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Forsmark site investigation

Boremap mapping of percussion boreholes HFM13–15 and HFM19

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June 2004

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Contents

1 Introduction

This document reports the data gained by Boremap mapping of four percussion boreholes drilled within the site investigation at Forsmark.

HFM14 and HFM15 are located at drill site 5 (Figure 2-1), while HFM13 is drilled to study the lineament XFM0133A0 and HFM19 is drilled to study the lineament XFM0099A0. The boreholes will also be used for groundwater level monitoring and to gain hydrogeochemical data. Borehole HFM13 also provided the flushing water needed for drilling the core drilled part of borehole KFM05A.

The percussion drilled boreholes were after completion of drilling investigated with several logging methods, for example, conventional geophysical logging, borehole radar and TV-logging. The latter method implies logging with a colour TV-camera to produce images of the borehole wall, so called BIPS-images (Borehole Image Processing System). The method is described in SKB MD 222.006 (Metodbeskrivning för TV-loggning med BIPS).

Mapping of percussion boreholes according to the Boremap method is based on the use of BIPS-images of the borehole wall, supported by the study of drill cuttings. Although the rock is crushed into fine-grained fractions, the mineralogical composition of the samples can still be studied. During drilling, the sampling of drill cuttings is discontinuous, and this introduces a degree of uncertainty in the classification of the rock composition between the sampling points. However, the combination of BIPS-images and samples of drill cuttings offers a reasonably efficient method for a continuous mapping of the geology along the borehole.

The BIPS-images also enable the study of the distribution of fractures along the borehole. Fracture characteristics like aperture, colour of fracture minerals etc are possible to study as well. Furthermore, since the BIPS software has the potential of calculating strike and dip of planar structures such as foliations, rock contacts and fractures intersecting the borehole, also the orientation of each planar structure is documented with the Boremap method. Important to keep in mind is that the mappings only represent the thin lines of the boreholes that intersect the rock body.

2 Objective and scope

The aim of this activity was to document lithologies, ductile structures and the occurrence and character of fractures and fracture zones in the bedrock penetrated by the four percussion drilled boreholes HFM13–15 and HFM19, see Figure 2-1. Data were collected in order to obtain a foundation for a preliminary assessment of the bedrock conditions adjacent to the telescopic drilled borehole KFM05A and to study the lineaments XFM0133A0 and XFM0099A01 down to about 150 m depth. Other data obtained from the percussion drilled boreholes, such as thickness of soil cover, soil stratigraphy, groundwater level and groundwater flow, will not be treated in this paper.

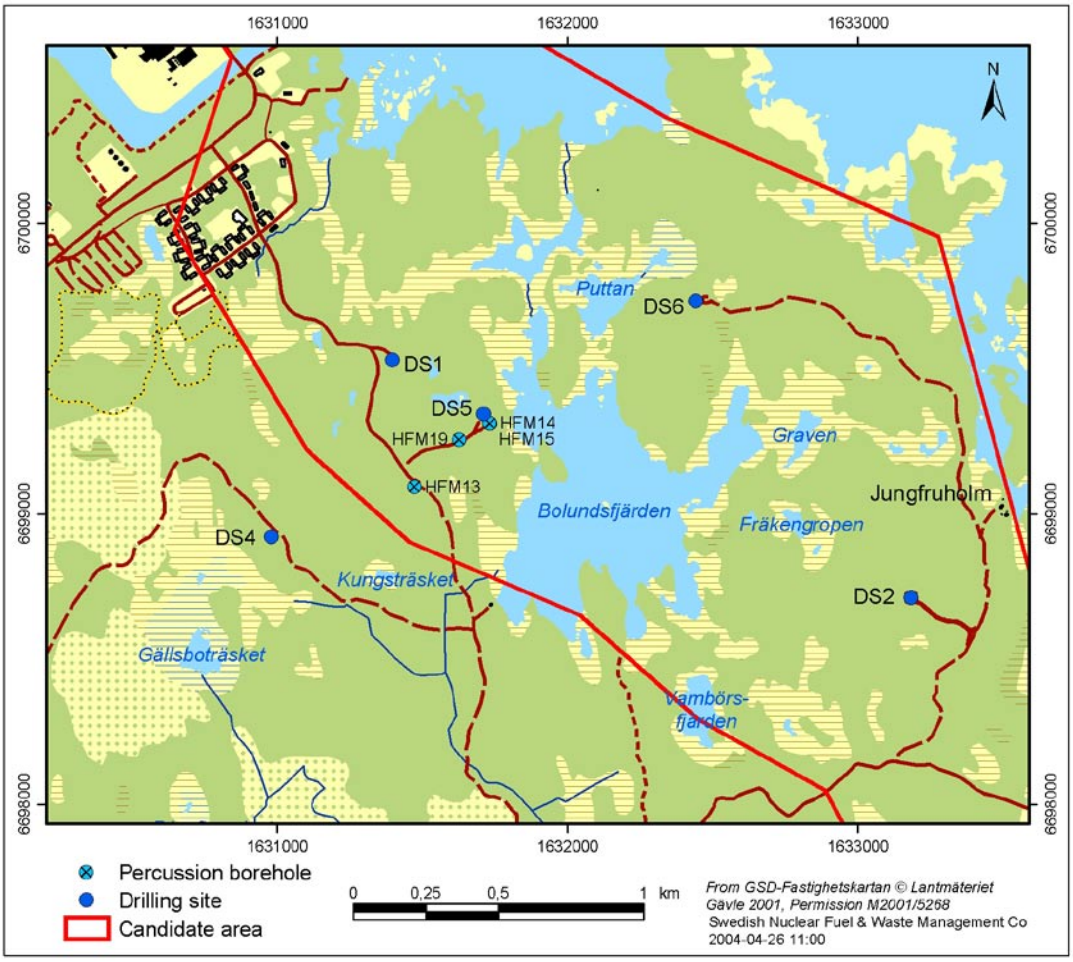


Figure 2-1. *Borehole locations at drill site 5, Forsmark. DS 1 = drill site 1, DS 2 = drill site 2, DS 4 = drill site 4, DS 5 = drill site 5, DS 6 = drill site 6.*

3 Equipment and methods

3.1 Software

Mapping was performed with the software Boremap v 3.3.5. The Boremap software calculates actual directions (strike and dip) of planar structures penetrated by the borehole (foliations, fractures, fracture zones, rock contacts etc). Data on inclination, bearing and diameter of the borehole are used as in-data for the calculations (Table 4-1). The Boremap software is loaded with the bedrock and mineral standard used by the Geological Survey of Sweden for surface mapping at the Forsmark investigation site to enable correlation with the surface geology.

Results from the investigaton of drill cuttings were documented in an Excel database, while the stereographic projections were plotted in StereoNet. Schematic presentations of the boreholes were presented in WellCad.

3.2 Other equipment

Stereo microscope, a day light lamp and an ordinary kitchen strainer were used to investigate drill cuttings.

3.3 BIPS-image quality

The BIPS-image quality of HFM13 is good. In the lower part of the borehole a very thin cover of precipitated suspensions cover 40–50% of the image. Still most geological features can be discerned through the covered parts.

The BIPS-image quality of HFM14 looks good at first, but the exposure of the BIPS-camera varies quite a lot. The section 67–83 m is probably overexposed, resulting in difficulties in interpreting fractures as open or sealed.

The BIPS-images of HFM15 are of poor quality, although the borehole has been logged three times with longer intervals between the loggings. The borehole fluid is rich in suspensions, which makes the BIPS-image diffuse and therefore only larger fractures can be discerned. The section 70–80 m has lowest quality. From approximately 87 m and downwards only 50% of the borehole wall is visible, while the other 50% is covered by mud. The BIPS-images of HFM15 are not good enough for mapping, resulting in relatively few observations.

The mapping of HFM19 was performed on two BIPS-images of the borehole. The first BIPS-image of HFM19 is relatively good to bad. The image is somewhat diffuse and in places only larger structures can be observed, i.e. rock contacts can be observed but not grain size, texture and thin fractures. The image seem to be of better quality from 115 m borehole length and downwards. Some stick-slip movements occur of the probe, but they are not disturbing the mapping.

Because of the poor quality of the BIPS-image of HFM19 the borehole was logged once more in May 2004. The mapping was then revised on the basis of the new BIPS-image. The new BIPS-image is of excellent quality with a few exceptions: the lightning of the image is poor in a few places: at approximately 109.5 m, 149.3 m and 150.1 m borehole length (rec depth) and the image is black from the crush zone at 170.2–170.5 m depth till the end of the borehole. Since the first BIPS-image of the borehole is good in this interval this is not considered to be a problem.

4 Execution

Boremap mapping of the percussion drilled boreholes HFM13–15 and HFM19 was performed and documented according to activity plan AP PF 400-03-106 (SKB, internal document) referring to the SKB method description for Boremap mapping (SKB MD 143.006, Version 1.0, Metodbeskrivning för Boremap-kartering).

4.1 Preparations

The lengths of the boreholes are listed in Table 4-1. Length corrections of the BIPS-images were made for all the boreholes. The BIPS-image of HFM13 was originally 174.43 m long but was corrected to 175.30 m long. The corresponding corrections for HFM14, HFM15 and HFM19 were 148.58 m to 149.33 m, 98.56 m to 99.06 m and 184.22 m to 184.9 m, respectively. The length of HFM19 is adjusted relative to the first BIPS-image. The corrections were made since it is known that the registered length in the BIPS-images in general deviates with approximately 0.5 m per 100 m from the real length, and that the last 30 cm of the boreholes cannot be logged with BIPS.

Background data collected from SICADA prior to the Boremap mapping included:

- borehole diameter (Appendix 10),
- total borehole length (Appendix 10),
- borehole deviation data (Appendix 11),
- drilling penetration rate (Appendix 12).

Geophysical logs from Geovista AB were used as supporting data for the boreholes HFM13–15 and HFM19 (Appendix 13).

Measurements of borehole directions were refined using deviation data from the SKB SICADA database (Field note no Forsmark 210, 258). Geometric data for boreholes HFM13–15 and 19 are given in Table 4-1.

Table 4-1. Borehole data for HFM13–15 and HFM19 (values from starting point).

ID-code	Northing	Easting	Bearing (degrees)	Inclina-tion (degrees)	Diameter (mm)	Borehole length (m)	BIPS-image interval (adj. length in m)	End of casing	Appr. depth to bedrock surface (m)
HFM16	6699721	1632466	327.9	-84.2	140	132.50	12.0-129.47	12.0	2.6
HFM17	6699462	1633261	318.6	-84.1	137	210.65	8.0-209.21	8.0	0.5
HFM18	6698327	1634037	313.3	-59.4	139	180.65	8.0-180.34	9.0	1.7

4.2 Execution of measurements

Available geological information is more limited for Boremap mapping of percussion drilled boreholes than core drilled boreholes, where the drill core can be directly compared with BIPS-images of the borehole wall. During mapping of percussion boreholes, fractures can only be seen on the BIPS-images and rock samples are merely available as crushed fragments. As solid rock samples are not accessible, certain assumptions and simplifications have to be made during mapping. These are described below.

4.2.1 Fractures

As fractures could be studied only in the BIPS-image they could not be confidently classified as rough, smooth or slickensided, nor could their mineralogy or alteration be reliably determined. Hence, classifications of fracture minerals in the percussion boreholes should be treated with caution. The following assumptions were made:

- Width of very thin fractures (< 1 mm) were impossible to measure accurately and was therefore, as a rule, interpreted as 0.7–1 mm thick or, if only vaguely observed, as 0.5 mm thick.
- Fractures were assumed to be open if not clearly observed to be sealed.
- Dark coloured fractures were interpreted to contain some amount of chlorite (such colouration may, however, also be caused by shadows in the fracture walls or by other dark coloured minerals).
- Bright white (commonly sealed) fracture fillings were interpreted to contain calcite.
- White to greyish fracture material was interpreted as quartz and sometimes feldspar. In some cases the white strike in fractures seems to be a result of good light reflection and not of a white fracture mineral.
- Light green-grey fracture fillings were interpreted as prehnite.
- The fracture minerals in fractures that were only indicated by shadows were mapped as unknown mineral. Some fractures were mapped with unknown mineral fill, but has the colour of the fracture fill mentioned in the comments.
- Red fracture fills were mapped as hematite or oxidized walls, although pure hematite probably does not occur in the borehole. Hematite occurs as pigmentation in other minerals, for example feldspars and laumontite.
- A light grey fracture filling was mapped as X7 (stored in Boremap). No further judgment of the nature of this fracture filling has been made.

4.2.2 Rock colour and oxidation

Rock colour and oxidation documented during Boremap mapping was mainly classified from the observations of drill cuttings (dry samples). Minor differences in colour of drill cutting samples were usually not recognizable in the BIPS-images and were therefore not documented in Boremap.

Rock colours in the BIPS-images appear somewhat modified and bleached, and the classification of the colour of minor rock occurrences only observed in the BIPS-image is therefore likely to be less accurate.

The varying exposure of the BIPS-camera as well as suspensions in the borehole water complicates the interpretation of oxidized sections, since sections with higher exposure are less reddish than sections with lower exposure and sections rich in suspensions look more brownish/reddish in BIPS than other sections.

4.2.3 Rock contacts

Orientation of irregular or diffuse rock contacts may be difficult to observe and measure with the Boremap method, since only planar and discrete features can be accurately measured.

4.2.4 Lithologies

Lithological classifications of minor rock occurrences were sometimes difficult, since the boreholes consist mostly of different granitic rocks. From the BIPS-image and the drill cuttings it is not easy to determine whether fine- or fine- to medium grained granites are "granite, fine- to medium grained" (D-type, code 111058), "granite, granodiorite and tonalite, metamorphic, fine- to medium grained" (C-type, code 101051) or "granite, metamorphic, aplitic" (C-type, code 101058). Even very thin occurrences of pegmatite (code 101061) can sometimes be difficult to separate from the rock occurrences mentioned earlier. Therefore some misinterpretations must be accounted for.

At the outcrop at drill site 5 fine- to medium grained granite, granodiorite and tonalite (C-type, code 101051) was quite frequently observed, but only few occurrences of 101051 were observed in the adjacent boreholes HFM14 and HFM15. Perhaps they were missed because of the low colour contrast between the two rock types at the locality. Usually they can also be separated by structural appearance, but in HFM14 and HFM15 it was difficult to see sharp transitions in structural appearance of the rock in the BIPS-images, and therefore most of the rock has been mapped as metagranite-granodiorite (code 101057).

Thin bands, veins or segregates of felsic rocks were commonly observed in the BIPS-images, but were often severely difficult to recognize in the drill cutting samples. The classification of these rock occurrences was therefore mainly based on observations in the BIPS-images.

When BIPS-images were not available, i.e. at the upper, cased part of the boreholes, rock classification was based on the observations of drill cuttings only. Therefore the exact positions of rock contacts are not certain.

4.2.5 Grain size

Classification of grain size can be difficult, especially for minor rock occurrences. If the mineralogy of the rock type in question does not differ from the dominating rock in which it is included, it may be difficult to separate the two lithologies in the fine-grained drill cutting samples. When the rock is composed of minerals of similar colours, the grain size can be overestimated when relying too much on the BIPS-images, since single grains are hard to distinguish.

Also classification of grain size in the drill cuttings can be treacherous. During drilling the rock has a tendency to break up through individual grains and not along grain boundaries, making the rock look more fine-grained in the drill cuttings than it actually is. This phenomenon is typical for the metagranite-granodiorite in the candidate area.

4.2.6 Foliation and lineation

Foliation and lineation are difficult to separate from each other in the BIPS-image, unless the deformation is strong. Some attempts have been made to separate the two in the Boremap mapping, but usually moderately dipping deformation has been interpreted as lineation, while steeply dipping deformation has been interpreted as foliation. This relation has been observed during regional mapping but the relationship is not definite and therefore some misinterpretations may occur.

The Boremap software does not yet calculate trend and plunge of linear features. Therefore the strike in Boremap for lineations should be recalculated with +90 in order to get the trend of the lineation. The dip in Boremap is equal to the plunge of the lineation.

4.2.7 Supporting data in Boremap-mapping

Data from investigation of drill-cuttings (Appendix 14) were used to support the classification of mineralogy and the extent of secondary alteration or deformation in lithological units observed in the BIPS-image.

Drilling penetration rate was used as supporting data for the geological interpretation (Appendix 12). For example, major anomalies of drilling penetration rate correlated well with crush zones.

After the Boremap mapping of HFM13–15 and HFM19 was completed, the boreholes were investigated with geophysics (Appendix 13). The new information from the geophysical logs was used to check and revise the earlier Boremap mappings.

4.3 Data handling

The mappings of drill cuttings and the Boremap mappings of HFM13–15 and HFM19 were performed on a local computer disk. When the mapping of drill cuttings was finished, the mapping was saved on Geosigma’s network, while a back-up of the Boremap mapping was saved on Geosigma’s network before each break exceeding 15 minutes. When the mappings were finished and quality checked by the author, the data was submitted to SKB.

Quality of mapping was also checked by a routine in the Boremap software before saving and exportation to SICADA.

All data, both the Boremap mapping and the investigation of the drill cuttings, are stored in the SKB SICADA database under Field note no Forsmark 322.

5 Results

Geology of the percussion drilled boreholes HFM13–15 and 19 corresponds well with the geology in the candidate area. See also P-report on detailed fracture mapping at drill site DS 5 /1/, and P-report on field data from bedrock mapping in the Forsmark area during 2002 /2/.

Results from the Boremap mapping are briefly described in Sections 5.1–5.4 below, and graphical presentations of the data are given in Appendices 1–8 (WellCad- and BIPS-images). Equal area stereo diagrams showing fractures are shown in Appendix 9.

5.1 HFM13

Lithologies

The dominant rock type of HFM13 is a medium-grained, lineated, greyish red, metagranite-granodiorite (86.3%). This is cut by several minor rock occurrences of pegmatite (6.2%), amphibolite (6.0%), fine-grained granites (codes 101058 and 111058, 0.9%) and an unknown granitic rock type here interpreted as the fine- to medium grained metagranite, -granodiorite to -tonalite (code 101051, 0.6%).

Fractures

Frequency of interpreted open fractures in HFM13 is calculated to about 1.4 open fractures/m from BIPS-images of the borehole (available between 14.9–175.3 m). Four densely fractured intervals were observed: 52.0–52.9 m (11.1 fractures/m), 74.5–76.0 m (8.0 fractures/m), 138.9–141.2 m (7.0 fractures/m) and 163.3–165.4 m (6.7 fractures/m). Two dominating fracture sets occur having the orientations 055°/80–90° (also overturned) and 060°/20°. A less pronounced fracture set strikes ~ 340°/80°. The first set is sub-parallel with the borehole orientation, and some of the fractures resemble horse tail fractures and may actually be artificial and caused by stress in the rock. The orientation pattern for interpreted sealed fractures is the same as for open fractures. The orientations of fractures are shown in Appendix 9.

A crushed section was observed between 20.29 m and 20.32 m having the orientation 120°/20°.

5.2 HFM14

Lithologies

The dominant rock type of HFM14 is the same medium-grained, lineated, greyish red, metagranite-granodiorite (87.9%) as in HFM13. This is cut by several minor rock occurrences of pegmatite (8.7%), amphibolite (1.2%), fine-grained granites (codes 101058 and 111058, 2.1%) and a possible fine- to medium grained metagranite, -granodiorite to -tonalite (code 101051, 0.1%).

Fractures

Frequency of interpreted open fractures in HFM14 has been calculated to about 2.3 open fractures/m from BIPS images of the borehole (available between 3.1–149.3 m). Four densely fractured intervals were observed: 3.8–4.4 m (15.0 fractures/m), 67.9–75.7 m (10.3 fractures/m), 96.3–97.5 m (9.2 fractures/m) and 115.4–116.7 m (6.9 fractures/m). Three sets of open fractures were observed. The orientations of these are 125°/10°, 060°/90° and 340°/80°. The densely fractured section occurring at 67.9–75.7 m belongs to the sub-horizontal fracture set. The dominating sets of interpreted sealed fractures have the orientations 270°/10° and 125°/15°. Less pronounced sets of sealed fractures are orientated 235°/90° and 350°/80°. Fracture orientations are shown in Appendix 9.

Crushed sections are observed at the following borehole lengths (with orientations in parentheses): 3.42–3.81 m (~ 210°/15°), 49.73–49.76 m (~ 330°/05°), 98.91–99.05 m (~ 185°/20°), 100.84–101.14 m (horizontal), 102.08–102.13 (~ 230°/10°), 102.19–102.24 m (~ 230°/15°) and 103.01–103.33 m (~ 170°/10°).

5.3 HFM15

Lithologies

The dominant rock type of HFM15 is a medium-grained, lineated, greyish red, metagranite-granodiorite (93.1%). This is cut by several minor rock occurrences of pegmatite (5.3%), amphibolite (0.3%) and fine-grained granites (codes 101058 and 111058, 1.3%).

Fractures

Frequency of interpreted open fractures in HFM15 is calculated to be 1.6 open fractures/m (from BIPS-image of the borehole, available between 6.0–99.0 m). Two densely fractured intervals were observed: 86.5–90.3 m (7.4 fractures/m) and 93.5–95.7 m (6.8 fractures/m). Two dominating sets of open fractures were observed having the orientations 085°/10° and 240°/80°. A less pronounced fracture set is orientated 335°/85°. The densely fractured intervals belong to the sub-horizontal fracture set. The mapped sealed fractures are few and show varying orientations. The orientations of fractures are shown in Appendix 9.

Two crushed sections were observed, the first one occurs roughly in the interval 4.3–4.9 m. This crushed section was only observed during drilling (Appendix 12), since it is now hidden behind the casing. Another crushed section is observed at 10.81–10.95 m having the rough orientation 045°/55°.

5.4 HFM19

Lithologies

The dominant rock type of HFM19 is a medium-grained, lineated, greyish red to pinkish grey, metagranite-granodiorite (84.7%). This is cut by several minor rock occurrences of pegmatite (4.3%), amphibolite (5.1%) and fine-grained granites (codes 101058 and 111058, 5.7%). A possible fine- to medium grained metagranite, granodiorite and tonalite comprise 0.2% of the borehole.

Fractures

Frequency of interpreted open fractures in HFM19 is calculated to 1.6 open fractures/m (from BIPS-image of the borehole, available between 12.0–184.9 m). Three densely fractured intervals were observed: 122.0–123.4 m (8.7 fractures/m), 142.6–144.2 m (10.0 fractures/m) and 175.2–176.0m (16.2 fractures/m). Two dominating open fracture sets were observed having the orientations 075°/15° and 055°/90°. Another possible fracture set is orientated 055°/50°. The dominating sets of interpreted sealed fractures are orientated 235°/85°, 345°/80°, 050°/20° and 240°/20°. The orientations of fractures are shown in Appendix 9.

Two crushed sections were observed, the first one at 12.43–12.53 m borehole length striking 188°/40° and the second at 170.21–170.55 m borehole length striking roughly 040°/30°. The latter is possibly not a real crushed section but it looks really damaged in BIPS. The lower limit of the latter section is a relatively large open fracture.

5.5 Discussion

From the above described working procedures, it is understood that Boremap mapping of percussion drilled boreholes suffers from certain shortcomings compared to the corresponding method for core drilled boreholes. For example, classification of thin fractures as open or sealed, classification of fracture minerals and identification of the colour and grain size of minor rock occurrences are clearly problematic.

The varying exposure of the BIPS-camera as well as suspensions in the borehole water may complicate the interpretation of oxidized sections, since sections with higher exposure are less reddish than sections with lower exposure and sections rich in suspensions look more brownish/reddish in BIPS than other sections. This variation in colour may be greater than the variation in colour due to oxidation of the rock.

An example of locally bleached BIPS-images is the white streak in fractures that seems to be a result of good light reflection and not of a white fracture mineral. In HFM13 these streaks have usually been interpreted as quartz but this interpretation was abandoned for the other boreholes.

Geophysical data were of some help in interpreting the rock types, and a few reinterpretations were made when the geophysics were finally compared with the first Boremap mapping of HFM13–14 and 19.

Neither geophysics nor the observation of drill cuttings can easily separate different fine- or medium-grained granitic rocks from each other, for example, the metagranite to granodiorite (code 101057) from the fine- to medium-grained granite-granodiorite-tonalite (code 101051). This separation has to be done only on the basis of the BIPS-image and does hence require good BIPS-images and usually also higher pixel resolution than what is pused today.

The mapping also benefits from synchronous analysis of supporting data from the drilling, such as drilling penetration rate and flush-water colour, and, not least, observations of drill cores and outcrops from the same drill site.

6 References

/1/ **Stephens M B, Lundqvist S, Bergman T, Andersson J, Ekström M, 2003.** Forsmark site investigation. Bedrock mapping – Rock types, their petrographic and geochemical characteristics, and a structural analysis of the bedrock based on Stage 1 (2002) surface data. SKB P-03-75, Svensk Kärnbränslehantering AB.

/2/ **Stephens M B, Bergman T, Andersson J, Hermansson T, Petersson J, Zetterström E L, Nordman C, Albrecht L, Ekström M, 2004.** Forsmark site investigation. Bedrock mapping – Stage 2 (2003) – Bedrock data from outcrops and the basal parts of trenches and shallow boreholes through the Quaternary cover. SKB P-04-91, Svensk Kärnbränslehantering AB.

Appendix 1

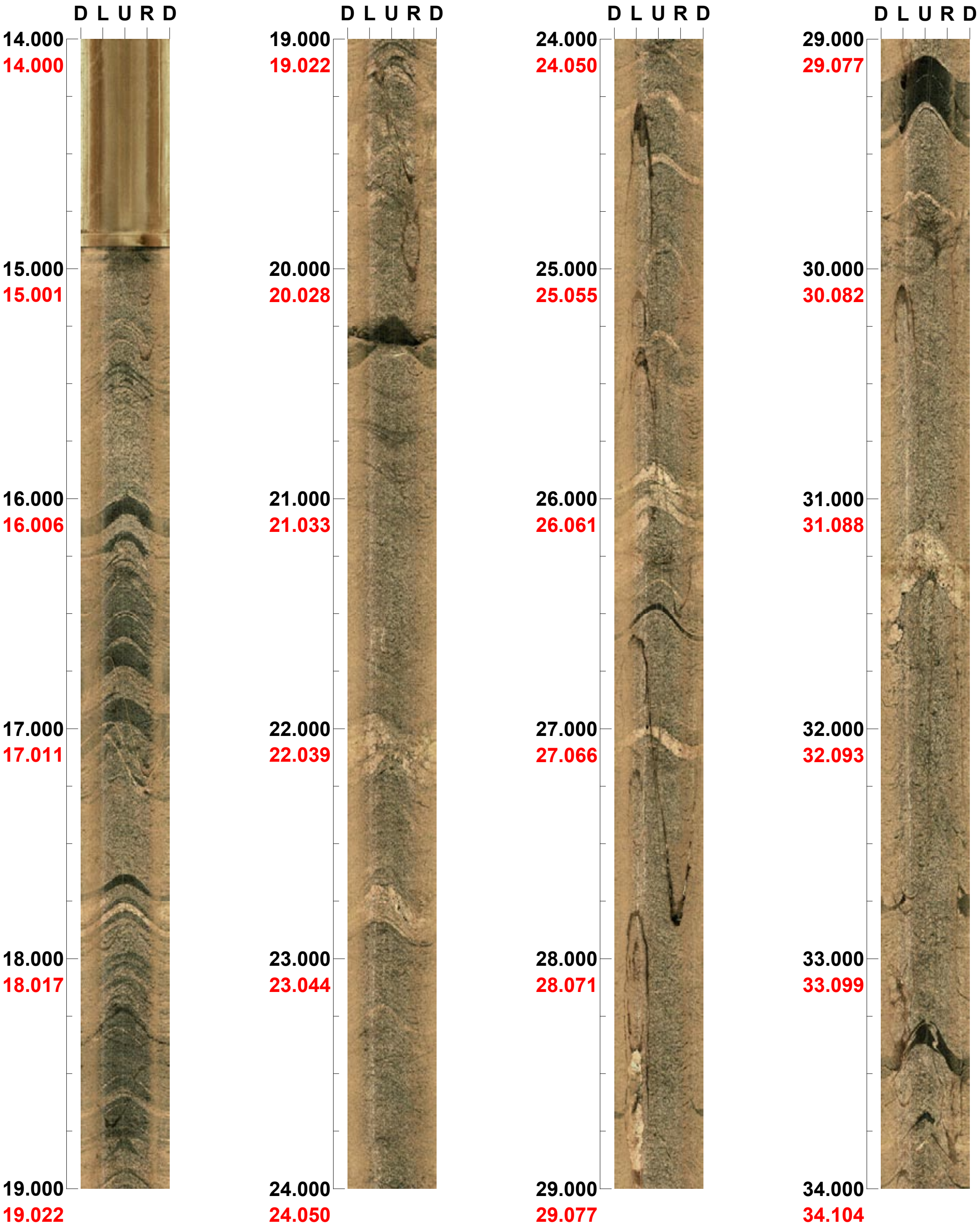
BIPS-images of HFM13

Project name: Forsmark

Image file	: c:\304179~1\hfm13.bip
BDT file	: c:\304179~1\hfm13.bdt
Locality	: FORSMARK
Bore hole number	: HFM13
Date	: 03/10/21
Time	: 14:42:00
Depth range	: 14.000 - 174.472 m
Azimuth	: 50
Inclination	: -60
Diameter	: 137.0 mm
Magnetic declination	: 0.0
Span	: 4
Scan interval	: 0.25
Scan direction	: To bottom
Scale	: 1/25
Aspect ratio	: 90 %
Pages	: 9
Color	: +0 +0 +0

Project name: Forsmark
Bore hole No.: HFM13 Azimuth: 50 Inclination: -60

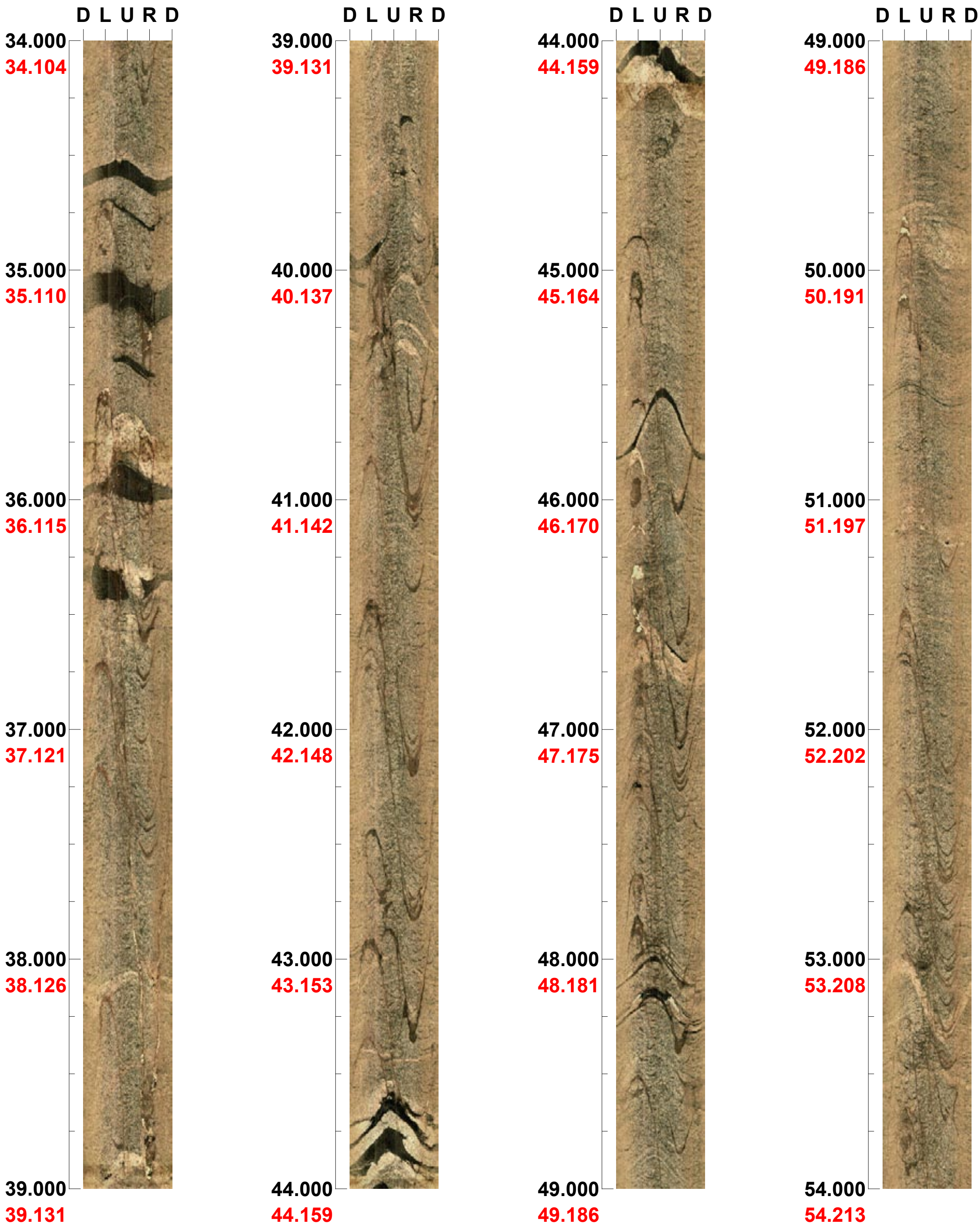
Depth range: 14.000 - 34.000 m



(1 / 9) Scale: 1/25 Aspect ratio: 90 %

Project name: Forsmark
Bore hole No.: HFM13 **Azimuth: 54** **Inclination: -60**

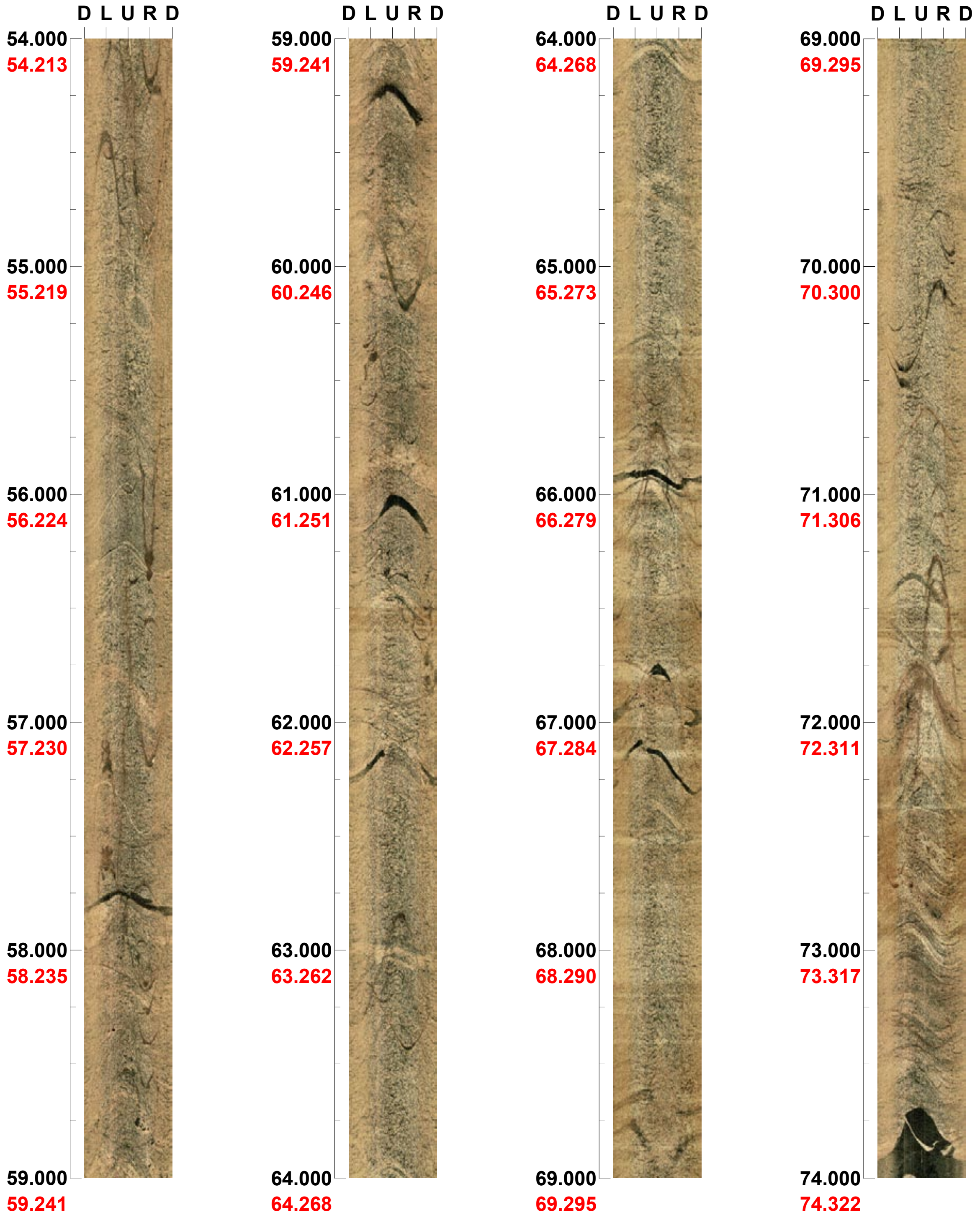
Depth range: 34.000 - 54.000 m



(2 / 9) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark
Bore hole No.: HFM13 **Azimuth: 61** **Inclination: -61**

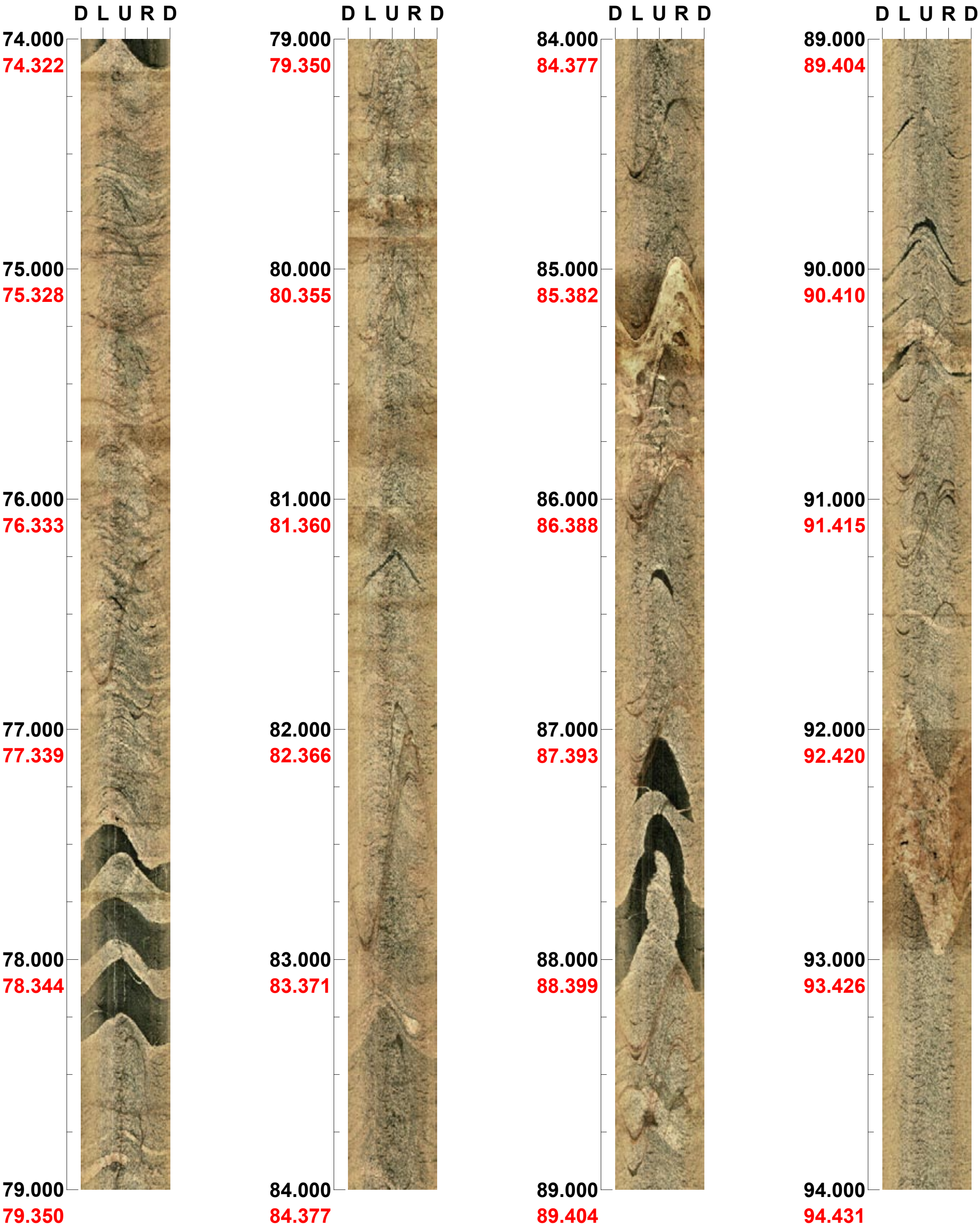
Depth range: 54.000 - 74.000 m



(3 / 9) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark
Bore hole No.: HFM13 Azimuth: 63 Inclination: -61

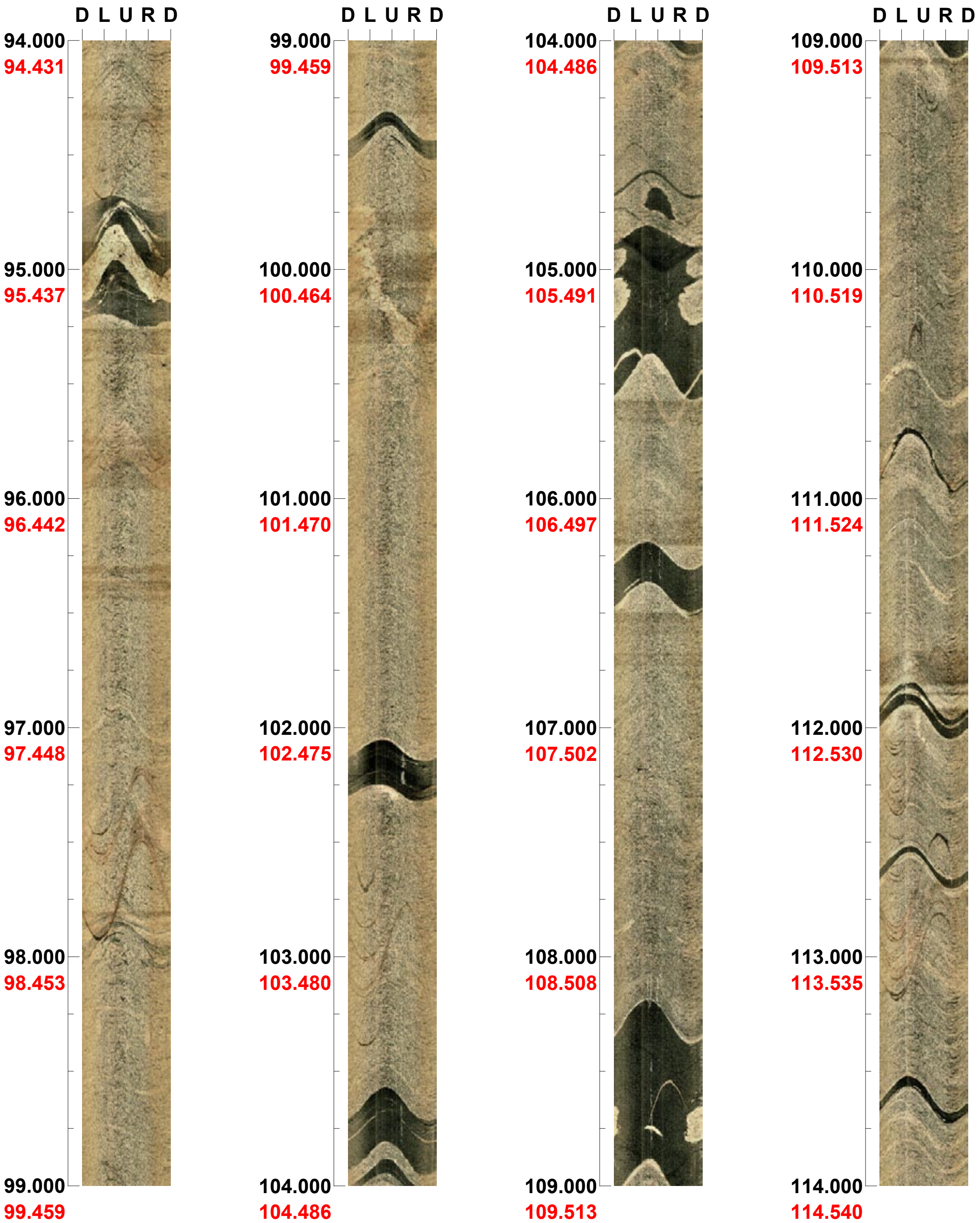
Depth range: 74.000 - 94.000 m



(4 / 9) Scale: 1/25 Aspect ratio: 90 %

Project name: Forsmark
Bore hole No.: HFM13 **Azimuth: 70** **Inclination: -60**

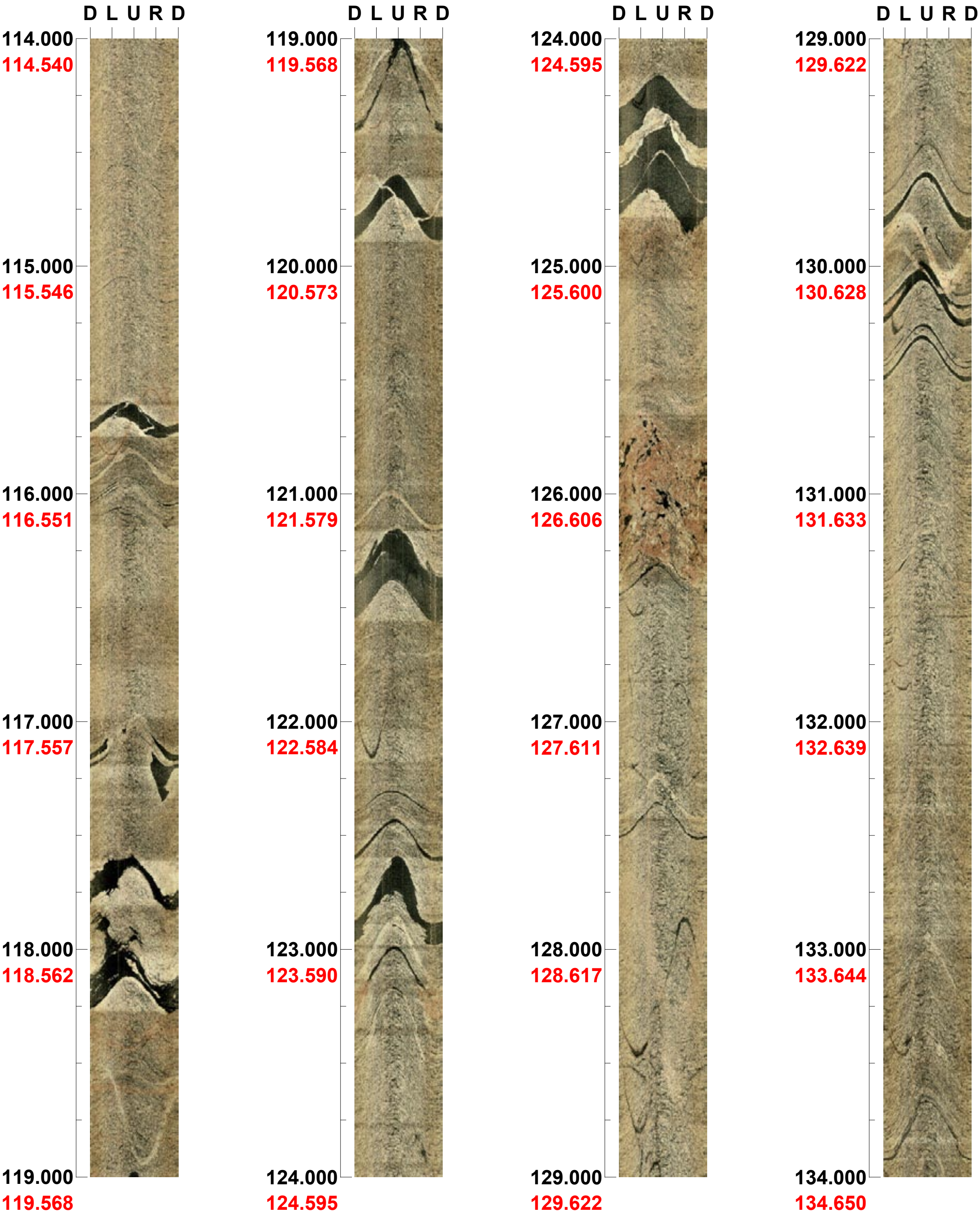
Depth range: 94.000 - 114.000 m



(5 / 9) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark
Bore hole No.: HFM13 **Azimuth: 76** **Inclination: -60**

Depth range: 114.000 - 134.000 m

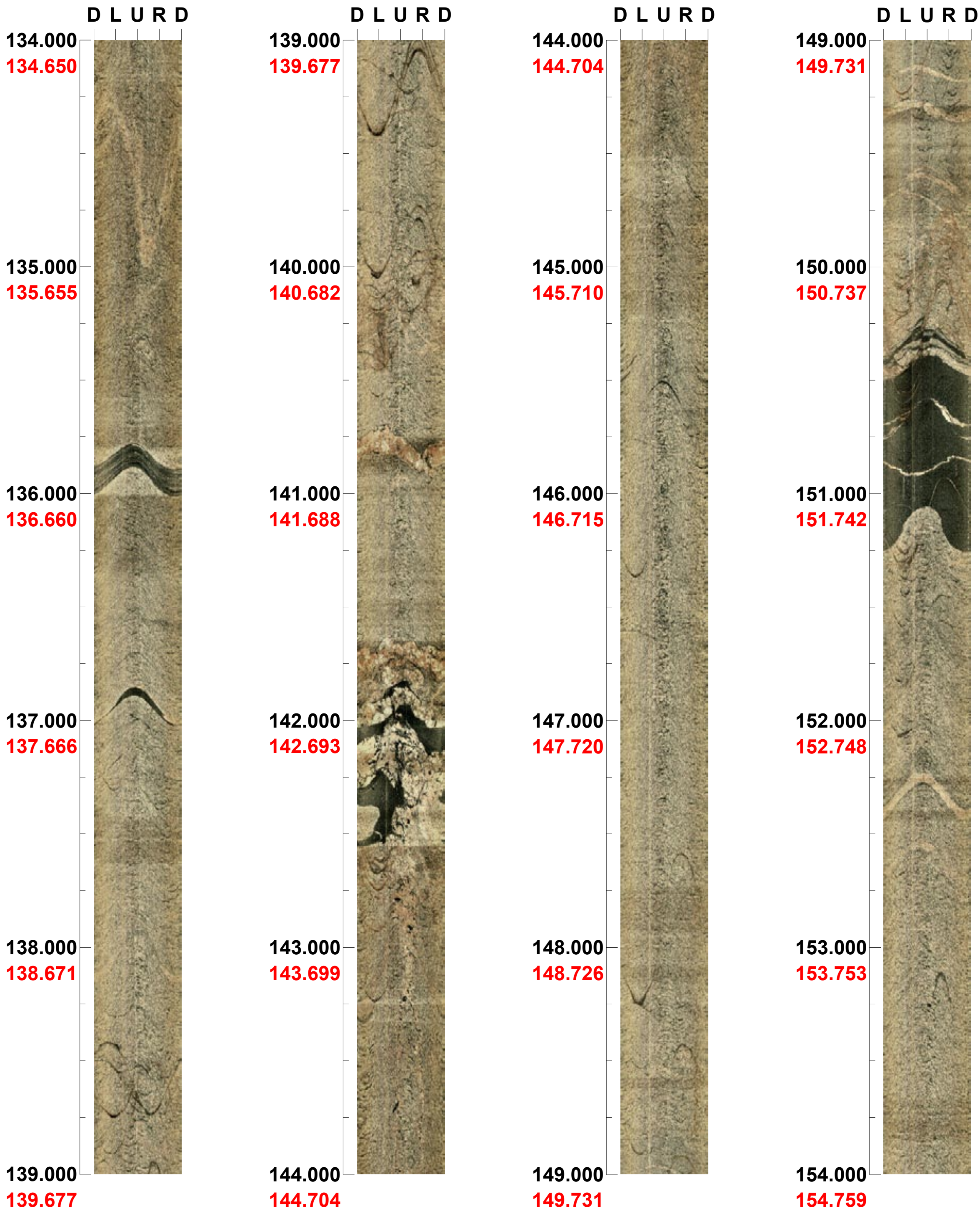


(6 / 9) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark

Bore hole No.: HFM13 **Azimuth: 77** **Inclination: -60**

Depth range: 134.000 - 154.000 m

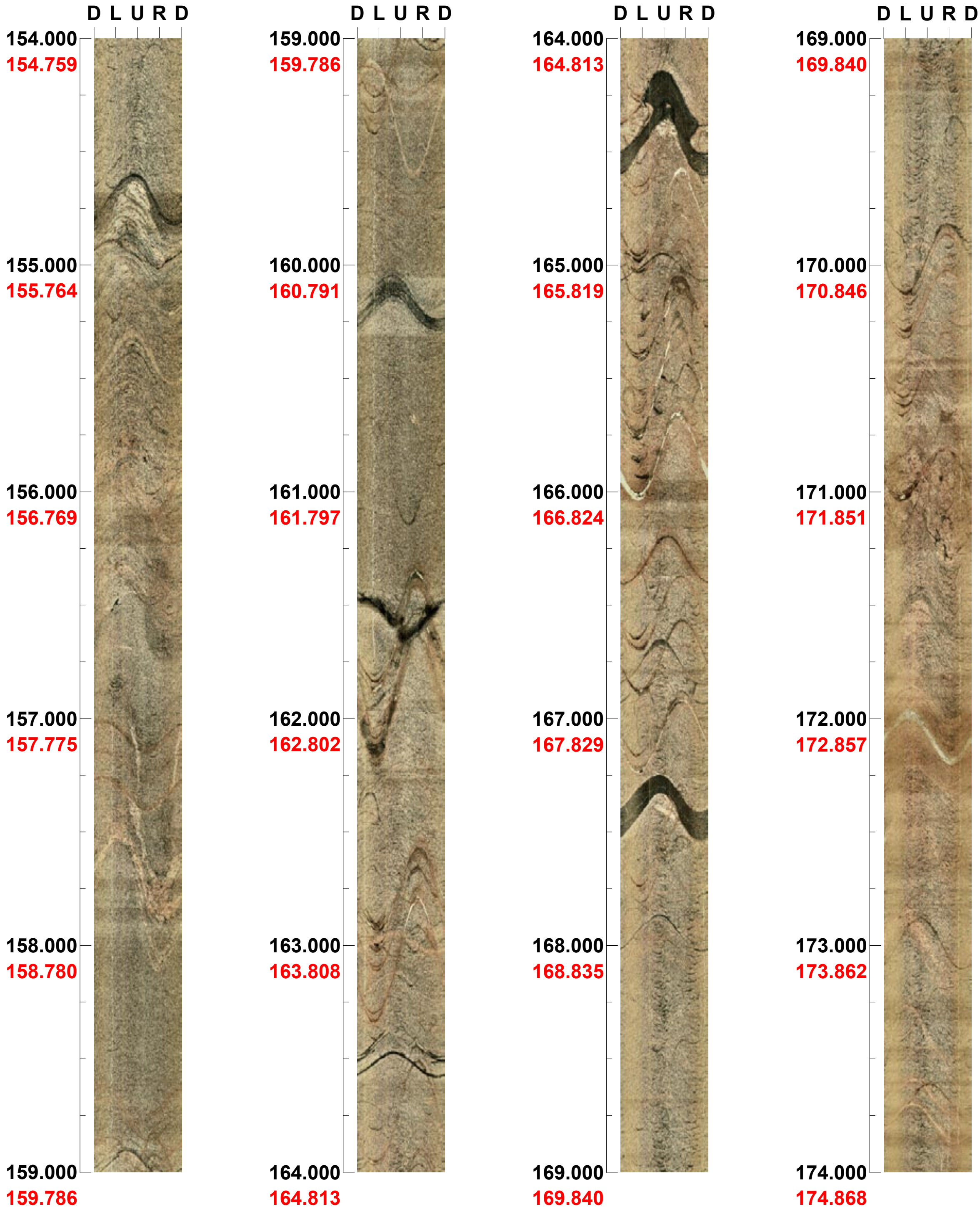


(7 / 9) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark

Bore hole No.: HFM13 **Azimuth: 80** **Inclination: -59**

Depth range: 154.000 - 174.000 m



(8 / 9) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark
Bore hole No.: HFM13 Azimuth: 84 Inclination: -58

Depth range: 174.000 - 174.472 m

D L U R D

174.000
174.868

(9 / 9) Scale: 1/25 Aspect ratio: 90 %

Appendix 2

BIPS-images of HFM14

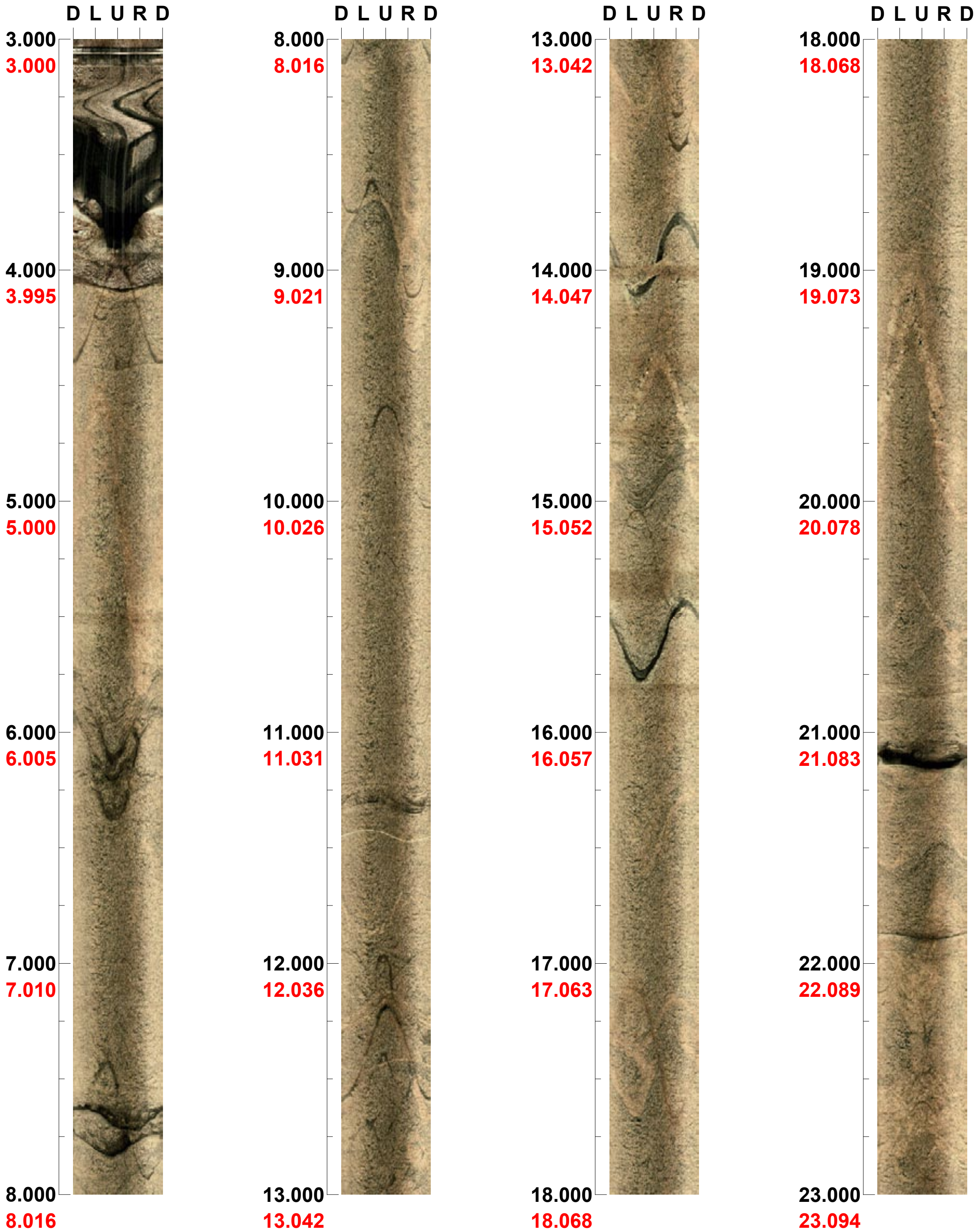
Project name: Forsmark

Image file	**: c:\304179~1\hfm14.bip**
BDT file	**: c:\304179~1\hfm14.bdt**
Locality	**: FORSMARK**
Bore hole number	**: HFM14**
Date	**: 03/10/21**
Time	**: 10:44:00**
Depth range	**: 3.000 - 148.581 m**
Azimuth	**: 331**
Inclination	**: -60**
Diameter	**: 137.0 mm**
Magnetic declination	**: 0.0**
Span	**: 4**
Scan interval	**: 0.25**
Scan direction	**: To bottom**
Scale	**: 1/25**
Aspect ratio	**: 90 %**
Pages	**: 8**
Color	**: +0 +0 +0**

Project name: Forsmark

Bore hole No.: HFM14 **Azimuth: 331** **Inclination: -60**

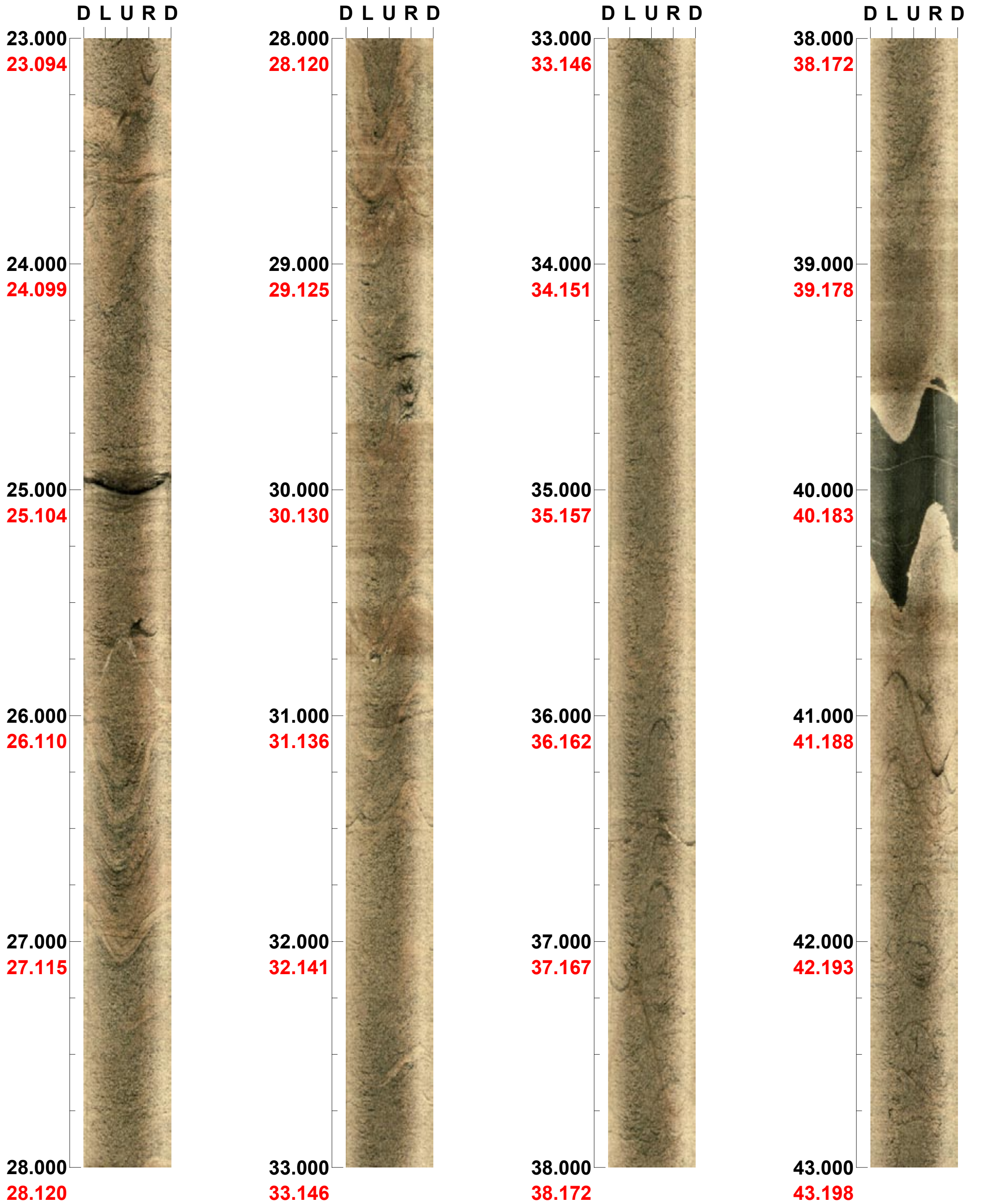
Depth range: 3.000 - 23.000 m



(1 / 8) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark
Bore hole No.: HFM14 **Azimuth: 328** **Inclination: -60**

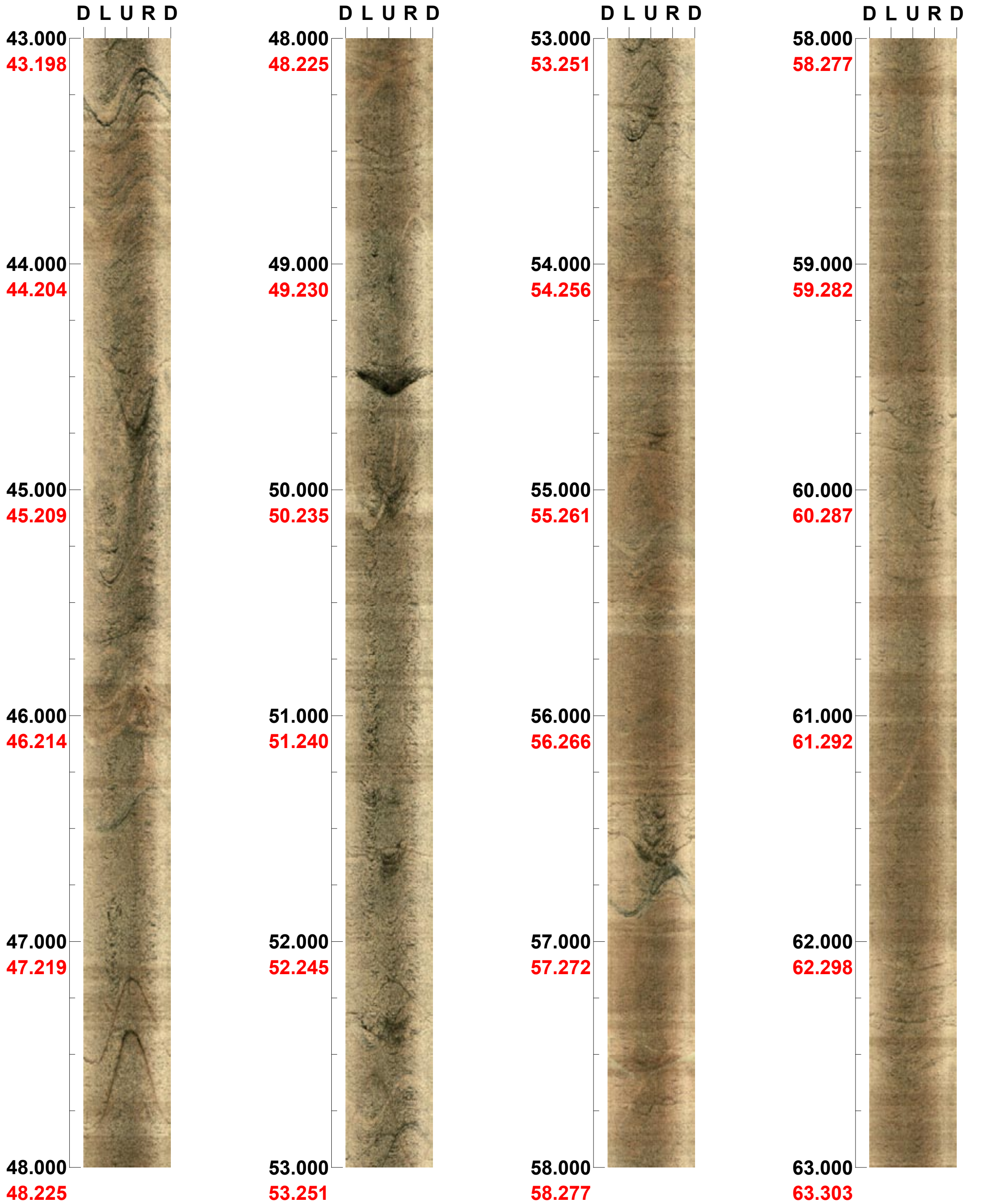
Depth range: 23.000 - 43.000 m



(2 / 8) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark
Bore hole No.: HFM14 **Azimuth: 320** **Inclination: -61**

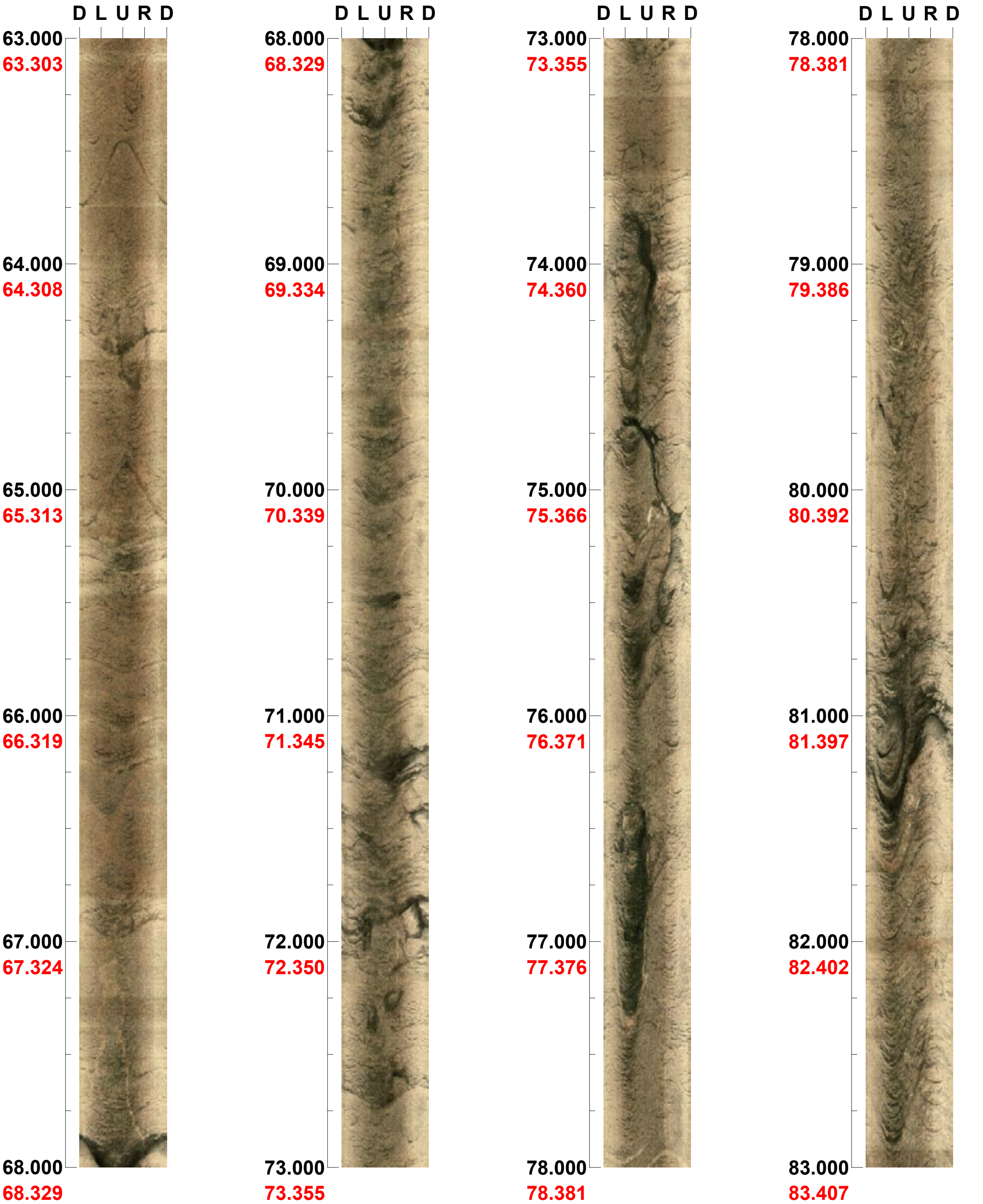
Depth range: 43.000 - 63.000 m



(3 / 8) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark
Bore hole No.: HFM14 **Azimuth: 319** **Inclination: -62**

Depth range: 63.000 - 83.000 m



(4 / 8) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark
Bore hole No.: HFM14 **Azimuth: 314** **Inclination: -61**

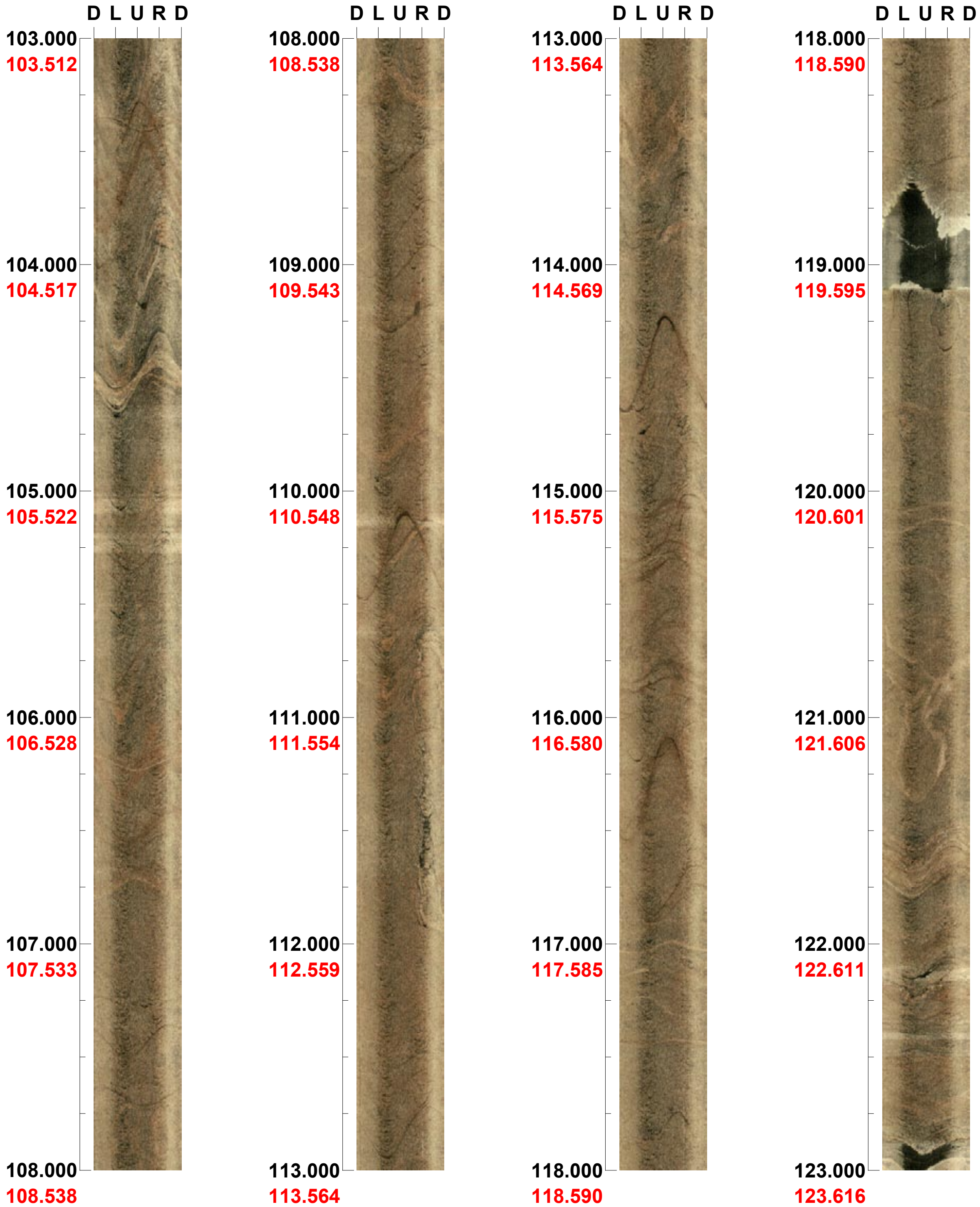
Depth range: 83.000 - 103.000 m

(5 / 8) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark

Bore hole No.: HFM14 **Azimuth: 302** **Inclination: -60**

Depth range: 103.000 - 123.000 m



(6 / 8) **Scale: 1/25** **Aspect ratio: 90 %**

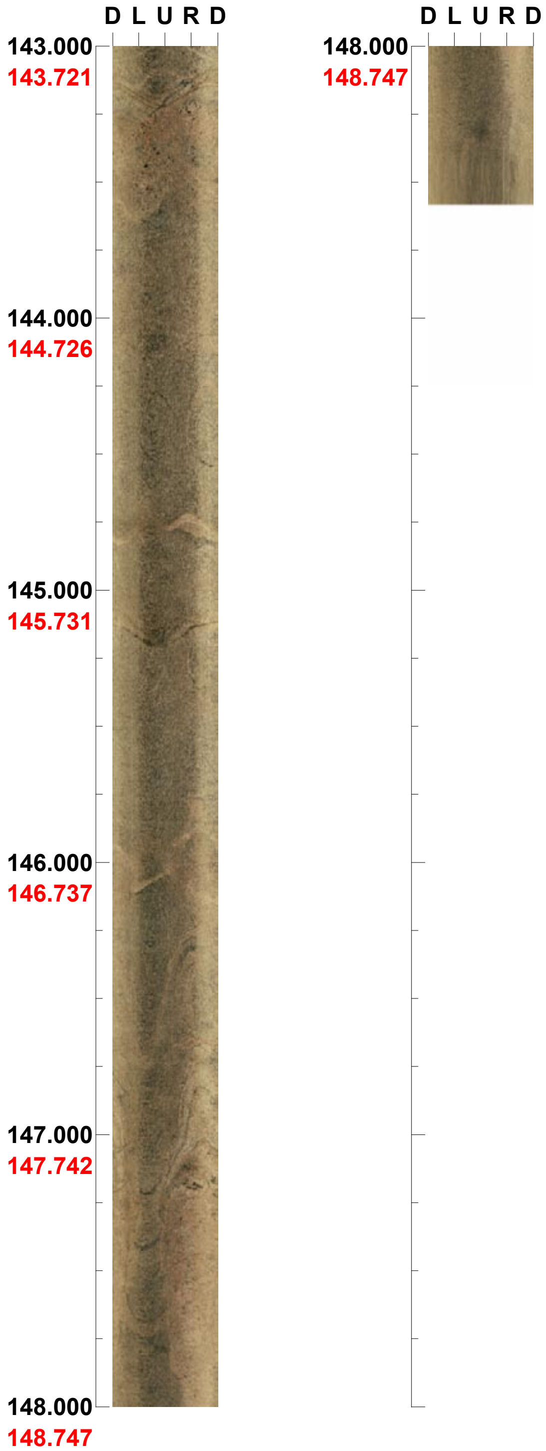
Project name: Forsmark
Bore hole No.: HFM14 Azimuth: 307 Inclination: -59

Depth range: 123.000 - 143.000 m

(7 / 8) Scale: 1/25 Aspect ratio: 90 %

Project name: Forsmark
Bore hole No.: HFM14 **Azimuth: 305** **Inclination: -59**

Depth range: 143.000 - 148.581 m



(8 / 8) **Scale: 1/25** **Aspect ratio: 90 %**

Appendix 3

BIPS-images of HFM15

Project name: Forsmark

Image file	**: c:\304179~1\hfm15.bip**
BDT file	**: c:\304179~1\hfm15.bdt**
Locality	**: FORSMARK**
Bore hole number	**: HFM15**
Date	**: 03/10/21**
Time	**: 09:17:00**
Depth range	**: 4.000 - 98.564 m**
Azimuth	**: 313**
Inclination	**: -44**
Diameter	**: 139.0 mm**
Magnetic declination	**: 0.0**
Span	**: 4**
Scan interval	**: 0.25**
Scan direction	**: To bottom**
Scale	**: 1/25**
Aspect ratio	**: 90 %**
Pages	**: 5**
Color	**: +0 +0 +0**

Project name: Forsmark

Bore hole No.: HFM15 **Azimuth: 313** **Inclination: -44**

Depth range: 4.000 - 24.000 m

(1 / 5) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark
Bore hole No.: HFM15 **Azimuth: 311** **Inclination: -45**

Depth range: 24.000 - 44.000 m

(2 / 5) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark
Bore hole No.: HFM15 **Azimuth: 307** **Inclination: -45**

Depth range: 44.000 - 64.000 m

(3 / 5) **Scale: 1/25** **Aspect ratio: 90 %**

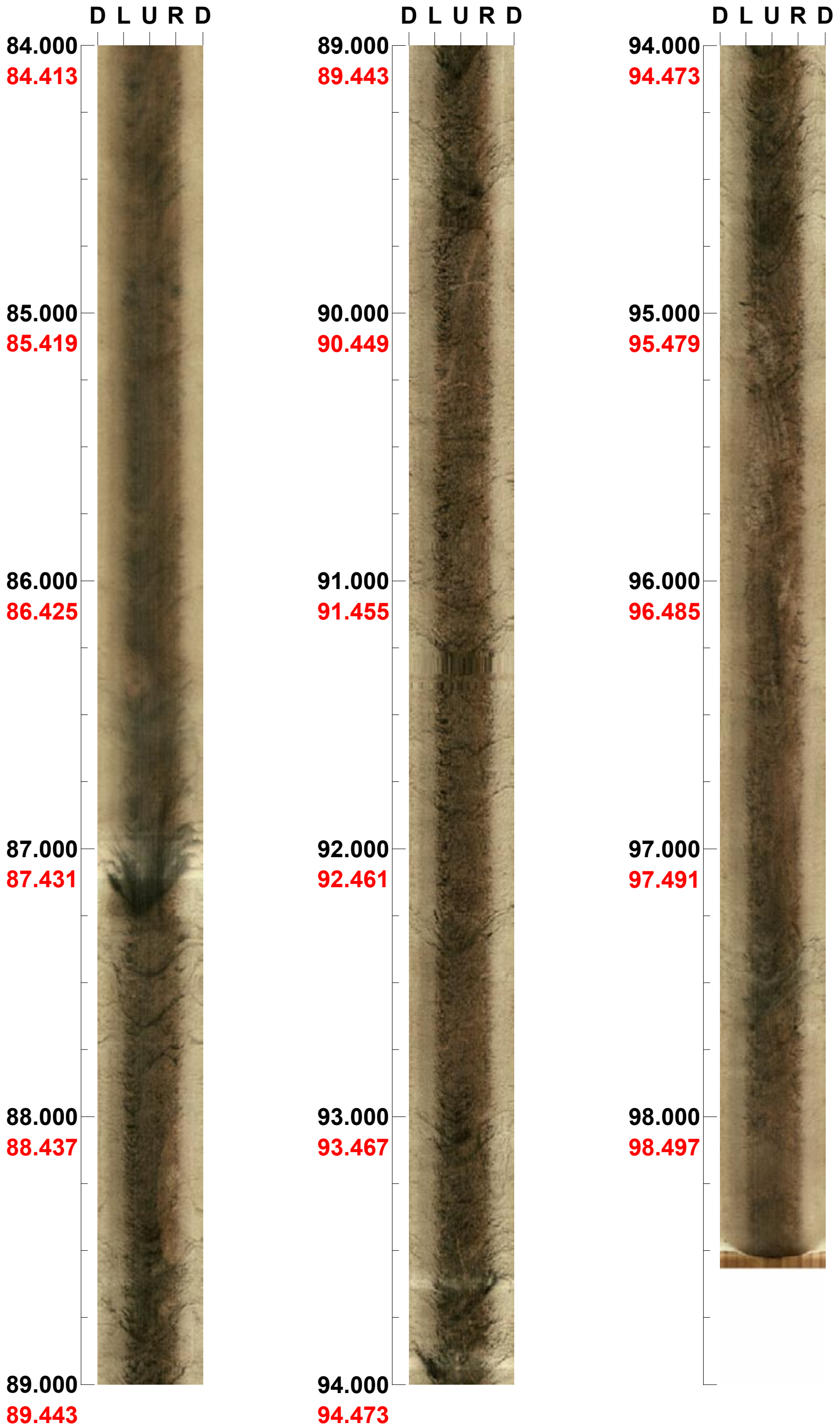
Project name: Forsmark
Bore hole No.: HFM15 **Azimuth: 301** **Inclination: -45**

Depth range: 64.000 - 84.000 m

(4 / 5) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark
Bore hole No.: HFM15 **Azimuth: 298** **Inclination: -43**

Depth range: 84.000 - 98.564 m



(5 / 5) **Scale: 1/25** **Aspect ratio: 90 %**

Appendix 4

BIPS-images of HFM19

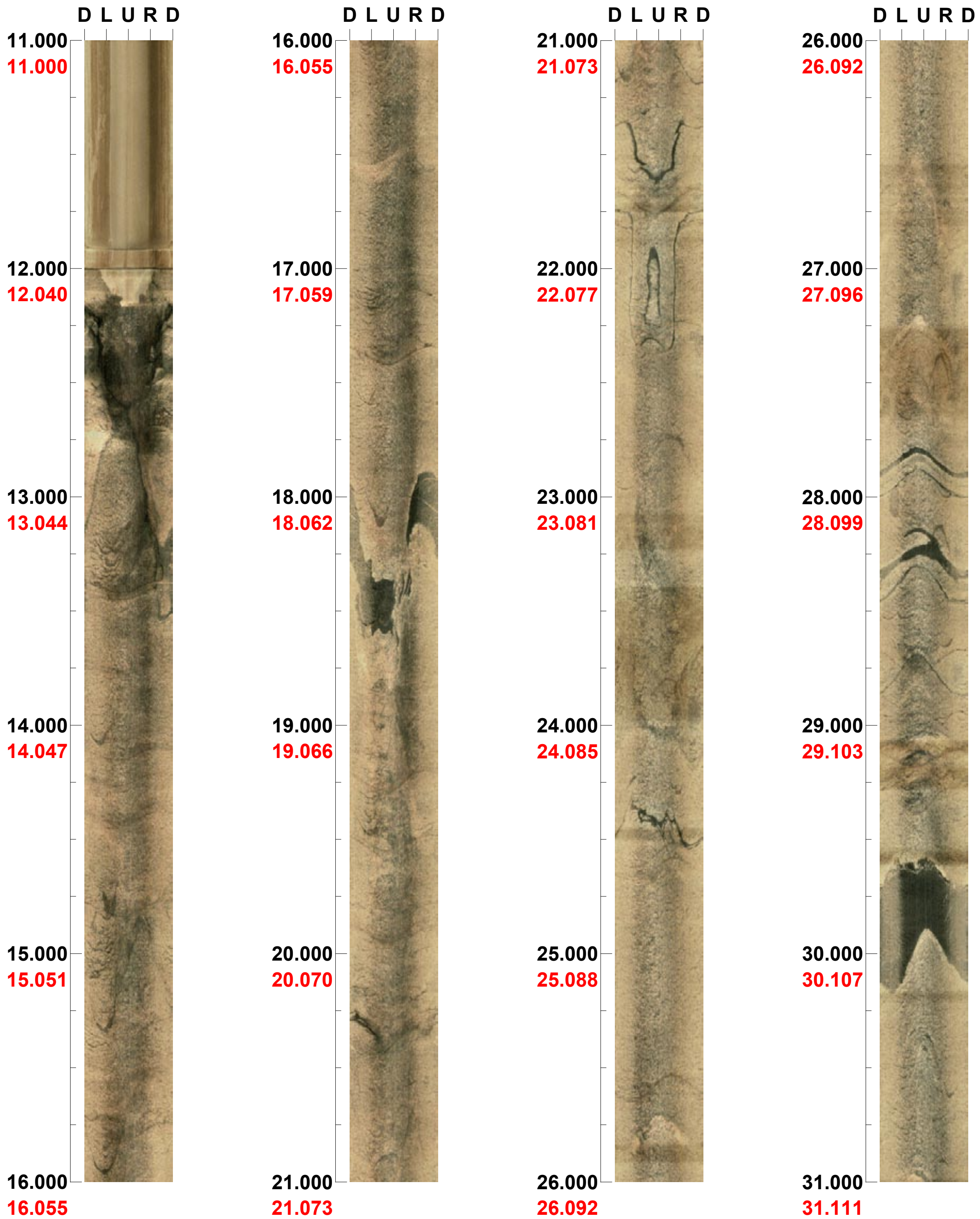
Project name: Forsmark

Image file	: c:\304179~1\hfm19.bip
BDT file	: c:\304179~1\hfm19.bdt
Locality	: FORSMARK
Bore hole number	: HFM19
Date	: 04/01/16
Time	: 08:14:00
Depth range	: 11.000 - 184.408 m
Azimuth	: 277
Inclination	: -58
Diameter	: 137.0 mm
Magnetic declination	: 0.0
Span	: 4
Scan interval	: 0.25
Scan direction	: To bottom
Scale	: 1/25
Aspect ratio	: 90 %
Pages	: 9
Color	: +0 +0 +0

Project name: Forsmark

Bore hole No.: HFM19 **Azimuth: 277** **Inclination: -58**

Depth range: 11.000 - 31.000 m



(1 / 9) **Scale: 1/25** **Aspect ratio: 90 %**

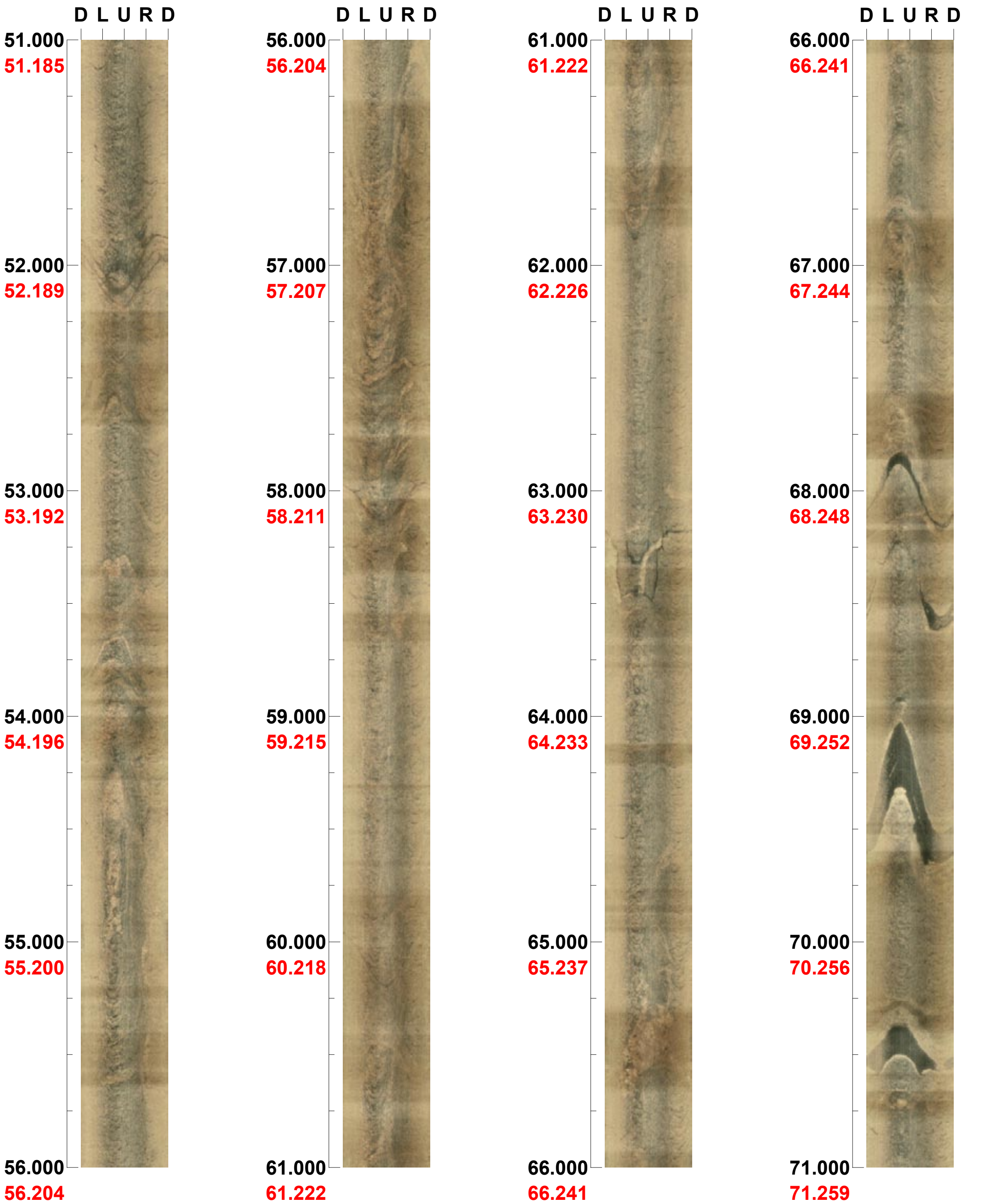
Project name: Forsmark
Bore hole No.: HFM19 **Azimuth: 275** **Inclination: -57**

Depth range: 31.000 - 51.000 m

(2 / 9) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark
Bore hole No.: HFM19 Azimuth: 275 Inclination: -54

Depth range: 51.000 - 71.000 m

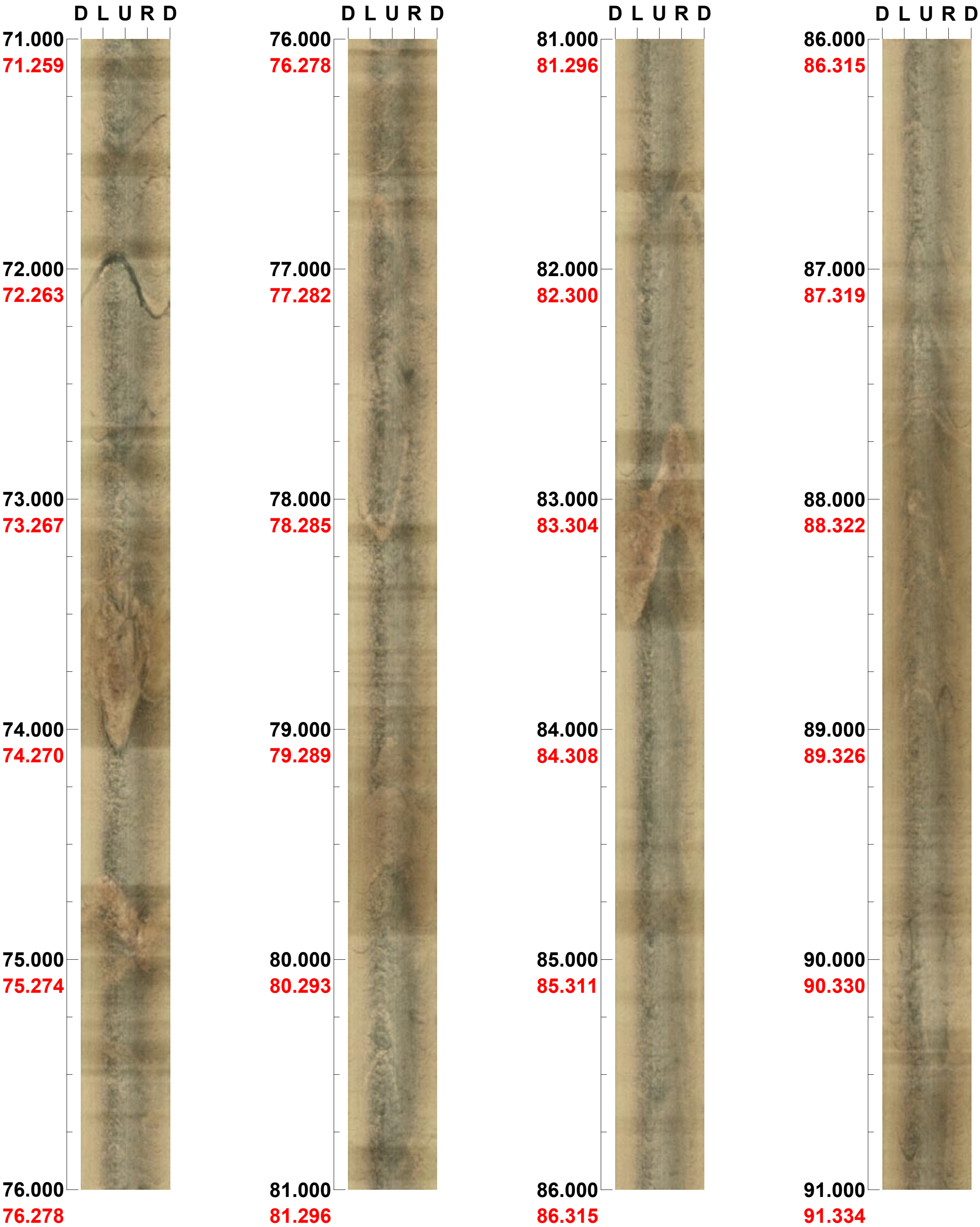


(3 / 9) Scale: 1/25 Aspect ratio: 90 %

Project name: Forsmark

Bore hole No.: HFM19 **Azimuth: 274** **Inclination: -53**

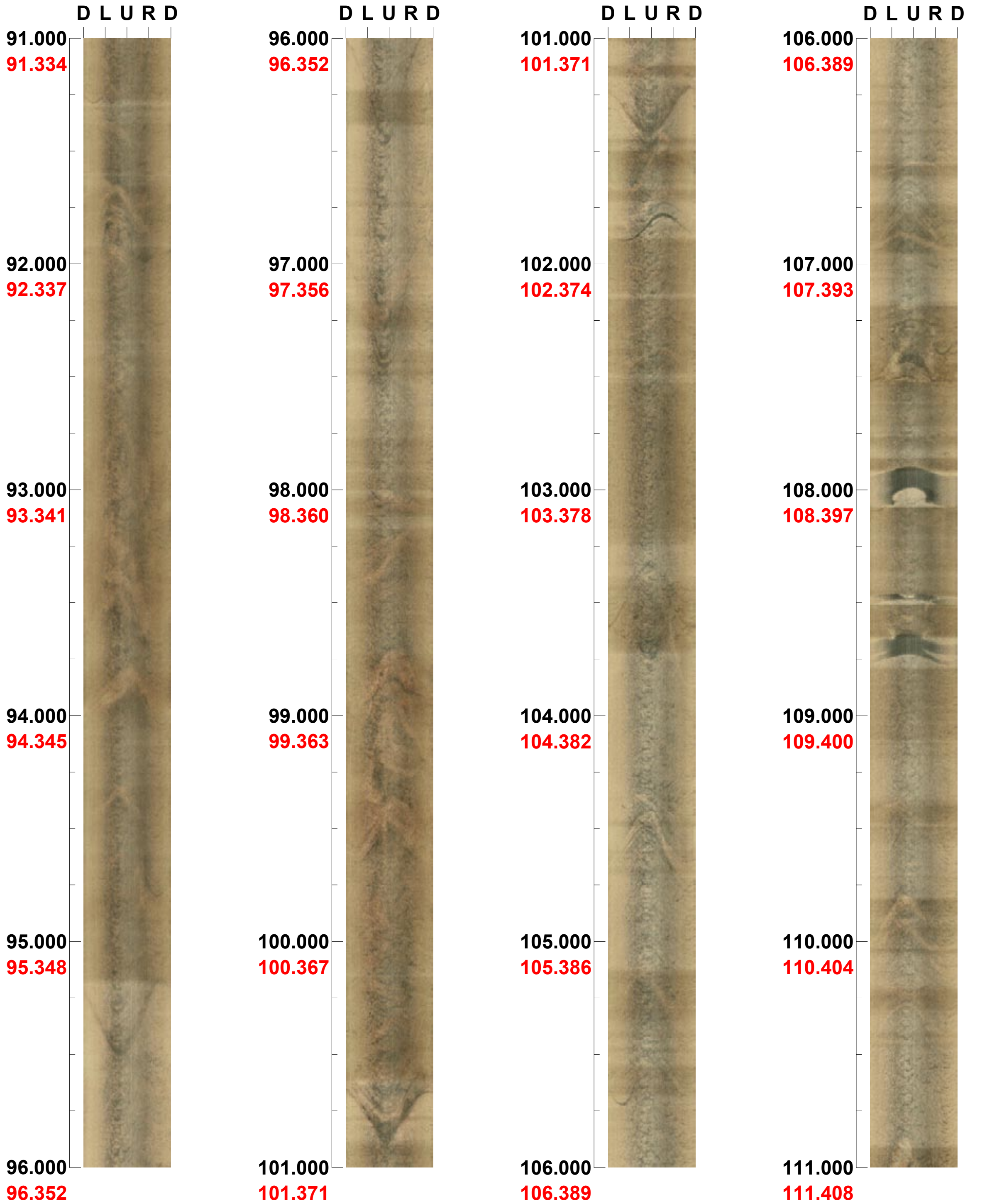
Depth range: 71.000 - 91.000 m



(4 / 9) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark
Bore hole No.: HFM19 **Azimuth: 273** **Inclination: -50**

Depth range: 91.000 - 111.000 m

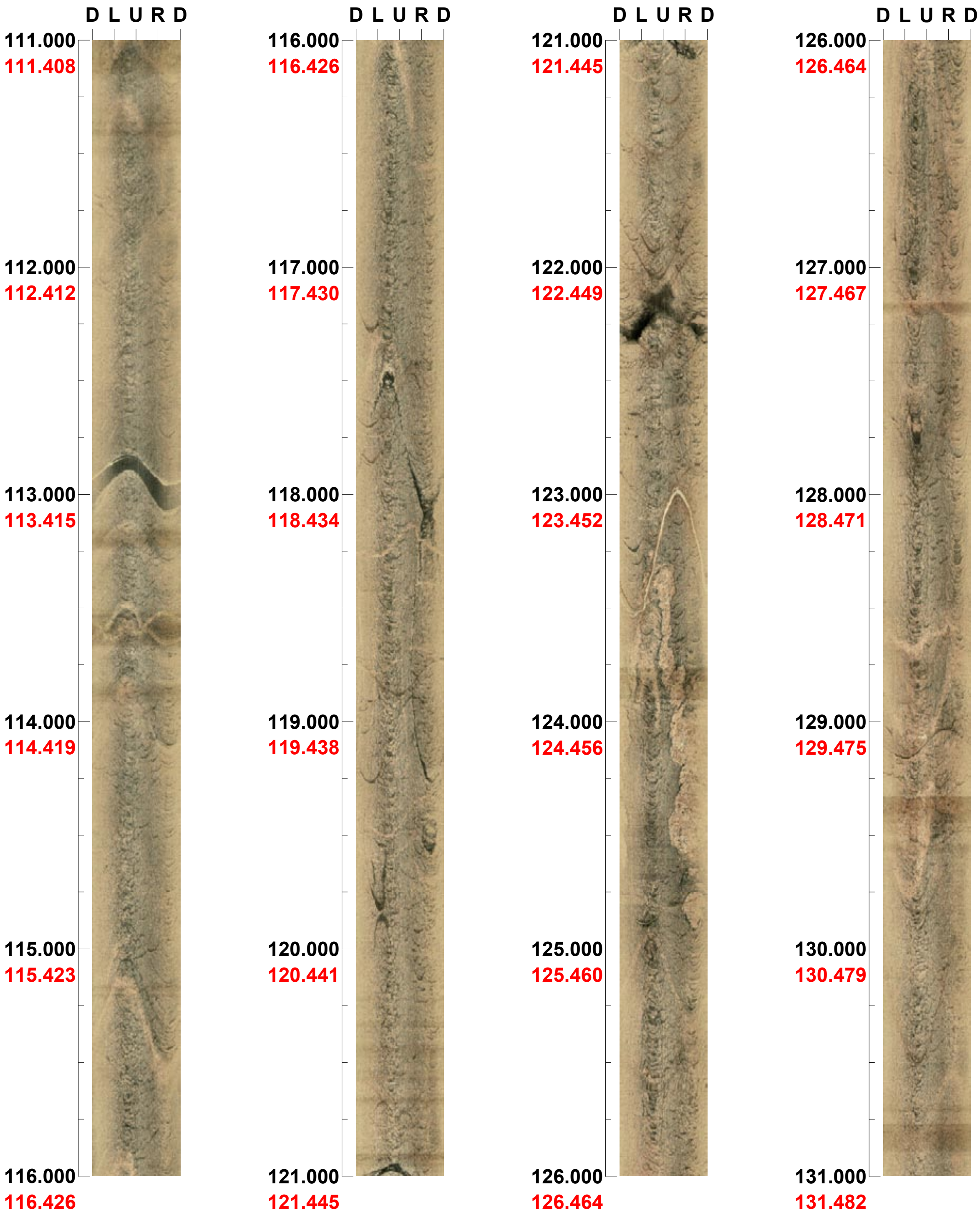


(5 / 9) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark

Bore hole No.: HFM19 **Azimuth: 273** **Inclination: -50**

Depth range: 111.000 - 131.000 m



(6 / 9) **Scale: 1/25** **Aspect ratio: 90 %**

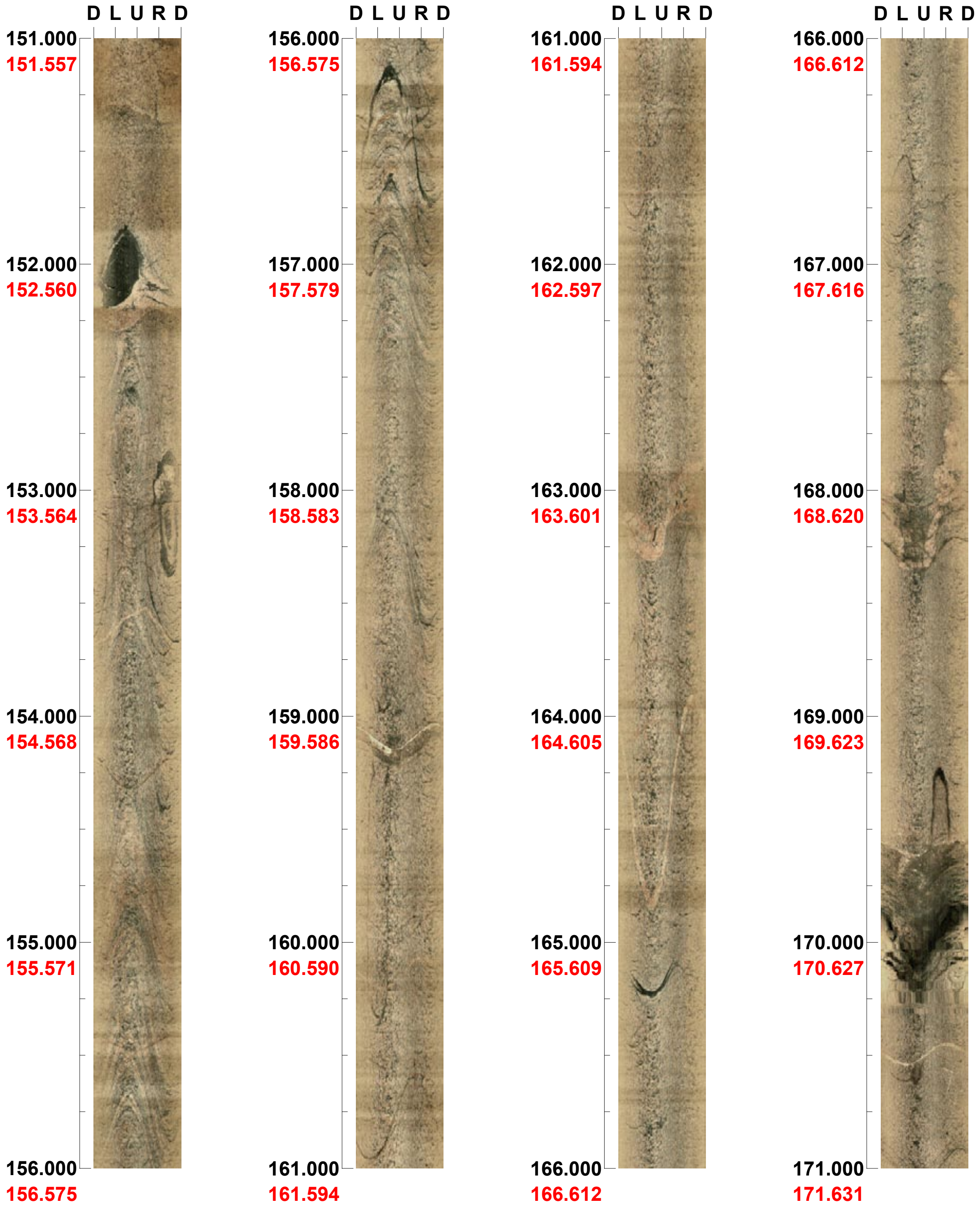
Project name: Forsmark
Bore hole No.: HFM19 Azimuth: 272 Inclination: -50

Depth range: 131.000 - 151.000 m

(7 / 9) Scale: 1/25 Aspect ratio: 90 %

Project name: Forsmark
Bore hole No.: HFM19 **Azimuth: 272** **Inclination: -49**

Depth range: 151.000 - 171.000 m



(8 / 9) **Scale: 1/25** **Aspect ratio: 90 %**

Project name: Forsmark

Bore hole No.: HFM19 **Azimuth: 272** **Inclination: -49**

Depth range: 171.000 - 184.408 m

(9 / 9) **Scale: 1/25** **Aspect ratio: 90 %**

WellCad diagram of HFM13

Title Geological legend for the boreholes HFM13-15 and HFM19 at Forsmark

Site	FORSMARK
Borehole	HFM13
Plot Date	2004-06-21 21:01:58

ROCKTYPE FORSMARK

- Granite, fine- to medium-grained
- Pegmatite, pegmatitic granite
- Granitoid, metamorphic
- Granite, granodiorite and tonalite, metamorphic, fine- to medium-grained
- Granite, metamorphic, aplitic
- Granite to granodiorite, metamorphic, medium-grained
- Granodiorite, metamorphic
- Tonalite to granodiorite, metamorphic
- Diorite, quarts diorite and gabbro, metamorphic
- Ultramafic rock, metamorphic
- Amphibolite
- Calc-silicate rock (skarn)
- Magnetite mineralization associated with calc-silicate rock (skarn)
- Sulphide mineralization
- Felsic to intermediate volcanic rock, metamorphic
- Mafic volcanic rock, metamorphic
- Sedimentary rock, metamorphic

ROCK ALTERATION

- Oxidized
- Chloritisized
- Epidotisized
- Weathered
- Tectonized
- Sericitisized
- Quartz dissolution
- Silicification
- Argillization
- Albitization
- Carbonatization
- Saussuritization
- Steatitization
- Uralitization

MINERAL

- Epidote
- Hematite
- Calcite
- Chlorite
- Quartz
- Unknown
- Oxidized Walls

STRUCTURE

- Cataclastic
- Schistose
- Gneissic
- Mylonitic
- Ductile Shear Zone
- Brittle-Ductile Zone
- Veined
- Banded
- Massive
- Foliated
- Brecciated

TEXTURE

- Hornfelsed
- Porphyritic
- Ophitic
- Equigranular
- Augen-Bearing
- Non_equigranular
- Metamorphic

GRAINSIZE

- Aphanitic
- Fine grained
- Fine to Medium Grained
- Medium coarse
- Coarse grained
- Medium grained

STRUCTURE ORIENTATION

- Schistose
- Gneissic
- Bedded
- Cataclastic
- Ductile Shear Zone
- Brittle-Ductile Shear Zone
- Veined
- Banded
- Lineated
- Brecciated
- Mylonitic
- Foliated

INTENSITY

- No intensity
- Faint
- Weak
- Medium
- Strong

ROUGHNESS

- Planar
- Undulating
- Stepped
- Irregular

SURFACE

- Rough
- Smooth
- Slickensided

CRUSH ALTERATION

- Slightly Altered
- Moderately Altered
- Highly Altered
- Completley Altered
- Gouge
- Fresh

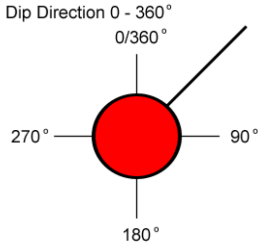
FRACTURE ALTERATION

- Slightly Altered
- Moderately Altered
- Highly Altered
- Completely Altered
- Gouge
- Fresh

FRACTURE DIRECTION

STRUKTURE ORIENTATION

Dip Direction 0 - 360°

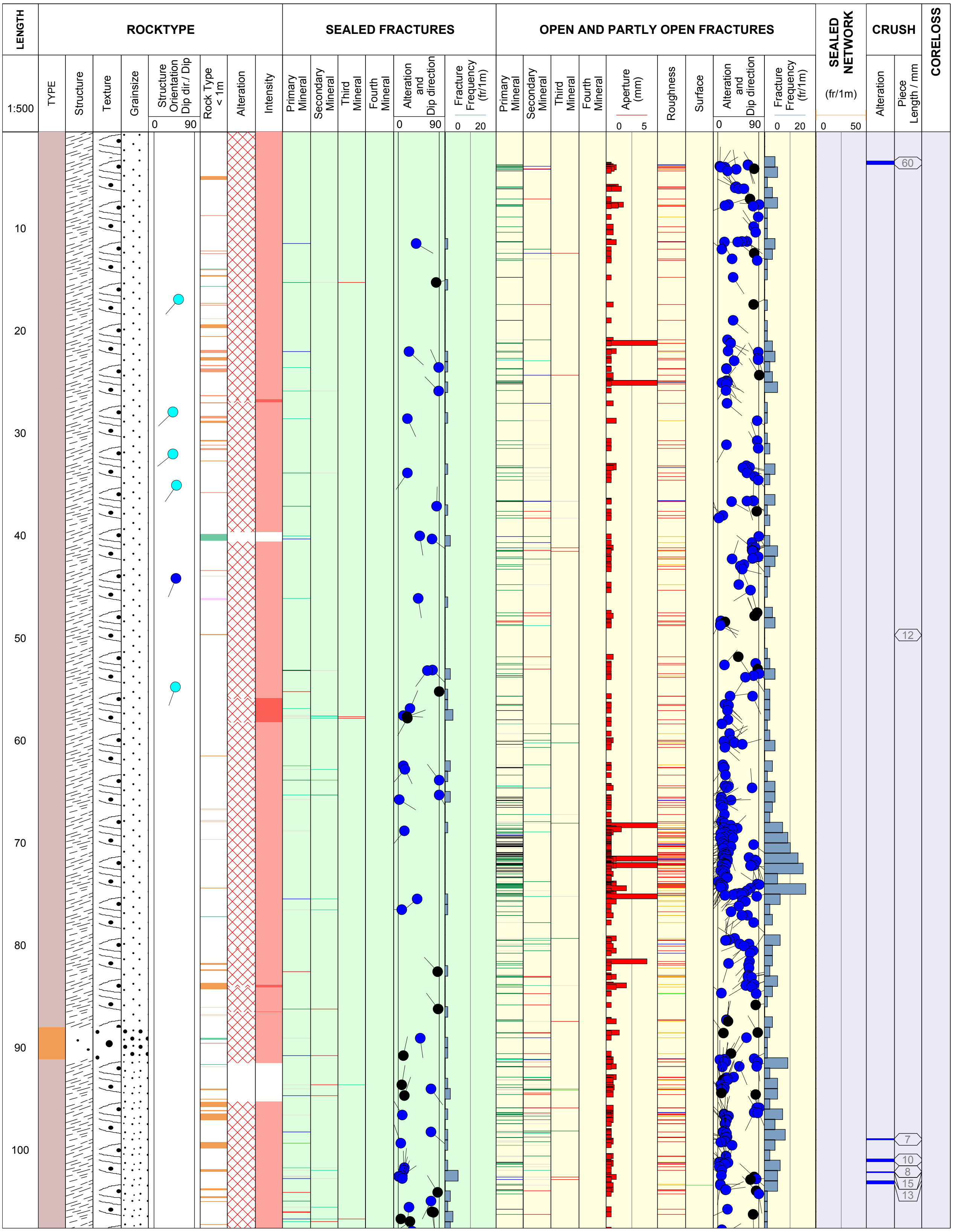


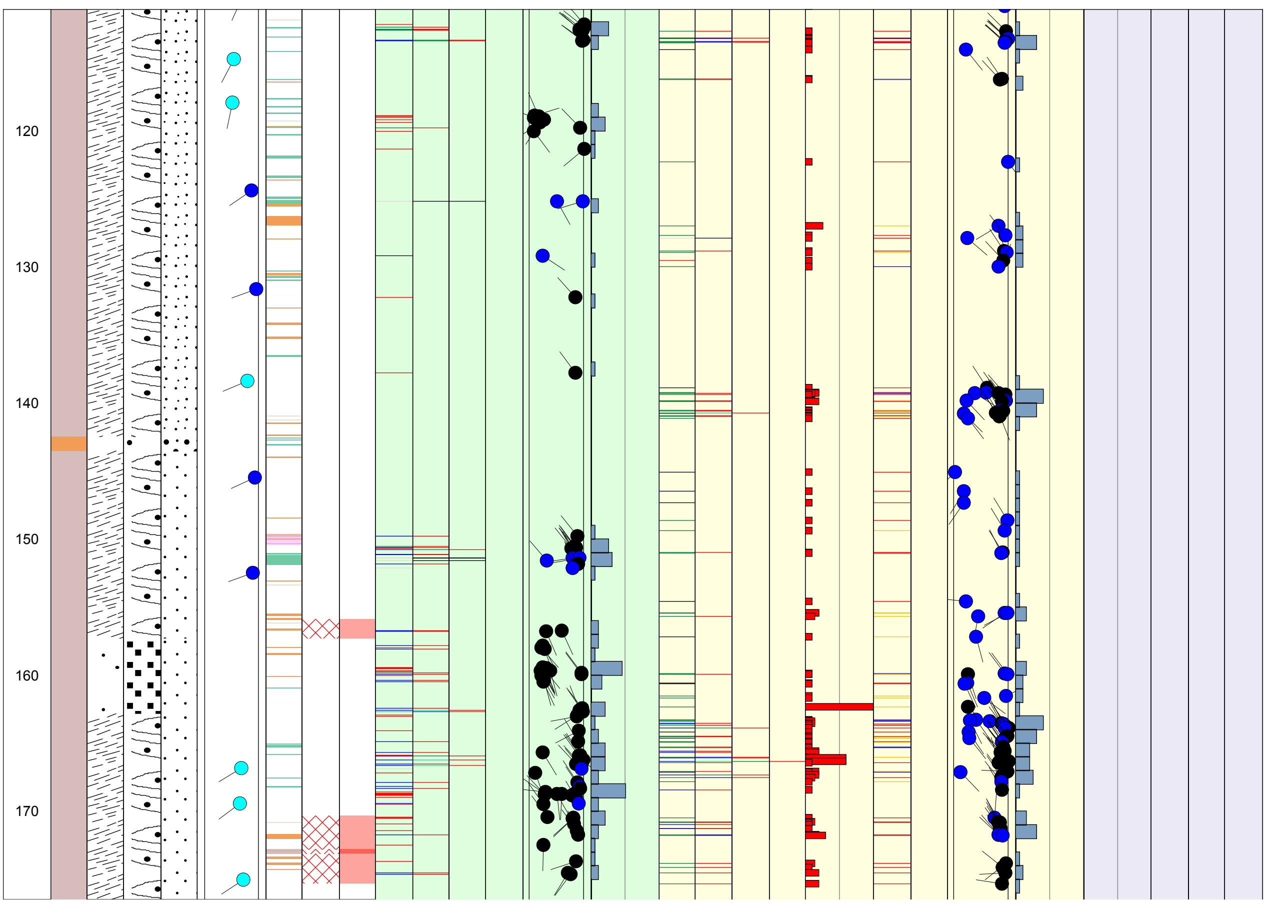
Dip 0 - 90°

WellCad diagram of HFM14

Title

Site	FORSMARK	**Coordinate System**	RT90-RHB70
Borehole	HFM14	**Northing [m]**	6699313.14
Diameter [mm]	136	**Easting [m]**	1631734.59
Length [m]	150.500	**Elevation [m.a.s.l.]**	3.91
Bearing [°]	331.75	**Drilling Start Date**	2003-10-06 14:00:00
Inclination [°]	-59.80	**Drilling Stop Date**	2003-10-09 15:00:00
Date of mapping	2004-06-14 14:09:00	**Plot Date**	2004-06-14 21:05:28
Rocktype data from	p_rock_XXXXX	**Fracture data from**	p_fract_core

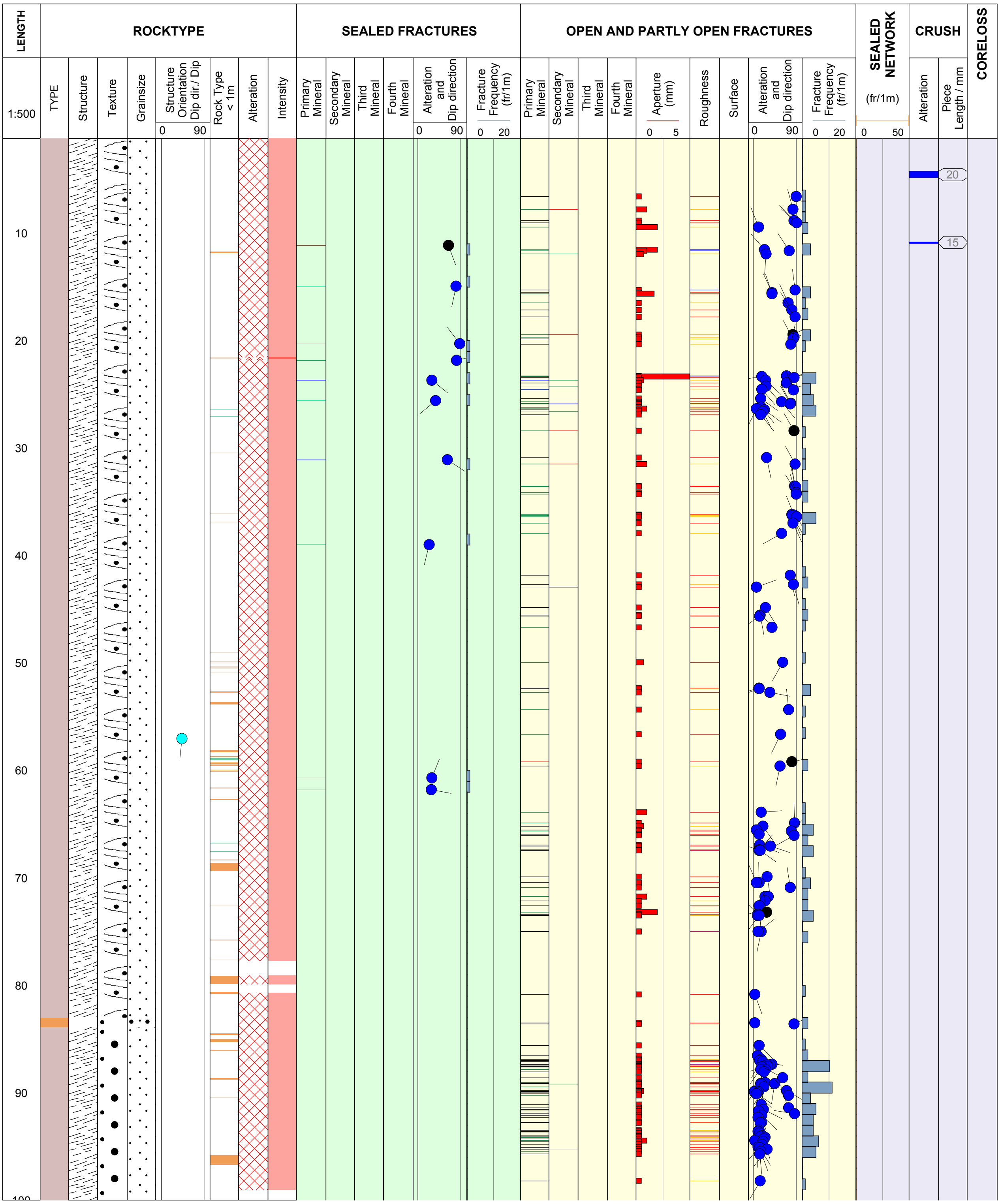



120
130
140
150
160
170

WellCad diagram of HFM15

Title

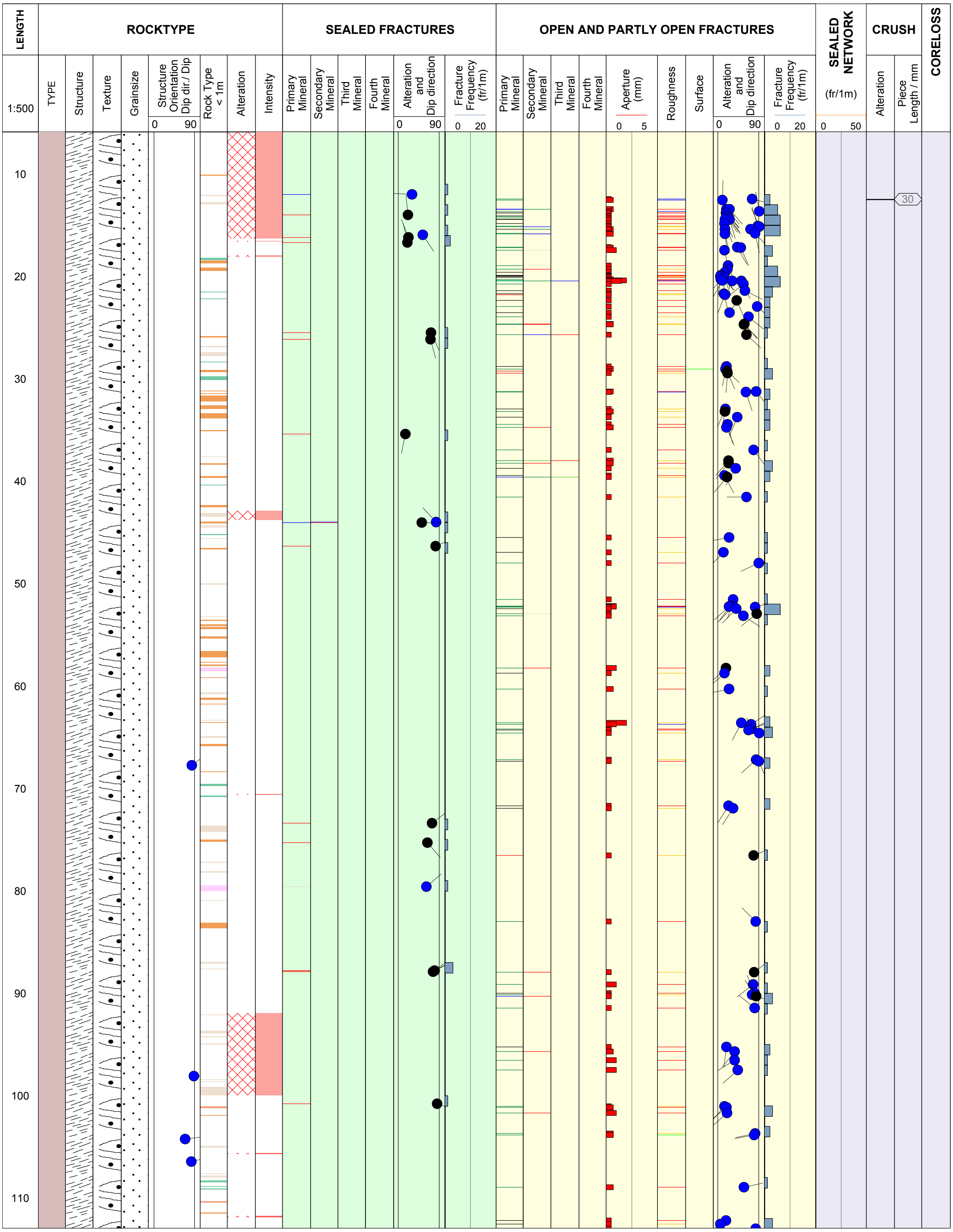
Site	FORSMARK	**Coordinate System**	RT90-RHB70
Borehole	HFM15	**Northing [m]**	6699312.44
Diameter [mm]	139	**Easting [m]**	1631733.08
Length [m]	99.500	**Elevation [m.a.s.l.]**	3.88
Bearing [°]	314.31	**Drilling Start Date**	2003-10-13 12:00:00
Inclination [°]	-43.69	**Drilling Stop Date**	2003-10-15 11:00:00
Date of mapping	2004-06-14 14:11:00	**Plot Date**	2004-06-14 21:05:28
Rocktype data from	p_rock_XXXXX	**Fracture data from**	p_fract_core

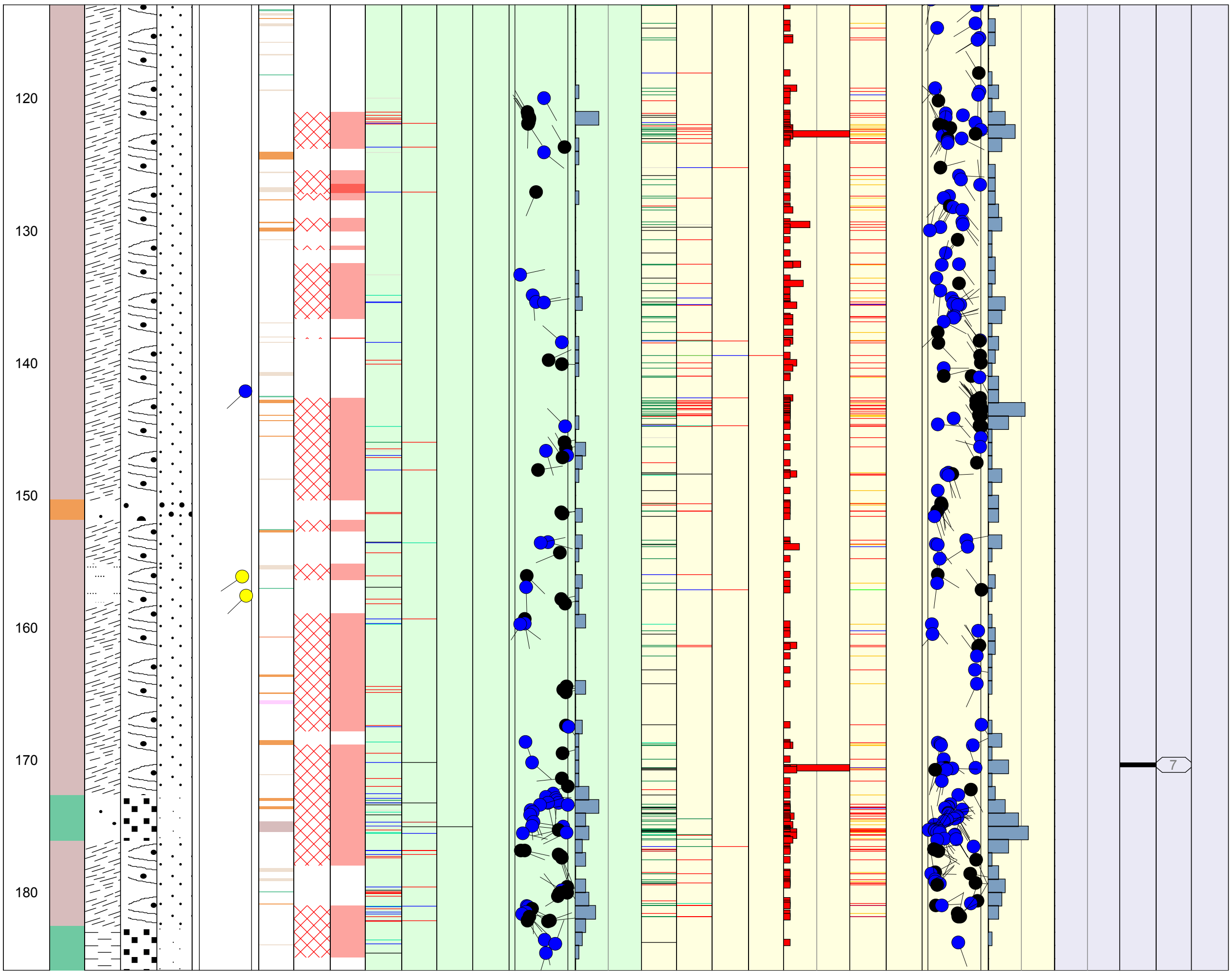


WellCad diagram of HFM19

Title

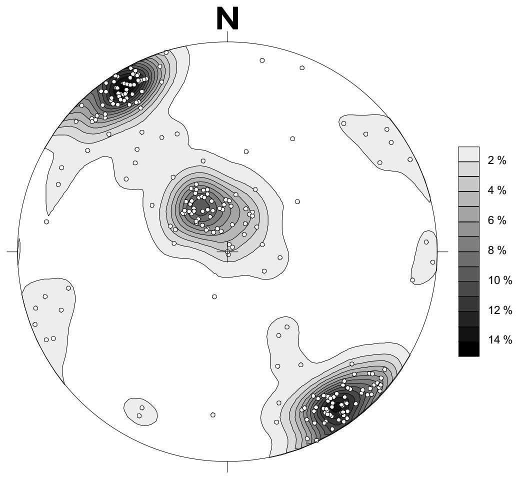
Site	FORSMARK	**Coordinate System**	RT90-RHB70
Borehole	HFM19	**Northing [m]**	6699257.59
Diameter [mm]	137	**Easting [m]**	1631626.93
Length [m]	185.200	**Elevation [m.a.s.l.]**	3.66
Bearing [°]	280.91	**Drilling Start Date**	2003-12-02 11:10:00
Inclination [°]	-58.09	**Drilling Stop Date**	2003-12-18 16:55:00
Date of mapping	2004-06-14 14:13:00	**Plot Date**	2004-06-14 21:05:28
Rocktype data from	p_rock_XXXXX	**Fracture data from**	p_fract_core



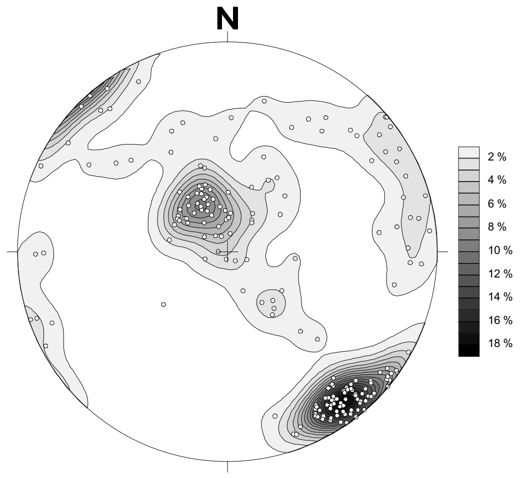

120
130
140
150
160
170
180
7

Appendix 9

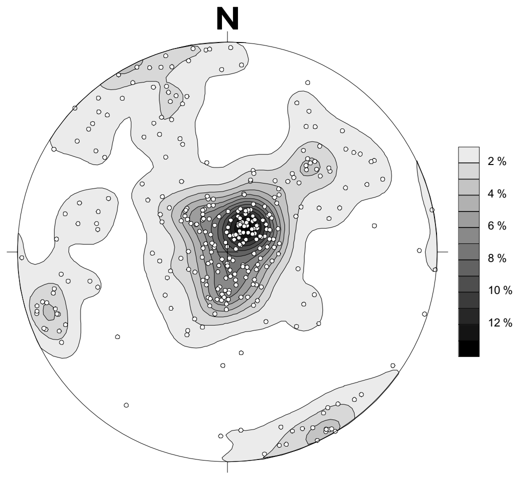
Stereographic projection of fractures, HFM13–15, 19



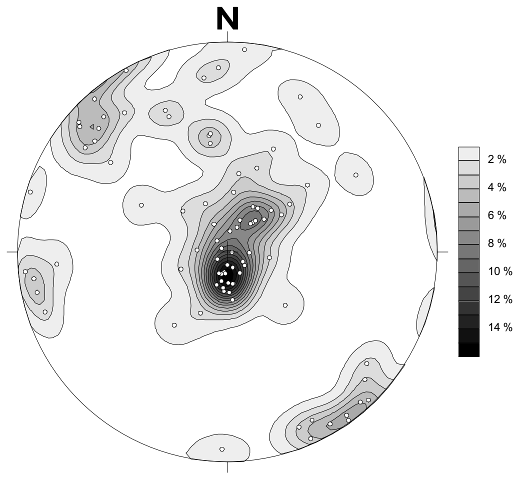
HFM13 – Contoured pole to plane diagram showing *open fractures* (N=232)



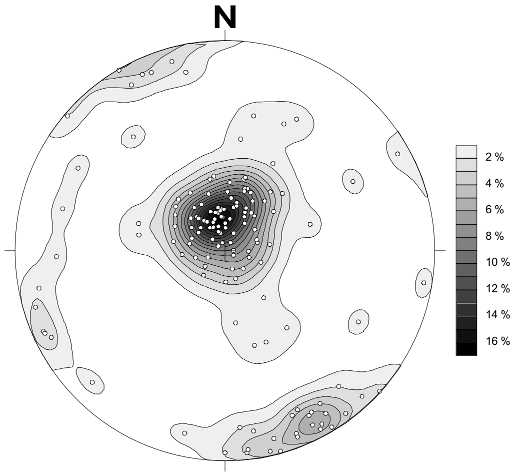
HFM13 – Contoured pole to plane diagram showing *sealed fractures* (N=197)



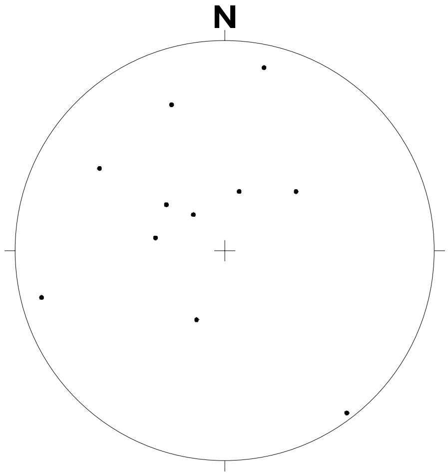
HFM14 - Contoured pole to plane diagram showing *open fractures* (N=334)



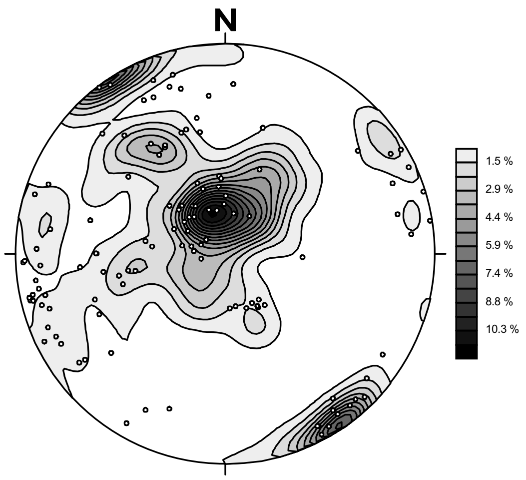
HFM14 - Contoured pole to plane diagram showing *sealed fractures* (N=88)



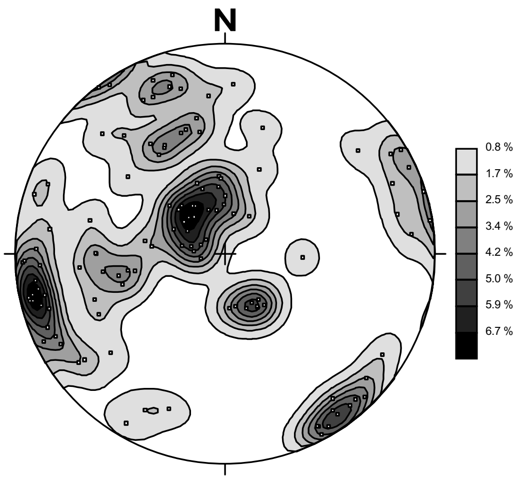
HFM15 - Contoured pole to plane diagram showing *open fractures* (N=145)



HFM15 - Pole to plane diagram showing *sealed fractures* (N=11)



HFM19 - Contoured pole to plane diagram showing *open fractures* (N=272)



HFM19 - Contoured pole to plane diagram showing *sealed fractures* (N=119)

In data: Borehole length and diameter HFM13–15, 19

Hole Diam T - Drilling: Borehole diameter

HFM13, 2003-09-18 12:30:00 - 2003-10-02 17:00:00 (0.000 - 175.600 m)

Sub Secup (m)	Sub Seclow (m)	Hole Diam (m)	Comment
0.000	4.400	0.235	Noex190
4.400	14.900	0.189	
14.900	101.000	0.138	
101.000	152.350	0.137	
152.350	175.600	0.135	

Printout from SICADA 2004-01-19 16:15:58.

Hole Diam T - Drilling: Borehole diameter

HFM14, 2003-10-06 14:00:00 - 2003-10-09 15:00:00 (0.000 - 150.500 m)

Sub Secup (m)	Sub Seclow (m)	Hole Diam (m)	Comment
0.000	3.100	0.235	Noex 190
3.100	101.300	0.138	0.1386m at 3.1 m
101.300	150.500	0.136	0.1366m at 102.15 m

Printout from SICADA 2004-01-19 16:21:18.

Hole Diam T - Drilling: Borehole diameter

HFM15, 2003-10-13 12:00:00 - 2003-10-15 11:00:00 (0.000 - 99.500 m)

Sub Secup (m)	Sub Seclow (m)	Hole Diam (m)	Comment
0.000	6.000	0.176	Tubex140
6.000	99.500	0.139	

Printout from SICADA 2004-01-19 16:23:36.

Hole Diam T - Drilling: Borehole diameter

HFM19, 2003-12-02 11:10:00 - 2003-12-18 16:55:00 (0.000 - 185.200 m)

Sub Secup (m)	Sub Seclow (m)	Hole Diam (m)	Comment
0.000	12.040	0.180	
12.040	185.200	0.137	

Printout from SICADA 2004-03-03 18:17:19.

Appendix 11

In data: Deviation data for HFM13–15, 19

Magnetic Acc Dev T - Magnetic accelerometer deviation measurement

HFM13, 2003-11-26 11:30:00 - 2003-11-26 12:30:00 (18.000 - 174.000 m)

Bhlen (m)	Magnetic Bearing (degrees)	Dip (degrees)	Northing (m)	Easting (m)	Elevation (m)	Locala (m)	Localb (m)	Localc (m)
18.00	50.0	-60.6						
21.00	51.5	-60.6						
24.00	52.4	-60.5						
27.00	54.2	-60.7						
30.00	54.8	-60.6						
33.00	56.5	-60.7						
36.00	56.6	-60.5						
39.00	58.2	-60.8						
42.00	59.4	-61.2						
45.00	58.7	-61.0						
48.00	59.0	-61.2						
51.00	59.9	-61.2						
54.00	61.1	-61.3						
57.00	61.9	-61.4						
60.00	62.1	-61.5						
63.00	62.2	-61.6						
66.00	63.5	-61.4						
69.00	66.2	-61.4						
72.00	66.1	-61.3						
75.00	66.5	-61.0						
78.00	68.4	-61.0						
81.00	66.9	-60.8						
84.00	69.2	-60.5						
87.00	70.3	-60.4						
90.00	70.7	-60.5						
93.00	72.1	-60.6						
96.00	73.3	-60.6						
99.00	73.6	-60.7						
102.00	73.7	-60.6						
105.00	74.4	-60.5						
108.00	74.5	-60.4						
111.00	74.5	-60.6						
114.00	76.3	-60.6						
117.00	76.4	-60.3						
120.00	76.8	-60.2						
123.00	76.9	-60.1						
126.00	77.1	-60.0						
129.00	76.8	-60.0						
132.00	78.3	-60.0						
135.00	79.1	-59.7						
138.00	79.0	-59.9						
141.00	79.4	-59.9						
144.00	80.5	-59.5						
147.00	81.0	-59.6						
150.00	80.9	-59.4						
153.00	82.8	-59.4						
156.00	82.3	-59.4						
159.00	81.7	-59.1						
162.00	82.0	-58.9						
165.00	82.6	-58.7						
168.00	83.0	-58.6						
171.00	82.6	-58.3						
174.00	84.8	-58.3						

Printout from SICADA 2004-01-19 16:29:30.

Magnetic Acc Dev T - Magnetic accelerometer deviation measurement

HFM14, 2003-10-15 11:00:00 - 2003-10-15 11:45:00 (0.000 - 150.000 m)

Bhlen (m)	Magnetic Bearing (degrees)	Dip (degrees)	Northing (m)	Easting (m)	Elevation (m)	Locala (m)	Localb (m)	Localc (m)
6.00	331.1	-60.1						
9.00	331.8	-60.2						
12.00	328.3	-60.5						
15.00	328.8	-60.7						
18.00	326.5	-60.9						
21.00	326.8	-61.1						
24.00	325.9	-61.2						
27.00	324.6	-61.3						
30.00	324.3	-61.4						
33.00	324.5	-61.5						
36.00	322.1	-61.7						
39.00	320.5	-61.4						
42.00	320.6	-61.9						
45.00	320.5	-62.0						
48.00	319.7	-62.0						
51.00	319.0	-61.9						
54.00	319.2	-62.2						
57.00	318.9	-62.2						
60.00	319.3	-62.7						
63.00	317.9	-62.7						
66.00	316.7	-62.7						
69.00	316.6	-62.2						
72.00	315.8	-62.1						
75.00	315.9	-62.0						
78.00	314.3	-61.6						
81.00	313.5	-61.4						
84.00	311.8	-61.1						
87.00	311.7	-60.9						
90.00	312.0	-60.6						
93.00	311.4	-60.4						
96.00	302.2	-60.3						
99.00	310.7	-60.2						
102.00	311.0	-59.8						
105.00	310.5	-59.7						
108.00	310.6	-59.6						
111.00	310.9	-59.7						
114.00	309.9	-59.6						
117.00	308.7	-59.7						
120.00	308.3	-59.6						
123.00	307.4	-59.5						
126.00	308.5	-59.4						
129.00	306.6	-59.4						
132.00	305.7	-59.5						
135.00	306.6	-59.3						
138.00	305.6	-59.3						
141.00	305.2	-59.2						
144.00	306.2	-59.0						
147.00	306.1	-59.0						
150.00	304.3	-58.8						

Printout from SICADA 2004-01-19 16:28:16.

Magnetic Acc Dev T - Magnetic accelerometer deviation measurement

HFM15, 2003-10-15 13:00:00 - 2003-10-15 13:45:00 (0.000 - 99.000 m)

Bhlen (m)	Magnetic Bearing (degrees)	Dip (degrees)	Northing (m)	Easting (m)	Elevation (m)	Locala (m)	Localb (m)	Localc (m)
9.00	313.6	-44.3						
12.00	312.3	-44.5						
15.00	312.9	-44.4						
18.00	311.9	-44.9						
21.00	311.0	-45.0						
24.00	310.3	-45.1						
27.00	309.3	-44.8						
30.00	308.8	-44.6						
33.00	307.1	-45.0						
36.00	306.9	-44.5						
39.00	307.0	-44.6						
42.00	306.1	-44.7						
45.00	305.3	-44.3						
48.00	304.5	-44.7						
51.00	302.7	-44.2						
54.00	303.6	-44.6						
57.00	301.6	-45.1						
60.00	301.0	-45.0						
63.00	300.9	-44.8						
66.00	301.3	-44.6						
69.00	300.4	-44.7						
72.00	299.5	-43.8						
75.00	300.1	-43.8						
78.00	298.4	-43.8						
81.00	298.1	-43.6						
84.00	297.7	-43.3						
87.00	296.6	-42.9						
90.00	296.7	-42.9						
93.00	297.5	-42.4						
96.00	297.2	-42.1						
99.00	296.1	-42.2						

Printout from SICADA 2004-01-19 16:27:03.

Magnetic Acc Dev T - Magnetic accelerometer deviation measurement

HFM19, 2004-01-13 00:00:00

Bhlen (m)	Magnetic Bearing (degrees)	Dip (degrees)	Northing (m)	Easting (m)	Elevation (m)	Locala (m)	Localb (m)	Localc (m)
12.80	277.8	-58.2						
15.30	277.6	-57.8						
17.90	274.4	-57.8						
20.40	275.9	-57.6						
22.90	275.5	-57.0						
25.40	276.8	-56.8						
27.90	277.8	-56.3						
30.40	274.2	-55.9						
32.90	275.7	-55.3						
35.30	277.7	-55.2						
37.80	275.7	-54.9						
40.30	273.7	-54.8						
42.70	275.4	-54.4						
45.10	275.2	-54.4						
47.60	274.2	-53.9						
50.00	274.2	-54.0						
52.40	274.8	-53.9						
54.80	274.5	-53.7						
57.30	274.9	-53.7						
59.70	274.3	-53.7						
62.10	274.8	-53.3						
64.50	275.2	-52.9						
66.90	274.7	-53.1						
69.30	274.9	-52.2						
71.60	274.6	-52.2						
74.00	274.5	-52.1						
76.40	275.0	-51.9						
78.70	273.6	-51.4						
81.10	274.5	-51.1						
83.40	274.5	-50.6						
85.70	272.7	-51.3						
88.10	273.4	-51.1						
90.40	273.2	-50.7						
92.70	272.6	-50.7						
95.00	273.2	-50.9						
97.40	272.4	-50.6						
99.70	272.8	-50.6						
102.00	272.8	-50.6						
104.30	273.2	-50.6						
106.60	273.7	-50.1						
108.90	273.8	-50.5						
111.30	273.1	-50.4						
113.60	272.9	-50.4						
115.90	273.1	-50.5						
118.20	274.6	-50.4						
120.50	273.5	-50.3						
122.80	272.7	-50.5						
125.10	272.6	-50.5						
127.40	272.4	-50.5						
129.80	272.3	-50.6						
132.10	272.3	-50.4						
134.40	273.4	-50.6						
136.70	272.8	-50.2						
139.00	272.5	-50.1						
141.30	272.7	-49.9						
143.60	272.8	-50.0						
145.90	272.4	-49.9						
147.40	272.6	-49.9						

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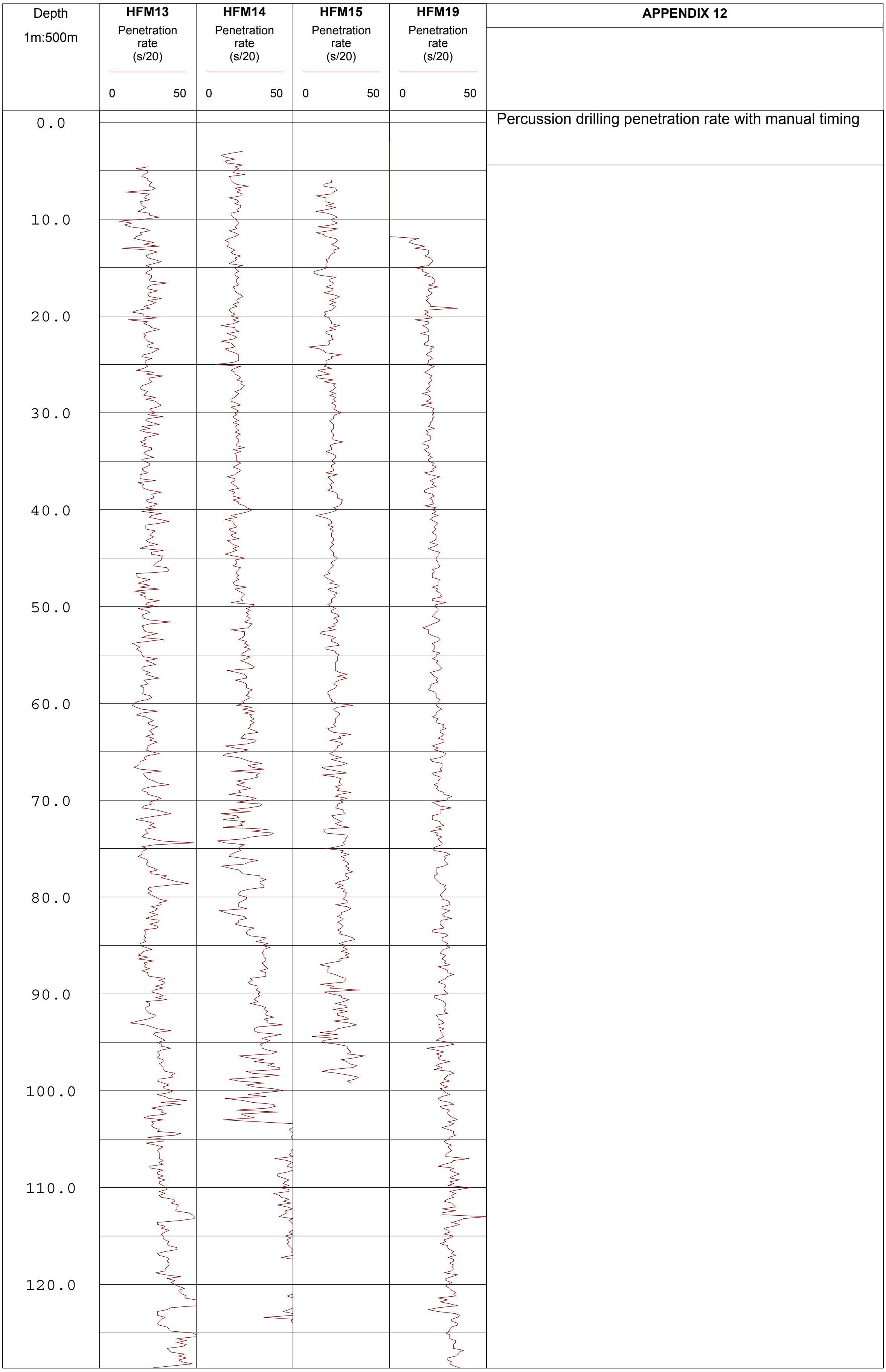
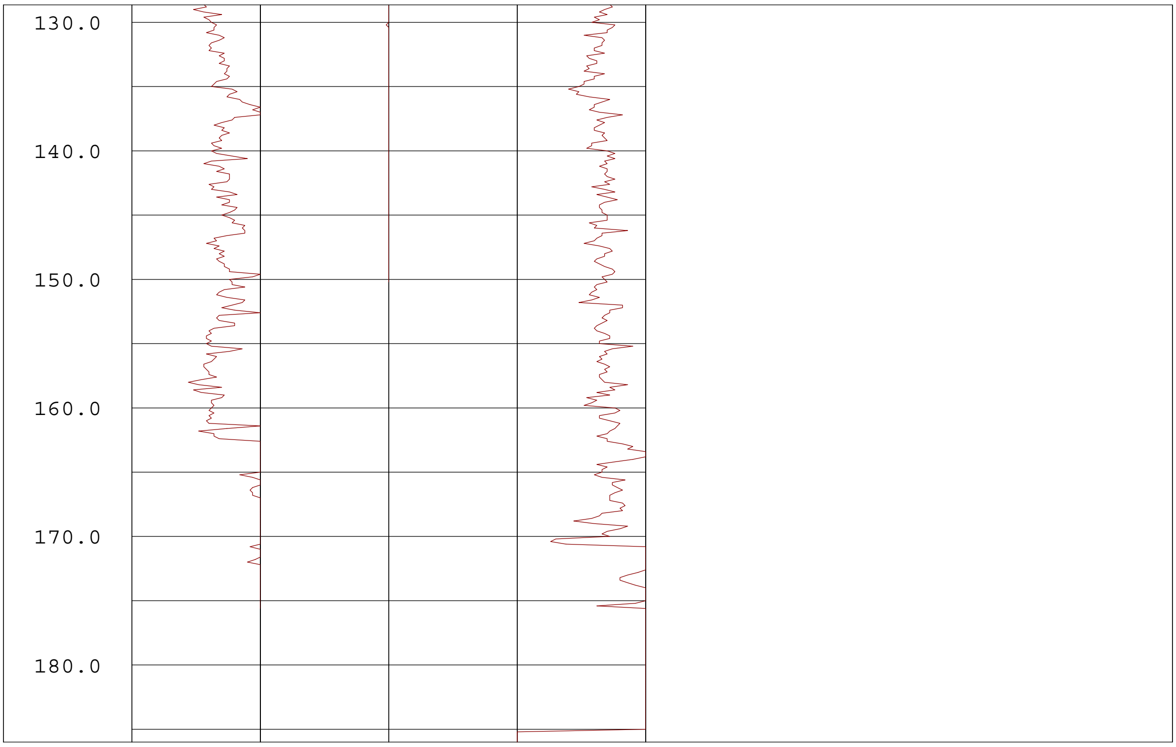
In data: Drilling penetration rate, HFM13–15, 19

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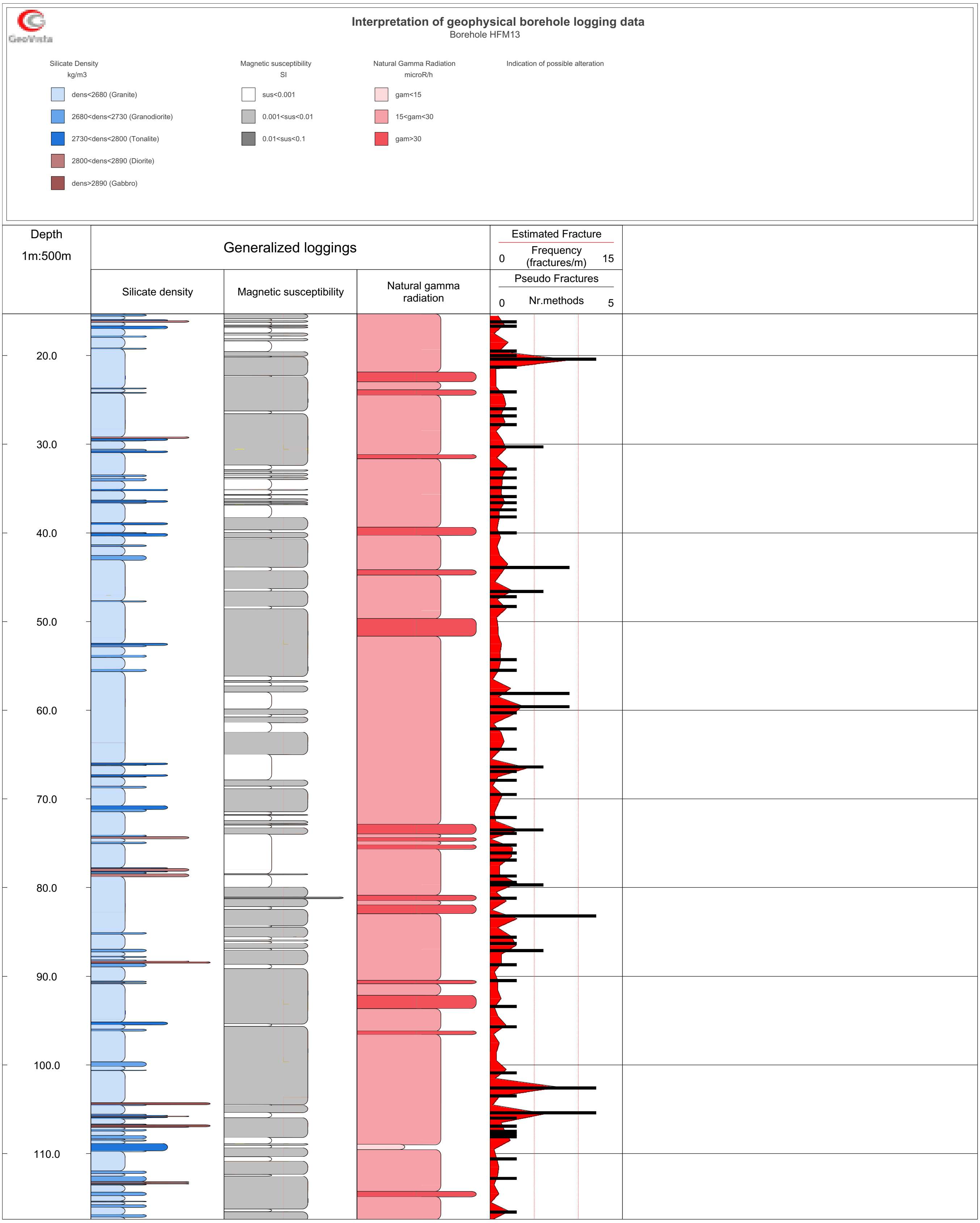
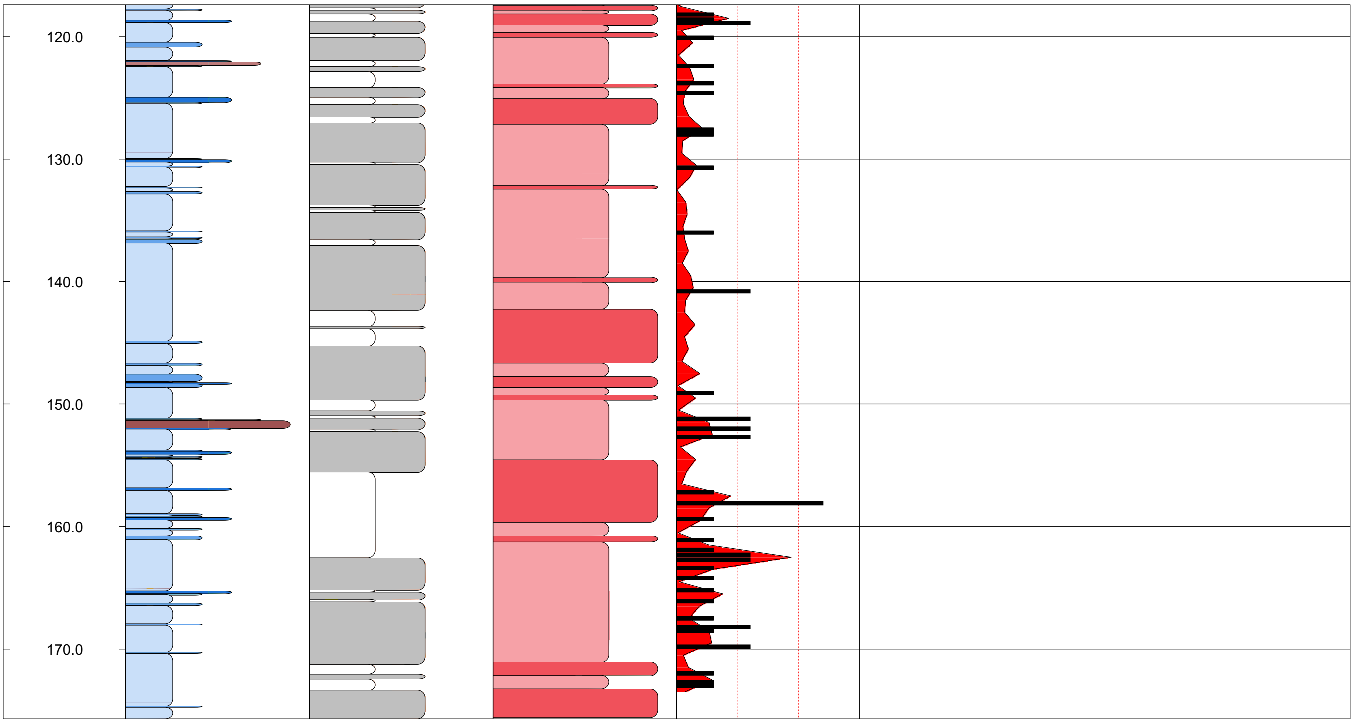
170.0
180.0

Appendix 13

In data: Geophysical logs, HFM13–15, 19

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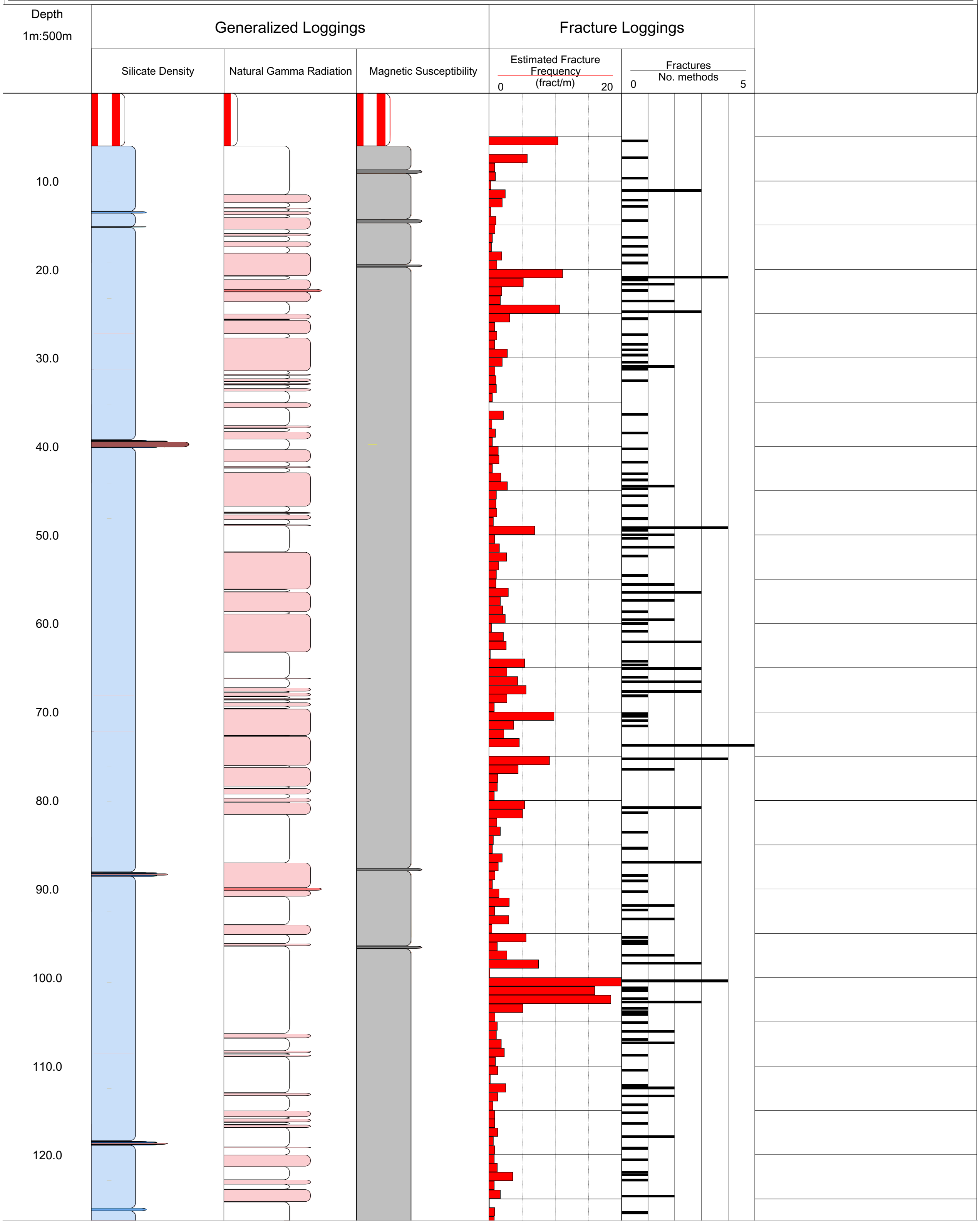
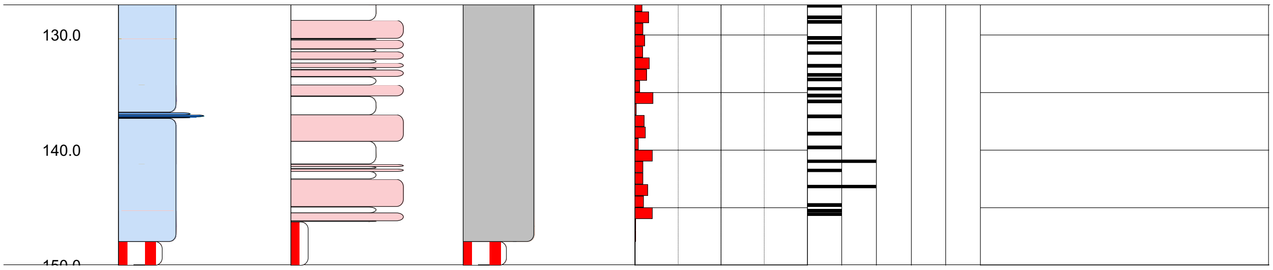
160.0
170.0

Interpretation of geophysical borehole logging data

Borehole HFM14

Silicate Density kg/m3	Natural Gamma Radiation microR/h	Magnetic susceptibility SI	Estimated fracture frequency fractures/m
unclassified	unclassified	unclassified	
dens<2680 (Granite)	gam<20	0.001<sus<0.01	
2680<dens<2730 (Granodiorite)	20<gam<36	0.01<sus<0.1	
2730<dens<2800 (Tonalite)	36<gam<53		
2800<dens<2890 (Diorite)			
dens>2890 (Gabbro)			

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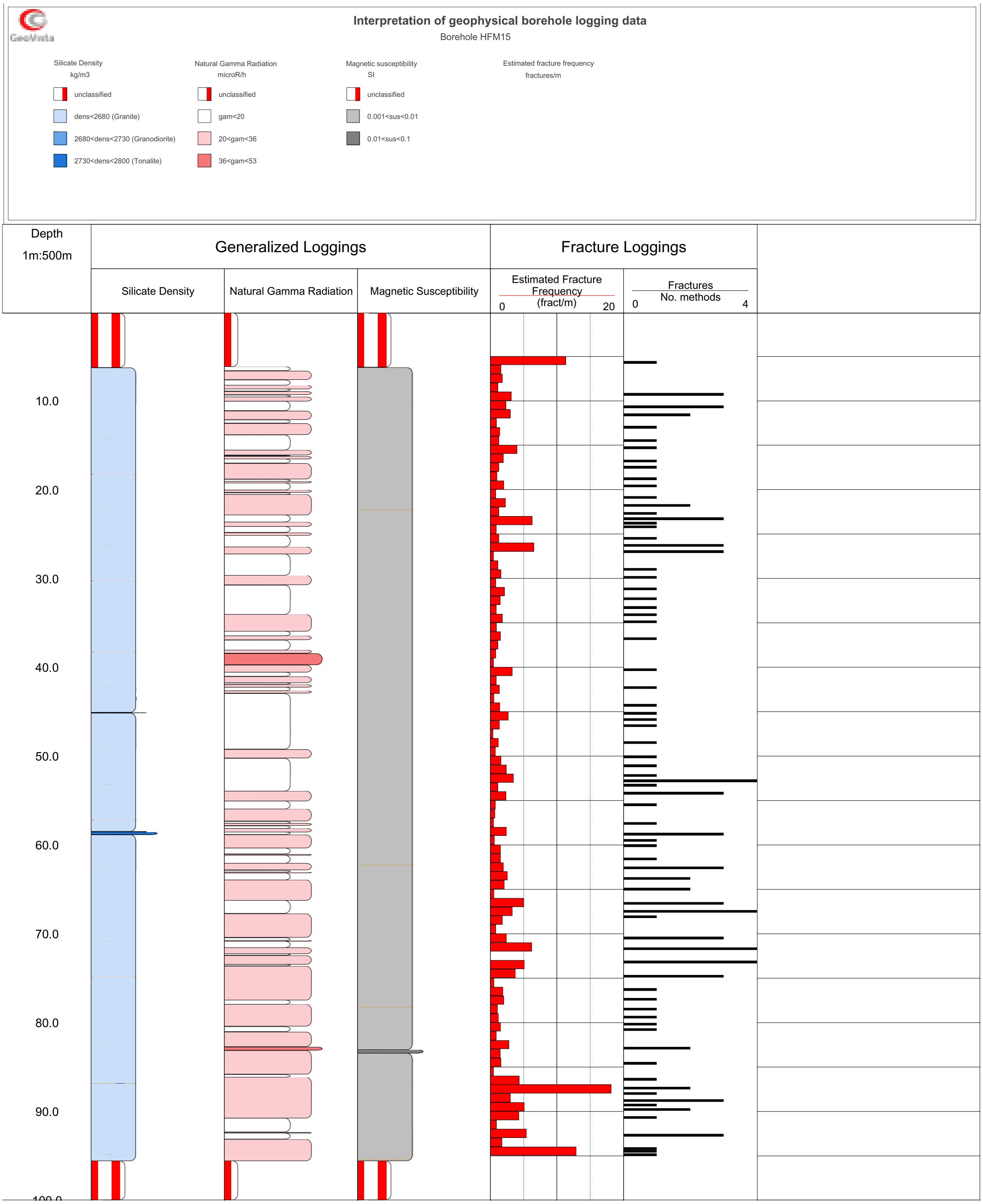
140.0
150.0


Interpretation of geophysical borehole logging data
Borehole HFM15
Silicate Density
kg/m3
unclassified
dens<2680 (Granite)
2680<dens<2730 (Granodiorite)
2730<dens<2800 (Tonalite)
Natural Gamma Radiation
microR/h
unclassified
gam<20
20<gam<36
36<gam<53
Magnetic susceptibility
SI
unclassified
0.001<sus<0.01
0.01<sus<0.1
Estimated fracture frequency
fractures/m
Depth
1m:500m
Generalized Loggings
Fracture Loggings
Silicate Density
Natural Gamma Radiation
Magnetic Susceptibility
Estimated Fracture Frequency
(fract/m)
0
20
Fractures
No. methods
0
4
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0

Interpretation of geophysical borehole logging data

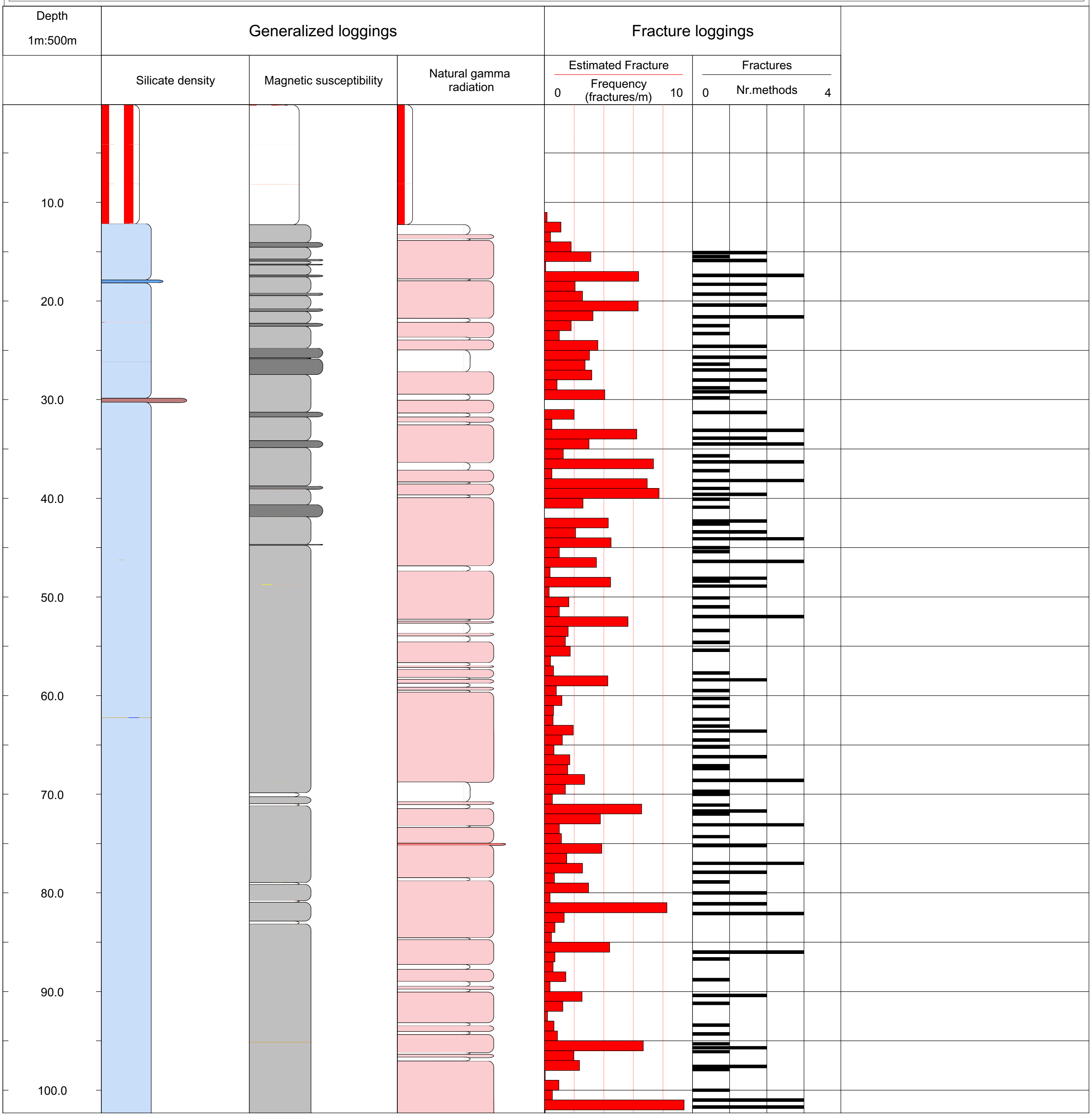
Borehole HFM19

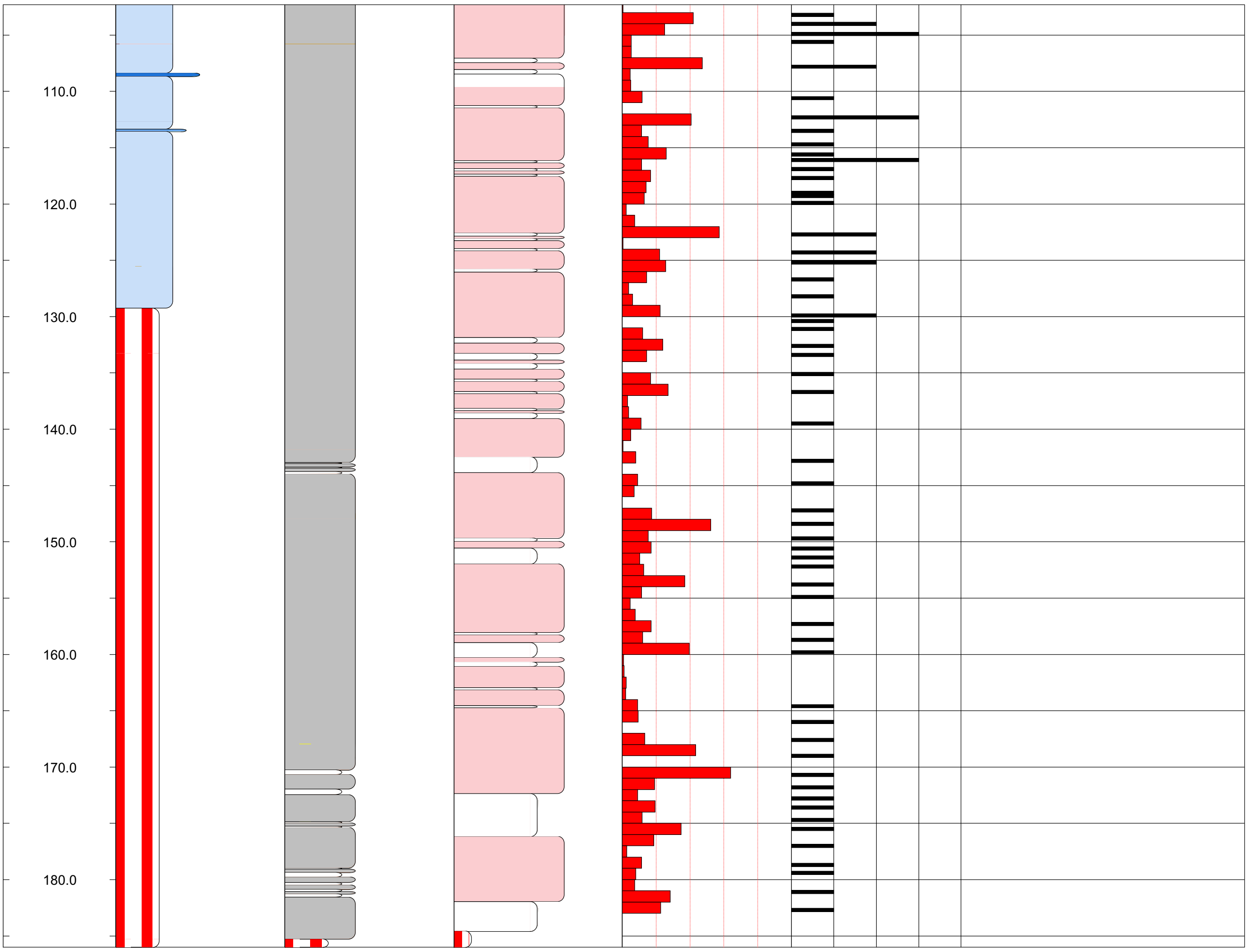
Silicate Density kg/m3
- unclassified
- dens<2680 (Granite)
- 2680<dens<2730 (Granodiorite)
- 2730<dens<2800 (Tonalite)
- 2800<dens<2890 (Diorite)

Natural Gamma Radiation microR/h
- unclassified
- gam<20
- 20<gam<36
- 36<gam<53

Magnetic susceptibility SI
- unclassified
- sus<0.001
- 0.001<sus<0.01
- 0.01<sus<0.1

Estimated fracture frequency fractures/m




110.0
120.0
130.0
140.0
150.0
160.0
170.0
180.0

Investigations of drill cuttings, HFM13–15, 19

Drill cuttings Date: 2004-01-22 Sign.: Christin Nordman

				Untreated drill cuttings sample				Washed and sieved drill cuttings sample												
Hole	from		to	Lightn.	Chrom.	Hue	Grainsize	Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM13	**4**	-	5	0;	0;	8; Grey	4; Coarse-grained (> 5 mm)	0;	0;	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	seems foliated.
HFM13	5	-	6	0;	0;	8; Grey	1; Aphanitic (grains not visible with naked eye)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	untreated sample: aphanitic and coarse. 101057 seems foliated.
HFM13	6	-	7	0;	40; Brownish	8; Grey	8; Medium to coarse grained	200; Dark	0;	8; Grey	2; Fine-grained (<1 mm)	102017; Amphibolite	101061; Pegmatite, pegmatitic granite	3; Amphibole	49; Plagioclase	32; Potash Feldspar	36; Quartz	10; Biotite	50; 50/50	roughly 40% amph, 40% peg and 20% granite-granodiorite. Some prehnite, traces of calcite. Possible open fracture plane.
HFM13	7	-	8	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	possibly foliated/lineated.
HFM13	8	-	9	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	traces of amphibolite.
HFM13	9	-	10	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	
HFM13	10	-	11	0;	80; Greyish	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	90; 90/10	Only traces of prehnite.
HFM13	11	-	12	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	Chlorite on possible fracture planes. Traces of calcite, prehnite, pyrite.
HFM13	12	-	13	200; Dark	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	20; Reddish	8; Grey	2; Fine-grained (<1 mm)	102017; Amphibolite	101057; Granite to granodiorite, metamorphic, medium grained	3; Amphibole	49; Plagioclase	32; Potash Feldspar	36; Quartz	10; Biotite	80; 80/20	epidote. Also weathered surfaces (open fracture planes?). Traces of pegmatite.
HFM13	13	-	14	0;	80; Greyish	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	Some biotite chlorite altered.
HFM13	14	-	15	200; Dark	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	20; Reddish	8; Grey	2; Fine-grained (<1 mm)	102017; Amphibolite	101057; Granite to granodiorite, metamorphic, medium grained	3; Amphibole	49; Plagioclase	32; Potash Feldspar	36; Quartz	10; Biotite	50; 50/50	
HFM13	15	-	16	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM13	16	-	17	200; Dark	40; Brownish	8; Grey	6; Fine-to medium grained	200; Dark	20; Reddish	8; Grey	2; Fine-grained (<1 mm)	102017; Amphibolite	101057; Granite to granodiorite, metamorphic, medium grained	3; Amphibole	49; Plagioclase	32; Potash Feldspar	36; Quartz	10; Biotite	70; 70/30	traces of calcite, hematite pigmentation on possible fracture planes.
HFM13	17	-	18	100; Light	40; Brownish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	80; 80/20	hematite pigmentation on possible fracture planes.
HFM13	18	-	19	100; Light	80; Greyish	4; Brown	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	both slightly foliated/lineated. Traces of calcite and hematitepigmentation on possible fracture plane.
HFM13	19	-	20	0;	20; Reddish	4; Brown	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	80; 80/20	
HFM13	20	-	21	100; Light	0;	4; Brown	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	traces of amhibole, calcite, chlorite
HFM13	21	-	22	100; Light	20; Reddish	4; Brown	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	traces of amphibolite.
HFM13	22	-	23	100; Light	0;	4; Brown	6; Fine-to medium grained	0;	0;	2; Red	6; Fine-to medium grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	70; 70/30	traces of epidote and amphibolite.
HFM13	23	-	24	100; Light	0;	4; Brown	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	traces of amphibolite, epidote.
HFM13	24	-	25	100; Light	0;	4; Brown	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	slightly deformed (foliated/lineated). Chlorite on possible fracture plane. Hematitepigmentation along sealed fracture planes.
HFM13	25	-	26	100; Light	0;	4; Brown	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	slightly deformed (foliated/lineated). Hematite pigmented fracture planes, traces of calcite and epidote.
HFM13	26	-	27	0;	20; Reddish	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	90; 90/10	slightly deformed (foliated/lineated).hematite pigmented surfaces, chlorite on possible fracture plane. Only traces of epidote.
HFM13	27	-	28	0;	20; Reddish	4; Brown	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	90; 90/10	Rock type ratio uncertain. Chlorite on possible fracture planes - also hematite pigmentation.
HFM13	28	-	29	0;	0;	4; Brown	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	slightly deformed (foliated/lineated). Chlorite on possible fracture plane - also hematite pigm. Traces of calcite.

Drill cuttings

Date: 2004-01-22 Sign.: Christin Nordman

Hole	from	to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM13	29	30	0;	0;	4; Brown	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite and green - possibly - fluorite.
HFM13	30	31	0;	0;	4; Brown	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	possibly foliated/lineated. Traces of amphibolite. Hematite pigmentation on possible fracture planes.
HFM13	31	32	0;	20; Reddish	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	slightly deformed (foliated/lineated). Hematite pigmented fracture planes.
HFM13	32	33	0;	0;	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	slightly deformed (foliated/lineated). Hematite pigmented fracture planes. Traces of amphibolite, pyrite
HFM13	33	34	0;	20; Reddish	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	traces of epidote and calcite. Hematite pigmentation on fracture planes.
HFM13	34	35	0;	0;	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	Hematite pigmentation on possible fracture planes.
HFM13	35	36	100; Light	0;	4; Brown	9; Medium-grained (1-5 mm)	100; Light	0;	2; Red	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	traces of amphibolite.
HFM13	36	37	200; Dark	0;	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	rich in hematite pigmentation. Traces of calcite, chlorite. Uncertain 101051
HFM13	37	38	0;	20; Reddish	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	Rich in hematite pigmentation. Traces of calcite. Biotite partly chlorite altered.
HFM13	38	39	0;	20; Reddish	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	Rich in hematite pigmentation.Biotite partly chlorite altered. Traces of amphibolite.
HFM13	39	40	0;	20; Reddish	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	Rich in hematite pigmentation.Biotite partly chlorite altered.
HFM13	40	41	0;	0;	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	Rich in hematite pigmentation.Biotite partly chlorite altered.
HFM13	41	42	0;	0;	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	Rich in hematite pigmentation.Biotite partly chlorite altered. Traces of calcite.
HFM13	42	43	0;	0;	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	Possible foliation/lineation. Rich in hematite pigmentation.Biotite partly chlorite altered.
HFM13	43	44	0;	0;	4; Brown	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	Also pegmatite appr 30%. Strong hematite pigmentation.
HFM13	44	45	0;	0;	4; Brown	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	90; 90/10	seems slighlty deformed. Some hematite pigmented fracture planes.
HFM13	45	46	0;	0;	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	Relatively rich in hematite pigmented fracture planes. Also few chlorite fracture planes.
HFM13	46	47	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	60; 60/40	Traces of chlorite, calcite, prehnite. Hematite pigmented fracture planes. Untreated sample is wet.
HFM13	47	48	100; Light	0;	8; Grey	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	Traces of chlorite on fracture plane. Traces of pegmatite.
HFM13	48	49	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	Traces of chlorite, calcite and hematite pigmentation.
HFM13	49	50	100; Light	0;	4; Brown	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	Slightly larger fraction of medium grain size.
HFM13	50	51	100; Light	0;	4; Brown	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	hematite pigmented on sealed fracture planes.
HFM13	51	52	0;	20; Reddish	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	
HFM13	52	53	100; Light	0;	4; Brown	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	traces of sealed prehnite fracture. Biotite slightly chlorite altered.
HFM13	53	54	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	prehnite and calcite on few fracture planes.
HFM13	54	55	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	hematite pigmentation on possible fracture planes. Biotite slightly chlorite altered.

Drill cuttings

Date: 2004-01-22 Sign.: Christin Nordman

Hole	from		to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM13	55	-	56	0;	40; Brownish	8; Grey	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	slightly deformed (folitated/lineated). Chlorite and hematite pigmentation on possible fracture planes.
HFM13	56	-	57	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	chlorite on possible fracture planes.
HFM13	57	-	58	0;	80; Greyish	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	Hematite pigmentation on possible fracture planes.
HFM13	58	-	59	0;	0;	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM13	59	-	60	0;	80; Greyish	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		90; 90/10	biotite slightly chlorite altered.
HFM13	60	-	61	0;	80; Greyish	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	90; 90/10	chlorite and hematite pigmentation on possible fracture planes.
HFM13	61	-	62	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	50; 50/50	only traces of prehnite.
HFM13	62	-	63	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	90; 90/10	slightly deformed (foliated/lineated). Traces of calcite and prehnite. Hematite pigmentation on possible fracture planes.
HFM13	63	-	64	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM13	64	-	65	200; Dark	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM13	65	-	66	100; Light	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Bleached. Also pegmatite?
HFM13	66	-	67	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM13	67	-	68	100; Light	0;	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Only traces of calcite.
HFM13	68	-	69	100; Light	0;	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	slightly deformed (foliated/lineated). Also some pegmatite? Traces of epidote.
HFM13	69	-	70	100; Light	0;	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	slightly deformed (foliated/lineated). Traces of epidote.
HFM13	70	-	71	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Only traces of calcite.
HFM13	71	-	72	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	slightly deformed (foliated/lineated). Traces of epidote. Hematite pigmentation on possible fracture planes.
HFM13	72	-	73	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	60; 60/40	some 101057-grains are strongly oxidized.
HFM13	73	-	74	100; Light	80; Greyish	4; Brown	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	90; 90/10	traces of epidote. Hematite pigmentation. No clearly evident deformation.
HFM13	74	-	75	0;	80; Greyish	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	slightly deformed (foliated/lineated). Traces of amphibolite <5%, epidote, chlorite.
HFM13	75	-	76	0;	20; Reddish	4; Brown	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	traces of amphibolite. Also pegmatite? Traces of epidote, calcite. Some slightly greenish grains: qz, ep, hematite pigm.
HFM13	76	-	77	0;	80; Greyish	4; Brown	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	same greenish epidote-qz-hematite grains as above. Also traces of prehnite, hematite pigmented bands.
HFM13	77	-	78	0;	80; Greyish	4; Brown	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	60; 60/40	rock type ratio uncertain. Also some amphibolite (5-10%).epidote, hematite pigmentation, prehnite?
HFM13	78	-	79	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	80; 80/20	traces of epidote. Possibly also some pegmatite <10%
HFM13	79	-	80	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	slightly deformed (foliated/lineated). Some epidote.
HFM13	80	-	81	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	80; 80/20	40% 101057, 40% pegmatite and 20% amphibolite? Traces of epidote.

Drill cuttings

Date: 2004-01-22 Sign.: Christin Nordman

Hole	from		to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM13	81	-	82	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	70% 101057, 20% pegmatite and 10% amphibolite? Traces of epidote, hematite pigmentated fracture planes.
HFM13	82	-	83	0;	80; Greyish	4; Brown	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	80; 80/20	traces of amphibolite. Hematite pigmented fracture planes.Traces of epidote.
HFM13	83	-	84	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	traces of amphibolite.
HFM13	84	-	85	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM13	85	-	86	100; Light	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	0;	0;	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	80; 80/20	big calcite vein? Appr 20-30% calcite in sample. Traces of pyrite and green mineral in calcite.
HFM13	86	-	87	100; Light	0;	4; Brown	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated).Traces of epidote, calcite, hematite pigmented surfaces.
HFM13	87	-	88	200; Dark	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	slightly deformed (foliated/lineated). Traces of epidote, calcite, hematite pigmented surfaces.
HFM13	88	-	89	200; Dark	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	calcite, traces of amphibolite, epidote, hematite pigmented surfaces, laumontite?
HFM13	89	-	90	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slighlty deformed (foliated/lineated). Traces of epidote, calcite, hematite pigmented surfaces.
HFM13	90	-	91	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	60; 60/40	Traces of epidote, calcite, hematite pigmented surfaces, amphibolite. 101057 slightly deformed.
HFM13	91	-	92	100; Light	80; Greyish	4; Brown	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slighlty deformed (foliated/lineated). Some epidote, calcite.
HFM13	92	-	93	100; Light	80; Greyish	4; Brown	9; Medium-grained (1-5 mm)	100; Light	0;	2; Red	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		80; 80/20	
HFM13	93	-	94	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	60; 60/40	traces of epidote, hematite pigmented surfaces, beige aphanitic grain. 101057 slighlty deformed (foliated/lineated).
HFM13	94	-	95	100; Light	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	50; Pyrite	80; 80/20	slightly deformed (foliated/lineated).
HFM13	95	-	96	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	80; 80/20	ca 70% 101057, 20% amphibolite, 10% pegmatite.101057 slightly deformed (foliated/lineated). Traces of pyrite.
HFM13	96	-	97	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		90; 90/10	slightly deformed (foliated/lineated).
HFM13	97	-	98	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	traces of pyrite, epidote. Some amphibolite and pegmatite - together max 10%
HFM13	98	-	99	200; Dark	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM13	99	-	100	200; Dark	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM13	100	-	101	200; Dark	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Some larger quartz grains (from vein or pegmatite?) In oxidized grain thin prehnite vein.
HFM13	101	-	102	0;	80; Greyish	4; Brown	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	untreated sample is wet. Slightly deformed (foliated/lineated).
HFM13	102	-	103	0;	50; Greenish	4; Brown	6; Fine-to medium grained	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM13	103	-	104	100; Light	0;	4; Brown	2; Fine-grained (<1 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM13	104	-	105	100; Light	0;	4; Brown	2; Fine-grained (<1 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	slightly deformed (foliated/lineated). Traces of amphibolite.
HFM13	105	-	106	200; Dark	40; Brownish	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	9; Black	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	70; 70/30	slightly deformed (foliated/lineated).Traces of epidote, prehnite, pyrite.
HFM13	106	-	107	200; Dark	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	9; Black	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	70; 70/30	slightly deformed (foliated/lineated). Traces of pyrite, prehnite

Drill cuttings

Date: 2004-01-22 Sign.: Christin Nordman

Hole	from	-	to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM13	107	-	108	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	9; Black	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	Untreated sample seems already washed. Slightly deformed (foliated/lineated).
HFM13	108	-	109	200; Dark	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	9; Black	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	60; 60/40	both slightly foliated/lineated. Traces of pyrite
HFM13	109	-	110	200; Dark	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	0;	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	80; 80/20	both slightly deformed (foliated/lineated). Traces of prehnite.
HFM13	110	-	111	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	70; 70/30	possibly also pegmatite
HFM13	111	-	112	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	80; 80/20	
HFM13	112	-	113	100; Light	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	slightly deformed (foliated/lineated). Traces of calcite surface with oxidized wall.
HFM13	113	-	114	0;	80; Greyish	1; Pink	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	water in sample and downwards. Slightly deformed (foliated/lineated).
HFM13	114	-	115	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of pyrite, prehnite
HFM13	115	-	116	100; Light	0;	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	slightly deformed (foliated/lineated). Some pegmatite?
HFM13	116	-	117	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	slightly deformed (foliated/lineated). Traces of amphibolite
HFM13	117	-	118	100; Light	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	slightly deformed (foliated/lineated). Some amphibolite, <10%
HFM13	118	-	119	100; Light	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	
HFM13	119	-	120	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	traces of amphibolite, calcite, epidote.
HFM13	120	-	121	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	traces of pyrite.
HFM13	121	-	122	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	some amphibolite <10%
HFM13	122	-	123	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	0;	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	very white. More tonalitic???
HFM13	123	-	124	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	100; Light	0;	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	50; Pyrite	100; 100 %	traces of epidote and pyrite. Slightly deformed (foliated/lineated).
HFM13	124	-	125	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	100; Light	0;	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	80; 80/20	slightly deformed (foliated/lineated).
HFM13	125	-	126	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	80; 80/20	slightly deformed (foliated/lineated). 70% 101057, 20% pegmatite, 10% amphibolite?
HFM13	126	-	127	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	70; 70/30	50% peg, 30% granit-granodiorite and 20% amphibolite?
HFM13	127	-	128	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	60; 60/40	and some amphibolite. 101057 slightly deformed (foliated/lineated).
HFM13	128	-	129	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM13	129	-	130	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	slightly deformed (foliated/lineated). Amphibolite less than 10%
HFM13	130	-	131	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	80; 80/20	slightly deformed (foliated/lineated). Traces of pyrite
HFM13	131	-	132	100; Light	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	slightly deformed (foliated/lineated). Traces of amphibolite and epidote.
HFM13	132	-	133	100; Light	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	slightly deformed (foliated/lineated). Traces of amphibolite and pyrite.

Drill cuttings

Date: 2004-01-22 Sign.: Christin Nordman

Hole	from		to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM13	133	-	134	100; Light	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	50; Pyrite	100; 100 %	slightly deformed (foliated/lineated). Slight epidote pigmentation? Traces of pyrite.
HFM13	134	-	135	100; Light	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	contamination of one amphibolite grain.
HFM13	135	-	136	100; Light	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM13	136	-	137	100; Light	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	0;	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM13	137	-	138	100; Light	0;	8; Grey	9; Medium-grained (1-5 mm)	100; Light	0;	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	slightly deformed (foliated/lineated). Traces of epidote, pyrite.
HFM13	138	-	139	100; Light	40; Brownish	8; Grey	6; Fine-to medium grained	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	slightly deformed (foliated/lineated). Only traces of epidote.
HFM13	139	-	140	100; Light	40; Brownish	8; Grey	6; Fine-to medium grained	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	slightly deformed (foliated/lineated). Chlorite on possible fracture surface.
HFM13	140	-	141	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated). Traces of prehnite. Biotite slightly chlorite altered.
HFM13	141	-	142	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		90; 90/10	slightly deformed (foliated/lineated).
HFM13	142	-	143	100; Light	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	70; 70/30	appr 60% 101057, 30% pegmatite and 10% amphibolite. Traces of prehnite and epidote.
HFM13	143	-	144	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		80; 80/20	101057 slightly deformed (foliated/lineated).
HFM13	144	-	145	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	80; 80/20	101057 slightly deformed (foliated/lineated). Traces of amphibolite.
HFM13	145	-	146	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		90; 90/10	101057 slightly deformed (foliated/lineated).
HFM13	146	-	147	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM13	147	-	148	0;	0;	8; Grey	6; Fine-to medium grained	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM13	148	-	149	0;	0;	8; Grey	6; Fine-to medium grained	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM13	149	-	150	0;	0;	8; Grey	6; Fine-to medium grained	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	90; 90/10	slightly deformed (foliated/lineated). Traces of epidote, calcite and possibly also prehnite.
HFM13	150	-	151	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	traces of calcite, pyrite, prehnite, amphibolite. Hematite pigmentation. Possible deformation along sealed fracture? Some seem banded.
HFM13	151	-	152	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	80; 80/20	both slightly deformed (foliated/lineated). Traces of pyrite, hematite pigmented surfaces.
HFM13	152	-	153	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	traces of pyrite, amphibolite.
HFM13	153	-	154	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of pegmatite.
HFM13	154	-	155	0;	40; Brownish	8; Grey	6; Fine-to medium grained	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM13	155	-	156	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		90; 90/10	slightly deformed (foliated/lineated).
HFM13	156	-	157	0;	20; Reddish	8; Grey	6; Fine-to medium grained	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite and hematite pigmented surfaces.
HFM13	157	-	158	0;	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	faintly deformed (foliated/lineated). Only traces of epidote.
HFM13	158	-	159	0;	20; Reddish	8; Grey	6; Fine-to medium grained	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	deformed? Traces of epidote and amphibolite.

Drill cuttings

Date: 2004-01-22 Sign.: Christin Nordman

Hole	from	to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM13	159	160	0;	20; Reddish	8; Grey	6; Fine-to medium grained	100; Light	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	deformed? Traces of prehnite, pyrite, epidote and amphibolite.
HFM13	160	161	0;	20; Reddish	8; Grey	6; Fine-to medium grained	100; Light	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	deformed? Traces of oxidized surfaces.
HFM13	161	162	0;	0;	8; Grey	6; Fine-to medium grained	100; Light	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	faintly deformed. Traces of epidote.
HFM13	162	163	200; Dark	0;	2; Red	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	Traces of prehnite, biotite partly chlorite altered.
HFM13	163	164	200; Dark	0;	2; Red	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	Traces of calcite, prehnite.
HFM13	164	165	0;	0;	2; Red	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	Seems slightly deformed.
HFM13	165	166	200; Dark	0;	2; Red	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	Traces of prehnite, biotite slightly chlorite altered.
HFM13	166	167	0;	0;	2; Red	6; Fine-to medium grained	0;	0;	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	Biotite slightly chlorite altered.
HFM13	167	168	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	0;	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	Biotite slightly chlorite altered. Traces of prehnite.
HFM13	168	169	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed. Traces of epidote, calcite, iron hydroxide.
HFM13	169	170	0;	0;	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed. Only traces of calcite.
HFM13	170	171	0;	80; Greyish	2; Red	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	hematite pigmentation. Biotite slightly chlorite altered. Traces of epidote.
HFM13	171	172	0;	0;	1; Pink	6; Fine-to medium grained	0;	0;	1; Pink	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	traces of prehnite, epidote. Strong oxidation in places.Very poor in biotite - if present then altered.
HFM13	172	173	0;	50; Greenish	2; Red	6; Fine-to medium grained	0;	50; Greenish	2; Red	9; Medium-grained (1-5 mm)	101061; Pegmatite, pegmatitic granite		32; Potash Feldspar	49; Plagioclase	36; Quartz	16; Epidote		100; 100 %	epidote sealed brittle ductile shear zone? Also deformed fragments.
HFM13	173	174	0;	0;	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	70; 70/30	rock type ratio uncertain. Partly brittle ductile shear zone. Some biotite slightly chlorite altered.
HFM13	174	175	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite and epidote.

Drill cuttings

Date: 2004-01-20 Sign.: Christin Nordman

Hole	from	to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM14	**0**	1	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	90; 90/10	only traces of chlorite - occur as altered biotite. Slightly deformed (lineated/foliated)
HFM14	1	2	0;	20; Reddish	8; Grey	4; Coarse-grained (> 5 mm)	100; Light	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated). Some larger quartz grains from vein or pegmatite.
HFM14	2	3	0;	80; Greyish	2; Red	8; Medium to coarse grained	100; Light	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	slightly deformed (lineated/foliated). Only traces of chlorite as an alteration product from biotite.
HFM14	3.4	3.8	100; Light	0;	4; Brown	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	silty sample.slightly deformed (lineated/foliated).
HFM14	3.8	4	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	4	5	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	5	6	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	6	7	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	7	8	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	8	9	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	9	10	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	10	11	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	slightly deformed (lineated/foliated). Chlorite as alteration product from biotite - only traces.
HFM14	11	12	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	12	13	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	slightly deformed (lineated/foliated). Chlorite as alteration product from biotite
HFM14	13	14	100; Light	0;	8; Grey	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	70; 70/30	slightly deformed (lineated/foliated). Amphibolite relatively rich in pyrite (disseminated).
HFM14	14	15	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	slightly deformed (lineated/foliated). Traces of pyrite. Richer in dark minerals.
HFM14	15	16	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	16	17	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	17	18	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	18	19	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	
HFM14	19	20	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	poor in dark minerals.
HFM14	20	21	100; Light	0;	4; Brown	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	relatively poor in dark minerals.
HFM14	21	22	100; Light	0;	4; Brown	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	traces of prehnite and amphibole (latter from amphibolite??? But the grain is relatively rich in quartz)
HFM14	22	23	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	some larger quartz-prehnite grains (from vein?).prehnite mostly as sealed fractures or foliation controlled.
HFM14	23	24	100; Light	0;	4; Brown	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	locally stronger hematite pigmentation (generally weak).
HFM14	24	25	0;	0;	4; Brown	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	

Drill cuttings							Date: 2004-01-20	Sign.:	Christin Nordman											
				Untreated drill cuttings sample				Washed and sieved drill cuttings sample												
Hole	from		to	Lightn.	Chrom.	Hue	Grainsize	Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM14	25	-	26	100; Light	0;	4; Brown	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	only traces of chlorite - occur as altered biotite.
HFM14	26	-	27	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	any deformation?
HFM14	27	-	28	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	
HFM14	28	-	29	0;	20; Reddish	7; White	6; Fine-to medium grained	100; Light	0;	2; Red	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	
HFM14	29	-	30	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	0;	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	
HFM14	30	-	31	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	
HFM14	31	-	32	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	probably slightly deformed (lineated/foliated).
HFM14	32	-	33	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	
HFM14	33	-	34	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	probably slightly deformed (lineated/foliated). Chlorite as alteration product from biotite - only traces.
HFM14	34	-	35	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	35	-	36	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	slightly deformed (lineated/foliated). Chlorite as an alteration product from biotite.
HFM14	36	-	37	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	37	-	38	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	38	-	39	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated). Perhaps traces of epidote?
HFM14	39	-	40	200; Dark	0;	5; Green	6; Fine-to medium grained	200; Dark	50; Greenish	8; Grey	2; Fine-grained (<1 mm)	102017; Amphibolite	101061; Pegmatite, pegmatitic granite	3; Amphibole	49; Plagioclase	36; Quartz	32; Potash Feldspar	10; Biotite	90; 90/10	probably foliated.
HFM14	40	-	41	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	slightly deformed (lineated/foliated). Amphibolite foliated. Possibly traces of prehnite
HFM14	41	-	42	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	42	-	43	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	43	-	44	100; Light	0;	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (lineated/foliated). Traces of chlorite as alteration product from biotite. Traces of amphibolite.
HFM14	44	-	45	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	slightly deformed (lineated/foliated). Traces of amphibolite.
HFM14	45	-	46	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	slightly deformed (lineated/foliated). Traces of amphibolite.
HFM14	46	-	47	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	47	-	48	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	48	-	49	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	49	-	50	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	slightly deformed (lineated/foliated). Amphibolite seems foliated. Traces of prehnite.
HFM14	50	-	51	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	slightly deformed (lineated/foliated).
HFM14	51	-	52	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	slightly deformed (lineated/foliated).

Drill cuttings

Date: 2004-01-20 Sign.: Christin Nordman

Hole	from	to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM14	52	53	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	slightly deformed (lineated/foliated). Chlorite as alteration product from biotite.
HFM14	53	54	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	54	55	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	55	56	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	slightly deformed (lineated/foliated). Chlorite as alteration product from biotite- only traces.
HFM14	56	57	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	probably slightly deformed (lineated/foliated).
HFM14	57	58	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	0;	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	biotite slightly chlorite altered. More oxidized than earlier.
HFM14	58	59	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (lineated/foliated).
HFM14	59	60	0;	80; Greyish	2; Red	8; Medium to coarse grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	60	61	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	61	62	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	slightly deformed (lineated/foliated). Only traces of epidote.
HFM14	62	63	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (lineated/foliated). Traces of rusty mineral.
HFM14	63	64	0;	0;	2; Red	8; Medium to coarse grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	64	65	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (lineated/foliated). Traces of prehnite ? And muscovite on possible fracture plane.
HFM14	65	66	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	66	67	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	67	68	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated).
HFM14	68	69	0;	40; Brownish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	
HFM14	69	70	0;	40; Brownish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	
HFM14	70	71	0;	40; Brownish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	
HFM14	71	72	0;	40; Brownish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	Biotite slightly chlorite altered.
HFM14	72	73	0;	40; Brownish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	
HFM14	73	74	0;	40; Brownish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	traces of hematite.
HFM14	74	75	0;	40; Brownish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	
HFM14	75	76	0;	40; Brownish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	Traces of calcite and copper coloured biotite.
HFM14	76	77	0;	40; Brownish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	Seems slightly lineated or foliated.
HFM14	77	78	0;	40; Brownish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	Seems slightly lineated or foliated.

Drill cuttings

Date: 2004-01-20 Sign.: Christin Nordman

Hole	from	to	Untreated drill cuttings sample: Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample: Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM14	78	79	0;	40; Brownish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	
HFM14	79	80	0;	40; Brownish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	Traces of epidote, prehnite. Biotite faintly chlorite altered.
HFM14	80	81	0;	40; Brownish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	Only traces of epidote.
HFM14	81	82	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	Some epidote and chorite in banded aggregates (thin deformation zone?). Only some prehnite.
HFM14	82	83	0;	40; Brownish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	Traces of epidote, calcite, prehnite.
HFM14	83	84	0;	40; Brownish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	Some epidote and prehnite.
HFM14	84	85	100; Light	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	Traces of epidote and prehnite.
HFM14	85	86	100; Light	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	Traces of epidote and prehnite. Less oxidized. Possibly slightly deformed.
HFM14	86	87	100; Light	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	Possibly also peg? Traces of banded epidote and chlorite also some prehnite and chlorite.
HFM14	87	88	100; Light	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (lineated/foliated). Only traces of calcite, prehnite and epidote.
HFM14	88	89	100; Light	0;	2; Red	9; Medium-grained (1-5 mm)	0;	0;	2; Red	9; Medium-grained (1-5 mm)	101061; Pegmatite, pegmatitic granite		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	traces of rusty fragment, amphibolite, chlorite, epidote and prehnite. Leucocratic.
HFM14	89	90	100; Light	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	0;	2; Red	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	traces of epidote.
HFM14	90	91	0;	0;	1; Pink	9; Medium-grained (1-5 mm)	100; Light	0;	2; Red	9; Medium-grained (1-5 mm)	101061; Pegmatite, pegmatitic granite		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	leucocratic. Could be up to coarse-grained.
HFM14	91	92	100; Light	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	70; 70/30	also traces of amphibolite, calcite
HFM14	92	93	0;	80; Greyish	2; Red	8; Medium to coarse grained	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (lineated/foliated). One more mafic, altered fragment.
HFM14	93	94	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	Some biotite slightly chlorite altered.
HFM14	94	95	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	some larger quartz grains. A few strongly altered fragments (green and brown - chlorite and altered feldspar?)
HFM14	95	96	0;	80; Greyish	2; Red	8; Medium to coarse grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	60; 60/40	101057 slightly deformed (lineated/foliated). Traces of calcite and epidote.
HFM14	96	97	0;	0;	2; Red	8; Medium to coarse grained	0;	0;	2; Red	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		80; 80/20	some biotite slightly chlorite altered.
HFM14	97	98	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		50; 50/50	
HFM14	98	99	100; Light	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated).
HFM14	99	100	0;	0;	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite.Biotite slightly chlorite altered.
HFM14	100	101	0;	0;	2; Red	8; Medium to coarse grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	90; 90/10	calcite on possible fracture plane.
HFM14	101	102	0;	0;	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		90; 90/10	
HFM14	102	103	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	small sample. Biotite partly altered to chlorite.
HFM14	103	104	0;	0;	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample.

Drill cuttings

Date: 2004-01-20 Sign.: Christin Nordman

				Untreated drill cuttings sample				Washed and sieved drill cuttings sample												
Hole	from		to	Lightn.	Chrom.	Hue	Grainsize	Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM14	104	-	105	0;	0;	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	small sample.
HFM14	105	-	106	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample. Possibly also some pegmatite.
HFM14	106	-	107	0;	0;	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample. Traces of prehnite. Two grains of white flsp (?) and green mineral (do not react with hydrochloric acid).
HFM14	107	-	108	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample.
HFM14	108	-	109	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	small sample. Only traces of epidote.
HFM14	109	-	110	0;	0;	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	small sample.
HFM14	110	-	111	0;	0;	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample.
HFM14	111	-	112	0;	0;	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	small sample. Only traces of calcite. Biotite slighlty chlorite altered.
HFM14	112	-	113	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	small sample.
HFM14	113	-	114	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	small sample. Traces of prehnite, calcite.
HFM14	114	-	115	0;	80; Greyish	2; Red	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	small sample. Only traces of prehnite.
HFM14	115	-	116	0;	80; Greyish	2; Red	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	small sample. Only traces of prehnite.
HFM14	116	-	117	0;	80; Greyish	2; Red	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	small sample.Traces of calcite, prehnite, hematite.
HFM14	117	-	118	0;	80; Greyish	2; Red	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample.
HFM14	118	-	119	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	small sample.
HFM14	119	-	120	200; Dark	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample.
HFM14	120	-	121	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample. With some biotite rich aggregates - from biotite altered amphibolite or from granite-granodiorite?
HFM14	121	-	122	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample. With biotite as above - but very small fragments- probably from granite-granodiorite.
HFM14	122	-	123	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample. Traces of rusty mineral - pyrite?
HFM14	123	-	124	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	small sample. Traces of prehnite and rusty mineral - pyrite?
HFM14	124	-	125	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	small sample. Traces of rusty mineral - pyrite?
HFM14	125	-	126	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample.
HFM14	126	-	127	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample. Traces of rusty mineral - pyrite?
HFM14	127	-	128	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	small sample. Prehnite as sealed fracture.
HFM14	128	-	129	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample. Traces of rusty mineral - pyrite?
HFM14	129	-	130	0;	0;	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	small sample.

Drill cuttings

Date: 2004-01-20 Sign.: Christin Nordman

Hole	from	to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM14	130	131	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	traces of calcite and chlorite. Latter as alteration product from biotite.
HFM14	131	132	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	traces of rusty mineral (pyrite?) calcite and possibly green fluorite?
HFM14	132	133	0;	0;	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample. Traces of rusty mineral - pyrite?
HFM14	133	134	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	some biotite altered - chlorite?
HFM14	134	135	0;	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample.some biotite altered - chlorite? (on oxidized parts) Traces of rusty mineral - pyrite?
HFM14	135	136	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample. Traces of rusty mineral - pyrite?, strongly weathered grain (open fracture?), some chlorite as alteration product from biotite.
HFM14	136	137	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	small sample. Traces of laumontite, calcite, green possibly fluorite, chlorite and rusty mineral.
HFM14	137	138	0;	20; Reddish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample. Traces of prehnite and rusty mineral.
HFM14	138	139	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample. Some rusty minerals. One rusty, weathered fragment - from open fracture?
HFM14	139	140	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	small sample.
HFM14	140	141	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample. One weathered, rusty grain - from open fracture? Traces of aphanitic mafic grains.
HFM14	141	142	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	small sample. Traces of calcite, prehnite (?) and weathered fragments.
HFM14	142	143	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	small sample.
HFM14	143	144	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	small sample. Traces of calcite, prehnite and rusty mineral.
HFM14	144	145	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	small sample.
HFM14	145	146	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample. Also rusty mineral.
HFM14	146	147	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	small sample.
HFM14	147	148	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	small sample. Traces of calcite and green possibly fluorite.
HFM14	148	149	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample.
HFM14	149	150	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	small sample. Some weathered fragments - from open fracture?

Drill cuttings

Date: 2004-01-26 Sign.: Christin Nordman

Hole	from	-	to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM15	1	-	2	200; Dark	80; Greyish	2; Red	8; Medium to coarse grained	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite, pyrite, white feldspar.
HFM15	2	-	3	100; Light	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	slightly deformed (foliated/lineated). Traces of epidote, white feldspar.
HFM15	3	-	4	100; Light	40; Brownish	8; Grey	8; Medium to coarse grained	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	4	-	5	100; Light	0;	4; Brown	8; Medium to coarse grained	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	5	-	6	100; Light	20; Reddish	8; Grey	8; Medium to coarse grained	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated). Traces of white feldspar.
HFM15	6	-	7	100; Light	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	water in sample from here and downwards. Larger quartz grains (qz-fracture or pegmatite). slightly deformed (foliated/lineated).
HFM15	7	-	8	100; Light	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	8	-	9	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	9	-	10	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	10	-	11	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated).
HFM15	11	-	12	0;	0;	8; Grey	8; Medium to coarse grained	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite and metal from drill bit?
HFM15	12	-	13	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	Traces of prehnite.
HFM15	13	-	14	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Possibly traces of epidote?
HFM15	14	-	15	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated).
HFM15	15	-	16	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		90; 90/10	slightly deformed (foliated/lineated).Rock type ratio uncertain.
HFM15	16	-	17	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	17	-	18	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	18	-	19	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	19	-	20	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated). Traces of prehnite, calcite, pyrite. Some biotite slightly chlorite altered.
HFM15	20	-	21	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	21	-	22	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated).Traces of calcite, prehnite.
HFM15	22	-	23	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	23	-	24	0;	0;	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated).traces of iron hydroxide, calcite,
HFM15	24	-	25	200; Dark	0;	2; Red	9; Medium-grained (1-5 mm)	200; Dark	0;	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	Traces of calcite, iron hydroxide (?), hematite. Some biotite slightly chlorite altered.
HFM15	25	-	26	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	50; Pyrite	100; 100 %	slightly deformed (foliated/lineated). Traces of pyrite (very fine grained to aphanitic aggregates), calcite
HFM15	26	-	27	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	60; 60/40	amph slightly foliated/lineated. Traces of calcite.

Drill cuttings

Date: 2004-01-26 Sign.: Christin Nordman

Hole	from	to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM15	27	28	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of amphibolite, possibly prehnite
HFM15	28	29	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	29	30	0;	0;	8; Grey	2; Fine-grained (<1 mm)	0;	0;	2; Red	1; Aphanitic (grains not visible with naked eye)			32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite			aphanitic to fine grained - not possible to wash sample. Minerals hardly identifiable
HFM15	30	31	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	31	32	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	32	33	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	33	34	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated). Traces of prehnite,
HFM15	34	35	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	10; Pinkish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	traces of prehnite
HFM15	35	36	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Possibly also traces of pegmatite.
HFM15	36	37	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	37	38	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	38	39	0;	0;	8; Grey	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	50; Pyrite	100; 100 %	possibly slightly deformed (foliated/lineated). Only traces of pyrite.
HFM15	39	40	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	
HFM15	40	41	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	50; Pyrite	100; 100 %	slightly deformed (foliated/lineated). Only traces of pyrite.
HFM15	41	42	0;	20; Reddish	8; Grey	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). With larger quartz grains- probably from vein.
HFM15	42	43	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	43	44	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	44	45	0;	40; Brownish	8; Grey	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	45	46	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	46	47	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	47	48	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	48	49	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	49	50	100; Light	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	some very fine grained biotite rich aggregates.
HFM15	50	51	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	only traces of calcite.
HFM15	51	52	100; Light	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	52	53	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).

Drill cuttings

Date: 2004-01-26 Sign.: Christin Nordman

Hole	from		to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM15	53	-	54	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		60; 60/40	101057 slightly deformed (foliated/lineated). Possibly traces of prehnite.
HFM15	54	-	55	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	60; 60/40	traces of prehnite
HFM15	55	-	56	0;	80; Greyish	1; Pink	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite, prehnite
HFM15	56	-	57	100; Light	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	57	-	58	0;	80; Greyish	1; Pink	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of pegmatite and uncertain prehnite.
HFM15	58	-	59	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	8; Medium to coarse grained	101058; Granite, metamorphic, aplitic	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	80; 80/20	also some101057. amph foliated/lineated. Traces of pyrite, prehnite, calcite.
HFM15	59	-	60	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		90; 90/10	Traces of folitated amphibolite.
HFM15	60	-	61	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated). Traces of weathered surfaces (open fracture?)
HFM15	61	-	62	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	62	-	63	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	possibly slightly deformed (foliated/lineated). Only traces of prehnite. Also pegmatite?
HFM15	63	-	64	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	64	-	65	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	65	-	66	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	66	-	67	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	slightly deformed (foliated/lineated). Traces of chlorite and possibly chalcopyrite. Chl could be an alteration product from biotite.
HFM15	67	-	68	0;	0;	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated).
HFM15	68	-	69	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	100; Light	0;	2; Red	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	50; 50/50	uncertain rock type ratio. 101057 slightly deformed (foliated/lineated). Only traces of amphibole.
HFM15	69	-	70	0;	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite, prehnite
HFM15	70	-	71	0;	80; Greyish	2; Red	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	deformed (foliated/lineated).
HFM15	71	-	72	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite and pegmatite.
HFM15	72	-	73	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	deformed (foliated/lineated). Only traces of calcite.
HFM15	73	-	74	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated). Traces of prehnite
HFM15	74	-	75	0;	0;	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Dull surface - probably from open fracture.
HFM15	75	-	76	0;	0;	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	76	-	77	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of pyrite and calcite.
HFM15	77	-	78	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated). Traces of prehnite and white feldspar (possibly fracture mineral).
HFM15	78	-	79	0;	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	90; 90/10	deformed (foliated/lineated). Traces of chlorite and hematite on probably open fracture plane. Also white feldspar (possible fracture mineral). Rock type ratio uncertain

Drill cuttings

Date: 2004-01-26 Sign.: Christin Nordman

Hole	from		to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM15	79	-	80	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		80; 80/20	101057 deformed (foliated/lineated). Rock type ratio uncertain.
HFM15	80	-	81	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	deformed (foliated/lineated). Possibly also some pegmatite.
HFM15	81	-	82	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	deformed (foliated/lineated). Traces of white feldspar (fracture mineral?).
HFM15	82	-	83	200; Dark	20; Reddish	8; Grey	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated). Traces of prehnite, chlorite (?)
HFM15	83	-	84	0;	0;	2; Red	6; Fine-to medium grained	0;	0;	2; Red	9; Medium-grained (1-5 mm)	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		80; 80/20	pegmatite leucocratic.
HFM15	84	-	85	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		50; 50/50	Rock type ratio uncertain. Weathered fragment. 101057 slightly deformed (foliated/lineated).
HFM15	85	-	86	0;	0;	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	weathered, chlorite altered biotite rich fragment from fracture (altered amphibolite?) Possibly some pegmatite. Traces of white feldspar (fracture mineral?)
HFM15	86	-	87	0;	0;	2; Red	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	seems slightly deformed (foliated/lineated). Traces of calcite, dull open fracture surface.
HFM15	87	-	88	200; Dark	50; Greenish	2; Red	8; Medium to coarse grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM15	88	-	89	0;	0;	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	probably slightly deformed (foliated/lineated). Traces of iron hydroxide, white feldspar (fracture mineral?)
HFM15	89	-	90	0;	0;	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	slightly deformed (foliated/lineated). Some dull surfaces- from open fractures. Traces of chlorite
HFM15	90	-	91	0;	0;	2; Red	6; Fine-to medium grained	0;	0;	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	probably slightly deformed (foliated/lineated). Traces of calcite, prehnite. Some biotite slighlty chlorite altered.
HFM15	91	-	92	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	0;	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	probably slightly deformed (foliated/lineated). Some biotite slightly altered - get a metallic lustre. Traces of calcite and hematite.
HFM15	92	-	93	0;	0;	2; Red	6; Fine-to medium grained	0;	0;	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	traces of white feldspar (fracture mineral), calcite, prehnite.
HFM15	93	-	94	0;	0;	2; Red	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	slightly deformed (foliated/lineated). Traces of epidote, traces of white feldspar and qz as probable sealed fracture.
HFM15	94	-	95	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	traces of pyrite, white feldspar probable as sealed fracture. Possibly slightly deformed (foliated/lineated).
HFM15	95	-	96	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	traces of chlorite, iron hydroxide
HFM15	96	-	97	100; Light	0;	2; Red	9; Medium-grained (1-5 mm)	100; Light	0;	2; Red	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	90; 90/10	traces of chlorite, calcite, white feldspar. 101057 could be from fracture zone.
HFM15	97	-	98	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	0;	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		90; 90/10	traces of iron hydroxide.
HFM15	98	-	99	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	0;	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	80; 80/20	rock type ratio uncertain. Traces of prehnite, white feldspar. 101057 probably slightly deformed (foliated/lineated).

Drill cuttings

Date: 2004-01-27 Sign.: Christin Nordman

Hole	from		to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM19	**5**	-	6	100; Light	0;	4; Brown	8; Medium to coarse grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		90; 90/10	contaminated by moraine.
HFM19	6	-	7	0;	20; Reddish	4; Brown	4; Coarse-grained (> 5 mm)	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Contaminated by moraine.
HFM19	7	-	8	100; Light	20; Reddish	4; Brown	8; Medium to coarse grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Some smooth surfaces - probably fracture planes. Traces of calcite and muscovite.
HFM19	8	-	9	0;	20; Reddish	4; Brown	8; Medium to coarse grained	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of white feldspar (fracture mineral?) and calcite from moraine.
HFM19	9	-	10	0;	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		90; 90/10	deformed (foliated/lineated). Traces of calcite from moraine.
HFM19	10	-	11	100; Light	40; Brownish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Some larger quartz grains, traces of white feldspar. Calcite as contamination from moraine.
HFM19	11	-	12	100; Light	0;	4; Brown	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of white and green fragments (prehnite-quartz?)
HFM19	12	-	13	0;	20; Reddish	8; Grey	8; Medium to coarse grained	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	80; 80/20	water in sample from here and downwards. 101057 slightly deformed (foliated/lineated). Traces of calcite, epidote. Calcite grains have small (aphanitic) dark green slightly transparent spherulites (prehnite?).
HFM19	13	-	14	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Only traces of calcite.
HFM19	14	-	15	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite, prehnite.
HFM19	15	-	16	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite.
HFM19	16	-	17	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite.
HFM19	17	-	18	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite and iron hydroxide.
HFM19	18	-	19	100; Light	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	50; Pyrite	60; 60/40	101057 slightly deformed (foliated/lineated). Traces of pyrite in 101057 (not in fracture)
HFM19	19	-	20	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	50; Pyrite	90; 90/10	101057 slightly deformed (foliated/lineated). Traces of rusty mineral.
HFM19	20	-	21	0;	0;	2; Red	9; Medium-grained (1-5 mm)	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Uncertain prehnite.
HFM19	21	-	22	100; Light	0;	8; Grey	9; Medium-grained (1-5 mm)	100; Light	0;	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	50; Pyrite	100; 100 %	slightly deformed (foliated/lineated). Relatively rich in pyrite. Almost white - still a 101057 or a tonalite? If so appr 90% tonalite 10% 101057
HFM19	22	-	23	100; Light	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	23	-	24	100; Light	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	7; White	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Or a tonalite?
HFM19	24	-	25	100; Light	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	25	-	26	100; Light	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated). Traces of prehnite, pyrite, epidote.
HFM19	26	-	27	100; Light	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	0;	1; Pink	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite. Calcite has spherulites of quartzprehnite? Concrete???
HFM19	27	-	28	100; Light	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	50; Pyrite	100; 100 %	101057 slightly deformed (foliated/lineated). Amphibolite biotite altered. Any amphibole left?
HFM19	28	-	29	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	29	-	30	0;	50; Greenish	9; Black	9; Medium-grained (1-5 mm)	0;	0;	9; Black	2; Fine-grained (<1 mm)	102017; Amphibolite	101057; Granite to granodiorite, metamorphic, medium grained	3; Amphibole	49; Plagioclase	10; Biotite	32; Potash Feldspar	36; Quartz	90; 90/10	amphibolite partly biotite and phlogopite (?) altered.

Drill cuttings

Date: 2004-01-27 Sign.: Christin Nordman

Hole	from		to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM19	30	-	31	100; Light	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	slightly deformed (foliated/lineated). Traces of amphibolite.
HFM19	31	-	32	100; Light	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	1; Pink	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		60; 60/40	101057 slightly deformed (foliated/lineated).
HFM19	32	-	33	100; Light	80; Greyish	1; Pink	9; Medium-grained (1-5 mm)	0;	80; Greyish	1; Pink	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		70; 70/30	101057 slightly deformed (foliated/lineated). Traces of rust and hematite.
HFM19	33	-	34	100; Light	80; Greyish	1; Pink	9; Medium-grained (1-5 mm)	0;	0;	1; Pink	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		80; 80/20	101057 slightly deformed (foliated/lineated). Traces of biotite rich aggregates (altered amphibolite?)
HFM19	34	-	35	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	90; 90/10	slightly deformed (foliated/lineated). Traces of prehnite, calcite, rust.
HFM19	35	-	36	100; Light	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of epidote, rusty minerals.
HFM19	36	-	37	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	37	-	38	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite.
HFM19	38	-	39	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	39	-	40	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite.
HFM19	40	-	41	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite, pyrite.
HFM19	41	-	42	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	42	-	43	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of pegmatite.
HFM19	43	-	44	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	90; 90/10	slightly deformed (foliated/lineated). Traces of quartz-calcite sealed fracture (Qz probably older).
HFM19	44	-	45	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Calcite with spherulites, traces of prehnite.
HFM19	45	-	46	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	46	-	47	100; Light	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	90; 90/10	101057 slightly deformed (foliated/lineated). Calcite with spherulites and calcite together with epidote.
HFM19	47	-	48	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	48	-	49	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	slightly deformed (foliated/lineated). Amph slightly biotite altered. Traces of epidote in amphibolite.
HFM19	49	-	50	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	50	-	51	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	slightly deformed (foliated/lineated). Traces of amphibolite.
HFM19	51	-	52	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	50; Pyrite	100; 100 %	slightly deformed (foliated/lineated). Traces of pyrite.
HFM19	52	-	53	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	50; Pyrite	100; 100 %	slightly deformed (foliated/lineated). Traces of pyrite.
HFM19	53	-	54	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	slightly deformed (foliated/lineated). Traces of epidote. Also traces of pegmatite?
HFM19	54	-	55	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).

Drill cuttings

Date: 2004-01-27 Sign.: Christin Nordman

Hole	from		to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM19	55	-	56	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	56	-	57	100; Light	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	80; Greyish	1; Pink	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		70; 70/30	
HFM19	57	-	58	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	90; 90/10	slightly deformed (foliated/lineated). Traces of epidote and rusty mineral.
HFM19	58	-	59	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		90; 90/10	slightly deformed (foliated/lineated).
HFM19	59	-	60	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of rusty mineral.
HFM19	60	-	61	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	slightly deformed (foliated/lineated). Traces of epidote.
HFM19	61	-	62	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	90; 90/10	slightly deformed (foliated/lineated). Traces of hematite, epidote
HFM19	62	-	63	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite with spherulites, pyrite.
HFM19	63	-	64	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	0;	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	90; 90/10	slightly deformed (foliated/lineated). Traces of epidote.
HFM19	64	-	65	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	slightly deformed (foliated/lineated). Traces of epidote.
HFM19	65	-	66	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		80; 80/20	101057 slightly deformed (foliated/lineated).
HFM19	66	-	67	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	slightly deformed (foliated/lineated). Traces of pegmatite and hematite pigmented feldspar sealed fracture.
HFM19	67	-	68	100; Light	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Rusty fragment from drill bit or fracture.
HFM19	68	-	69	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	0;	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	69	-	70	200; Dark	0;	8; Grey	9; Medium-grained (1-5 mm)	100; Light	0;	8; Grey	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	3; Amphibole	10; Biotite	70; 70/30	Traces of pyrite,epidote. Amphibolite is foliated/lineated.
HFM19	70	-	71	100; Light	50; Greenish	8; Grey	9; Medium-grained (1-5 mm)	100; Light	0;	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	3; Amphibole	10; Biotite	70; 70/30	40% 101057, 30% pegmatite, 30% amphibolite? Relatively rich in prehnite and epidote. Traces of calcite and hematite.
HFM19	71	-	72	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	both slightly deformed (foliated/lineated). Traces of prehnite - mostly related to amphibolite.
HFM19	72	-	73	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated). Traces of prehnite.
HFM19	73	-	74	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	1; Pink	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	90; 90/10	traces of calcite and amphibolite.
HFM19	74	-	75	0;	0;	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of pegmatite.
HFM19	75	-	76	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of pegmatite.
HFM19	76	-	77	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		90; 90/10	101057 slightly deformed (foliated/lineated).
HFM19	77	-	78	0;	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	slightly deformed (foliated/lineated). Traces of amphibolite. 101057 or 101051?
HFM19	78	-	79	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	79	-	80	100; Light	80; Greyish	2; Red	9; Medium-grained (1-5 mm)	100; Light	0;	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite, rusty minerals and amphibolite.
HFM19	80	-	81	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of rusty mineral.

Drill cuttings

Date: 2004-01-27 Sign.: Christin Nordman

Hole	from	to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM19	81	82	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	82	83	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	83	84	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	50; Pyrite	100; 100 %	slightly deformed (foliated/lineated). 5% pegmatite. Traces of pyrite, rusty mineral.
HFM19	84	85	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of pegmatite.
HFM19	85	86	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	slightly deformed (foliated/lineated). Traces of hematite, epidote
HFM19	86	87	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	87	88	0;	0;	8; Grey	9; Medium-grained (1-5 mm)	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of pegmatite, epidote/prehnite, rusty mineral.
HFM19	88	89	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Also pegmatite?
HFM19	89	90	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of rusty mineral.
HFM19	90	91	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	slightly deformed (foliated/lineated). Traces of epidote, rusty minerals.
HFM19	91	92	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	slightly deformed (foliated/lineated). Traces of epidote.
HFM19	92	93	100; Light	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of rusty mineral.
HFM19	93	94	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	0;	1; Pink	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	90; 90/10	
HFM19	94	95	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	slightly deformed (foliated/lineated). Traces of pegmatite and hematite.
HFM19	95	96	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	96	97	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	slightly deformed (foliated/lineated). Traces of hematite.
HFM19	97	98	0;	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	98	99	0;	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	99	100	0;	0;	1; Pink	6; Fine-to medium grained	0;	0;	1; Pink	9; Medium-grained (1-5 mm)	101061; Pegmatite, pegmatitic granite		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	100; 100 %	traces of 101057.
HFM19	100	101	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	101	102	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	possibly slightly deformed (foliated/lineated).
HFM19	102	103	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	possibly slightly deformed (foliated/lineated).
HFM19	103	104	100; Light	0;	8; Grey	6; Fine-to medium grained	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	any deformation?
HFM19	104	105	0;	0;	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	any deformation?
HFM19	105	106	0;	0;	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of rusty mineral.
HFM19	106	107	0;	0;	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).

Drill cuttings

Date: 2004-01-27 Sign.: Christin Nordman

Hole	from	to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM19	107	108	0;	0;	8; Grey	6; Fine-to medium grained	100; Light	0;	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	50; Pyrite	60; 60/40	101057 slightly deformed. Traces of pyrite, epidote, rusty fragment.
HFM19	108	109	200; Dark	0;	8; Grey	6; Fine-to medium grained	0;	80; Greyish	9; Black	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	60; 60/40	traces of rusty mineral.
HFM19	109	110	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	possibly slightly deformed (foliated/lineated).
HFM19	110	111	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	111	112	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	1; Pink	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of amphibolite, rusty mineral.
HFM19	112	113	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	113	114	0;	0;	8; Grey	6; Fine-to medium grained	0;	0;	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	slightly deformed (foliated/lineated). Traces of amphibolite, rusty mineral.
HFM19	114	115	0;	0;	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	slightly deformed (foliated/lineated). Traces of amphibolite and possibly prehnite.
HFM19	115	116	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		80; 80/20	101057 slightly deformed (foliated/lineated).
HFM19	116	117	0;	0;	8; Grey	6; Fine-to medium grained	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	slightly deformed (foliated/lineated). Traces of amphibolite.
HFM19	117	118	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		90; 90/10	101057 slightly deformed (foliated/lineated).
HFM19	118	119	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	slightly deformed (foliated/lineated).Traces of pegmatite and amphibolite.
HFM19	119	120	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite on possible fracture plane. Also pegmatite?
HFM19	120	121	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	121	122	0;	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Some grains more oxidized and biotite is slightly chlorite altered.
HFM19	122	123	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	50; Pyrite	100; 100 %	slightly deformed (foliated/lineated). Traces of pyrite, calcite, chlorite.
HFM19	123	124	0;	20; Reddish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Relatively rich in calcite - also prehnite. A few grains of 101057 seem aphanitic. Deformed?
HFM19	124	125	0;	10; Pinkish	8; Grey	9; Medium-grained (1-5 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		60; 60/40	101057 deformed (foliated/lineated).
HFM19	125	126	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite		slightly deformed (foliated/lineated). Calcite with spherulites, traces of pyrite and possibly epidote.
HFM19	126	127	0;	80; Greyish	2; Red	6; Fine-to medium grained	100; Light	0;	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101058; Granite, metamorphic, aplitic	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	80; 80/20	rock type ratio very uncertain. Any 101058? Leucocratic sample. Traces of calcite
HFM19	127	128	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Some grains leucocratic.
HFM19	128	129	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	129	130	0;	0;	2; Red	6; Fine-to medium grained	0;	0;	2; Red	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	traces of 101057.
HFM19	130	131	0;	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite, epidote, pegmatite.
HFM19	131	132	0;	40; Brownish	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	132	133	0;	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	33; Chlorite	100; 100 %	untreated sample slightly rusty. slightly deformed (foliated/lineated). Traces of chlorite, calcite, pyrite - all on possible fracture planes.
HFM19	133	134	0;	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).

Drill cuttings

Date: 2004-01-27 Sign.: Christin Nordman

			Untreated drill cuttings sample				Washed and sieved drill cuttings sample												
Hole	from	to	Lightn.	Chrom.	Hue	Grainsize	Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM19	134	135	0;	0;	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite, hematite and possibly prehnite.
HFM19	135	136	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite and chlorite on possible fracture planes.
HFM19	136	137	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite and chlorite.
HFM19	137	138	0;	40; Brownish	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	untreated sample slightly rusty. slightly deformed (foliated/lineated).
HFM19	138	139	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		90; 90/10	101057 slightly deformed (foliated/lineated).
HFM19	139	140	0;	20; Reddish	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated). Traces of prehnite, calcite, epidote.
HFM19	140	141	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	1; Pink	6; Fine-to medium grained	101058; Granite, metamorphic, aplitic	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		70; 70/30	possible 101058 leucocratic. 101057 slightly deformed (foliated/lineated).
HFM19	141	142	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Some leucocratic grains as i sample above.
HFM19	142	143	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	101057 slightly deformed (foliated/lineated). Strong hematite pigmentation on possible fracture planes. Some amphibolite.
HFM19	143	144	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	90; 90/10	slightly deformed (foliated/lineated). Traces of calcite, oxidized surfaces, epidote and possibly amphibolite.
HFM19	144	145	0;	20; Reddish	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	90; 90/10	slightly deformed (foliated/lineated). Traces of calcite, prehnite.
HFM19	145	146	0;	20; Reddish	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	27; Hematite	70; 70/30	slightly deformed (foliated/lineated). Hematite pigmented surfaces and sealed fractures.
HFM19	146	147	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	147	148	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated).
HFM19	148	149	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of greenish mineral /mineral aggregate.
HFM19	149	150	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	150	151	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	100; Light	10; Pinkish	8; Grey	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	80; 80/20	traces of epidote.
HFM19	151	152	100; Light	40; Brownish	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	7; White	8; Medium to coarse grained	101061; Pegmatite, pegmatitic granite	101057; Granite to granodiorite, metamorphic, medium grained	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	90; 90/10	untreated sample slightly rusty. Traces of epidote.
HFM19	152	153	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	90; 90/10	slightly deformed (foliated/lineated). And some pegmatite.
HFM19	153	154	0;	80; Greyish	2; Red	6; Fine-to medium grained	200; Dark	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated). Traces of prehnite and oxidized surfaces.
HFM19	154	155	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		90; 90/10	101057 slightly deformed (foliated/lineated).
HFM19	155	156	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	50; Pyrite	100; 100 %	slightly deformed (foliated/lineated). Traces of pyrite. Possibly also pegmatite.
HFM19	156	157	0;	0;	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	deformed (foliated/lineated). Traces of epidote and pyrite.
HFM19	157	158	0;	0;	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	16; Epidote	100; 100 %	slightly deformed (foliated/lineated). Traces of epidote.
HFM19	158	159	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).

Drill cuttings

Date: 2004-01-27 Sign.: Christin Nordman

Hole	from	to	Untreated drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Washed and sieved drill cuttings sample Lightn.	Chrom.	Hue	Grainsize	Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
HFM19	159	160	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	untreated sample slightly rusty. slightly deformed (foliated/lineated).
HFM19	160	161	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	161	162	100; Light	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of prehnite/epidote.
HFM19	162	163	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	163	164	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		80; 80/20	101057 slightly deformed (foliated/lineated).
HFM19	164	165	100; Light	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		90; 90/10	101057 slightly deformed (foliated/lineated).
HFM19	165	166	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	166	167	0;	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	167	168	100; Light	40; Brownish	8; Grey	6; Fine-to medium grained	0;	10; Pinkish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	untreated sample sligthly rusty. slightly deformed (foliated/lineated).
HFM19	168	169	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained	101061; Pegmatite, pegmatitic granite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	80; 80/20	101057 slightly deformed (foliated/lineated).Traces of prehnite.
HFM19	169	170	0;	20; Reddish	8; Grey	6; Fine-to medium grained	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	170	171	0;	80; Greyish	2; Red	6; Fine-to medium grained	0;	50; Greenish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite and greenish-white banded aphanitic grains - mylonitic?
HFM19	171	172	0;	0;	2; Red	2; Fine-grained (<1 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of greenish aphanitic grains - mylonitic?
HFM19	172	173	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	200; Dark	80; Greyish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	3; Amphibole	10; Biotite	60; 60/40	Traces of pyrite, iron hydroxide, calcite, possible prehnite, aphanitic greenish grains.
HFM19	173	174	0;	80; Greyish	4; Brown	6; Fine-to medium grained	200; Dark	50; Greenish	2; Red	2; Fine-grained (<1 mm)	102017; Amphibolite	101061; Pegmatite, pegmatitic granite	49; Plagioclase	3; Amphibole	32; Potash Feldspar	36; Quartz	10; Biotite	50; 50/50	some amphibole in amphibolite strongly altered (-> green, chlorite? Or ->cupper coloured (biotite or other mica?)). Probably plagioclase also consumed in alteration. Some aphanitic dark greenish grains (mylonite/cataclastite?) alteration possibly connected to calcite veins.
HFM19	174	175	200; Dark	0;	4; Brown	2; Fine-grained (<1 mm)	200; Dark	50; Greenish	2; Red	2; Fine-grained (<1 mm)	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	33; Chlorite	10; Biotite	60; 60/40	some amphibole in amphibolite is altered (plag-> green prehnite? amph ->cupper coloured (biotite or other mica?)).Traces of calcite.
HFM19	175	176	0;	50; Greenish	2; Red	2; Fine-grained (<1 mm)	0;	20; Reddish	9; Black	2; Fine-grained (<1 mm)	102017; Amphibolite	101057; Granite to granodiorite, metamorphic, medium grained	49; Plagioclase	3; Amphibole	32; Potash Feldspar	36; Quartz	10; Biotite	70; 70/30	untreated sample slightly rusty. Amphibolite less altered than sample above. Same alteration. Traces of prehnite and epidote.
HFM19	176	177	0;	0;	2; Red	2; Fine-grained (<1 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	100; 100 %	slightly deformed (foliated/lineated). Traces of amphibolite, epidote and prehnite. Prehnite seems aphanitic.
HFM19	177	178	0;	80; Greyish	2; Red	2; Fine-grained (<1 mm)	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	107; Prehnite	100; 100 %	slightly deformed (foliated/lineated). Traces of prehnite sealed fracture.
HFM19	178	179	0;	80; Greyish	2; Red	2; Fine-grained (<1 mm)	100; Light	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated).
HFM19	179	180	0;	0;	2; Red	2; Fine-grained (<1 mm)	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite		100; 100 %	slightly deformed (foliated/lineated). Traces of white feldspar, possibly from fracture
HFM19	180	181	0;	80; Greyish	2; Red	2; Fine-grained (<1 mm)	0;	20; Reddish	8; Grey	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	50; Pyrite	100; 100 %	slightly deformed (foliated/lineated). Traces of pyrite.
HFM19	181	182	0;	80; Greyish	2; Red	2; Fine-grained (<1 mm)	0;	80; Greyish	2; Red	6; Fine-to medium grained	101057; Granite to granodiorite, metamorphic, medium grained		32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated). Traces of calcite.
HFM19	182	183	0;	20; Reddish	9; Black	2; Fine-grained (<1 mm)	0;	20; Reddish	9; Black	9; Medium-grained (1-5 mm)	101057; Granite to granodiorite, metamorphic, medium grained	102017; Amphibolite	32; Potash Feldspar	49; Plagioclase	36; Quartz	10; Biotite	3; Amphibole	80; 80/20	one big fragment - the rest very fine grained (untreated). Rock type ratio very uncertain. Amphibolite slightly altered (copper coloured mica?, prehnite).

Drill cuttings

Date: 2004-01-27 Sign.: Christin Nordman

Hole	from		to	Untreated drill cuttings sample				Washed and sieved drill cuttings sample				Rock type A	Rock type B	Min-1	Min-2	Min-3	Min-4	Min-5	Distr.	Kommentar
				Lightn.	Chrom.	Hue	Grainsize	Lightn.	Chrom.	Hue	Grainsize									
HFM19	183	-	184	0;	0;	9; Black	2; Fine-grained (<1 mm)	0;	20; Reddish	9; Black	2; Fine-grained (<1 mm)	102017; Amphibolite	101057; Granite to granodiorite, metamorphic, medium grained	49; Plagioclase	3; Amphibole	32; Potash Feldspar	36; Quartz	10; Biotite	90; 90/10	slightly deformed (foliated/lineated).Traces of prehnite, copper coloured mica (?), white feldspar.
HFM19	184	-	185	0;	0;	9; Black	2; Fine-grained (<1 mm)	0;	20; Reddish	9; Black	2; Fine-grained (<1 mm)	102017; Amphibolite		49; Plagioclase	3; Amphibole	36; Quartz	10; Biotite	30; Calcite	100; 100 %	slightly deformed (foliated/lineated).