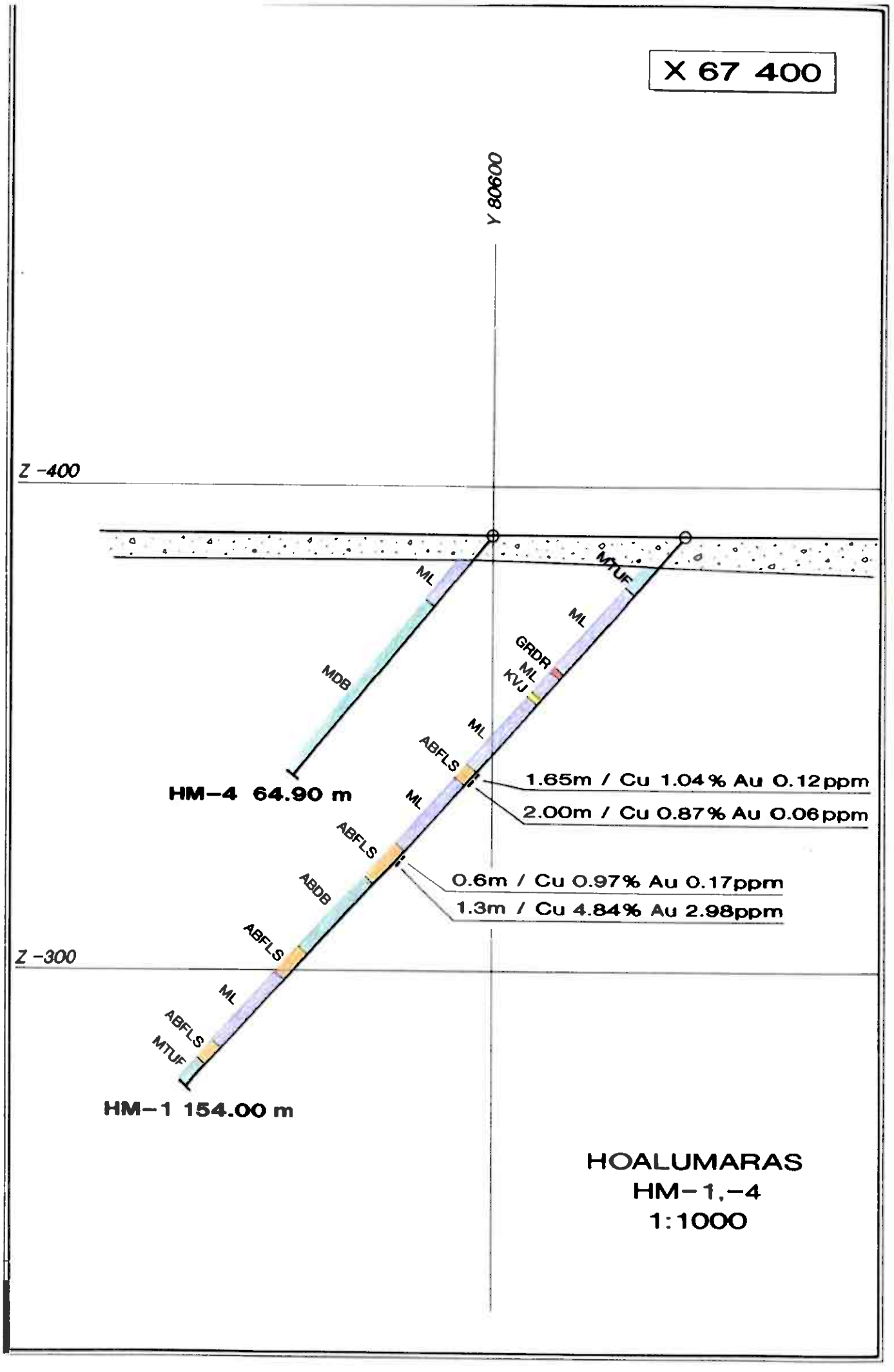
6360 460

HM–4 HM–1

HM–5

Y 80.5

Y 81.0


X 67 400
Y 80600
Z -400
Z -300
ML
MTUF
ML
GRDR
ML
KVJ
ML
ABFLS
ML
ABFLS
ABDB
ABFLS
ML
ABFLS
MTUF
MDB
HM-4 64.90 m
HM-1 154.00 m
1.65m / Cu 1.04% Au 0.12ppm
2.00m / Cu 0.87% Au 0.06ppm
0.6m / Cu 0.97% Au 0.17ppm
1.3m / Cu 4.84% Au 2.98ppm
HOALUMARAS
HM-1,-4
1:1000

BIP-PROJECT
DIAMANTBORRING 1992

LIST OF DRILLHOLES

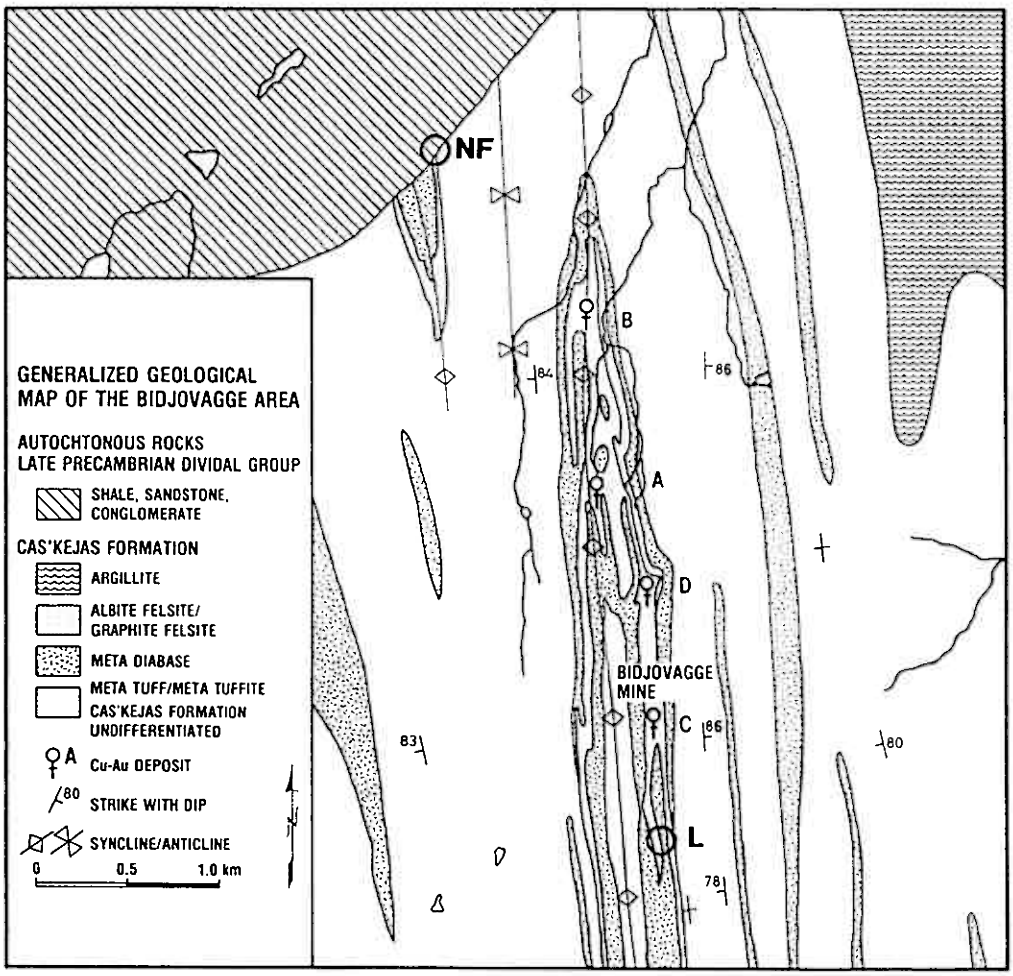
Hål	N/X	Ö/Y	Z	Retn	Fallv	Längd	Månad	Analysnummer			Inmatning			
											Ba	An	Dip	Koord
S440	- 439.90	650.12	-672.91	90	45.4	220.3	3	21001	-	21048	x	x	x	x
S52 I	- 520.26	777.90	-669.00	270	69.9	162.0	3	21049	-	21073	x	x	x	x
S54 D	- 540.02	940.87	-668.63	270	49.6	160.0	4	21074	-	21093	x	x	x	x
S60 C	- 600.18	870.88	-669.62	270	48.9	111.5	4	21094	-	21107	x	x	x	x
S92 F	- 915.34	1004.51	-687.81	270	62.5	230.3	4	21108	-	21142	x	x	x	x
S96 E	- 959.67	997.71	-687.63	270	57.6	220.5	4	21143	-	21161	x	x	x	x
S90 G	- 898.4	1000.01	-689.24	270	51.3	231.8	5	21162	-	21208	x	x	x	x
S90 E2	- 899.37	950.54	-681.04	270	50.0	177.0	5	21209	-	21236	x	x	x	x
S140 G	-1400.00	915.00	-694 ?	270	45.3	142.5	5	21237	-	21255	x	x	x	
S134 F	-1338.16	986.80	-700.32	270	54.1	139.9	5	21256	-	21294	x	x	x	x
S134 G	-1340.15	831.60	-700.63	90	58.5	133.3	5	21295	-	21305	x	x	x	x
S132 N	-1320.32	946.35	-695.71	270	54.3	111.8	5	21306	-	21311	x	x	x	x
S144 N	-1440.00	925.00	-700.00	270	40.9	117.6 ?	5	21312	-	21316	x	x	x	
S186 B	-1859.75	1064.25	-723.88	270	57.1	202.3	6	21317	-	21363	x	x	x	x
S186 C	-1860.00	1065.00	-730.00	270	67.9	226.0	6	21364	-	21402	x	x	x	
S190 F	-1900.19	1068.33	-724.86	270	68.4	197.7	6	21403	-	21438	x	x	x	x
S190 G	-1900.12	1069.08	-725.11	270	56.5	178.6	6	21439	-	21466	x	x	x	x
S184 C	-1839.88	1059.02	-723.06	270	61.4	166.6	6	21467	-	21490	x	x	x	x
S178 D	-1779.90	1048.70	-720.30	270	61.2	178.0	6	21491	-	21502	x	x	x	x
S190 H	-1900.15	920.77	-721.83	90	49.7	181.5	6	21503	-	21539	x	x	x	x
S192 C	-1920.00	940.00	720.00?	90	56.4	178.9	6	21540	-	21575	x	x	x	
N54 C	540.00	635.00	-620.00	270	49.9	121.0	7	21576	-	21596	x	x	x	
N56 F	560.00	660.00	-623.00 ?	270	48.5	148.0	7	21597	-	21623	x	x	x	
N58 G	580.00	677.00	-621.00	270	46.2	154.9	7	21624	-	21641	x	x	x	
S54 E	- 539.41	999.07	-670.18	270	65.4	269.5	7	21642	-	21684	x	x	x	x
S376 A	-3760.05	1202.13	-641.33	90	70.4	87.0	7	21685	-	21704	x	x	x	x
S196 A	-1960.42	904.00	-726.48	90	52.1	219.3	7	21706	-	21739	x	x	x	x
S192 D	-1919.87	900.36	-724.99	90	56.1	210.0	7	21740	-	21778	x	x	x	x
S184 D	-1840.14	1035.70	-721.03	270	59.9	161.2	8	21779	-	21832	x	x	x	x
N296 D	2959.44	- 435.15	-587.03	270	69.3	111.0	8	21833	-	21862	x	x	x	x
N302 D	-3019.06	- 431.20	-586.80	270	71.3	145.0	8	21863	-	21890	x	x	x	x
S376 B	-3760.05	1202.13	-641.33	90	50.0	65.6	8	21891	-	21913	x	x	N/A	x
N304 D	3038.98	- 450.84	-587.03	270	74	126.2	8	21914	-	21937	x	x	x	x
S374 C	-3740.09	1210.93	-641.54	90	48	50.7	8	21938	-	21959	x	x	N/A	x
S374 B	-3740.09	1224.00	-640.20	90	49	41.2	8	21960	-	21976	x	x	N/A	x
N304 E	3039.30	- 401.16	-586.15	270	75	205.3	8	21977	-	22014	x	x	x	x
S380 B	-3800.04	1228.83	-638.14	90	54	61.8	8	22015	-	22029	x	x	N/A	x
S380 C	-3800.13	1216.88	-639.00	90	66	65.2	8	22030	-	22041	x	x	N/A	x
N292 C	2919.18	- 381.13	-586.44	270	65	172.1	8	22042	-	22056	x	x	x	x
S240 B	-2400.00	699.24	-721.05	270	50	126.5	8	22058	-	22062	x	x		x
S240 C	-2399.63	575.67	-733.38	90	50.5	104.6	8	22063	-	22067	x	x	x	x
N288 C	2879.94	- 380.03	-586.22	270	68	165.6	9	22068	-	22079	x	x	x	x
S245 A	-2449.63	550.35	-736.44	90	43.7	122.0	9	22080	-	22085	x	x	x	x
S265 A	-2649.53	989.57	-720.91	270	50.6	93.8	9	22086	-	22088	x	x	x	x
S274 B	-2742.88	1130.47	-718.10	270	50.9	132.9	9	22089	-	22094	x	x	x	x
S340 A	-3399.76	671.25	-648.02	90	50	84.5	9	22095	-	22098	x	x	x	x
S 36 E	- 360.07	869.20	-668.76	270	75.7	270.0	9	22099	-	22150	x	x	x	x
S360 B	-3650.35?	720.14	-648.99	90	51	66.5	9	22151	-	22152	x	x	x	x
S32 A	- 319.73	899.98	-669.61	270	59.3	248.1	9	22153	-	22191	x	x	x	x
S424 A	-4240.08	1400.65	-590.95	270	50	96.8	9	22192	-	22194	x	x	x	x
S424 B	-4239.81	1530.56	-581.18	270	50	84.7	9	22195	-	22208	x	x	x	x
S274 B					OMANALYS			22209	-	22214	x	x	N/A	N/A
N296 D					OMANALYS			22215	-	22217	x	x	N/A	N/A
S454 A	-4540.12	1600.28	-539.18	270	50	85.5	9	22218	-	22239	x	x	x	x
S32 B	- 319.73	899.98	-669.61	270	70.3	292.8	9	22240	-	22292	x	x	x	x
S274 A	-2742.19	1081.27	-712.02	270	49.7	93.0	9	22294	-	22305	x	x	x	x
S200C	-2000.00	1084.00	-730.00	270	61.6	194.8	9	22306	-	22337	x	x	x	
S54 F	- 540.03	940.85	-668.58	270	66.1	186.0	9	22338	-	22380	x	x	x	x
UV16	64.700	82.955		270	50	103.6	9	22381	-	22403	N/A	N/A	N/A	N/A
S4A	- 40.55	792.56	-649.82	270	49.7	89.8	10	22404	-	22413	x	x	x	x
UV15	67.200	83.530		270	50	72.0	10	22414	-	22425	N/A	N/A	N/A	N/A
N185A	1850.00	800.00	-600.00	270	50	169.4	10	22426	-	22434	x	x	x	
UV14	62.500	83.530		270	50	112.2	10	22435	-	22450	N/A	N/A	N/A	N/A
S4B	- 40.55	792.56	-649.82	270	36.5	51.0	10	22451	-	22455	x	x	x	x
UV19	67.350	82.970	?	90	60	118.3	10	22456	-	22486	N/A	N/A	N/A	N/A
N150B	1500.00	540.00	-600.00	270	45	127.7	10	22487	-	22500	x	x	x	
UV15						OMANALYS	10	22501	-					
UV17	66.200	83.550		270	50	76.0	10	22567	-	22568				
UV20	67.550	82.910		90	60	127.2	10	22502	-	22515				
S580	- 580.00	1000.00	-690.00	270	65	236.0	10	22516	-	22561	x	x		
UV18	67.35	82.970		90	60	99.5	10	22562	-	22566				

Total 9917.3 m

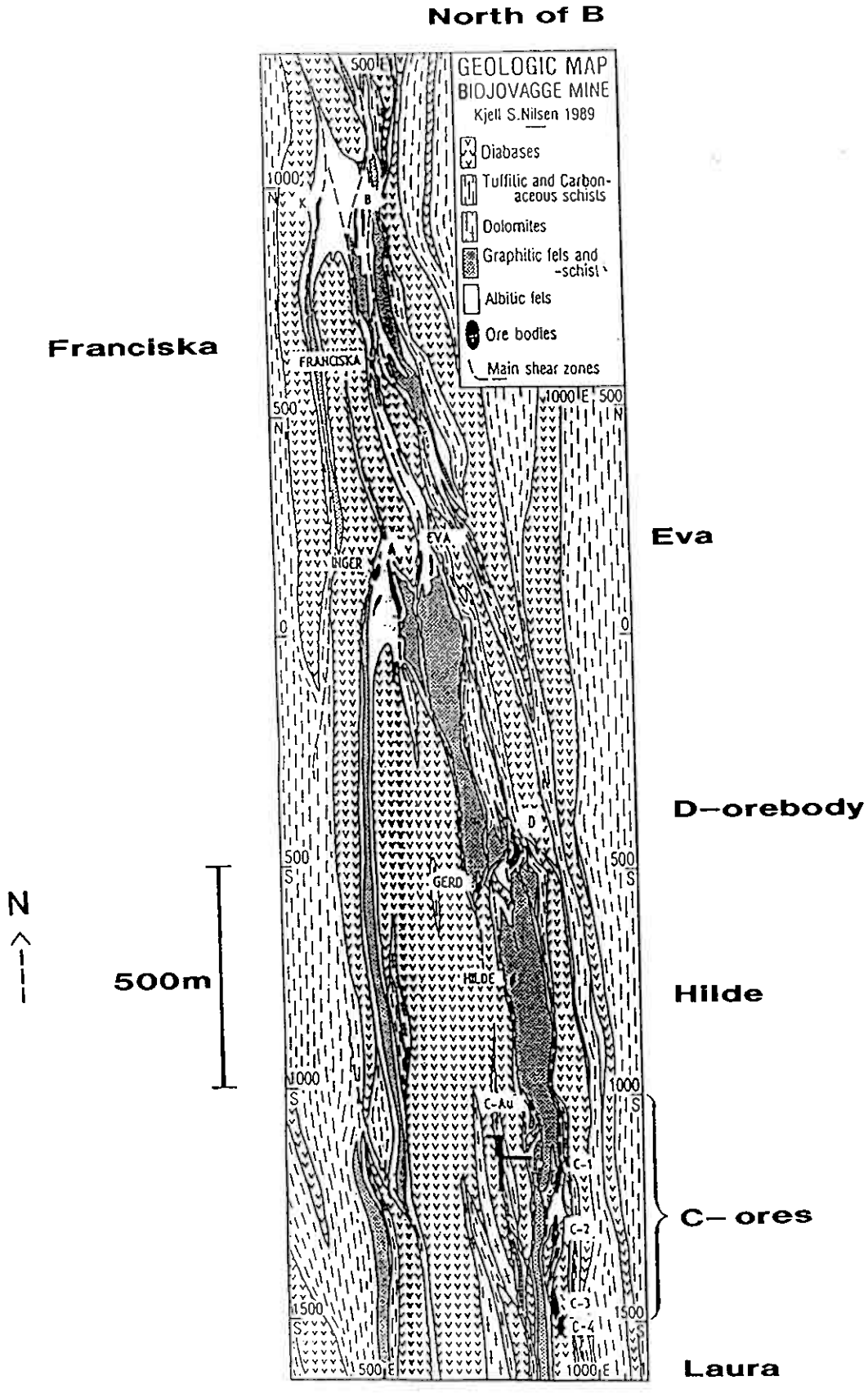
BIP–PROJECT
DIAMANTBORRING 1993

LIST OF DRILLHOLES

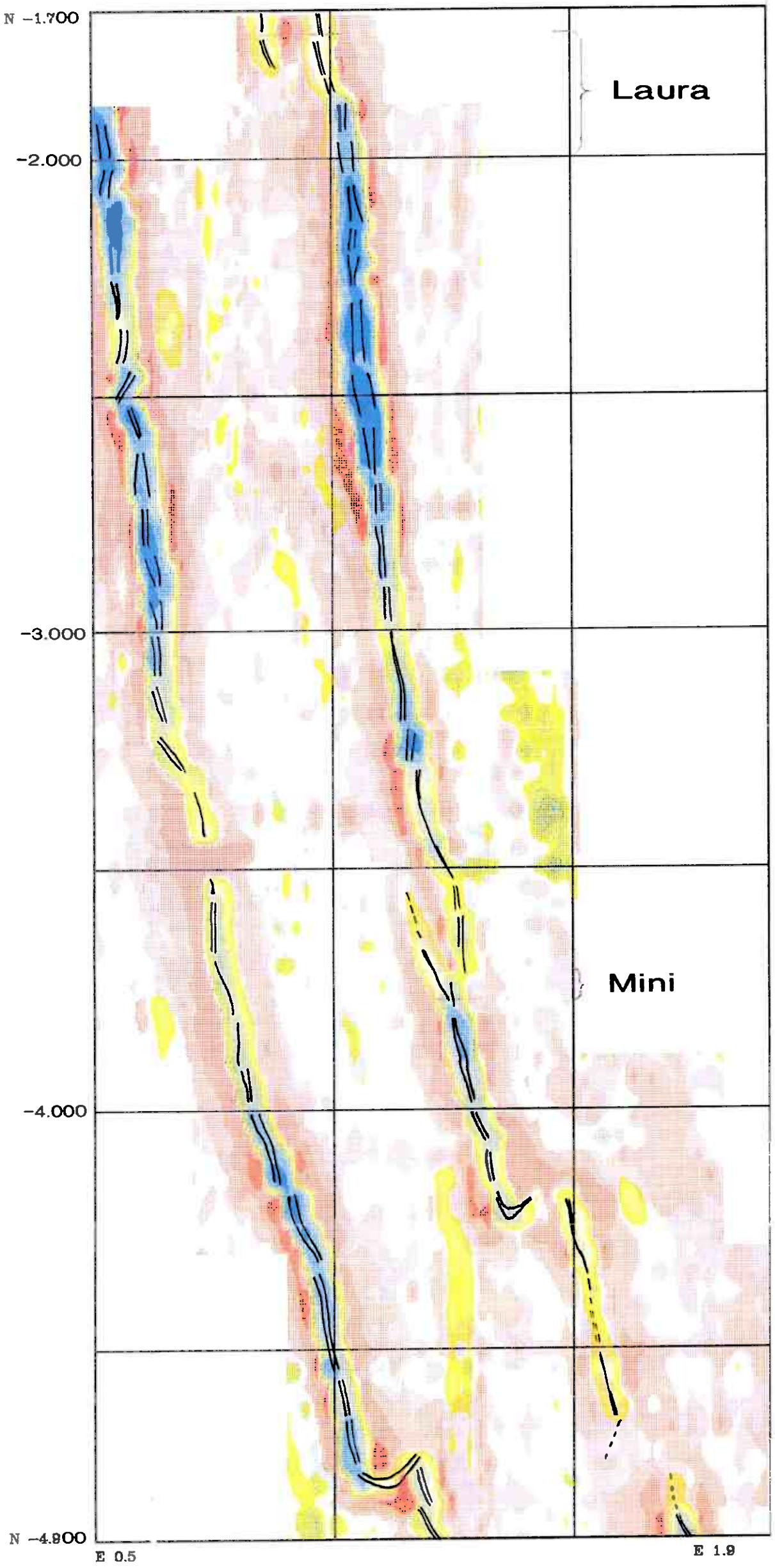
Hull	x	y	z	Retn	Fallv	Längd	Månad	Analysnummer 93	Inmatning Ba	An	Dip	Koord
R–S56E	–560.320	1015.620	–675.035	270	64.2	300.30	4	19124 - 19159	x	x	x	x
R–S56F	–560.000	985.560	–669.852	270	66.1	254.30	4	19174 - 19197	x	x	x	x
R–S58E	–579.820	781.160	–671.164	90	61.7	297.00	5	19198 - 19277	x	x	x	x
R–S34A	–340.000	701.000	–668.863	270	55.0	253.50	5	19373 - 19448	x	x	x	x
R–S60D	–599.400	970.730	–670.325	270	70.4	286.00	5	19278 - 19372	x	x	x	x
R–S34B	–340.000	901.000	–668.863	270	70,9	237.00	5	19852 - 19869	x	x	x	x
								19476 - 19500	x	x	x	x
R–S46J	–460.240	799.840	–668.467	270	79.2	184.80	5	19501 - 19542	x	x	x	x
R–S50J	–500.350	799.540	–668.950	270	69.0	186.20	5	19543 - 19566	x	x	x	x
R–S76E	–760.570	870.120	–677.226	270	65.2	149.00	5	19449 - 19475	x	x	x	x
R–S84F	–840.100	923.770	–679.073	270	50.2	152.00	5	19567 - 19602	x	x	x	x
R–S92G	–920.620	923,920	–680.943	270	50.0	135.70	5	19603 - 19642	x	x	x	x
R–S96F	–959.960	900.580	–686.547	270	64.9	154.20	6	19643 - 19677	x	x	x	x
R–S50K	–500.110	1007.810	–669.809	270	66.1	300.00	6	19757 - 19804	x	x	x	x
R–S54G	–540.090	1038.940	–677.394	270	60.0	317.30	6	19678 - 19726	x	x	x	x
R–S94A	–940.230	999.220	–688.056	270	60.0	216.50	6	19727 - 19756	x	x	x	x
R–S90H	–900.150	–724.920	–689.541	90	50.8	262.00	6	19805 - 19851	x	x	x	x
R–S188C	–1880.170	1080.130	–728.20	270	53.0	186.50	7	20380 - 20420	x	x	x	x
R–S196B	–1960.020	1100.040	–731.119	270	60.0	148.70	8	20548 - 20559	x	x	x	x
R–N112A	+1120.17	624.34	–605.881	270	55.0	176.20	8	20440 - 20474	x	x	x	x
R–N12P	+119.48	855.38	–647.23	270	55.0	253.00	8	20475 - 20520	x	x	x	x
R–S46K	–460.000	959.170	–668.12	270	70.0	114.50	8	20521 - 20528	x	x	x	x
R–S158C	–1579.75	919.32	–698.93	270	50.0	62.10	8	20529 - 20541	x	x	x	x
R–S162A	–1620.09	919.44	–700.944	270	50.0	50.20	8	20542 - 20547	x	x	x	x
R–S34D	–339.69	849.41	–668.05	270	50.0	181.00	8/9	20560 - 20586	x	x	x	x
R–S32D	–319.50	824.79	–668.16	270	58.0	187.00	9	20589 - 20620	x	x	x	x
R–S60E	–600.17	1009.95	–675.991	270	70.0	339.00	9	20621 - 20684	x	x	x	x
R–S190J	–1900.00	900.00	–725.000	90	58.0	235.30	9	20685 - 20735	x	x	x	
R–S32C	–320.130	920.080	–668.264	270	71.0	329.80	6	19933 - 19986	x	x	x	x
R–S150D	–1500.120	980.490	–703.019	270	61.0	139.20	6	19870 - 19916	x	x	x	x
R–S160D	–1599.960	920.090	–700.012	270	61.0	113.10	6	19917 - 19918	x	x	x	x
								19920 - 19932	x	x	x	x
R–S174B	1739.890	1025.290	–714.832	270	50.0	156.30	6	19987 - 20034	x	x	x	x
R–S34C	339.920	875.200	–669.367	270	53.0	235.00	6	20035 - 20096	x	x	x	x
R–S174C	–1739.570	899.560	–709.084	270	50.0	116.00	7	20097 - 20122	x	x	x	x
R–S56G	–560.630	1040.140	–678.242	270	65.0	341.60	7	20153 - 20241	x	x	x	x
R–S246A	–2458.980	1088.570	–738.201	270	50.0	53.00	7	20421 - 20425	x	x	x	x
R–S265B	2650.980	1108.950	–732.129	270	50.0	101.50	7	20123 - 20152	x	x	x	x
R–S290A	–2894.330	1148.920	–688.607	270	50.0	85.70	7	20242 - 20266	x	x	x	x
R–S304A	–3039.150	1170.460	–673.837	270	50.0	97.90	7	20267 - 20297	x	x	x	x
R–S186D	–1869.690	1139.930	–731.520	270	55.0	209.20	7	20426 - 20439	x	x		x
R–S330A	–3300.00	1210.00	–622.78	270	50.0	83.20	7	20330 - 20346	x	x	x	x
R–S338A	–3380.00	1210.00	–456.69	270	50.0	50.40		20347 - 20356	x	x	x	x
R–S188B	–1880.170	1080.130	–728.20	270	60.0	222.80	7	20288 - 20329	x	x	x	x
R–S223A	–2230.00	1080.00	–735.1?	270	50.0	112.00	7	20357 - 20379	x	x	x	x
HM–1	67.400	80.640	–390	270	49.3	154.00	3	19001 - 19022	x	x	x	
HM–2	67.600	80.630	–390	270	50.2	105.50	4	19023 - 19044	x	x	x	
HM–3	67.500	80.650	–390	270	50.1	146.40	4	19045 - 19089	x	x	x	
JAL–2	65.600	80.860	–390	270	50.9	102.70	4	19090 - 19123	x	x	x	
JAL–1	64.050	80.940	–390	270	49.4	149.30	4	19165 - 19167	x	x	x	
HM–4	67.400	80.600	–390	270	50.0	64.90	4	19168 - 19173	x	x	icke mätt	
HM–5	67.350	80.600	–390	270	50.0	65.30	4	19160 - 19164	x	x	icke mätt	
					TOTAL	8854.10						



Geological map of the Bidjovagge area. (From *Bjørlykke* et al., 1987) + NF- AND L-ORES



Simplified geological map of the Bidjovagge area



BIP - PROJECT
SYDFELT

Interpretation of
ground EM data

CONDUCTORS

location //

conductivity

high

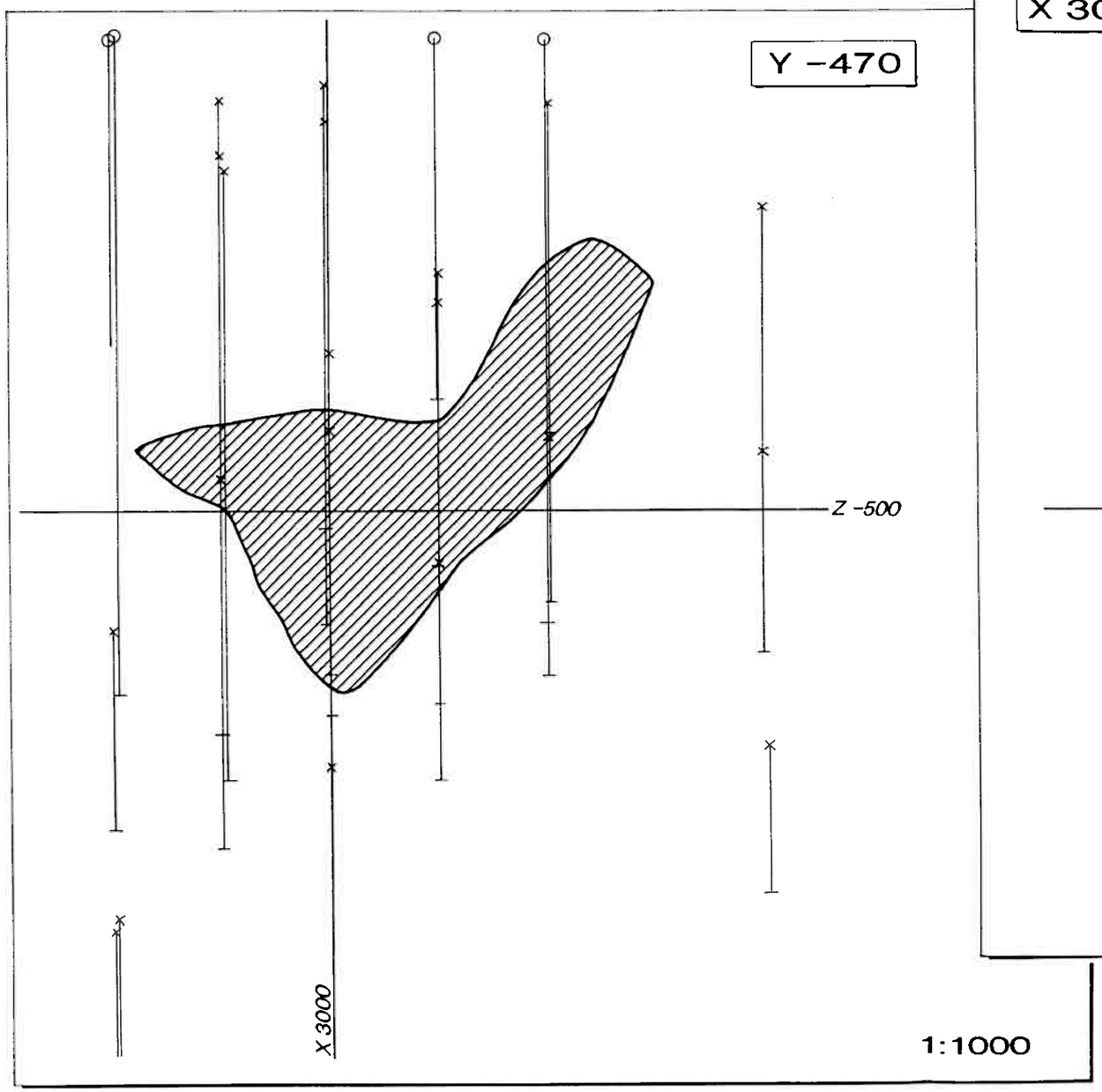
medium

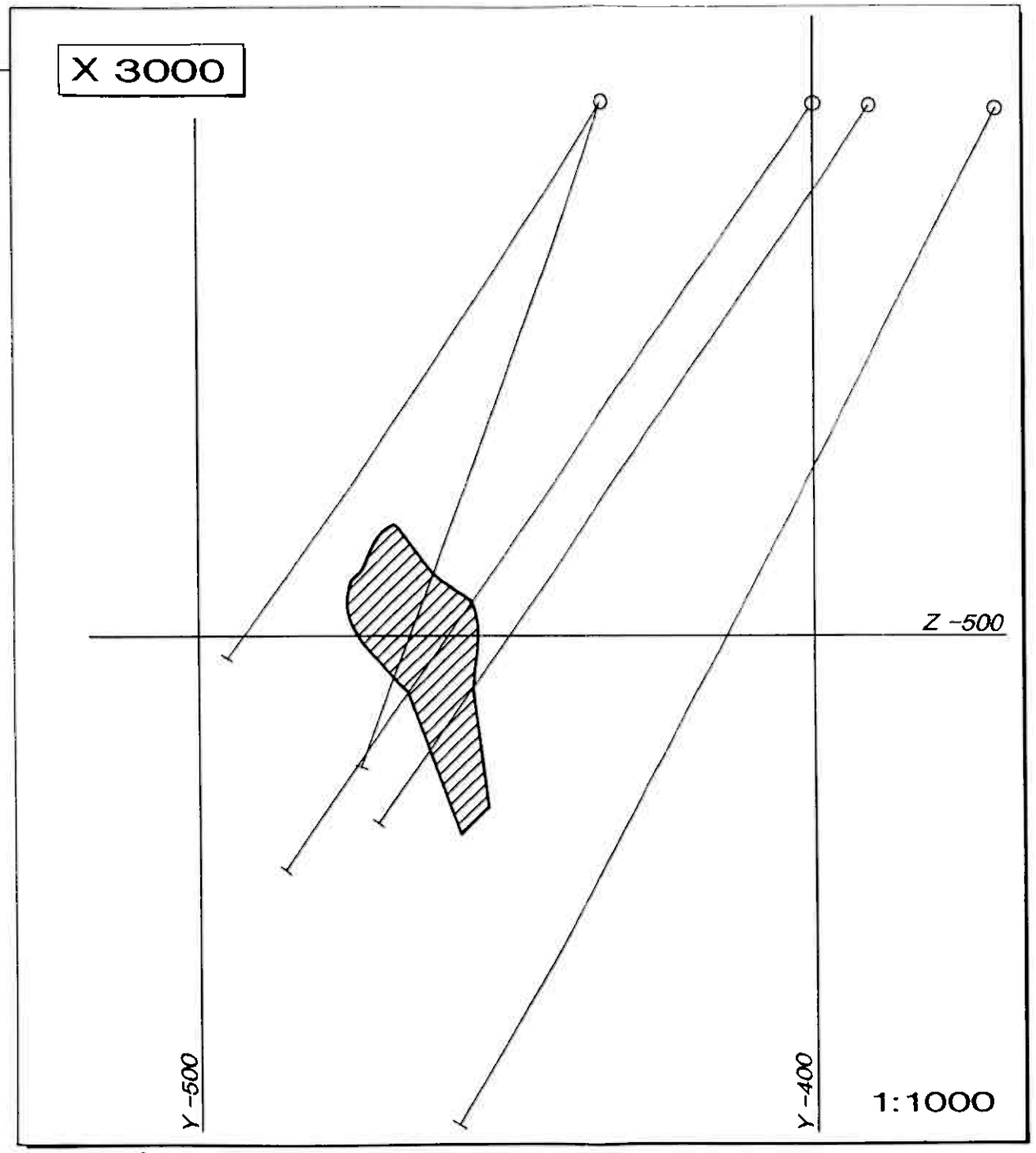
low

0 0.5km

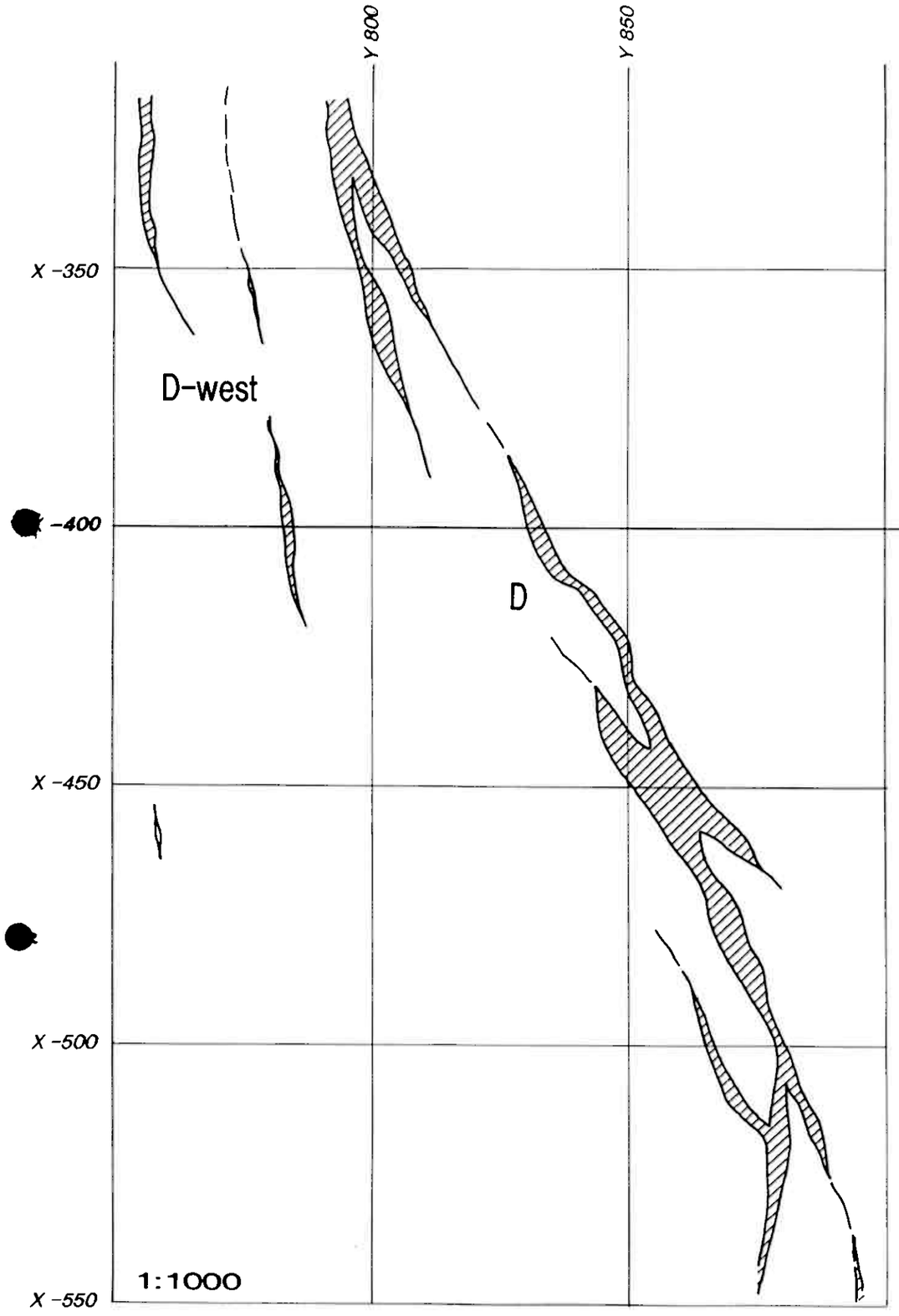
Fig. 9

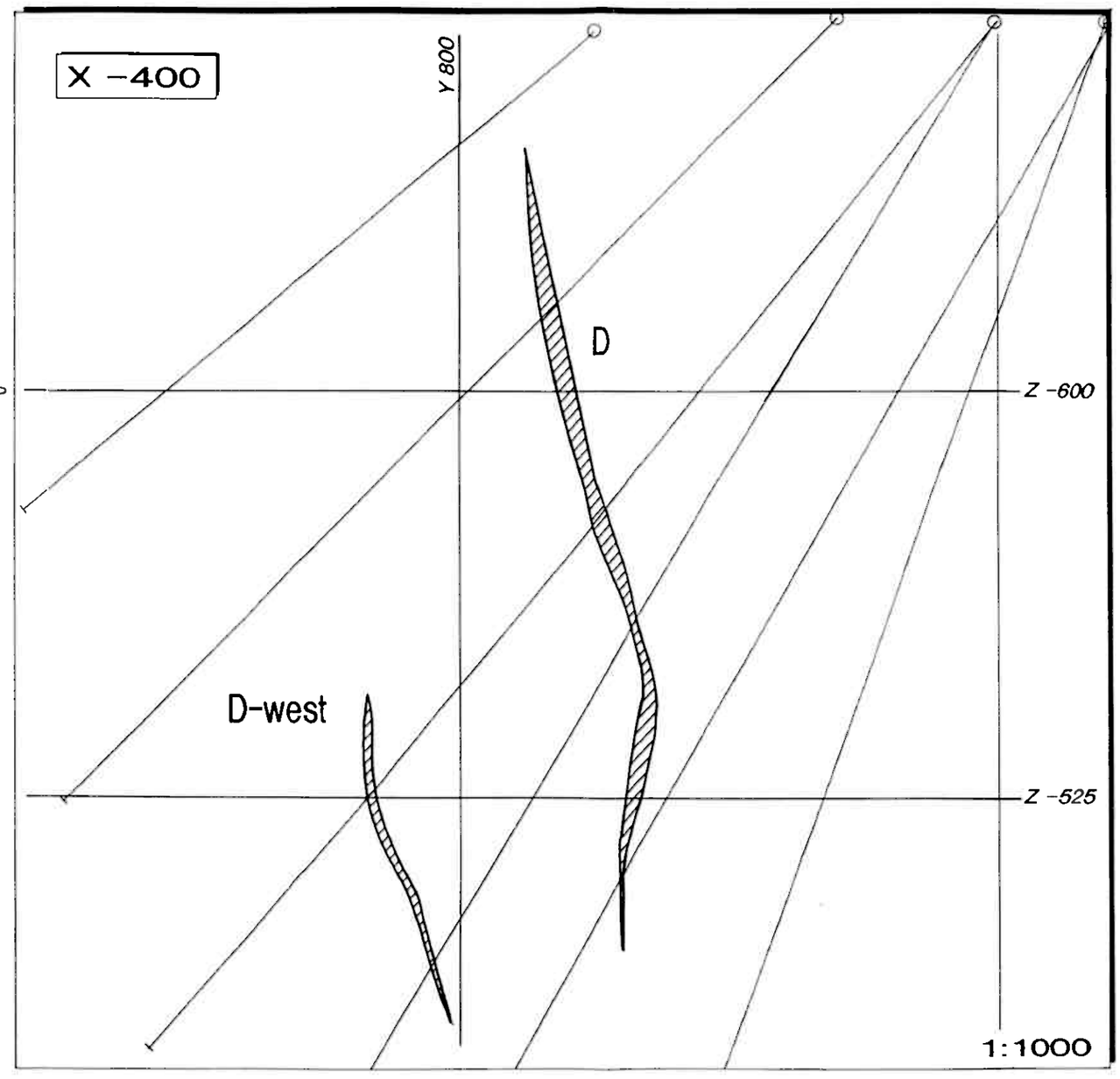
A longitudinal and a cross section of the North Field ore body

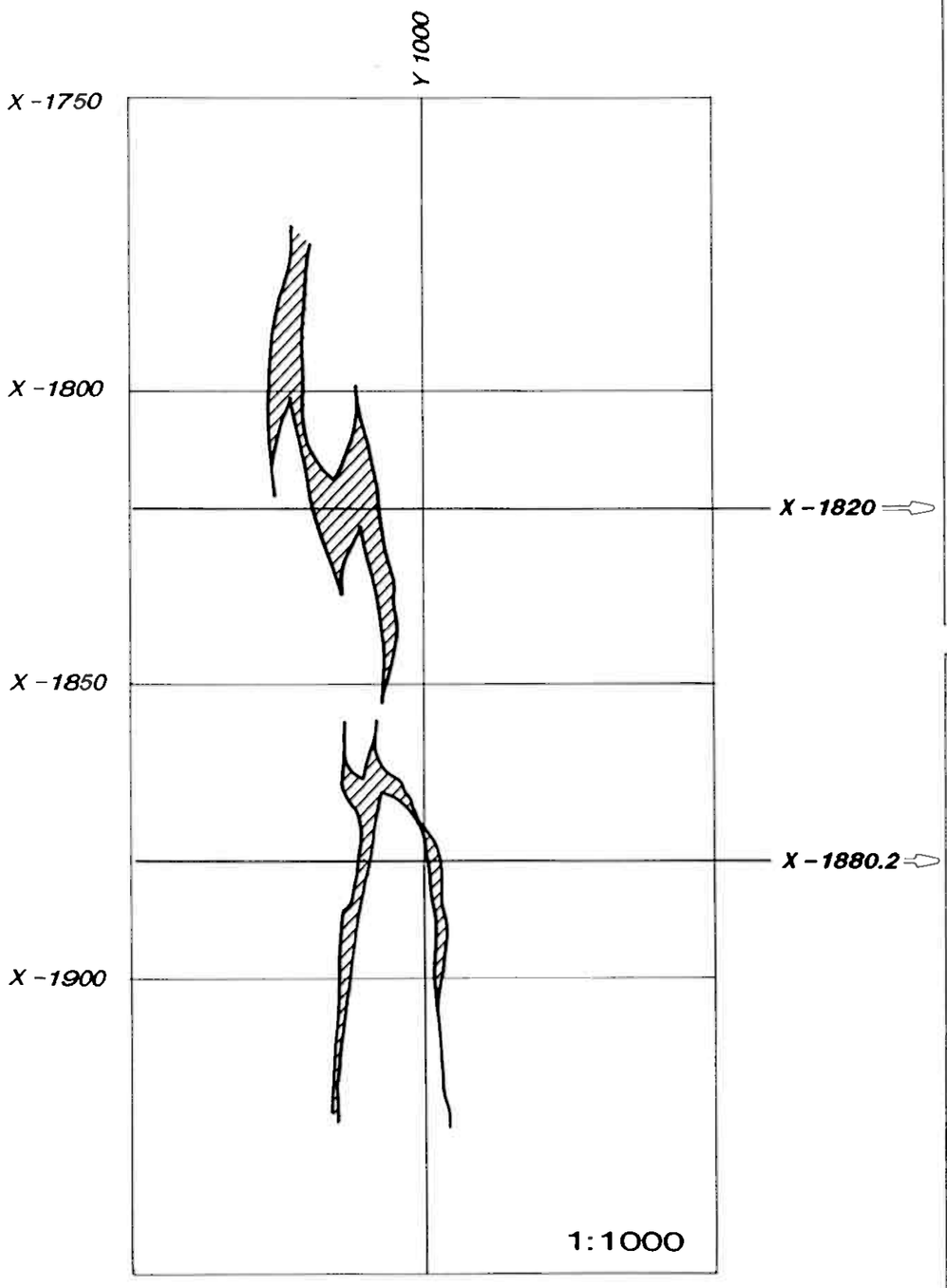


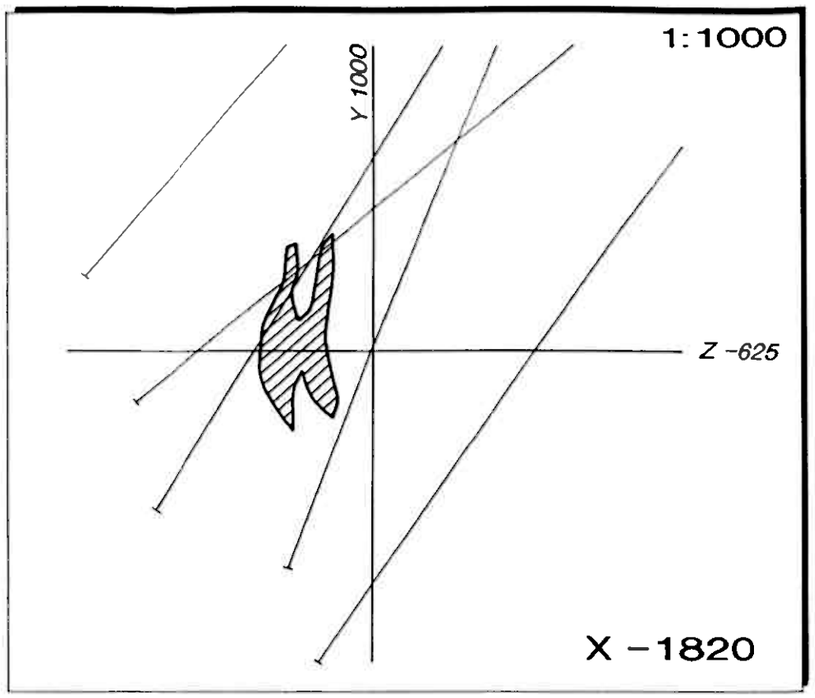


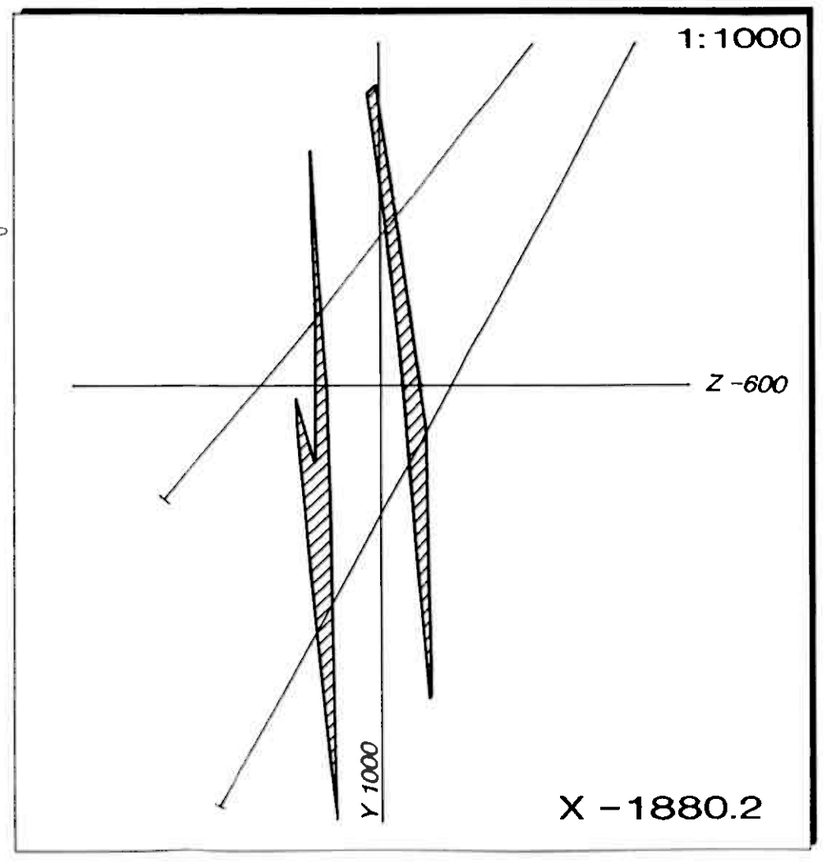
A horizontal and a cross section of the D- and D-west ore bodies



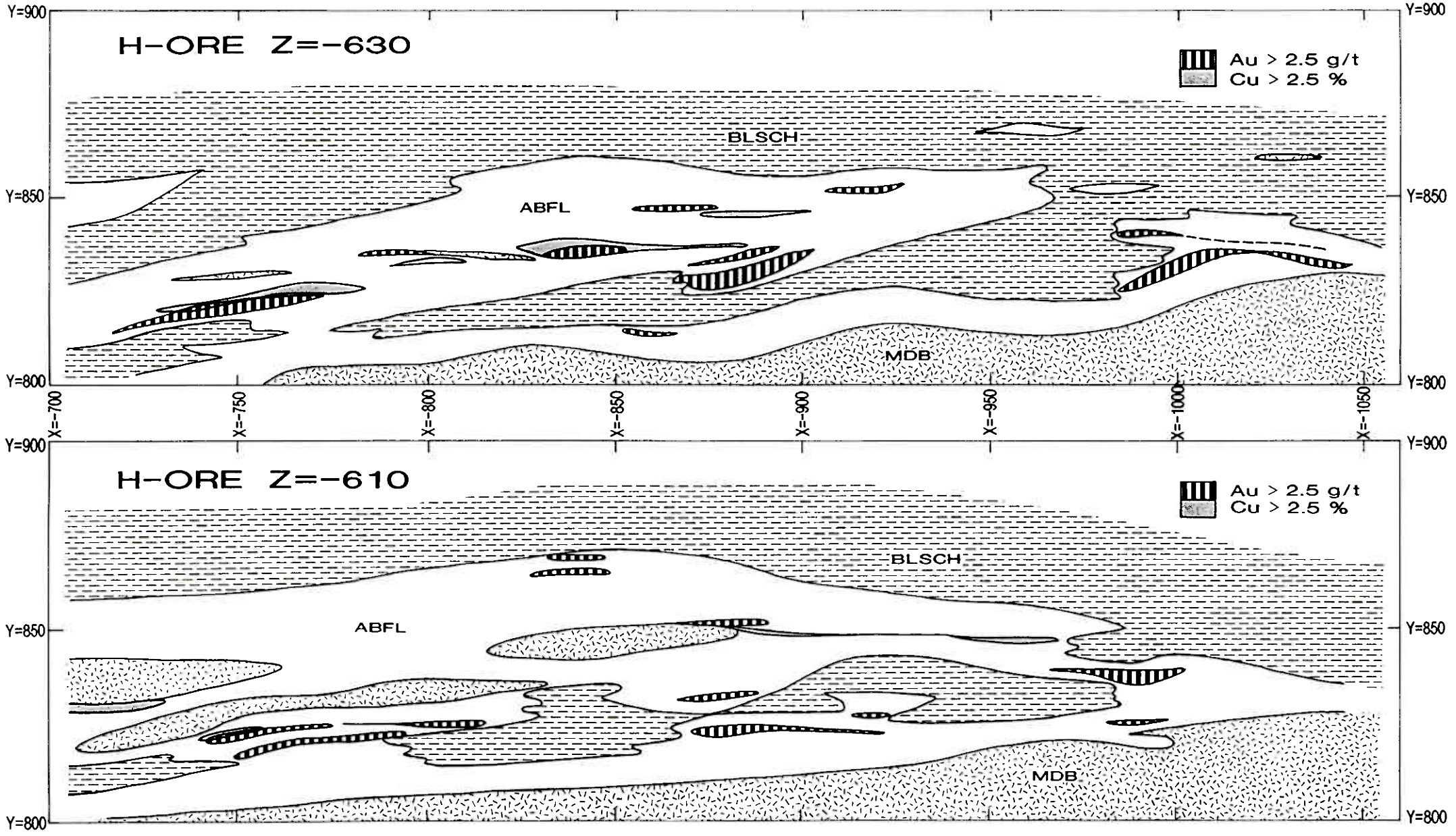


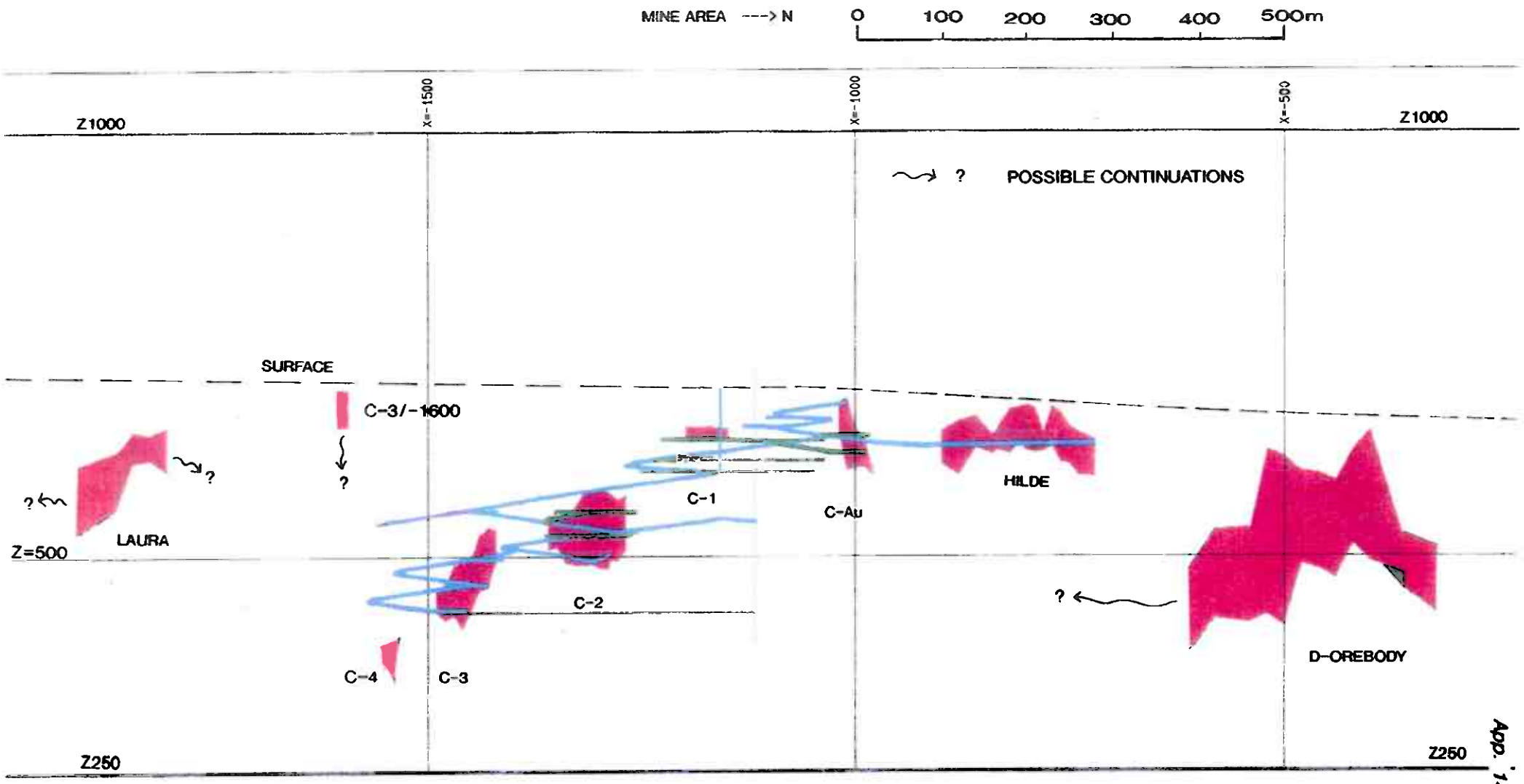






A horizontal and cross sections of the Laura ore body


H-ORE Z=-630
Au > 2.5 g/t
Cu > 2.5 %
BLSCH
ABFL
MDB
Y=900
Y=850
Y=800
X=-700
X=-750
X=-800
X=-850
X=-900
X=-950
X=-1000
X=-1050
H-ORE Z=-610
Au > 2.5 g/t
Cu > 2.5 %
BLSCH
ABFL
MDB
Y=900
Y=850
Y=800


MINE AREA ---> N
0
100
200
300
400
500m
Z1000
X=-1500
X=-1000
X=-500
Z1000
? POSSIBLE CONTINUATIONS
SURFACE
C-3/-1600
?
?
?
LAURA
Z=500
C-1
C-Au
HILDE
C-2
?
D-OREBODY
C-4
C-3
Z250
Z250

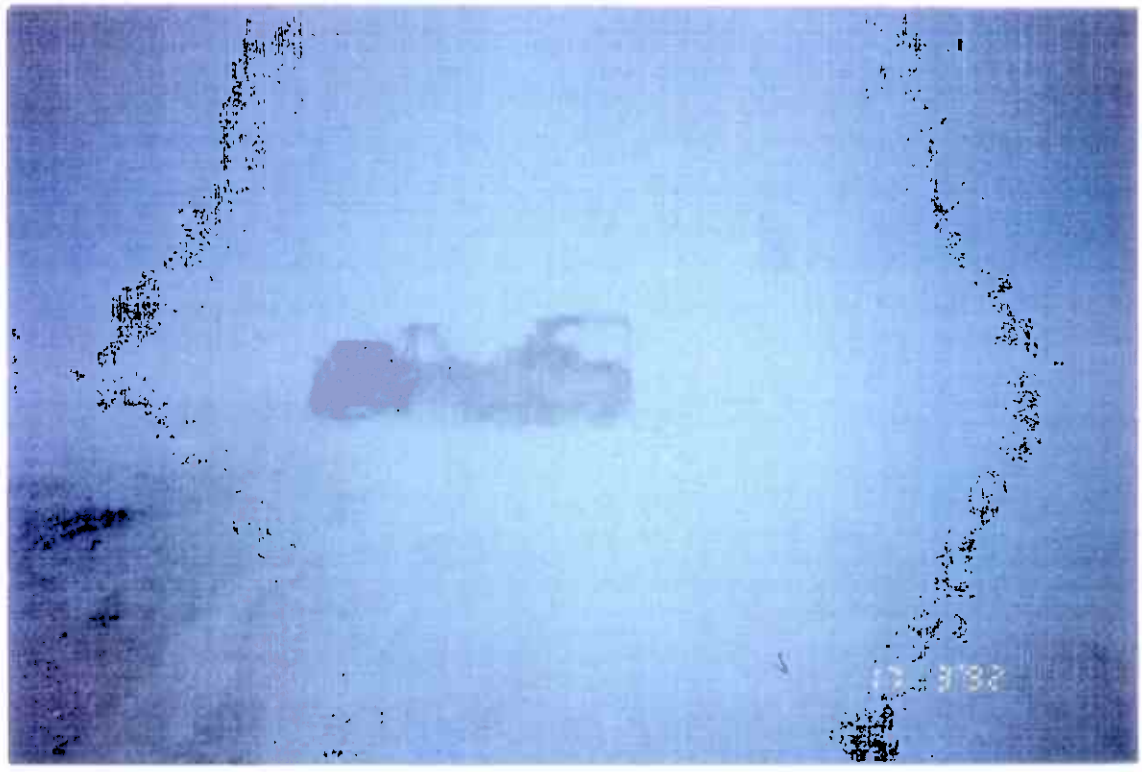
App. 14

PHOTOS

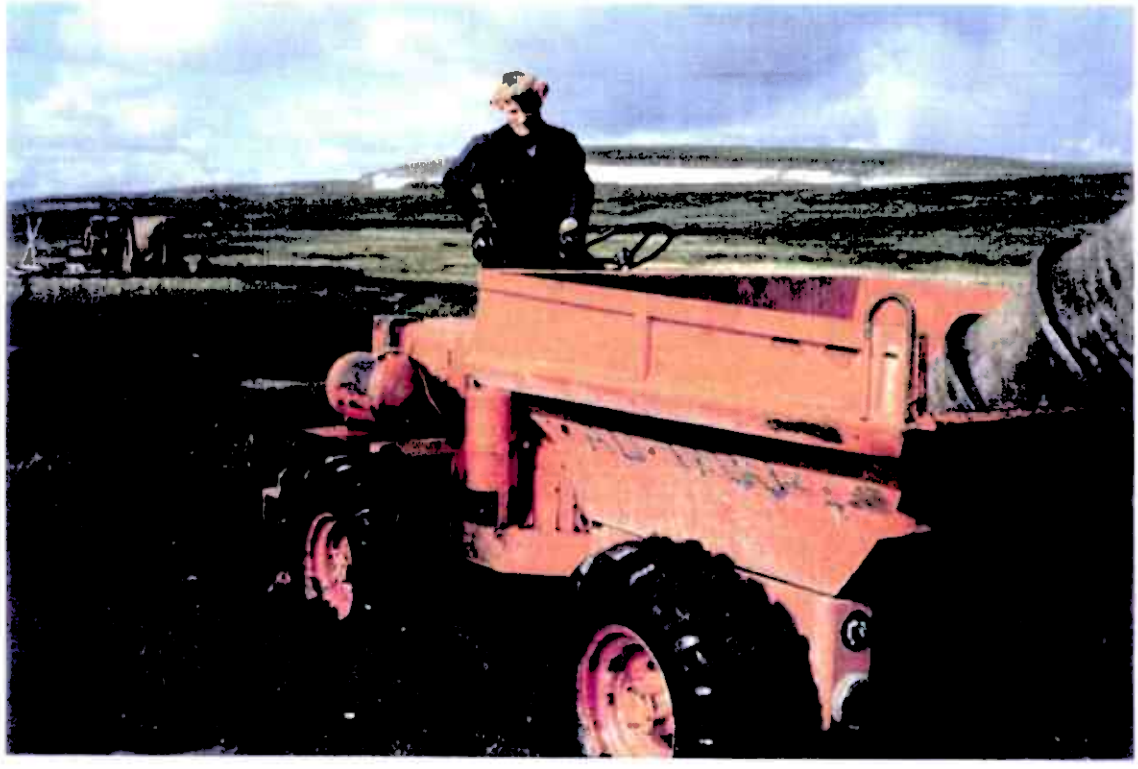
1	Excursion at Dael'ljadas in autumn 1991
2	Sampling at Gaessemaras in autumn 1991
3	Start of the diamond drilling at the Mine Area 1992
4	Drilling at the North Field 1992
5	Geophysical measurements at the Cabardasjåkka area will be started 1993
6	Drilling at Hoallumaras 1993
7 and 8	Drilling at the Mine Area in autumn 1993
9 and 10	Day of the Leading Group Meeting at Bidjovagge 23.9.1993

1

2



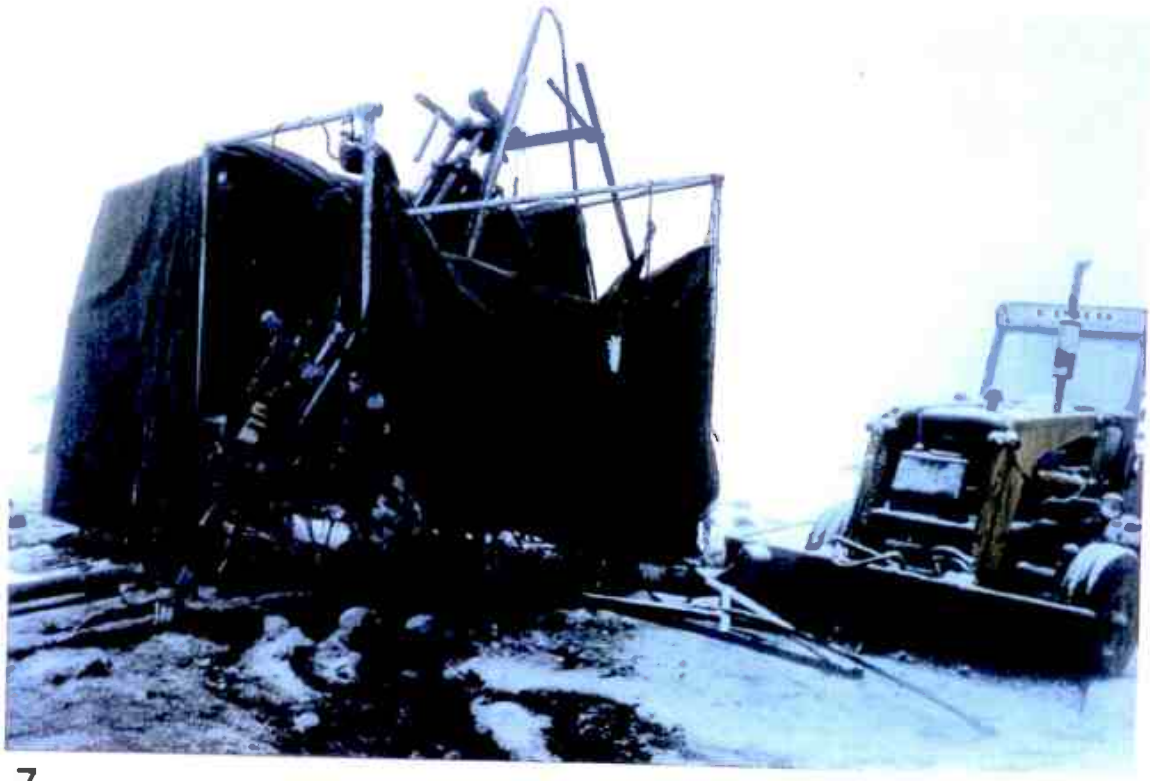
3



4

5

6



7

8

9

10

4.12.1992

BIDJOVAGGE-PROJECT

THE ACTIVITIES AND RESULTS OF THE PHASE ONE (1991 - 1992)

Rovaniemi Dec. 1992

Osmo Inkinen

Henrik Ask

Distr. Helge Tysland, Norsulfid A/S
Johann G. Heim, Norsulfid A/S
Sigmund Johnsen, Finnmark Fylke
Harry A. Rosenqvist, Norsulfid A/S
Rauno Hugg, Outokumpu Finnmines Oy

APPENDICES BIP Phase 1

App 1 General overview

App 2 Mine Area (incl. North and South Field)

2.1 Mine Area hor.
2.2 South Field hor.
2.3 North Field long.
2.4 North Field hor.
2.5 D-ore long.
2.6 D 580 hor.
2.7 D 500 hor.
2.8 Laura long.
2.9 Laura hor.
2.10 prof. S2740 vert.
2.11 D-L long.
2.12 D-L hor.

App 3 Statistics

3.1-3.6 D-ore variograms
3.7 D-ore interpretation
3.8 Ore reserve 1991
3.9 List of drillholes 1992

App 4 Objects outside the Mine Area

4.1 Cabardasjokka
4.2 Riednjajavri
4.3 Uccavuovdas
4.4 Dael'ljadas (IP+drillholes)
4.5 Dael'ljadas (gröfter)
4.6 Gaessemaras (blokkvifte)
4.7 Gaessemaras (IP+gröfter)
4.8 Area 56 (drillholes)

CONTENTS

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BIP-PROJECT

1
Commission of the project

BIP-project is based on the agreement between Norsulfid A/S/Bidjovagge Gruber and Outokumpu Finnmines Oy (both partner belong to Outokumpu Mining Oy). The proposal for the first exploration program of BIP-project was made in May 1991 by Rauno Hugg and Osmo Inkinen. A renewed exploration program for the year 1992 was made in January 1992 by Osmo Inkinen.

2
Organization involved in the project

The management group of BIP-project is composed of two representatives from both partowners as well as one representative from Finnmark Fylke. The representatives of Norsulfid A/S have been Johann G. Heim and Torvald Östby and of Outokumpu Finnmines Oy Juhani Nuutilainen and Harry Rosenqvist since the first meeting of the management group at Rovaniemi (14 June 1992). To the second meeting at Bidjovagge (15 October 1991) geologist Sigmund Johnsen was invited as representative of Finnmark Fylke. After the decease of Juhani Nuutilainen (16 May 1992) Rauno Hugg from Outokumpu Finnmines Oy/Exploration was appointed to the management group. Torvald Östby resigned his position on September 1992 when he assumed the post of local Chief of Folldal Verk. To his place came Helge Tysland, General Manager of Norsulfid A/S.

The operator for BIP-project is Outokumpu Finnmines Oy/Exploration. The project manager/geologist has been Osmo Inkinen and the technical assistant Leiv Nessvoll since the beginning of the project. As the project geologist has worked Risto Anttonen (15.8.-30.9.91), Markus Ekberg (15.3.-15.6.92), Henrik Ask (13.7.-9.12.92) and Kjell Nilsen (24.8.-26.9.-92). The expert in geophysical questions has been Aimo Hattula and in the geochemical problems Erkki Ilvonen. The book-keeper for the project and representative of Outokumpu Finnmines Oy in Norway has been Tuula Lahdenperä (TL-Regnskap i Alta).

Prof.Arne Björlykke from University of Oslo has worked as geological consult during the year 1992.

3
Works of contractors

Geophysical survey:
- NGU/Helicopter geophysical survey in Finnmark 1991 (NGU Rapport 91.256)
- SMOy/Slingram-magnetic measurements at Uccavuovdas, Kautokeino, August 1991 (SMOy report 9.9.91)
- SMOy/Slingram-magnetic profile measurements at Cabardasjokka and Riednjajavri, April 1992

Geochemical survey:
- GSF/Geochemical survey at Cabardasjokka 1992 (GSF report 5.6.92)

Diamond drilling:
- Terje Holmen/1991/Uccavuovdas and Area57/ tot. 1293 m and 1992/Mining zone and Cabardasjokka/tot 9917 m..

Trenching:
- J.Penta/1991/Djaelljadas and Gaessemaras

Geology:
- NGU and UIO/Interpretation of geodata for estimation of ore potential in KGB, Finnmark (NGU Rapport 92.255)

Laboratories:
- Bidjovagge Gruber A/S,1991/Au- and Cu-analyses
- Saattoporan Kaivos, Rautuvaara/OMF/Au- and Cu-analyses
- GAL/OMS/Au- and Cu-analyses/petrographical and mineralogical study of six samples from gold-copper exploration program in Bidjovagge area, Northern Norway

4
Time table and financing of the project

The appointed time for the project is three years, that has been divided into two phases. The phase one will finish at the end of the year 1992. The total budget for the phase one was 12.4 MNOK and it is financed as:

- Finnmark Fylke	1.2 MNOK
- Näringsdepartemente	5.0 "
- Norsulfid A/S	6.2 "
	12.4 MNOK

5
Operating costs

After "TL-regnskap" the total costs of BIP-project fromSeptember -91 to November -92 have been 9.560.940 NOK (without fee). The estimation of the total costs of BIP-project during the phase one is 10.6 MNOK.

The costs during the period September -91 - November -92 are divided as:

Bidjovagge prosjekt - BIP Outokumpu Oy

Malmletning	Kostnader i Finland	
Geologi	509300:	667.336
Geofysikk	509301:	14.401
Geokjemi	509302:	268.064
Diamantboring	509303:	268.064
Baser	509308:	-
Felles	509309:	5.008
SUM HITTIL PROSJEKT BIP-OUTOK.SF		1.223.605

Bidjovagge prosjekt - BIP Outokumpu Oy

Malmletning	Kostnader i Norge	
Geologi	509310:	623.567
Geofysikk	509311:	
Geokjemi	509312:	193.350
Diamantboring	509313:	
Baser	509318:	-
Felles	509319:	
SUM HITTIL PROSJEKT BIP-OUTOK.N		816.917

Bidjovagge prosjekt - BIP

Malmletning	Andre kostnader BIP i Norge	
Geologi	509310:	487.234
Geofysikk	509311:	1.473.752
Geokjemi	509312:	19.720
Diamantboring	509313:	5.016.602
Baser	509318:	420
Felles	509319:	193.757
Lönn		161.258
Representasjon		12.708
Telefon		5.040
Reisekostnader		54.118
Bilgodtgjörelse		18.020
Diett oppg pl		22.910
Sosiale kostn		897
Bilutgifter		53.982
SUM	NOK	7.520.418

6
Exploration targets

6.1
Targets outside of Mine Area

The exploration targets in the Kautokeino greenstone belt are presented on the new geological map made by NGU/92 (app.1).

6.1.1
Cabardasjokka and Riednjajavri (app.4.1-4.2)

The helicopterborne geophysical measurements at Cabardasjokka (74 km²) and Riednajavri (29 km²) were done by NGU. After interpretation of this EM data seven objects from Riednjajavri and five objects from Cabardasjokka were chosen for geophysical profile measurements. At Cabardasjokka also 459 deep till samples were taken from the same objects. The average Au- and Cu-values at Cabardasjokka were very high compared with the values of regional geochemical data. During this year we had time to make only three drill holes (UV-18-20) to Sukkesmara. At UV-19 was 1m ore breccia with 2.46% Cu and 1.65 ppm Au in metatuff and 3m with 0.45% Cu dissemination in albite diabase. At UV-20 were found black schist with albite felses and a week mineralisation: 1m/0.757% Cu, 0.03 ppm Au. Sukkesmara and the other objects at the Cabardasjokka area are waiting for continuation of exploration activities. On the Riednjajavri area the most promising object seems to be the southernmost part of the measured area.

6.1.2
Uccavuovdas (app.4.3)

Uccavuovdas has been used as reference area for the helicopterborne geophysical measurements of Cabardasjokka, because there was geophysical and drilling information from the older investigations (NGU -64 and BG A/S 1989-90). During 1991 we widened the earlier slingram-magnetic measurements (1.25 km²) and drilled 7 new drill holes (UV-7-13, tot.827.1 m). During 1992 we still made some geophysical profiles south of Uccavuovdas and drilled the holes UV-14-15 to the southern part of Uccavuovdas and UV-16 to the northern part of the geophysical measured area. The results of the drillings indicated that the black schists at the northern part of Uccavuovdas are hydrothermally altered and contain with chalcopyrite-pyrite- carbonate veins (UV-11/4.4m/ 0.82% Cu and 0.57ppm + 1.9m / 1.45%Cu and 0.66ppm Au ; UV-16/1.4m/0.4% Cu and 0.6ppm Au). At the southern part of Uccavuovdas we found pyrite

rich albite carbonate rocks and breccias with low Au-Cu- content (UV-13/10.1m/0.53% Cu and 0.47ppm Au). This part of Uccavuovdas needs more investigations. Also NGU found southern part of Uccavuovdas very analogical with Bidjovagge (NGU rapport 92.255).

6.1.3
Daelljadas and Gaessamaras (app.4.4..4.7)

After detailed investigation of the existing data Daelljadas and Gaessamaras prospects were chosen for quick clearing up work by digging machine. At Daelljadas it was done four trenches trough the mineralised zone south from the drill hole BH-3. In the trenches it was found about 0.5 m wide Cu-mineralization, those contacts were very heavily weathered and biotite rich. It is possible that there are more parallel zones, but the values were quite low (Cu 0.11-1.40% and Au 0.20-0.30ppm). At Gaessemaras the trenching was directed towards IP-anomalies, but because of the thick soil cover the sampling succeeded only in three trenches and the origin of the ore boulders is still open.

6.1.4
Area-56 (app.4.8) Area-56 is situated about 7 km east of the Bidjovagge mine and has been an exploration target for A/S Prospektering 1982-1985 (rapport nr 1711/ Ragnar Hagen). In autumn 1991 four drill holes more were drilled to this object (57-5..8/91, tot. 466.5 m). In every drill holes the hydrothermal alteration with rich pyrite mineralization were found, but the values of Cu and Au were low (Cu max. 0.8% and Au 0.36 ppm).

6.2
Targets in the Mine area (incl. North Field and South Field)

Diamond drilling in the Mine Area comprise of 9209 drillmeters.
The location of the Mine Area, North Field and South Field is given in appendix 1. Details in the Mine Area and in the South Field are shown in appendices 2.1 and 2.2.

The distribution of drillmeters for the different targets is given in table 6.1

TABLE 6.1 Mine area drilling 1992

target	no of holes	total meters	avg. per hole
North Field	6	925	154
D-ore	12	2302	192
Laura	12	2294	191
South Field (incl Mini)	17	1462	86
North of B	2	297	149
Franciska	3	423	141
C-2	5	644	129
H-tunnel (Hilde)	4	859	215
TOT		9209 meters	

A complete record of all drillholes is given in appendix 3.9.

TABLE 6.2

ESTIMATED RESOURCES SUMMARY

Target	Kton	%Cu	g/t Au	g/t Au(red)	cutoff
North Field	56	1.6	15.3	7.7	2.5
D-orebody	328	1.1	3.1	2.9	2.5
(D-orebody	317	1.2	3.2	2.9	2.0)
D-west	32	2.0	2.6	(2.6)	2.5
(D-west	35	1.8	1.9	1.8	2.0)
Laura	51	2.2	4.1	2.5	2.5
(Mini	9	2.1	1.4	(1.4)	1.2)
Mini	4	3.8	1.0	(1.0)	2.5
C4	16	2.1	5.2	4.7	2.5
H-tunnel	39	1.8	2.4	(2.4)	2.5
TOT RESOURCE	**526**	**1.4**	**4.5**	**3.4**	**2.5**

Comment on cutoffs employed: Cutoff 2.5 and 1.2 mean Cu-eqv >=2.5 and 1.2 respectively, where Cu-eqv=1*Cu+1*Au

Cutoff 2.0 means Cu-eqv >=2.0 where Cu-eqv= 1*Cu+0.5*Au

A summary of ore reserves from December 1991 is also presented in appendix 3.8 for comparison.

A summary of estimated results is presented in table 6.2 (over)

Further presentation of results and work done is given for each drilltarget (sections 6.1-6.5).

Finally a presentation of statistical results and 3-D modelling is given in section 6.6 and summary of geological conclusions in section 6.7.

6.2.1
North field

Six holes totalling 925 meters have been drilled.
Infill drilling has been performed at this previously known deposit.
The increase in ore reserve has been limited.
Some high gold grades have been encountered in blackschists (14 and 28 ppm).
The mineralisation lies 40-100 meters below surface.
A longitudinal section and a horizontal map is presented in appendices 2.3 and 2.4.

Resource estimation

56 kton @ 1.6 % Cu, 15.3 g/t Au, 7.7 g/t Au(red)

cutoff 2.5 Cu-eqv Cu-eqv=1*Cu+1*Au Density=2.85
Reduction Au>25 g/t to Au=25 g/t

The mineralisation is well known and delimited.

6.2.2
D-ore

Twelve holes totalling 2302 meters have been drilled.
The D-ore can be divided into two separate mineralisations:
The D-orebody and the D-west.
D-orebody is the continuation at depth of the mined out D-ore.
D-west is located west of the D-orebody.
Drillings performed during the year had delimited the D-orebody to the north and has shown that the mineralisation continues to the south and at depth.
The deepest parts of the mineralisation is 250 meters below surface.
The location of the D-orebody is shown in appendix 2.1.
A longitudinal section is presented together with two horizontal maps in appendices 2.5, 2.6 and 2.7.

Resource estimation

D-orebody:
328 kton @ 1.2 % Cu, 3.1 g/t Au, 2.9 g/t Au(red)

D-west:
32 kton @ 2.0 % Cu, 2.6 g/t Au

cutoff 2.5 Cu-eqv Cu-eqv=1*Cu+1*Au Density=2.85

D-orebody:
317 kton @ 1.2 % Cu, 3.2 g/t Au, 2.9 g/t Au(red)

D-west:
35 Kton @ 1.8 % Cu, 1.9 g/t Au, 1.8 g/t Au(red)

cutoff 2.0 Cu-eqv Cu-eqv=1*Cu+0.5*Au Density=2.85
Reduction Au>=15 g/t to Au=15 g/t

The D-orebody is well known but not delimited at depth and to the south.

The D-west mineralisation is not well known and should be regarded as a possible resource.

6.2.3
Laura

Twelve holes totalling 2294 meters have been drilled.
The Laura mineralisation is a new significant discovery.
The mineralisation consists of two separate but close lying lenses.
The mineralisation lies approximately 100 meters below surface
The location of the Laura mineralisation is shown in appendix 2.1.
A longitudinal section and a horizontal map is presented in appendices 2.8 and 2.9.

Resource estimation

51 kton @ 2.2 % Cu, 4.1 g/t Au, 2.5 g/t Au(red)

cutoff 2.5 Cu-eqv Cu-eqv=1*Cu+1*Au Density=2.85
reduction Au>10 g/t to Au=10 g/t
The mineralisation is delimited.

6.2.4
South field (incl. MINI)

17 holes totalling 1462 meters have been drilled
The location of the drillholes and the Mini deposit is shown in appendix 2.2.
The Mini deposit is very small but lies directly beneath the soil overburden (2-10 meters thick).

Resource estimation MINI

9 kton @ 2.1 % Cu, 1.4 g/t Au cutoff 1.2 Cu-eqv
4 kton @ 3.8 % Cu, 1.0 g/t Au cutoff 2.5 Cu-eqv
Cu-eqv=1*Cu+1*Au
The deposit is delimited.

The drilltargets in the South Field were selected mainly from geophysical interpretation.
The drilling results in general were not encouraging.
An interesting gold mineralisation was encountered in profile S2740 (see profile in appendix 2.10).
The host rock is altered (ab-qz) metadiabas.
About 200 meters south from this profile there is a geochemical gold anomaly.

6.2.5
Other objects

The locations of the different objects are given in appendix 2.1.

Performed drillings will be presented in the following.

NORTH OF B
Two holes were drilled based on geophysical interpretation.

FRANCISKA
Three holes were drilled to check the continuity of a small mineralisation close to the F-pit.

C-2
Five holes were drilled above C-2 orebody to investigate the possible continuation of a small known mineralisation.

H-TUNNEL
Four holes were drilled to check the continuity of a known mineralisation east and below the H-tunnel.

The results in the objects listed above have been discouraging.

6.2.6
Statistics and 3-D modelling

A statistical study has been undertaken for the D-orebody and the H-tunnel area.

Variograms were created in all directions, with the same parameter setup in order to get comparable results.

The results for H-tunnel were not encouraging from an exploration point of view.
They only tell us that for mining purposes drilling

spacing should be 5 to 7 meters (i.e. low-variance ranges are often less than 8 meters).

The results from D-orebody are more interesting. Copper shows the best variograms in directions NW-SE, dipping 45 NW and N-S,horizontal (315/45 and 0/0).
Gold shows the best variogram in direction N-S, dipping 60 S.
In some cases gold shows completely random behaviour where copper shows good special correlation.
See appendices 3.1 to 3.6 (variograms).
This implies that gold and copper should be regarded as different populations.
This agrees well with other geological evidence like mineralogy, textures and fluid inclusions.
Copper is associated with carbonate veins, coarse brittle type textures and lower temperature fluids whereas gold is associated with quartz veins, planar to lenticular ductile type textures and higher temperature fluids. (pers. comm. A. Björlykke).

A 3-D modelling of the D-orebody, D-west and associated blackschists has been done (see cover). It is recommended that this work should be continue with the diabases, especially at the footwall side because it is felt that these influence the jumps of the shear zone.

The spacial relationship between mineralisation, oxidation fronts and diabase could be better established this way.

See appendix 3.7 for possible interpretation of D-orebody geology.

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FINNMINES

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6.2.7
Geological conclusions

The most promising target in the Mine Area is the continuation of the D-orebody to the South and at depth.
It is however deeply located and requires drill-holes of over 300 meters length.
The gold grades tend to increase below z=-550.
In the deepest part the gold ore is hosted by quartz-sericite-albite shist (K-alteration).
The D-orebody is the biggest mineralisation in Bidjovagge - including the mined out parts it would be almost 600 kton.
There are possibilities to increase the D-west mineralisation.

Laura is a significant new discovery in the Mine Area.
The possibilities of increasing the ore reserve are however limited.

A longitudinal projection and a horizontal map showing the positions of Laura, D-orebody, D-west and the existing drifts are presented in appendices 2.11 and 2.12

The North Field shows a modest increase in ore reserve.
Some high gold grades have been encountered in blackschist.
The results in objects North of B, Franciska, C-2 and H-tunnel are discouraging.

The results in the South Field have been dis-appointing apart from minor finds at S3720-3760 (Mini) and an interesting gold find in profile S2740.

The gold in S2740 is hosted by an altered (ab-qz) metadiabase. See appendix 2.10.
This could represent a shear zone going through the footwall diabase.
Also there is a geochemical Au-anomaly located some 200 m further to the south.

7
Recommendations for the further activities

7.1
Mine Area

D-OREBODY
Continued drilling at D-orebody at depth and to the south (below Z -450 and south of profile S500).

D-WEST
If results in D-orebody are promising, continued drilling in D-west in profiles S400,420.440 and 460.

SOUTH FIELD
Further investigation in the South Field at profile S2740 and to the south towards the geochemical gold anomaly.

OTHER TARGETS
Further study of the western side of the black-schists south of C-Au

Proposed areas of further study due to low drilling density:

D-C	S600-S800	E900
D-E	S300-0	E700-800
F-B	N600-N800	E500

OTHER ACTIVITIES
Carry on with 3-D modelling in D-ore with other rock types (albite felsites and especially diabase).

7.2
Targets outside the mine area

CABARDASJOKKA
Further investigation in Cabardasjokka at Sukkesmara (geophysics and drilling), at Hoallumara =CIII (drilling) and at C IV (geophysics and drilling). Till sampling at Riednjajavri South.

UCCAVUOVDAS AND STALLOVARRI
Continued drilling and/or trenching at Uccavuovdas South and Stallovarri

NEW TARGETS
Exploration work on the new areas as Masi Suolvuobmi and Kvaenangen-Kåfjord areas.

ORE RESERVE DECEMBER 1991

place	kton	% Cu	g/t Au(red)
H-tunnel	39	1.8	2.4
North Field	50	1.7	5.5
D-orebody	175	1.5	2.7
C4	16	2.1	4.7
TOTAL	280	1.6	3.3

cutoff 2.5 Cu-eqv Cu-eqv=1*Cu+1*Au

Note: The above stated figures are not exactly comparable to the 1992 estimated resources.

DIAMANTBORRING 1992

Hål	N/X	O/Y	Z	Retn	Fallv	Längd	Månad	Analysnummer			Inmatning Ba	An	Dip	Koord
S440	- 439.90	650.12	-672.91	90	45.4	220.3	3	21001	-	21048	x	x	x	x
S52 I	- 520.26	777.90	-689.00	270	69.9	162.0	3	21049	-	21073	x	x	x	x
S54 D	- 540.02	940.87	-688.63	270	49.6	160.0	4	21074	-	21093	x	x	x	x
S60 C	- 600.18	870.88	-669.62	270	48.9	111.5	4	21094	-	21107	x	x	x	x
S62 F	- 915.34	1004.51	-687.81	270	62.5	230.3	4	21108	-	21142	x	x	x	x
S96 E	- 959.67	997.71	-687.63	270	57.6	220.5	4	21143	-	21161	x	x	x	x
S90 G	- 898.4	1000.01	-689.24	270	51.3	231.8	5	21162	-	21208	x	x	x	x
S90 E2	- 899.37	950.54	-681.04	270	50.0	177.0	5	21209	-	21236	x	x	x	x
S140 G	-1400.00	915.00	-694 ?	270	45.3	142.5	5	21237	-	21255	x	x	x	
S134 F	-1338.16	986.60	-700.32	270	54.1	139.9	5	21256	-	21294	x	x	x	x
S134 G	-1340.15	831.60	-700.63	90	58.5	133.3	5	21295	-	21305	x	x	x	x
S132 N	-1320.32	946.35	-695.71	270	54.3	111.8	5	21306	-	21311	x	x	x	x
S144 N	-1440.00	925.00	-700.00	270	40.9	117.6 ?	5	21312	-	21316	x	x	x	
S186 B	-1859.75	1064.25	-723.88	270	57.1	202.3	6	21317	-	21363	x	x	x	x
S186 C	-1860.00	1065.00	-730.00	270	67.9	226.0	6	21364	-	21402	x	x	x	
S190 F	-1900.19	1068.33	-724.86	270	68.4	197.7	6	21403	-	21438	x	x	x	x
S190 G	-1900.12	1069.08	-725.11	270	56.5	178.6	6	21439	-	21466	x	x	x	x
S184 C	-1839.88	1059.02	-723.06	270	61.4	166.6	6	21467	-	21490	x	x	x	x
S178 D	-1779.90	1048.70	-720.30	270	61.2	178.0	6	21491	-	21502	x	x	x	x
S190 H	-1900.15	920.77	-721.83	90	49.7	181.5	6	21503	-	21539	x	x	x	x
S192 C	-1920.00	940.00	720.00?	90	56.4	178.9	6	21540	-	21575	x	x	x	
N54 C	540.00	635.00	-620.00	270	49.9	121.0	7	21576	-	21596	x	x	x	
N56 F	560.00	660.00	-623.00 ?	270	48.5	148.0	7	21597	-	21623	x	x	x	
N58 G	580.00	677.00	-621.00	270	46.2	154.9	7	21624	-	21641	x	x	x	
354 E	- 539.41	999.07	-670.18	270	65.4	269.5	7	21642	-	21684	x	x	x	x
S376 A	-3760.05	1202.13	-641.33	90	70.4	87.0	7	21685	-	21704	x	x	x	x
)6 A	-1960.42	904.00	-726.48	90	52.1	219.3	7	21706	-	21739	x	x	x	x
S192 D	-1919.87	900.36	-724.99	90	56.1	210.0	7	21740	-	21778	x	x	x	x
84 D	-1840.14	1035.70	-721.03	270	59.9	161.2	8	21779	-	21832	x	x	x	x
296 D	2959.44	- 435.16	-587.03	270	69.3	111.0	8	21833	-	21862	x	x	x	x
N302 D	-3019.06	- 431.20	-586.80	270	71.3	145.0	8	21863	-	21890	x	x	x	x
S376 B	-3760.05	1202.13	-641.33	90	50.0	65.6	8	21891	-	21913	x	x	N/A	x
N304 D	3038.88	- 450.84	-587.03	270	74	126.2	8	21914	-	21937	x	x	x	x
S374 C	-3740.09	1210.93	-641.54	90	48	50.7	8	21938	-	21959	x	x	N/A	x
S374 B	-3740.09	1224.00	-640.20	90	49	41.2	8	21960	-	21976	x	x	N/A	x
N304 E	3039.30	- 401.16	-586.15	270	75	205.3	8	21977	-	22014	x	x	x	x
S380 B	-3800.04	1228.83	-638.14	90	54	61.8	8	22015	-	22029	x	x	N/A	x
S380 C	-3800.13	1216.88	-639.00	90	66	65.2	8	22030	-	22041	x	x	N/A	x
N292 C	2919.18	- 381.13	-586.44	270	65	172.1	8	22042	-	22056	x	x	x	x
S240 B	-2400.00	699.24	-721.05	270	50	126.5	8	22058	-	22062	x	x		x
S240 C	-2399.63	575.67	-733.38	90	50.5	104.6	8	22063	-	22067	x	x	x	x
N288 C	2879.94	- 380.03	-586.22	270	68	165.6	9	22068	-	22079	x	x	x	x
S245 A	-2449.63	550.35	-736.44	90	43.7	122.0	9	22080	-	22085	x	x	x	x
S255 A	-2549.53	989.57	-720.91	270	50.6	93.8	9	22086	-	22088	x	x	x	x
S274 B	-2742.88	1130.47	-718.10	270	50.9	132.9	9	22089	-	22094	x	x	x	x
S340 A	-3399.76	671.25	-648.02	90	50	84.5	9	22095	-	22098	x	x	x	x
S 36 E	- 360.07	869.20	-668.76	270	75.7	270.0	9	22099	-	22150	x	x	x	x
S360 B	-3650.357	720.14	-648.99	90	51	66.5	9	22151	-	22152	x	x	x	x
332 A	- 319.73	899.98	-669.61	270	59.3	248.1	9	22153	-	22191	x	x	x	x
3424 A	-4240.08	1400.65	-590.95	270	50	96.8	9	22192	-	22194	x	x	x	x
)24 B	-4239.81	1530.56	-581.18	270	50	84.7	9	22195	-	22208	x	x	x	x
3274 B					OMANALYS			22209	-	22214	x	x	N/A	N/A
N296 D					OMANALYS			22215	-	22217	x	x	N/A	N/A
3454 A	-4540.12	1600.28	-539.18	270	50	85.5	9	22218	-	22239	x	x	x	x
S32 B	- 319.73	899.98	-669.61	270	70.3	292.8	9	22240	-	22292	x	x	x	x
S274 A	-2742.19	1081.27	-712.02	270	49.7	93.0	9	22294	-	22305	x	x	x	x
S200C	-2000.00	1084.00	-730.00	270	61.6	194.8	9	22306	-	22337	x	x	x	
S54 F	- 540.03	940.85	-668.58	270	66.1	186.0	9	22338	-	22380	x	x	x	x
UV16	64.700	82.955		270	50	103.6	9	22381	-	22403	N/A	N/A	N/A	N/A
S4A	- 40.55	792.56	-649.82	270	49.7	89.8	10	22404	-	22413	x	x	x	x
UV15	67.200	83.530		270	50	72.0	10	22414	-	22425	N/A	N/A	N/A	N/A
N185A	1850.00	800.00	-600.00	270	50	169.4	10	22426	-	22434	x	x	x	
UV14	62.500	83.530		270	50	112.2	10	22435	-	22450	N/A	N/A	N/A	N/A
S4B	- 40.55	792.56	-649.82	270	36.5	51.0	10	22451	-	22455	x	x	x	x
UV19	67.350	82.970	?	90	60	118.3	10	22456	-	22486	N/A	N/A	N/A	N/A
N150B	1500.00	540.00	-600.00	270	45	127.7	10	22487	-	22500	x	x	x	
UV15						OMANALYS	10	22501	-					
UV17	66.200	83.550		270	50	76.0	10	22567	-	22568				
UV20	67.550	82.910		90	60	127.2	10	22502	-	22515				
S580	- 580.00	1000.00	-690.00	270	65	236.0	10	22516	-	22561	x	x		
UV18	67.35	82.970		90	60	99.5	10	22562	-	22566				

Total 9917.3 m

GRØFTER DÆL'LJADAS