

**P-06-238**

## **Oskarshamn site investigation**

### **Boremap mapping of core drilled borehole KLX18A**

Karl-Johan Mattsson, Stefan Eklund  
Geosigma AB

December 2007

**Svensk Kärnbränslehantering AB**

Swedish Nuclear Fuel  
and Waste Management Co  
Box 250, SE-101 24 Stockholm  
Tel +46 8 459 84 00



## **Oskarshamn site investigation**

### **Boremap mapping of core drilled borehole KLX18A**

Karl-Johan Mattsson, Stefan Eklund  
Geosigma AB

December 2007

*Keywords:* KLX18A, Geology, Drill core mapping, Boremap, Fractures, BIPS, Laxemar.

This report concerns a study which was conducted for SKB. The conclusions and viewpoints presented in the report are those of the authors and do not necessarily coincide with those of the client.

Data in SKB's database can be changed for different reasons. Minor changes in SKB's database will not necessarily result in a revised report. Data revisions may also be presented as supplements, available at [www.skb.se](http://www.skb.se).

A pdf version of this document can be downloaded from [www.skb.se](http://www.skb.se).

## Abstract

This report presents the Boremap mapping of KLX18A, which is a c 611 m long core drilled borehole. The borehole was drilled with orientation 271.4/-82.0°, and it was mapped from 2006-05-22 to 2006-06-13.

The lithology in KLX18A consist of 91.4% Ävrö granite (501044), 3.6% fine-grained diorite-gabbro (505102), 3.5% fine-grained dioritoid (501030), 1.1% diorite/gabbro (501033) and 0.2% fine-grained granite (511058).

Seven sections have been highlighted based on anomalous fracture frequencies, alterations and structural features. These sections cover the following intervals: 136–149 m, 196–207 m, 283–298 m, 329–337 m, 359–367 m, 448–449 m and 479–489 m. In some cases these sections are associated with lithological changes.

## Sammanfattning

Denna rapport presenterar boremapkarteringen av KLX18A som är ett ca 611 meter långt kärnborrhål, borrarat med deklinationen 271,4° och inklinationen -82,0°. Borrhålet karterades mellan 2006-05-22 och 2006-06-13.

KLX18A utgörs av 91,4 % Ävrö granit (501044) 3,6 % finkornig diorit-gabbro (505102), 3,5 % finkornig dioritoid (501030), 1,1 % diorit/gabbro (501033) och 0,2 % finkornig granit (511058).

Sju sektioner i KLX18A kan urskiljas baserat på förhöjd sprickfrekvens, sidobergets omvandlingar och geologiska strukturer. Dessa sektioner återfinns i följande intervall: 136–149 m, 196–207 m, 283–298 m, 329–337 m, 359–367 m, 448–449 m och 479–489 m. Dessa sektioner är ibland associerade med litologiska förändringar.

# Contents

<b>1</b>	<b>Introduction</b>	7
<b>2</b>	<b>Objective and scope</b>	9
<b>3</b>	<b>Equipment</b>	11
3.1	Description of software	11
3.2	Other equipment	11
3.3	BIPS-image video film sequences	11
3.4	BIPS-image: resolution, contrast and quality	11
3.4.1	BIPS-image resolution	11
3.4.2	BIPS-image contrast	11
3.4.3	BIPS-image quality	12
<b>4</b>	<b>Execution</b>	13
4.1	General	13
4.2	Preparations	13
4.3	Execution of measurements	13
4.3.1	Fracture definitions	13
4.3.2	Fracture alteration and joint alteration number	14
4.3.3	Mapping of fractures not visible in the BIPS-image	14
4.3.4	Definition of veins and dikes	15
4.3.5	Mineral codes	15
4.4	Data handling	15
4.5	Geological summary table, general description	15
4.5.1	Columns in the geological summary table	16
<b>5</b>	<b>Results</b>	19
5.1	General	19
5.2	Lithology and structures	19
5.3	Fracture mineralogy	20
<b>Appendix 1</b>	Geological summary table for KLX18A	23
<b>Appendix 2</b>	Search paths for the geological summary table	25
<b>Appendix 3</b>	BIPS-image for KLX18A	27
<b>Appendix 4</b>	WellCad diagram for KLX18A	55
<b>Appendix 5</b>	Legend to WellCad diagram for KLX18A	59
<b>Appendix 6</b>	In-data: Borehole length and diameter for KLX18A	61
<b>Appendix 7</b>	In-data: Reference marks for length adjustments for KLX18A	63
<b>Appendix 8</b>	In-data: Borehole deviation data for KLX18A	65

# 1 Introduction

This document reports data gained from the mapping of KLX18A in the Laxemar area, which is one of the activities performed within the site investigation at Oskarshamn. The work was carried out in accordance with activity plan AP PS 400-06-069. In Table 1-1 controlling documents for performing this activity are listed. Both Activity plan and Method descriptions are SKB's internal controlling documents. Rock type nomenclature that has been used is shown in Table 1-2.

SKB investigates two potential sites for a deep repository for nuclear waste in the Swedish Precambrian basement at approximately 500 m depth. These places are Forsmark in northern Uppland and Oskarshamn in eastern Småland. In order to make a preliminary evaluation of the rock mass down to a depth of about 1,000 m at these sites, SKB has initiated a drilling program using core drilled boreholes. Every borehole usually starts with a percussion drilled part the first 100 m, where only drill cuttings are examined together with BIPS, followed by core drilling.

**Table 1-1. Controlling documents for the performance of the activity.**

<b>Activity plan</b>	<b>Number</b>	<b>Version</b>
Boremapkartering av KLX18A	AP PS 400-06-069	1.0
<b>Method descriptions</b>	<b>Number</b>	<b>Version</b>
Nomenklatur vid Boremapkartering	SKB MD 143.008	1.0
Method Description for Boremap mapping	SKB MD 143.006	2.0
Mätsystembeskrivning för Boremap	SKB MD 146.005	1.0
Instruktion: Regler för bergarters benämningar vid platsundersökning i Oskarshamn	SKB MD 132.004	1.0
Instruktion för längdkalibrering vid undersökningar i kärnborrhål	SKB MD 620.010	2.0

**Table 1-2. Rock type nomenclature for the site investigation at Oskarshamn.**

<b>Rock type</b>	<b>Rock code</b>	<b>Rock description</b>
Dolerite	501027	Dolerite
Fine-grained Götemar granite	531058	Granite, fine- to medium-grained, ("Götemar granite")
Coarse-grained Götemar granite	521058	Granite, coarse-grained, ("Götemar granite")
Fine-grained granite	511058	Granite, fine- to medium-grained
Pegmatite	501061	Pegmatite
Granite	501058	Granite, medium- to coarse-grained
Ävrö granite	501044	Granite to quartz monzodiorite, generally porphyritic
Quartz monzodiorite	501036	Quartz monzonite to monzodiorite, equigranular to weakly porphyritic
Diorite/gabbro	501033	Diorite to gabbro
Fine-grained dioritoid	501030	Intermediate magmatic rock
Fine-grained diorite-gabbro	505102	Mafic rock, fine-grained
Sulphide mineralization	509010	Sulphide mineralization
Sandstone	506007	Sandstone

Borehole KLX18A is situated within the Laxemar area (Figure 1-1). KLX18A is a c 611 m long telescopic borehole oriented 271.4/−82.0°. The borehole mapping was performed between 2006-05-22 and 2006-06-13.

Detailed mapping of the drill core is essential for a three dimensional modelling of the geology at depth. The mapping is based on the use of BIPS-image (Borehole Image Processing System) of the borehole wall and by the study of the drill core itself. The BIPS-image enables the study of orientations, since the Boremap software calculates strike and dip of planar features such as foliations, rock contacts and fractures.

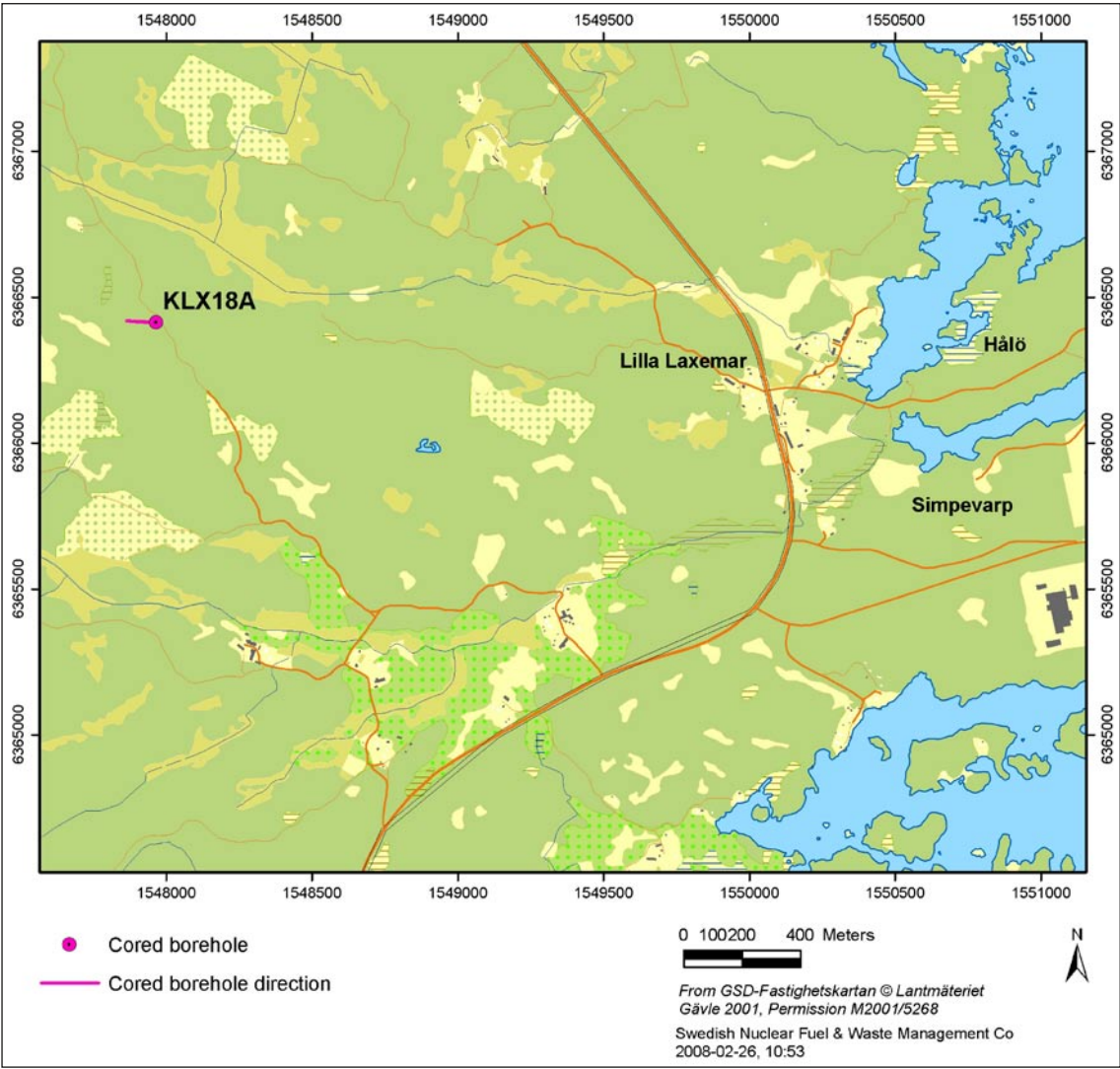


Figure 1-1. Location of the core drilled borehole KLX18A.

## **2 Objective and scope**

The principal aim of the mapping activities presented in this report is to obtain a documentation of geological structures and lithologies intersecting borehole KLX18A. Geological structures will be correctly oriented in space along the borehole with the Boremap system. The result will serve as a platform for forthcoming investigations of the drill core, as well as various site descriptive modelling.



## **3 Equipment**

### **3.1 Description of software**

Software used for the mapping of KLX18A was Boremap v. 3.7.5, with bedrock and mineral standards of SKB. The data presentation was made using WellCad v. 4, Microsoft Access and Microsoft Excel. Boremap is the software that unites orthodox core mapping with modern video mapping, where Boremap shows the image from BIPS (Borehole Image Processing System) and extracts the geometrical parameters: length, width, strike and dip from the image.

### **3.2 Other equipment**

The following equipment is used to facilitate the core mapping: folding rule, pen, diluted hydrochloric acid, knife, water-filled atomiser and hand lens.

### **3.3 BIPS-image video film sequences**

The BIPS-image of KLX18A covers the interval 100.00–610.91 m.

### **3.4 BIPS-image: resolution, contrast and quality**

The visibility of thin fractures in BIPS depends on image resolution, image contrast and image quality.

#### **3.4.1 BIPS-image resolution**

Resolution of the BIPS-image is perhaps the principal reason why very thin fractures as well as very thin apertures are not visible in the BIPS-image and the resolution depends on the BIPS video camera pixel size and illumination angle.

#### **3.4.2 BIPS-image contrast**

Thick fractures are always visible in both drill core and the BIPS-image. However, the visibility of thin fractures depends strongly on the contrast between the fracture and the wall rock.

A bright fracture in a dark rock is clearly visible in the BIPS-image. But a bright coloured fracture in a light coloured rock might, however, be clearly visible in the drill core but not visible in the BIPS-image, especially if the fracture and wall rock have the same colour. The opposite is true for dark fractures.

In very rare cases when the BIPS-image contrast between a very thin fracture and the wall rock is very strong the fracture might be visible in the BIPS-image even if it is not visible in the drill core.

### 3.4.3 BIPS-image quality

BIPS-image quality is sometimes limited due to:

- 1) blackish coatings probably related to the drilling equipment,
- 2) vertical bleached bands from the clayey mixture of drill cuttings and water,
- 3) light and dark bands at high angle to the drill hole related to the automatic aperture of the video camera,
- 4) vertical enlargements of pixels due to stick-slip movement of the camera probe.

Vertical bleached bands and blackish coatings are usually the main disturbances in the BIPS-image quality.

The image quality is classified into four levels; good, acceptable, bad and very bad. Good quality means a more or less clear image which is easy to interpret. If the quality is acceptable it means that the image is not good, but that the mapping can be performed without any problems. An image of bad quality is somewhat difficult to interpret while an image of very bad quality cannot be interpreted except from very obvious and outstanding features. It should be remembered that even if only 10–20% of the image is visible, this is often enough for an acceptable interpretation. When the BIPS-image quality is so bad that fractures and structures cannot be identified, they can still be oriented using the *guide-line method* (Section 4.3.3). The BIPS-image quality for KLX18A is presented in Table 3-1.

The BIPS-image for KLX18A is in general good to acceptable except for the interval 100–111 m, where the BIPS-image quality is bad.

**Table 3-1. BIPS-image quality in KLX18A.**

From (m)	To (m)	Quality
100	111	Bad
111	480	Good
480	521	Acceptable
521	592	Good
592	611	Acceptable

## 4 Execution

### 4.1 General

Mapping of the drill core of the telescopic drilled borehole was performed and documented according to Activity plan AP PS 400-06-069 (SKB, internal document) referring to the *Method Description for Boremap mapping* (SKB MD 143.006, v. 2.0), *Nomenklatur vid Boremapkartering* (SKB MD 143.008, v. 1.0), *Instruktion: Regler för bergarters benämningar vid platsundersökningen i Oskarshamn* (SKB MD 132.004) and *Instruktion för längdkalibrering vid undersökningar i kärnborrhål* (SKB MD 620.010), all of them SKB internal documents.

The drill core was displayed on inclined roller tables and mapped in its entire length with the Boremap software. The core mapping was carried out without any detailed geological knowledge of the area but with access to geophysical logs from the borehole and rock samples.

The term *oxidation* has been used as an alteration type until the mapping of KLX05. However, research has shown that the red colour of the bedrock is actually not only a result of oxidation. Since April 2005 the term *red staining* is used instead of the term *oxidation*.

The mapping was performed by Karl-Johan Mattsson (Geosigma AB) and Stefan Eklund (Geosigma AB).

### 4.2 Preparations

Any depth registered in the BIPS-image deviates from the true depth in the borehole, a deviation which increases with depth, with approximately 0.4 m/100 m. This problem is eliminated by adjusting the depth of the BIPS-image to reference slots cut into the borehole walls every fiftieth meter (Appendix 7). The level for each slot is measured in the BIPS-images and then adjusted to the correct level using the correct depth value from the SICADA database.

Necessary indata for length adjustment and orientation in space are borehole diameter, reference marks, length and deviation; both collected from SICADA database (Appendices 6–8).

### 4.3 Execution of measurements

Concepts used during the core mapping, are defined in this chapter.

#### 4.3.1 Fracture definitions

Definitions of different fracture types, aperture, crush zones, and sealed fracture networks are found in *Nomenklatur vid Boremapkartering* (SKB MD 143.008, v. 1.0), SKB internal document. Apertures for broken fractures have been mapped in accordance with the definitions in MD 143.008 v. 1.0.

Two types of fractures are mapped in Boremap; broken and unbroken. Broken are fractures that split the core while unbroken fractures do not split the core. All fractures are described with their fracture minerals and other characteristics, e.g. width, aperture and roughness. Visible apertures are measured down to 1 mm in the BIPS-image. Smaller apertures, which are impossible to detect in the BIPS-image, are denoted a value of 0.5 mm. If the core pieces don't fit well, the aperture is considered "probable". If the core pieces do fit well, but the fracture surfaces are dull or altered, the aperture is considered "possible".

All fractures with apertures  $> 0$  mm are treated as open in the SICADA database. Only few broken fractures are given the aperture = 0 mm. Unbroken fractures usually have apertures = 0 mm. Unbroken fractures that have apertures  $> 0$  mm are interpreted as partly open and are included in the open-category. Open and sealed fractures are finally frequency calculated and shown in Appendix 1.

#### 4.3.2 Fracture alteration and joint alteration number

Joint alteration number is principally related to the thickness of, and the clay content in a fracture. Thick fractures rich in clay minerals are given joint alteration numbers between 2 and 3. The majority of the broken fractures are very thin to extremely thin and seldom contain clay minerals. These fractures receive joint alteration numbers between 1 and 2.

A subdivision of fractures with joint alteration numbers between 1 and 2 was introduced to facilitate both the evaluation process for fracture alterations and the possibility to compare the alterations between different fractures in the boreholes. The subdivision is based on fracture mineralogy as follows:

- a) fracture wall alterations,
- b) fracture mineral fillings assumed to have been deposited from circulating water-rich solutions,
- c) fracture mineral fillings most likely resulting from altered wall rock material.

*Joint alteration number equal to 1:* Fractures with or without wall rock alteration, e.g. oxidation or epidotization, and without mineral fillings is considered as fresh. The joint alteration number is thus set to 1.

Minerals such as calcite, quartz, fluorite, zeolites, laumontite and sulphides are regarded as deposited by circulating water-rich solutions and not as true fracture alteration minerals. The joint alteration number is thus set to 1.

*Joint alteration number equal to 1.5:* Epidote, prehnite, hematite, chlorite and/or clay minerals are regarded as fracture minerals most likely resulting from altered wall rock. A weak alteration is thus assumed and the joint alteration number was set to 1.5. Extra considerations have been given to clay minerals since the occurrence of these minerals often resulted in a higher joint alteration number.

*Joint alteration numbers higher than 1.5:* When the mineral fillings is thick and contain a few mm of clay minerals, often together with epidote and chlorite, the joint alteration number is set to 2. In rare cases, when a fracture contains 5–10 mm thick clay, together with chlorite, the joint alteration number is set to 3 or higher.

When the alteration of a fracture is too thick (and/or intense) to give the fracture the joint alteration number 1.5 and too thin and/or weak to give it a 2, 1.7 and 1.8 is used.

#### 4.3.3 Mapping of fractures not visible in the BIPS-image

Not all fractures are visible in the BIPS-images, and these fractures are orientated by using the *guide-line method*, based on the following data:

- Amplitude (measured along the drill core) which is the interval between fracture extremes along the drill core.
- The relation between the orientations of the fracture trace, measured on the drill core and a well defined structure visible in the BIPS-image.
- Absolute depth.

Orientation of fractures and other structures with the *guide-line method* is done in the following way: The first step is to calculate the amplitude of the fracture trace in the BIPS-image (with 76 mm diameter) from the measured fracture amplitude in the drill core (with 50 mm diameter). The second step is the correction of strike and dip. This is done by rotating the fracture trace in the BIPS-image relative to a feature with known orientation. The fracture trace is then put at the correct depth according to the depth measured on the drill core.

The *guide-line method* can be used to orientate any feature that is not visible in the BIPS-image. It is also a valuable tool to control that the personnel working with the drill core is observing the same feature as the personnel delineating the trace in the BIPS-image, especially in intervals rich in fractures.

The error of orientating fractures using the *guide-line method* is not known but experience and an estimation using stereographic plots indicated that the error is most likely insignificant. Accordingly, the *guide-line method* is so far considered better than mapping lots of non-oriented fractures. The fractures in question are mapped as “non-visible in BIPS” and can therefore be separated from fractures visible in BIPS which probably have a more accurate orientation.

#### **4.3.4 Definition of veins and dikes**

Rock occurrence is the way Boremap handles the occurrence of lithology up to 1 meter wide. Chiefly two different rock occurrences are mapped: veins and dikes. These two are separated by their respectively length in the drill core; veins are set to 0–20 cm and dikes are set to 20–100 cm. Rock occurrences that covers more than 100 cm of the drill core are mapped under the feature *rock type*.

#### **4.3.5 Mineral codes**

In the case where properties and/or minerals are not represented in the mineral list, following mineral codes have been used:

X5 Bleached fracture walls.

X7 Broken fractures with a fresh appearance and no mineral fill.

X8 Saussuritized walls.

X9 Epidotized walls.

### **4.4 Data handling**

Mapping of the drill core is performed on-line on the SKB network, in order to obtain the best possible data security. Before every break (> 15 minutes) a back-up is saved on the local disk. Regular quality controls are performed. Every working day a Summary report (from Boremap) and a WellCad plot are printed in order to find possible misprints. The mapping is also quality checked by a routine in Boremap before it is exported to and archived in SICADA database. Personnel from SKB also perform spot test controls and regular quality revisions. All primary data is stored in SKB's database SICADA and only these data are later used for interpretation and modelling.

### **4.5 Geological summary table, general description**

A geological summary table (Appendix 1) is an overview of the features mapped with the Boremap software. It also facilitates comparisons between Boremap information collected from different boreholes and is more objective than a pure descriptive borehole summary. The table is

the result of cooperation between Jan Ehrenborg from the mapping personnel and Pär Kinnbom from PO (site investigation, Oskarshamn). The aim was to make a standard form in handy A4-size, where all information is taken directly from the Boremap database using simple and well defined search paths for each geological parameter (Appendix 2).

Data from the Boremap database cannot automatically be extracted into the geological summary table. First the data has to be sorted out and frequencies in the different column must be calculated in Microsoft Excel. WellCad is used to create the geological summary table from the frequency calculations of mapped features. From the Boremap database the data to the non-frequency columns are retrieved, i.e. lithology and red staining.

The geological summary table consists of 23 columns, each one representing a specific geological parameter, presented as either intervals or frequencies (see Section 4.5.1 for column description). Intervals are calculated for parameters with a width  $\geq 1$  m and frequencies for parameters with a width  $< 1$  m. Frequency information is treated as point observations. It should be noted that parameters with a thickness of only 1 mm get the same “value” as a similar parameter with a thickness of 999 mm since both are treated as point observations and used for frequency calculations.

Parameters are sometimes related in such a way that the mapping of one parameter cause a decrease in the frequency of another parameter. This type of intimate relationship between parameters has been noted for the following cases;

- There is a decrease in the frequency of *unbroken fractures* with oxidized walls and without mineral fillings in intervals mapped with *Alteration – red staining*.
- No *unbroken fractures* are mapped in intervals of *sealed fracture network*.
- No *broken fractures* are mapped in intervals with *crush*.
- Hybrid rock and composite dikes generally include a large amount of fine to medium grained granite veins. These veins are not mapped and the frequency presented for veins + dikes in column 6 (Appendix 1) are lower than the true frequency in composite dike intervals.

#### 4.5.1 Columns in the geological summary table

The geological summary table includes the following 23 columns:

**Column 1:** *Rock type/Lithology*, interval column. Only lithologies longer than 1 m are presented here. Shorter lithologies are presented in column 6. This column is identical with the ordinary WellCad presentation.

**Column 2:** *Rock type/Grain size*, interval column. Interval limits follows column 1. This column is identical with the ordinary WellCad presentation.

**Column 3:** *Rock type/Texture*, interval column. Interval limits follows column 1. This column is identical with the ordinary WellCad presentation.

**Column 4:** *Alteration/Type*, interval column. No frequency column is presented for alteration/type. The alteration/type column is identical with the ordinary WellCad presentation.

**Column 5:** *Alteration/intensity*, interval column. This column is identical with the ordinary WellCad presentation.

**Column 6:** *Rock occurrence/Veins + Dikes < 1 m wide*, frequency column. This rock type column can be seen as the frequency complement to the rock type/lithology interval column. Only rock type sections that are thinner than 1 m can be described as rock occurrences in Boremap. Thicker rock type sections are mapped as rock type.

**Column 7:** *Structure/Shear zone < 1 m wide*, frequency column. This column includes ductile shear structures as well as brittle-ductile shear structures and these are mapped as rock occurrences in Boremap.

**Column 8:** *Structure/Brecciated < 1 m wide*, frequency column. Breccias < 1 m wide are mapped as rock occurrence in Boremap. Very thin micro breccias along sealed/natural fracture planes are generally not considered.

**Column 9:** *Structure/Brecciated  $\geq 1$  m wide*, interval column. Breccias > 1 m wide are mapped as rock type/structure in Boremap.

**Column 10:** *Structure/Mylonite < 1 m wide*, frequency column. Mylonites < 1 m wide are mapped as rock occurrence/structure in Boremap.

**Column 11:** *Structure/Mylonite  $\geq 1$  m wide* is an interval column. Mylonites > 1 m wide are mapped as rock type/structure in Boremap.

**Column 12:** *Structure/Foliated < 1 m wide* is a frequency column. Sections with foliation < 1 m wide are mapped as rock occurrence/structure in Boremap.

**Column 13:** *Structure/Foliated  $\geq 1$  m wide* is an interval column. Sections with foliation  $\geq 1$  m wide are mapped as rock type/structure in Boremap.

**Column 14:** *Sealed fractures/All*, frequency column. This column includes all fractures mapped as unbroken in the Boremap system and this includes unbroken fractures where the drill core is not broken as well as broken fractures interpreted to have broken up artificially during/after drilling.

**Column 15:** *Sealed fractures/Broken fractures with aperture = 0*, frequency column. This column includes unbroken fractures interpreted to have broken up artificially during/after drilling.

**Column 16:** *Sealed fractures/Sealed fracture network < 1 m wide*, frequency column. The sealed fracture network parameter is the only parameter that is generally evaluated directly from observations of the drill core. These types of sealed fractures can only in rare cases be observed in the BIPS-image.

**Column 17:** *Sealed fractures/Sealed fracture network  $\geq 1$  m wide*, interval column.

**Column 18:** *Open fractures/All apertures > 0*, frequency column. This column includes all broken fractures, both fractures that with certainty were open before drilling and fractures that probably or possibly were open before drilling.

**Column 19:** *Open fractures/Uncertain, Aperture = 0.5 probable + 0.5 possible*, frequency column. This column includes fractures that probably or possibly open before drilling.

**Column 20:** *Open fractures/Certain, Aperture = 0.5 and > 0.5*, frequency column. This column includes fractures that with certainty were open before drilling.

**Column 21:** *Open fractures/Joint alteration > 1.5*, frequency column. This column show fractures with stronger joint alteration than normal. This parameter is generally correlated with the location of lithologies with a more weathered appearance.

**Column 22:** *Open fractures/Crush < 1 m wide*, frequency column. This column includes shorter sections with crush.

**Column 23:** *Open fractures/Crush  $\geq 1$  m wide*, interval column. This column includes longer sections with crush.



## 5 Results

### 5.1 General

Borehole KLX18A is oriented with declination 271.4° and inclination –82.0°. The drill core covers the interval 100.00–611.28 m while the BIPS-image covers the interval 100.00–610.91 m.

All results from the mapping are principally found in the appendices. Information from the SICADA database is shown in the geological summary table in Appendix 1 and a search path to geological summary table is presented in Appendix 2. The BIPS-image is presented in Appendix 3, the WellCad diagram in Appendix 4 and In-data, such as borehole length, reference marks, deviation data and diameter are presented in Appendices 6–8.

Original data from the reported activity are stored in the primary database SICADA. Data are traceable in SICADA by the Activity Plan number (AP PS 400-06-069). Only data in databases are accepted for further interpretation and modelling. The data presented in this report are regarded as copies of the original data. Data in the databases may be revised, if needed. Such revisions will not necessarily result in a revision of the P-report, although the normal procedure is that major revisions entail a revision of the P-report. Minor revisions are normally presented as supplements, available at [www.skb.se](http://www.skb.se).

### 5.2 Lithology and structures

The lithology in KLX18A (Table 5-1) is dominated by Ävrö granite (501044). Subordinated rock types are fine-grained diorite-gabbro (505102), fine-grained dioritoid (501030), diorite/gabbro (501033) and fine-grained granite (511058).

Seven sections in KLX18A are recognized by anomalous fracture frequencies, alterations and structural features;

Section interval characteristics.

1. 136–149 m. Increased frequency of open fractures and open fractures with aperture > 0.5 mm, sealed fracture networks, crush zones, ductile and brittle-ductile shear zones, cataclasite, foliation, red staining and epidotization occurs in this section.
2. 196–207 m. Increased frequency of open fractures, brittle-ductile shear zones and foliation. This interval also includes an intrusion of fine-grained diorite-gabbro (505102) in the Ävrö granite (501044).

**Table 5-1. Lithology distribution in KLX18A.**

%	Rock types
91.4	Ävrö granite (501044)
3.6	Fine-grained diorite-gabbro (505102)
3.5	Fine-grained dioritoid (501030)
1.1	Diorite/gabbro (501033)
0.2	Fine-grained granite (511058)



3. 283–298 m. Increased frequency of open fractures and open fractures with aperture > 0.5 mm, sealed fracture networks, crush zones, core loss, brittle-ductile shear zones, breccia, red staining and chloritization occurs in this section. This interval also includes intrusions of fine-grained diorite-gabbro (505102) and fine-grained granite (511058) in the Ävrö granite (501044).
4. 329–337 m. Increased frequency of open fractures and open fractures with aperture > 0.5 mm, sealed fracture networks, cataclasite, foliation and red staining occurs in this section. This interval also includes an intrusion of fine-grained diorite-gabbro (505102) in the Ävrö granite (501044).
5. 359–367 m. Increased frequency of open fractures, sealed fracture networks, crush zones, brittle-ductile shear zones, cataclasite and red staining occurs in this section.
6. 448–457 m. Increased frequency of open fractures, sealed fracture networks, ductile shear zones, cataclasite and red staining occurs in this section.
7. 479–489 m. Increased frequency of open fractures and open fractures with aperture > 0.5 mm, sealed fracture networks, crush zones, ductile and brittle-ductile shear zones, cataclasite and red staining occurs in this section.

### 5.3 Fracture mineralogy

Tables 5-2 and 5-3 show the frequency of minerals found in open and sealed fractures in KLX18A. Chlorite and calcite are the most frequently occurring minerals in both open and sealed fractures. Subordinate minerals in open fractures are clay minerals and pyrite. Subordinate minerals in sealed fractures are quartz and prehnite.

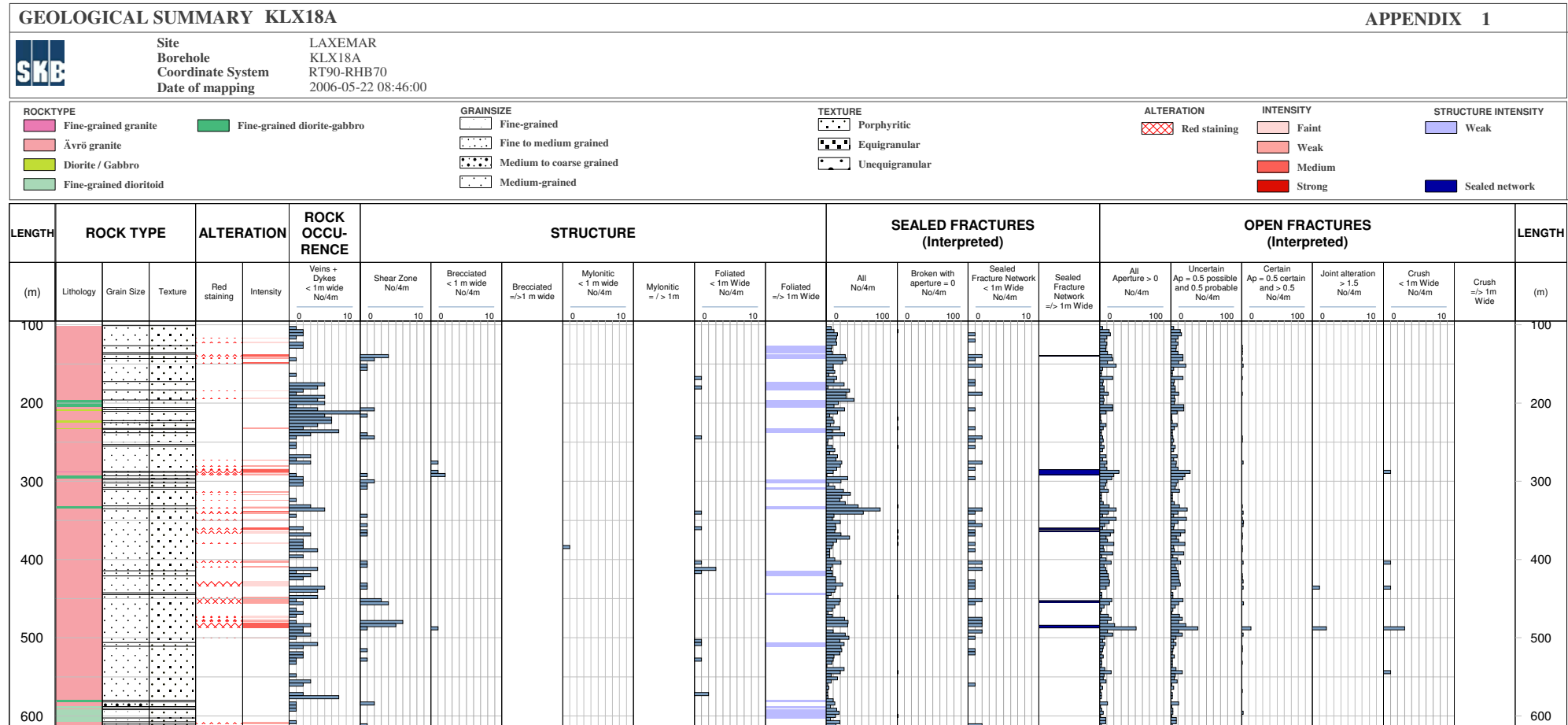
**Table 5-2. Frequency of minerals and rock wall alteration in open fractures.**

%	Mineral
85.7	Calcite
79.0	Chlorite
22.5	Pyrite
18.8	Clay Minerals
18.1	Oxidized Walls
5.2	Epidote
4.0	No detectable minerals (X7)
3.6	Prehnite
3.2	Hematite
2.5	Quartz
< 1	Muscovite, Laumontite, Adularia, Unknown Mineral

**Table 5-3. Frequency of minerals and rock wall alteration in sealed fractures.**

<b>%</b>	<b>Mineral</b>
85.7	Oxidized Walls
79.0	Calcite
22.5	Chlorite
18.8	Quartz
18.1	Prehnite
5.2	White Feldspar
4.0	Adularia
3.6	Epidote
3.2	Pyrite
2.5	Bleached fracture walls (X5)
< 1	Hematite, Clay Minerals, Laumontite, Muscovite, Saussuritized walls (X8), Epidotized walls (X9)

Geological summary table for KLX18A



## Search paths for the geological summary table

TABLE HEAD LINES		INFORMATION SOURCE			PRESENTATION
Head lines	Sub head lines	Varcode	First suborder	Second suborder	Interval / frequency
<b>Rock type</b>	Lithology	5	Sub 1		Interval
	Grain size	5	Sub 5		Interval
	Texture	5	Sub 6		Interval
<b>Alteration</b>	Type	7	Sub 1 = 700		Interval
	Intensity	7	Sub 1 = 700	Sub 2	Interval
<b>Rock occurrence</b>	Vein + dyke	31	Sub 1 = 2 and 18		Frequency
<b>Structure</b>	Shear zone, < 1m wide	31	Sub 4 = 41 and 42		Frequency
	Brecciated, < 1m wide	31	Sub 4 = 7		Frequency
	Brecciated, >= 1 m wide	5	Sub 3 = 7	Sub 4; 101 and 102 = 102	Interval
		5	Sub 3 = 7	Sub 4; 103 and 104 = 104	
	Mylonite, < 1 m wide	31	Sub 4 = 34		Frequency
	Mylonite, >= 1 m wide	5	Sub 3 = 34	Sub 4; 101 and 102 = 102	Interval
		5	Sub 3 = 34	Sub 4; 103 and 104 = 104	
	Foliated, < 1 m wide	31	Sub 4 = 81		Frequency
	Foliated, >= 1 m wide	5	Sub 3 = 81	Sub 4; 101 and 102 = 102	Interval
5		Sub 3 = 81	Sub 4; 103 and 104 = 104		
<b>Sealed fracture</b>	All unbroken fractures and broken fractures	3			Frequency
	Broken fractures, Aperture = 0	2	SNUM 11= 0		Frequency
	Sealed fracture network < 1 m wide	32			Frequency
	Sealed fracture network >= 1 m wide	32			Interval
	All, Aperture > 0	2 and 3	SNum 11>0		Frequency
<b>Open fractures</b>	Uncertain, Aperture = 0.5 possible and 0.5 probable	2 and 3	SNum 11>0	Sub 12 = 3	Frequency
		2 and 3	SNum 11>0	Sub 12 = 2	
	Certain, Aperture = 0.5 and >0.5	2 and 3	SNum 11>0	Sub 12 = 1	Frequency
	Joint alteration > 1.5	2	SNum16 > 1.5		Frequency
	Crush < 1 m wide	4			Frequency
	Crush >= 1 m wide	4			Interval

**BIPS-image for KLX18A**

## Borehole Image Report

Borehole Name: KLX18A  
Mapping Name: KLX18A\_KJM\_STE\_1  
Mapping Range: 100.000 - 609.440 m  
Diameter: 76.0 mm  
Printed Range: 100.000 - 609.440  
Pages: 27

**Image File Information:**

File: G:\skb\bips\oskarshamn\KLX18A\Used\KLX18A\_100-609m.BIP  
Date/Time: 2006-05-15 10:41:00  
Start Depth: 100.000 m  
End Depth: 609.440 m  
Resolution: 1.00 mm/pixel (depth)  
Orientation: Gravmetric  
Image height: 509440 pixels  
Image width: 360 pixels  
BIP Version: BIP-III  
Locality: LAXEMAR  
Borehole: KLX18A  
Scan Direction: Down  
Color adjust: 0 0 0 (RGB)

Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 100.000 - 120.000 m  
Azimuth: 272.3  
Inclination: -80.6



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

Aspect: 150 %

2 (27)



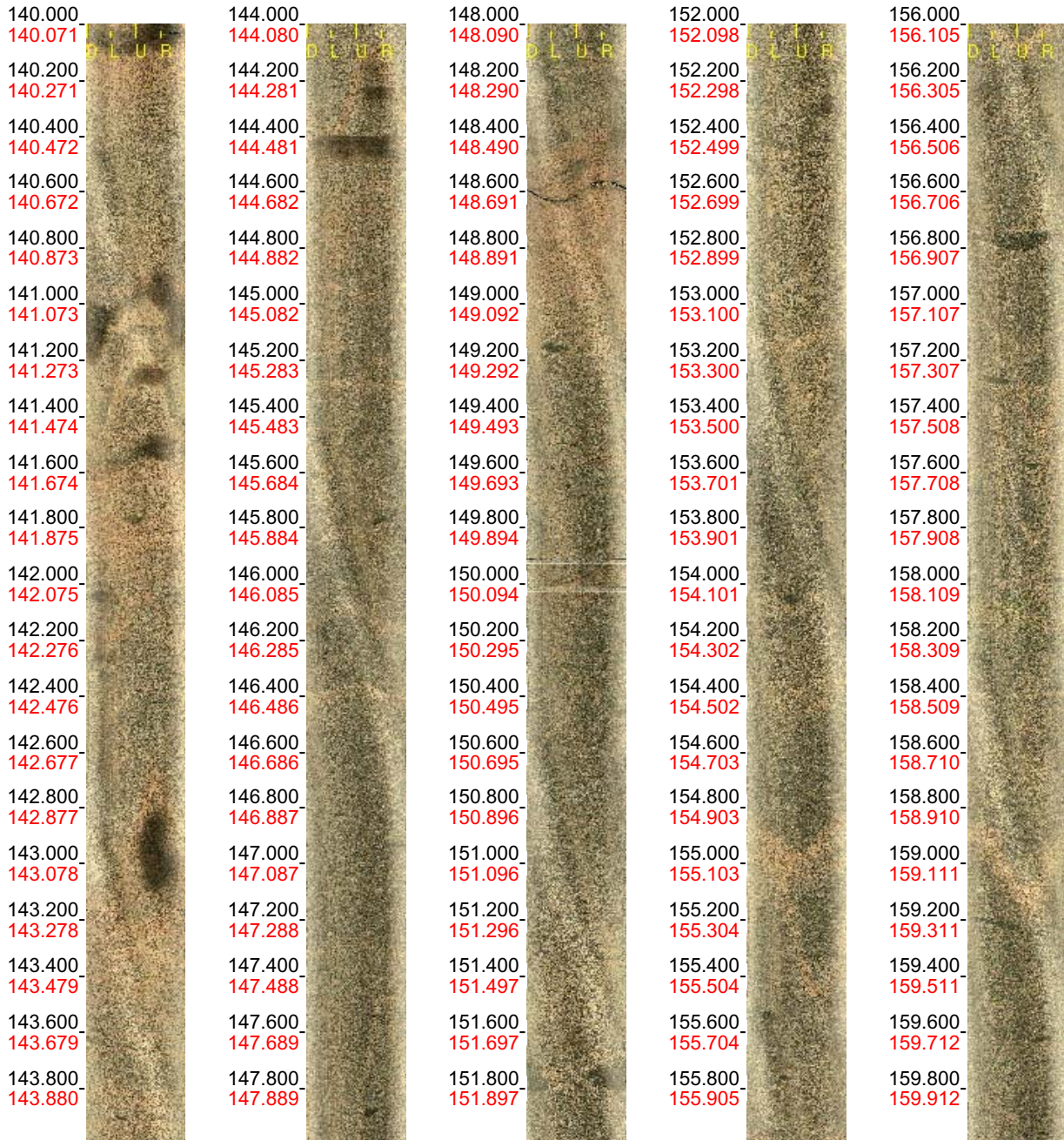
Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 120.000 - 140.000 m  
Azimuth: 272.3  
Inclination: -80.4



Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 140.000 - 160.000 m  
Azimuth: 271.2  
Inclination: -80.6



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

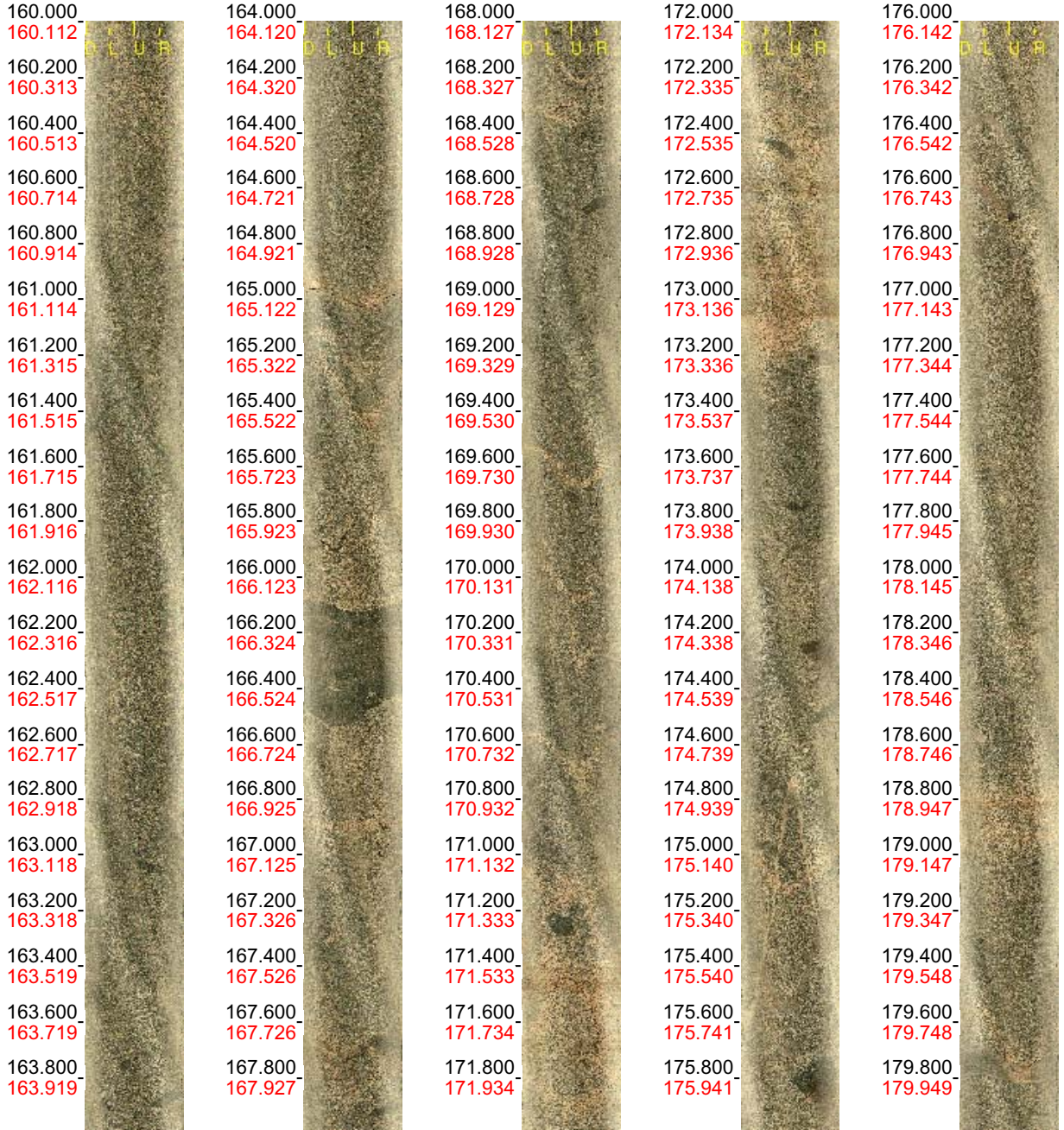
Aspect: 150 %

4 (27)



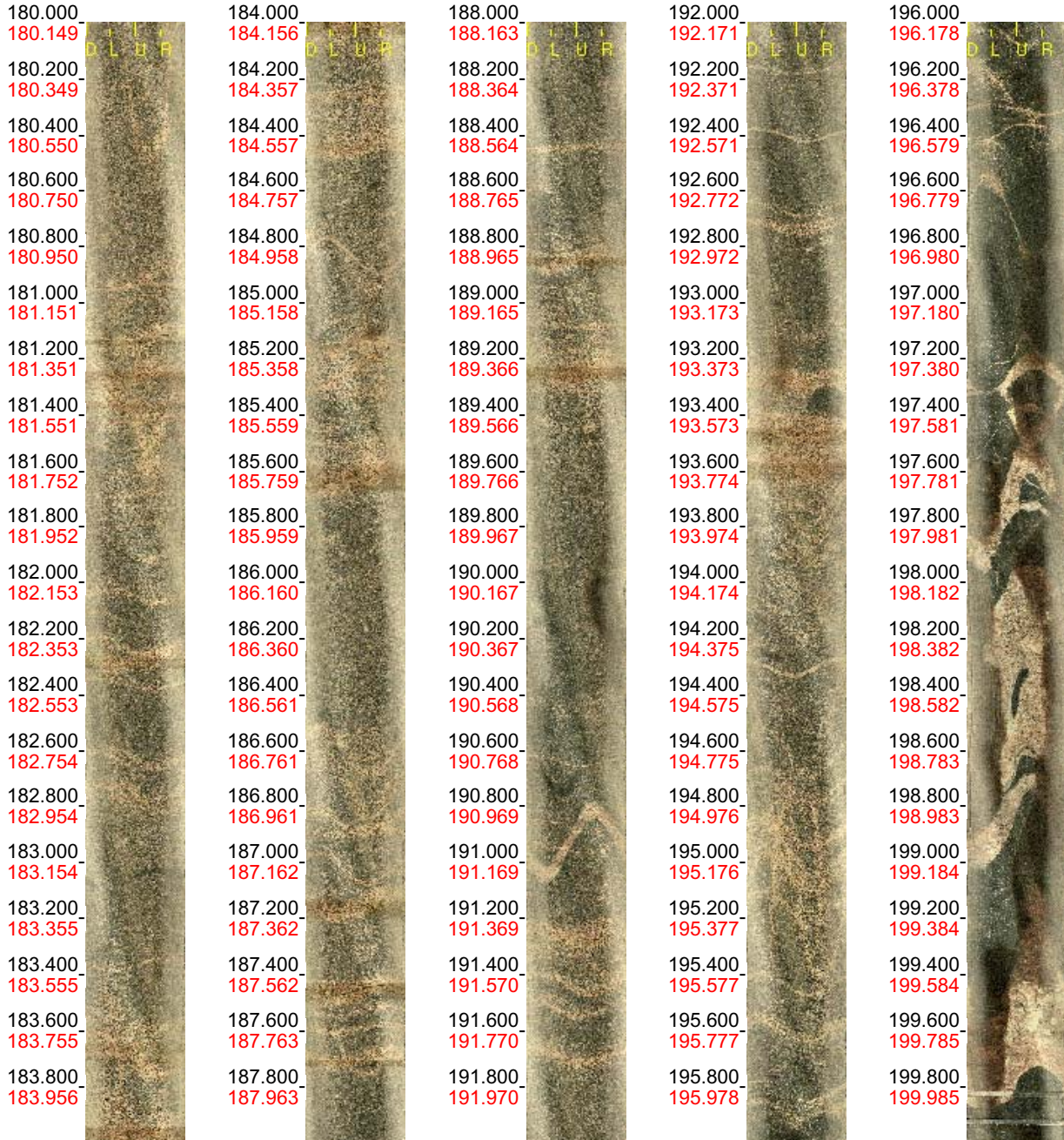
Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 160.000 - 180.000 m  
Azimuth: 272.3  
Inclination: -80.4



Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 180.000 - 200.000 m  
Azimuth: 273.4  
Inclination: -80.2



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

Aspect: 150 %

6 (27)



Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 200.000 - 220.000 m  
Azimuth: 273.4  
Inclination: -80.4



Printed: 2006-06-13 15:04:48

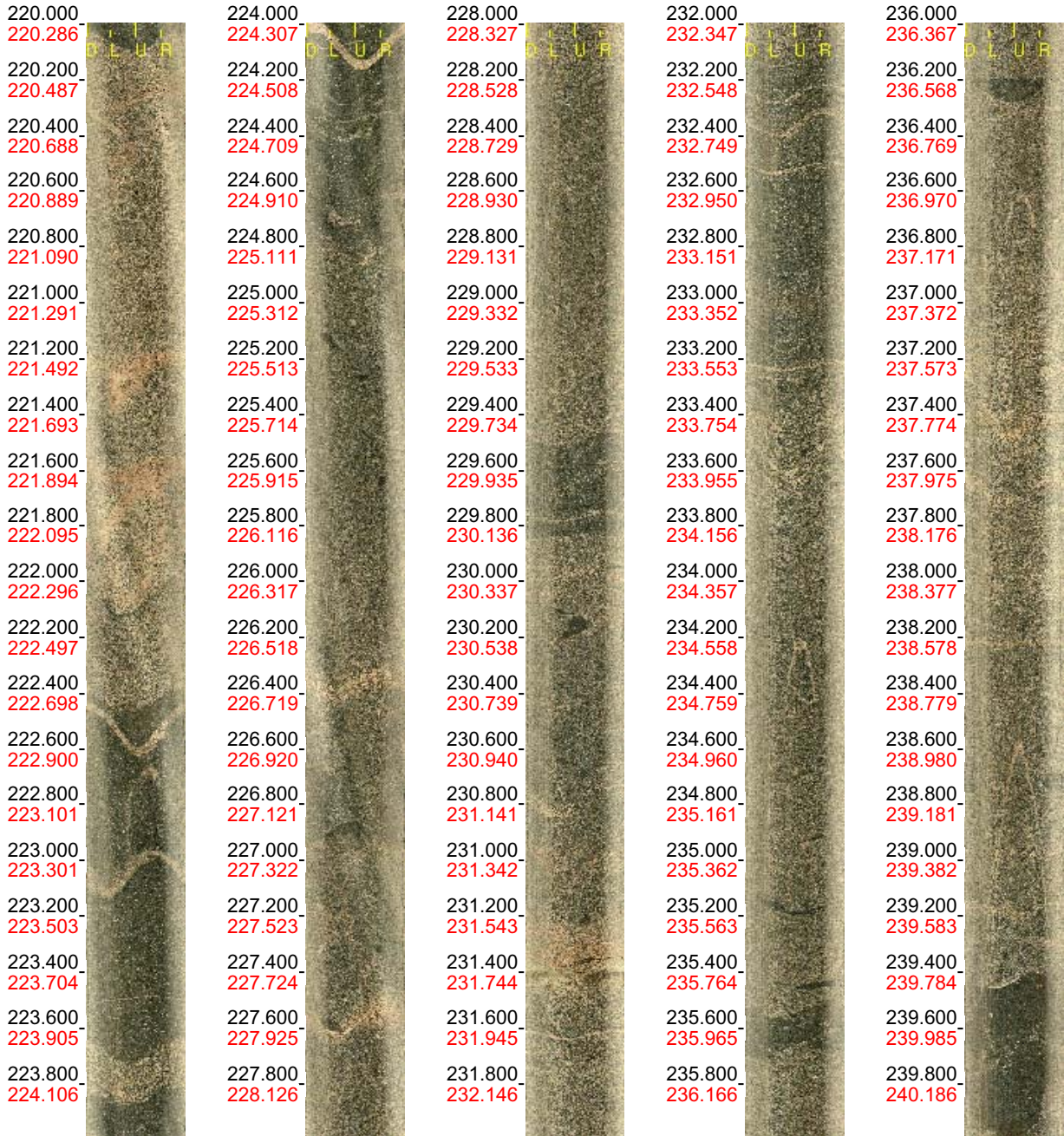
Scale: 1 : 20

Aspect: 150 %

7 (27)

Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 220.000 - 240.000 m  
Azimuth: 272.3  
Inclination: -80.4



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

Aspect: 150 %

8 (27)



Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 240.000 - 260.000 m  
Azimuth: 272.2  
Inclination: -80.0



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

Aspect: 150 %

9 (27)

Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 260.000 - 280.000 m  
Azimuth: 272.2  
Inclination: -80.0



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

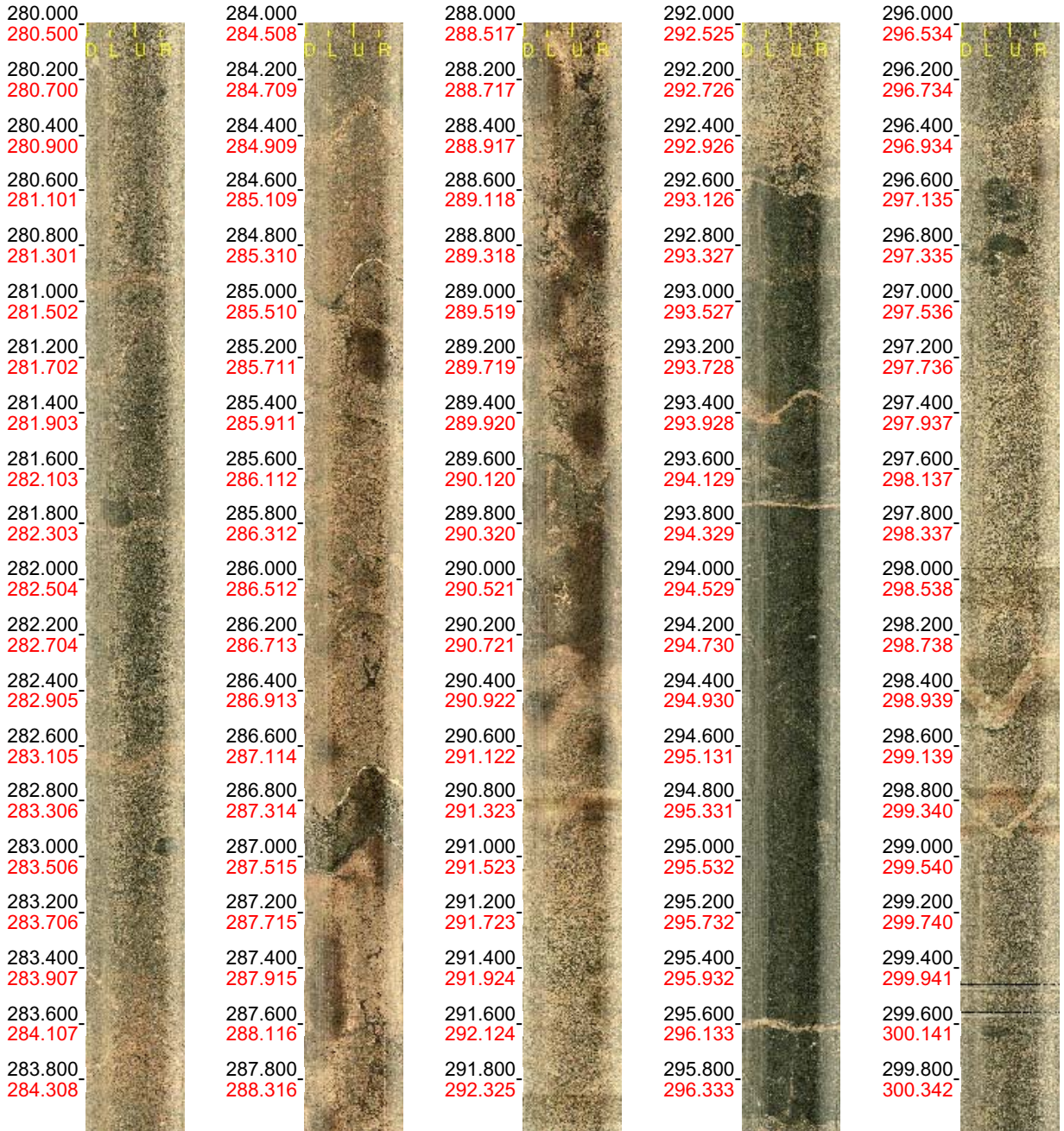
Aspect: 150 %

10 (27)



Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 280.000 - 300.000 m  
Azimuth: 272.2  
Inclination: -80.0



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

Aspect: 150 %

11 (27)

Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 300.000 - 320.000 m  
Azimuth: 272.2  
Inclination: -79.8



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

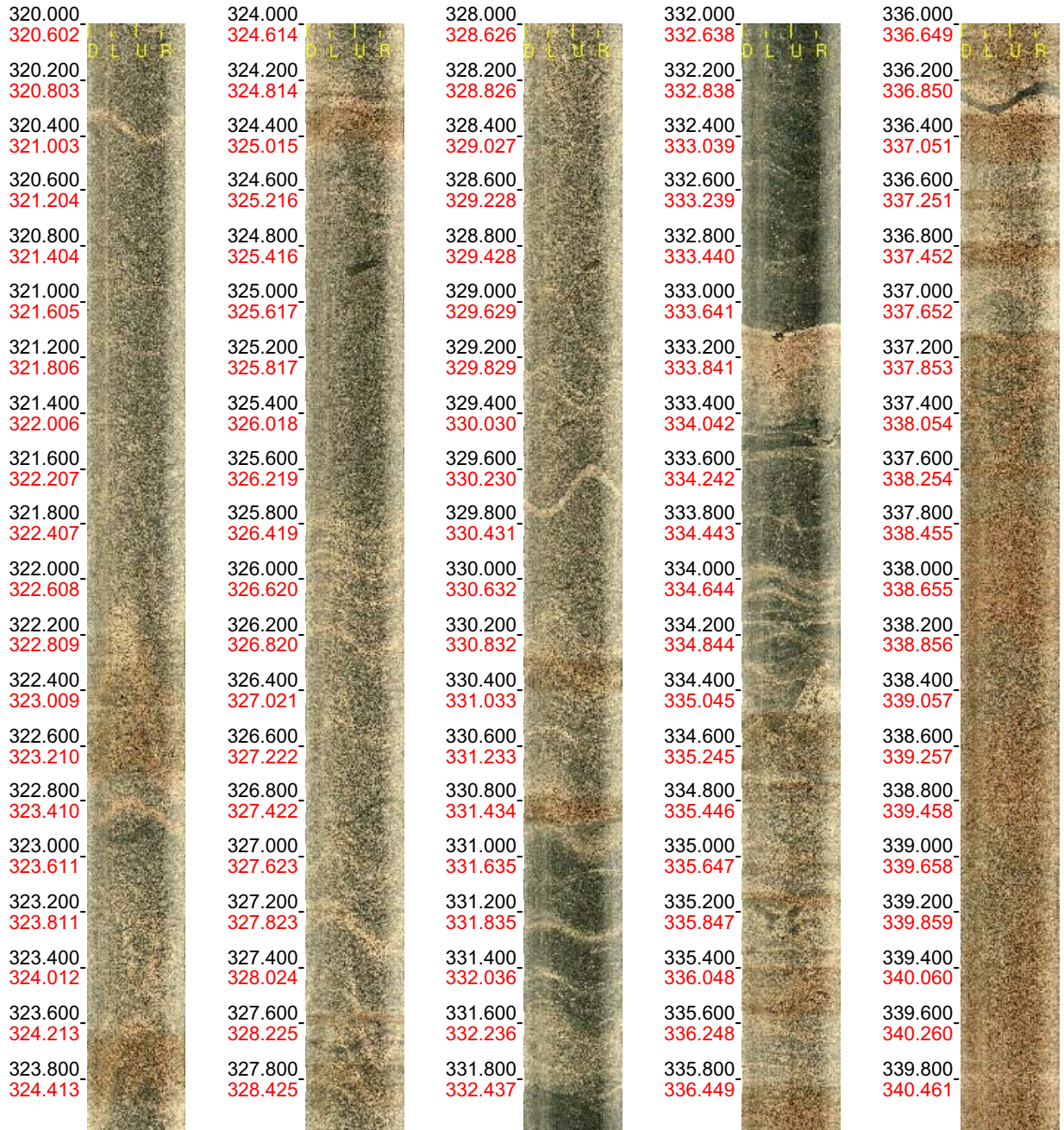
Aspect: 150 %

12 (27)



Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 320.000 - 340.000 m  
Azimuth: 273.2  
Inclination: -79.8



Printed: 2006-06-13 15:04:48

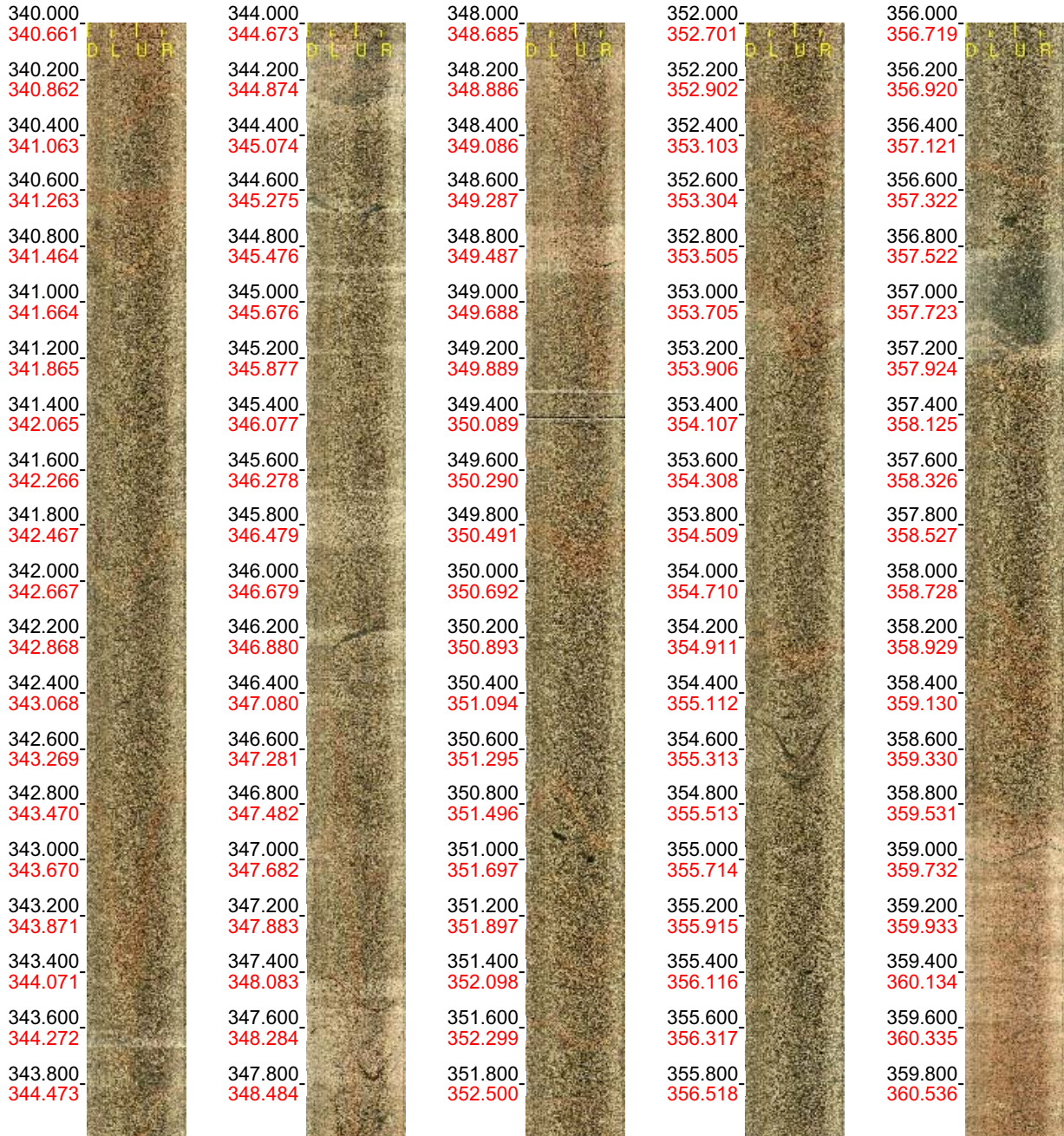
Scale: 1 : 20

Aspect: 150 %

13 (27)

Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 340.000 - 360.000 m  
Azimuth: 273.2  
Inclination: -79.6



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

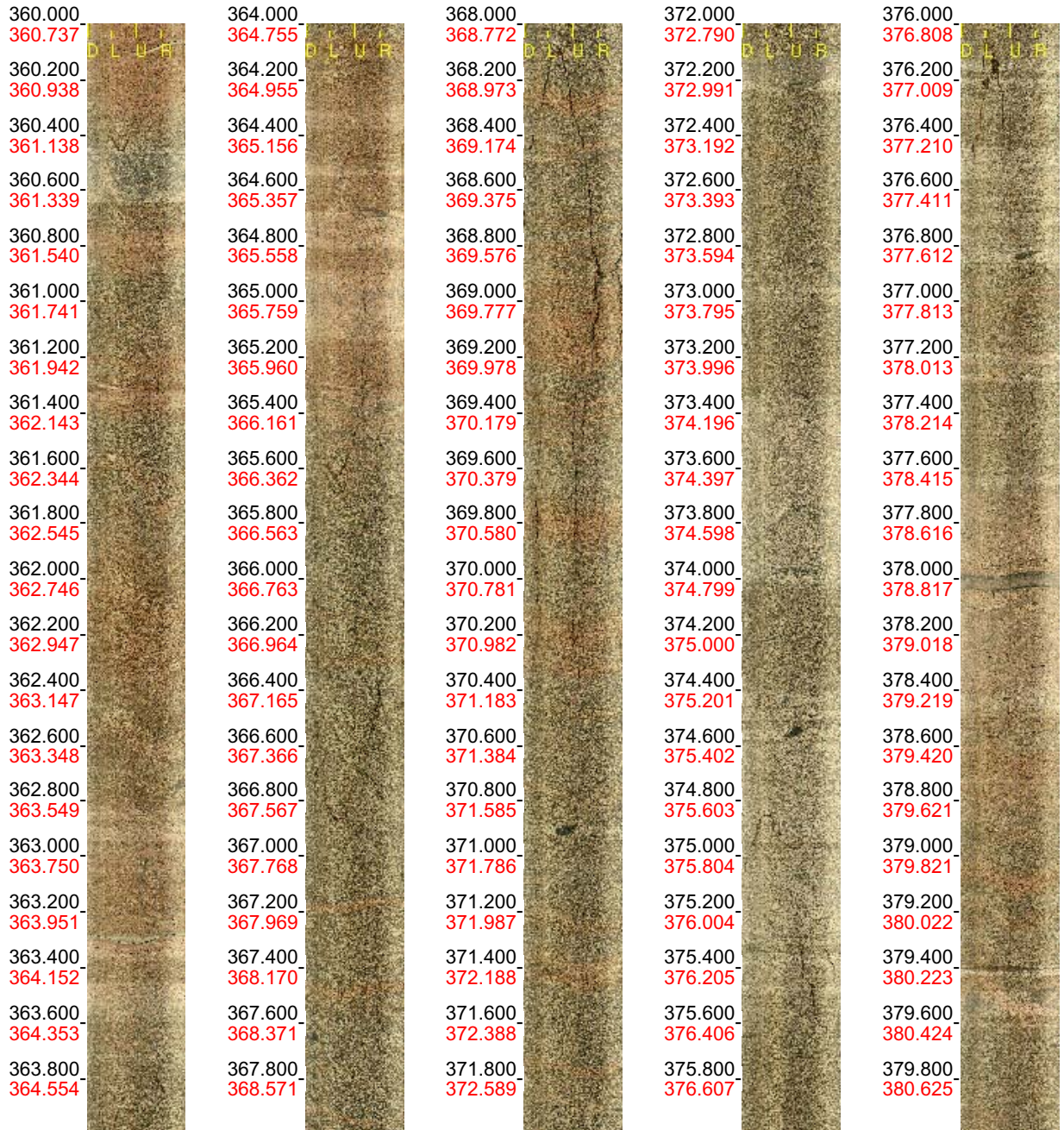
Aspect: 150 %

14 (27)



Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 360.000 - 380.000 m  
Azimuth: 274.2  
Inclination: -79.6



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

Aspect: 150 %

15 (27)

Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 380.000 - 400.000 m  
Azimuth: 274.2  
Inclination: -79.6



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

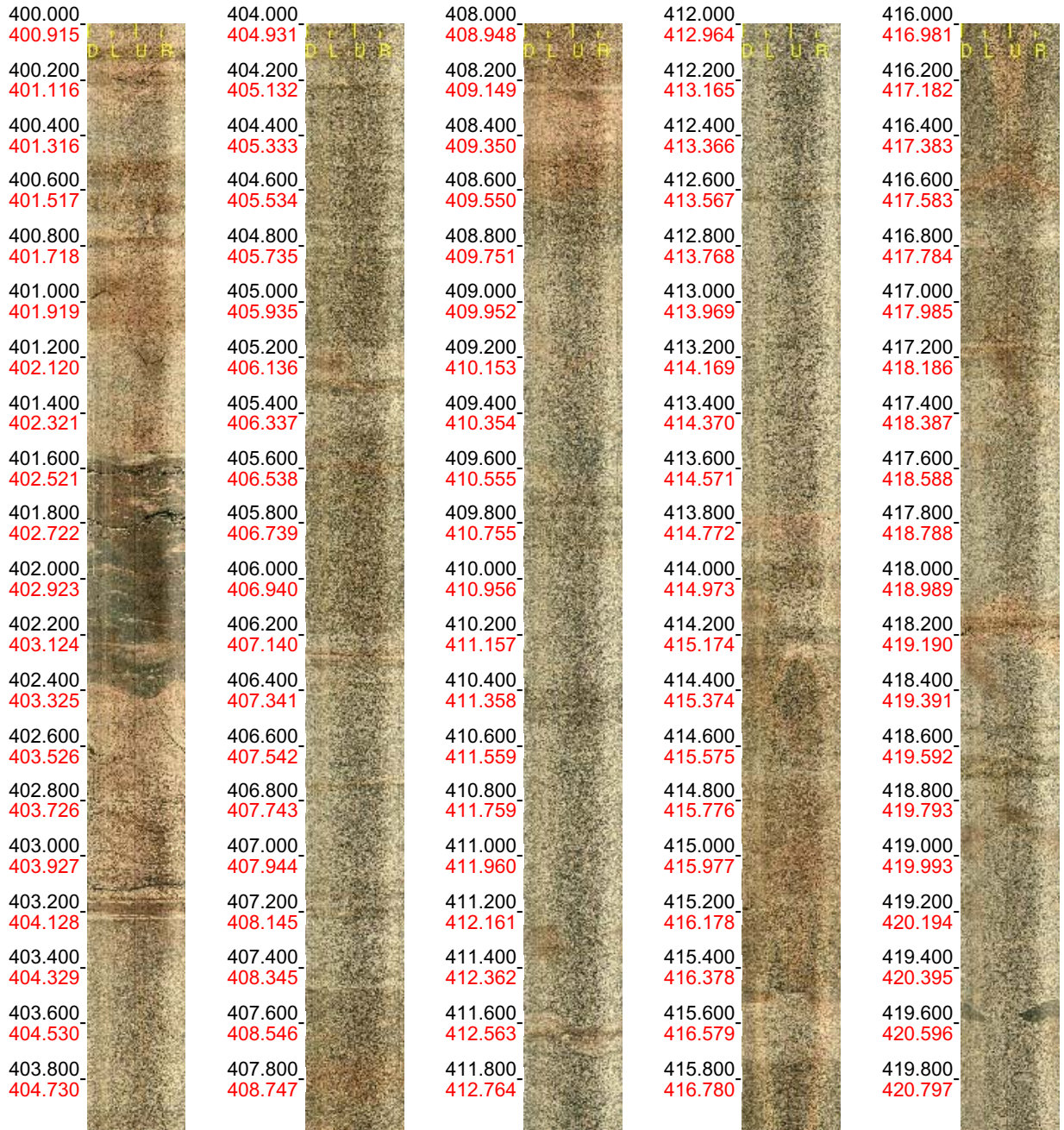
Aspect: 150 %

16 (27)



Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 400.000 - 420.000 m  
Azimuth: 274.2  
Inclination: -79.6



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

Aspect: 150 %

17 (27)

Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

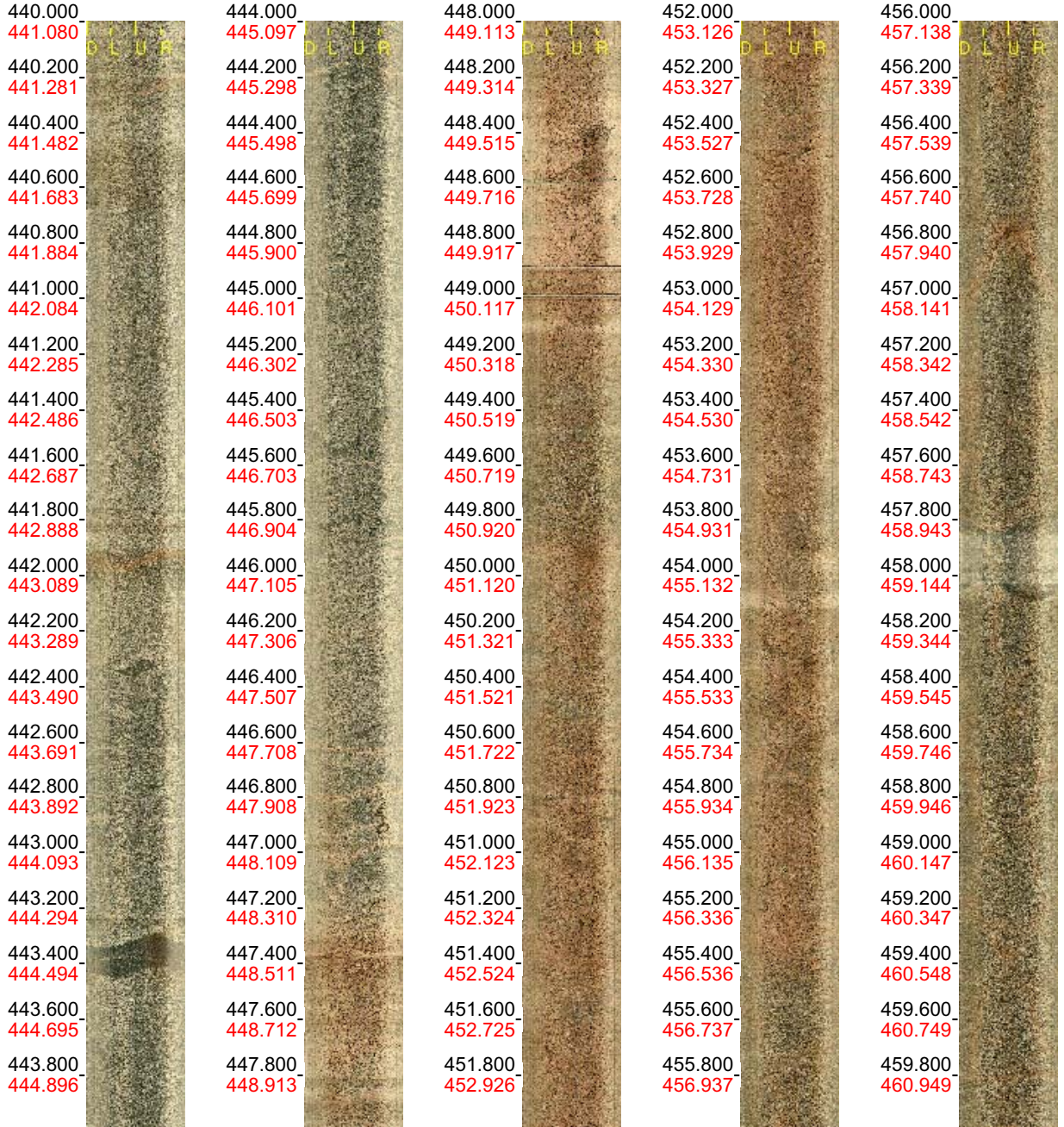
Depth range: 420.000 - 440.000 m  
Azimuth: 274.2  
Inclination: -79.6





Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 440.000 - 460.000 m  
Azimuth: 274.2  
Inclination: -79.6



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

Aspect: 150 %

19 (27)

Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 460.000 - 480.000 m  
Azimuth: 275.3  
Inclination: -79.6



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

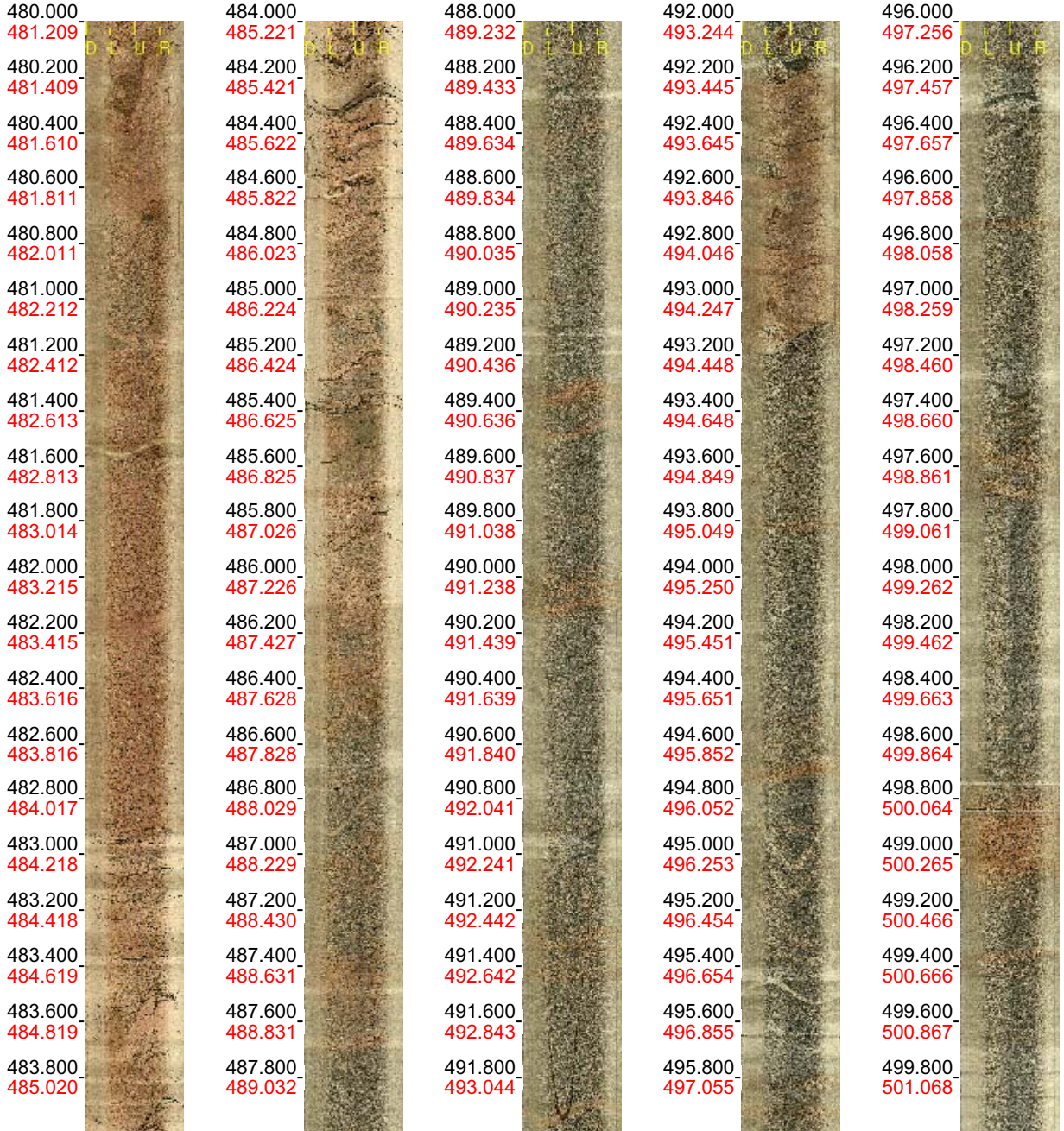
Aspect: 150 %

20 (27)



Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 480.000 - 500.000 m  
Azimuth: 274.2  
Inclination: -79.6



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

Aspect: 150 %

21 (27)

Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 500.000 - 520.000 m  
Azimuth: 275.3  
Inclination: -79.6



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

Aspect: 150 %

22 (27)



Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 520.000 - 540.000 m  
Azimuth: 275.2  
Inclination: -79.4



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

Aspect: 150 %

23 (27)

Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 540.000 - 560.000 m  
Azimuth: 276.2  
Inclination: -79.4



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

Aspect: 150 %

24 (27)



Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 560.000 - 580.000 m  
Azimuth: 277.3  
Inclination: -79.4



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

Aspect: 150 %

25 (27)

Borehole: KLX18A  
 Mapping: KLX18A\_KJM\_STE\_1

Depth range: 580.000 - 600.000 m  
 Azimuth: 277.1  
 Inclination: -79.1



Printed: 2006-06-13 15:04:48

Scale: 1 : 20

Aspect: 150 %

26 (27)



Borehole: KLX18A  
Mapping: KLX18A\_KJM\_STE\_1

Depth range: 600.000 - 609.440 m  
Azimuth: 278.1  
Inclination: -79.1




Printed: 2006-06-13 15:04:48

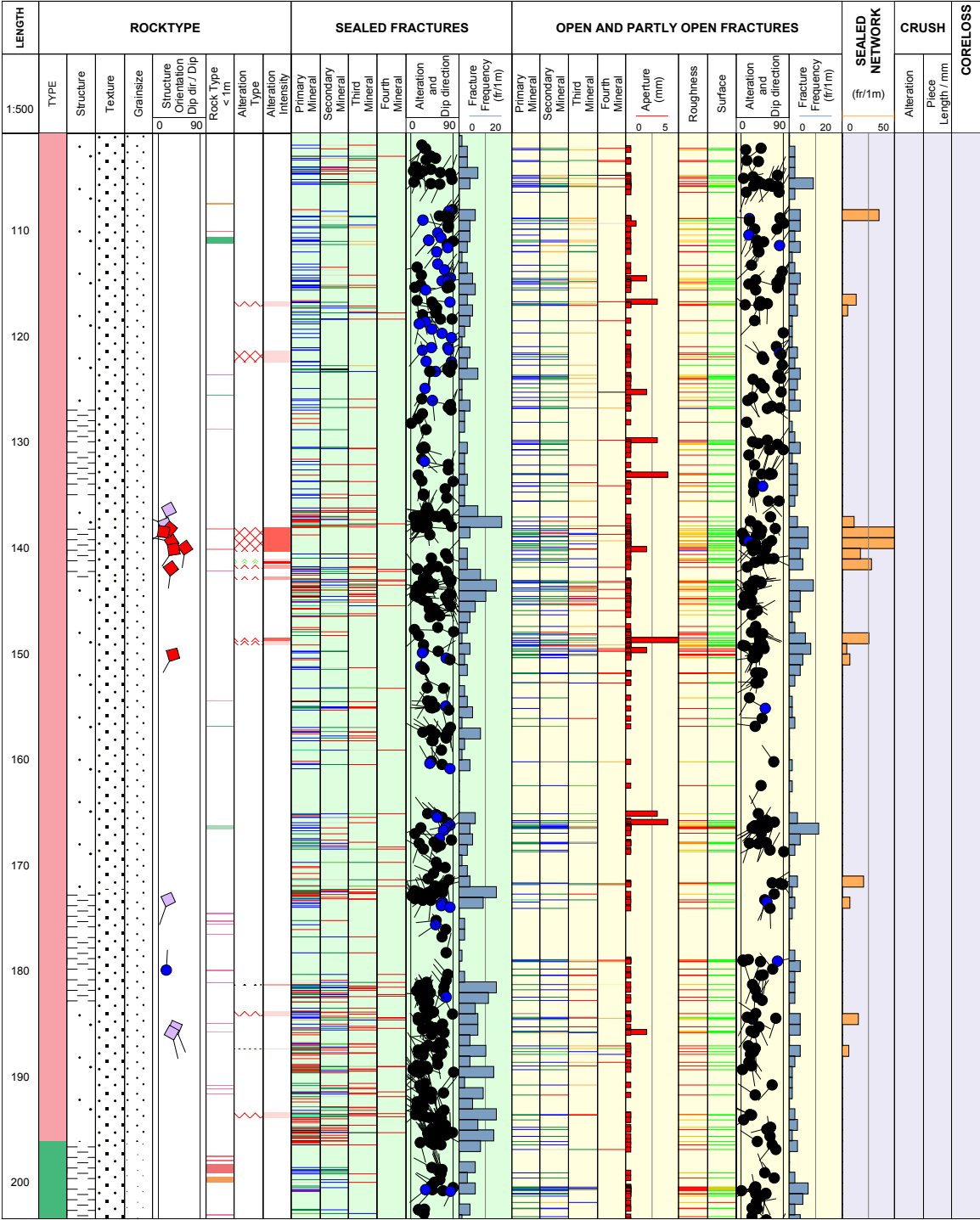
Scale: 1 : 20

Aspect: 150 %

27 (27)

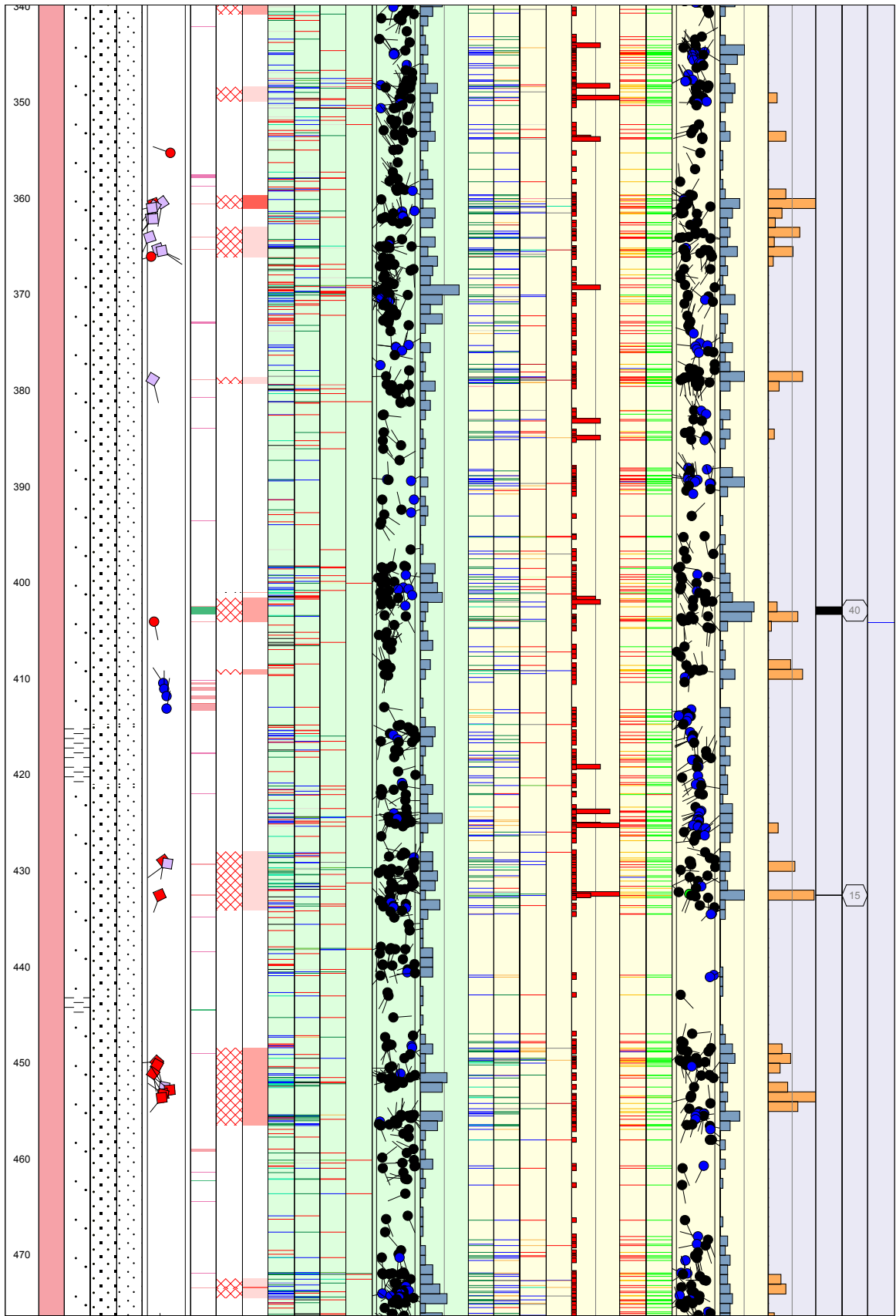
WellCad diagram for KLX18A

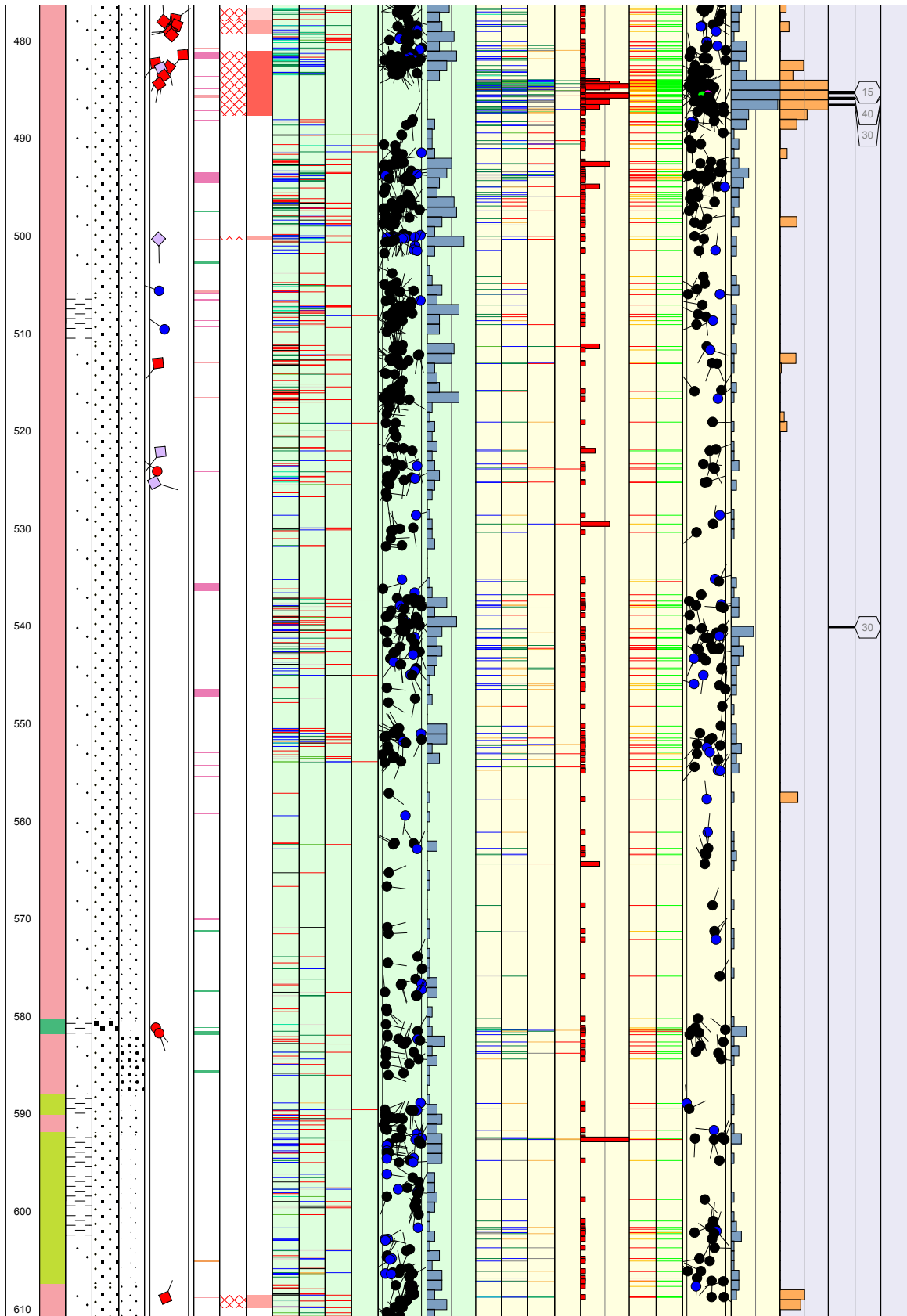
Title <b>GEOLOGY IN KLX18A</b>		Appendix:		
	Site	LAXEMAR	Coordinate System	RT90-RHB70
	Borehole	KLX18A	Northing [m]	6366413.39
	Diameter [mm]	76	Easting [m]	1547966.35
	Length [m]	611.280	Elevation [m.a.s.l.]	21.01
	Bearing [°]	271.40	Drilling Start Date	2006-03-29 10:00:00
	Inclination [°]	-82.10	Drilling Stop Date	2006-05-02 12:22:00
	Date of coremapping	2006-05-22 08:46:00	Plot Date	2007-10-25 22:03:45
	Rocktype data from	p_rock	Signed data	














Legend to WellCad diagram for KLX18A

Title		LEGEND FOR LAXEMAR	KLX18A									
		Site Borehole Plot Date Signed data	LAXEMAR KLX18A 2007-10-25 22:03:45									
		<table border="0"> <tr> <td> <b>ROCKTYPE LAXEMAR</b>   Äspö Diorite   Dolerite   Fine-grained Götemargranite   Coarse-grained Götemargranite   Fine-grained granite   Pegmatite   Granite   Ävrö granite   Quartz monzodiorite   Diorite / Gabbro   Fine-grained dioritoid   Fine-grained diorite-gabbro   Sulphide mineralization   Sandstone   Soil   Ävrö quartz monzodiorite   Ävrö granodiorite         </td> <td> <b>ROCK ALTERATION TYPE</b>   Oxidized   Chloritized   Epidotized   Weathered   Tectonized   Sericitized   Quartz dissolution   Silicification   Argillization   Albitization   Carbonatization   Saussuritization   Steatitization   Uralitization   Laumontitization   Fract zone alteration         </td> <td> <b>MINERAL</b>   Epidote   Hematite   Calcite   Chlorite   Quartz   Pyrite   Clay Minerals   Laumontite   Prehnite   Oxidized Walls         </td> </tr> <tr> <td> <b>STRUCTURE</b>   Cataclastic   Schistose   Gneissic   Mylonitic   Ductile Shear Zone   Brittle-Ductile Zone   Veined   Banded   Massive   Foliated   Brecciated   Lineated  <b>TEXTURE</b>   Hornfelsed   Porphyritic   Ophitic   Equigranular   Augen-Bearing   Unequigranular   Metamorphic  <b>GRAINSIZE</b>   Aphanitic   Fine-grained   Fine to medium grained   Medium to coarse grained   Coarse-grained   Medium-grained         </td> <td> <b>STRUCTURE ORIENTATION</b>   Cataclastic   Bedded   Gneissic   Schistose   Brittle-Ductile Shear Zone   Ductile Shear Zone   Lineated   Banded   Veined   Brecciated   Foliated   Mylonitic         </td> <td> <b>ROCK ALTERATION INTENSITY</b>   No intensity   Faint   Weak   Medium   Strong  <b>ROUGHNESS</b>   Planar   Undulating   Stepped   Irregular  <b>SURFACE</b>   Rough   Smooth   Slickensided  <b>CRUSH ALTERATION</b>   Slightly Altered   Moderately Altered   Highly Altered   Completely Altered   Gouge   Fresh         </td> <td> <b>FRACTURE ALTERATION</b>   Slightly Altered   Moderately Altered   Highly Altered   Completely Altered   Gouge   Fresh         </td> </tr> <tr> <td colspan="2"></td> <td colspan="2"> <b>FRACTURE DIRECTION</b>  <b>STRUCTURE ORIENTATION</b>   </td> </tr> </table>		<b>ROCKTYPE LAXEMAR</b>  Äspö Diorite  Dolerite  Fine-grained Götemargranite  Coarse-grained Götemargranite  Fine-grained granite  Pegmatite  Granite  Ävrö granite  Quartz monzodiorite  Diorite / Gabbro  Fine-grained dioritoid  Fine-grained diorite-gabbro  Sulphide mineralization  Sandstone  Soil  Ävrö quartz monzodiorite  Ävrö granodiorite	<b>ROCK ALTERATION TYPE</b>  Oxidized  Chloritized  Epidotized  Weathered  Tectonized  Sericitized  Quartz dissolution  Silicification  Argillization  Albitization  Carbonatization  Saussuritization  Steatitization  Uralitization  Laumontitization  Fract zone alteration	<b>MINERAL</b>  Epidote  Hematite  Calcite  Chlorite  Quartz  Pyrite  Clay Minerals  Laumontite  Prehnite  Oxidized Walls	<b>STRUCTURE</b>  Cataclastic  Schistose  Gneissic  Mylonitic  Ductile Shear Zone  Brittle-Ductile Zone  Veined  Banded  Massive  Foliated  Brecciated  Lineated <b>TEXTURE</b>  Hornfelsed  Porphyritic  Ophitic  Equigranular  Augen-Bearing  Unequigranular  Metamorphic <b>GRAINSIZE</b>  Aphanitic  Fine-grained  Fine to medium grained  Medium to coarse grained  Coarse-grained  Medium-grained	<b>STRUCTURE ORIENTATION</b>  Cataclastic  Bedded  Gneissic  Schistose  Brittle-Ductile Shear Zone  Ductile Shear Zone  Lineated  Banded  Veined  Brecciated  Foliated  Mylonitic	<b>ROCK ALTERATION INTENSITY</b>  No intensity  Faint  Weak  Medium  Strong <b>ROUGHNESS</b>  Planar  Undulating  Stepped  Irregular <b>SURFACE</b>  Rough  Smooth  Slickensided <b>CRUSH ALTERATION</b>  Slightly Altered  Moderately Altered  Highly Altered  Completely Altered  Gouge  Fresh	<b>FRACTURE ALTERATION</b>  Slightly Altered  Moderately Altered  Highly Altered  Completely Altered  Gouge  Fresh		
<b>ROCKTYPE LAXEMAR</b>  Äspö Diorite  Dolerite  Fine-grained Götemargranite  Coarse-grained Götemargranite  Fine-grained granite  Pegmatite  Granite  Ävrö granite  Quartz monzodiorite  Diorite / Gabbro  Fine-grained dioritoid  Fine-grained diorite-gabbro  Sulphide mineralization  Sandstone  Soil  Ävrö quartz monzodiorite  Ävrö granodiorite	<b>ROCK ALTERATION TYPE</b>  Oxidized  Chloritized  Epidotized  Weathered  Tectonized  Sericitized  Quartz dissolution  Silicification  Argillization  Albitization  Carbonatization  Saussuritization  Steatitization  Uralitization  Laumontitization  Fract zone alteration	<b>MINERAL</b>  Epidote  Hematite  Calcite  Chlorite  Quartz  Pyrite  Clay Minerals  Laumontite  Prehnite  Oxidized Walls										
<b>STRUCTURE</b>  Cataclastic  Schistose  Gneissic  Mylonitic  Ductile Shear Zone  Brittle-Ductile Zone  Veined  Banded  Massive  Foliated  Brecciated  Lineated <b>TEXTURE</b>  Hornfelsed  Porphyritic  Ophitic  Equigranular  Augen-Bearing  Unequigranular  Metamorphic <b>GRAINSIZE</b>  Aphanitic  Fine-grained  Fine to medium grained  Medium to coarse grained  Coarse-grained  Medium-grained	<b>STRUCTURE ORIENTATION</b>  Cataclastic  Bedded  Gneissic  Schistose  Brittle-Ductile Shear Zone  Ductile Shear Zone  Lineated  Banded  Veined  Brecciated  Foliated  Mylonitic	<b>ROCK ALTERATION INTENSITY</b>  No intensity  Faint  Weak  Medium  Strong <b>ROUGHNESS</b>  Planar  Undulating  Stepped  Irregular <b>SURFACE</b>  Rough  Smooth  Slickensided <b>CRUSH ALTERATION</b>  Slightly Altered  Moderately Altered  Highly Altered  Completely Altered  Gouge  Fresh	<b>FRACTURE ALTERATION</b>  Slightly Altered  Moderately Altered  Highly Altered  Completely Altered  Gouge  Fresh									
		<b>FRACTURE DIRECTION</b> <b>STRUCTURE ORIENTATION</b> 										

**In-data: Borehole length and diameter for KLX18A**

**Hole Diam T - Drilling: Borehole diameter**

**KLX18A, 2006-03-29 10:00:00 - 2006-05-02 12:22:00 (99.930 - 611.280 m)**

<b>Sub Secup (m)</b>	<b>Sub Seclow (m)</b>	<b>Hole Diam (m)</b>	<b>Comment</b>
99.930	101.350	0.0862	T-86
101.350	611.280	0.0758	Corac N/3

Printout from SICADA 2006-06-07 10:47:28.

**In-data: Reference marks for length adjustments for KLX18A**

**Reference Mark T - Reference mark in drillhole**

**KLX18A, 2006-05-12 06:00:00 - 2006-05-12 15:20:00 (110.000 - 602.000 m)**

<b>Bhlen (m)</b>	<b>Rotation Speed (rpm)</b>	<b>Start Flow (l/min)</b>	<b>Stop Flow (l/min)</b>	<b>Stop Pressure (bar)</b>	<b>Cutter Time (s)</b>	<b>Trace Detectable</b>	<b>Cutter Diameter (mm)</b>	<b>Comment</b>
110.00	400.00	180	1000	30.0	240	Yes		
150.00	400.00	200	1000	34.0	62	Yes		
200.00	400.00	180	1000	32.0	48	Yes		
250.00	400.00	180	1000	32.0	50	Yes		
300.00	400.00	200	1000	32.0	49	Yes		
350.00	400.00	200	1000	32.0	32	Yes		
400.00	400.00	180	1000	35.0	34	Yes		
450.00	400.00	200	1000	34.0	26	Yes		
500.00	400.00	180	1000	35.0	27	Yes		
550.00	400.00	180	1000	35.0	30	Yes		
602.00	400.00	200	1000	35.0	30	Yes		

Printout from SICADA 2006-06-07 10:49:32.



In-data: Borehole deviation data for KLX18A

SICADA - object\_location

Idcode	Coord System	Northing (m)	Eastings (m)	Elevation (m.a.s.l.)	Length (m)	Vertical Depth (m)	Inclination (degrees)	Bearing (degrees)	Inclination Uncert (degrees)	Bearing Uncert (degrees)	Radius Uncert (m)	Origin	Indat
KLX18A	RT90-RHB70	6366413.39	1547966.35	21.01	0.00	0.00	-82.11	271.40	0.415	0.734	0.00	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.40	1547965.94	18.04	3.00	2.97	-82.18	271.40	0.415	0.734	0.02	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.41	1547965.53	15.07	6.00	5.94	-82.23	271.42	0.415	0.734	0.04	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.42	1547965.12	12.09	9.00	8.92	-82.22	271.44	0.415	0.734	0.07	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.43	1547964.72	9.12	12.00	11.89	-82.22	271.45	0.415	0.734	0.09	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.44	1547964.31	6.15	15.00	14.86	-82.20	271.47	0.415	0.734	0.11	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.45	1547963.90	3.18	18.00	17.83	-82.15	271.49	0.415	0.734	0.13	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.46	1547963.49	0.20	21.00	20.81	-82.13	271.50	0.415	0.734	0.15	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.47	1547963.08	-2.77	24.00	23.78	-82.12	271.52	0.415	0.734	0.17	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.48	1547962.67	-5.74	27.00	26.75	-82.10	271.54	0.415	0.734	0.20	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.50	1547962.25	-8.71	30.00	29.72	-82.03	271.55	0.415	0.734	0.22	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.51	1547961.84	-11.68	33.00	32.69	-82.02	271.57	0.415	0.734	0.24	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.52	1547961.42	-14.65	36.00	35.66	-81.91	271.59	0.415	0.734	0.26	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.53	1547961.00	-17.62	39.00	38.63	-81.88	271.60	0.415	0.734	0.28	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.54	1547960.57	-20.59	42.00	41.60	-81.81	271.62	0.415	0.734	0.30	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.55	1547960.14	-23.56	45.00	44.57	-81.78	271.64	0.415	0.734	0.33	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.57	1547959.71	-26.53	48.00	47.54	-81.76	271.65	0.415	0.734	0.35	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.58	1547959.28	-29.50	51.00	50.51	-81.72	271.67	0.415	0.734	0.37	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.59	1547958.85	-32.47	54.00	53.48	-81.55	271.69	0.415	0.734	0.39	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.60	1547958.41	-35.43	57.00	56.44	-81.52	271.71	0.415	0.734	0.41	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.62	1547957.96	-38.40	60.00	59.41	-81.38	271.72	0.415	0.734	0.43	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.63	1547957.51	-41.37	63.00	62.38	-81.31	271.74	0.415	0.734	0.46	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.65	1547957.05	-44.33	66.00	65.34	-81.24	271.76	0.415	0.734	0.48	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.66	1547956.59	-47.30	69.00	68.31	-81.12	271.77	0.415	0.734	0.50	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.67	1547956.13	-50.26	72.00	71.27	-81.04	271.79	0.415	0.734	0.52	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.69	1547955.66	-53.22	75.00	74.23	-80.97	271.81	0.415	0.734	0.54	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.70	1547955.19	-56.19	78.00	77.20	-80.93	271.82	0.415	0.734	0.56	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.72	1547954.71	-59.15	81.00	80.16	-80.88	271.84	0.415	0.734	0.59	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.73	1547954.24	-62.11	84.00	83.12	-80.89	271.86	0.415	0.734	0.61	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.75	1547953.76	-65.07	87.00	86.08	-80.86	271.87	0.415	0.734	0.63	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.77	1547953.29	-68.03	90.00	89.04	-80.84	271.89	0.415	0.734	0.65	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.78	1547952.81	-70.99	93.00	92.00	-80.77	271.91	0.415	0.734	0.67	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.80	1547952.32	-73.96	96.00	94.97	-80.70	271.92	0.415	0.734	0.70	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.81	1547951.84	-76.92	99.00	97.93	-80.72	271.94	0.415	0.734	0.72	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.83	1547951.36	-79.88	102.00	100.89	-80.70	271.96	0.415	0.734	0.74	Measured	2007-01-17 09:55

KLX18A	RT90-RHB70	6366413.85	1547950.87	-82.84	105.00	103.85	-80.70	271.97	0.415	0.734	0.76	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.86	1547950.39	-85.80	108.00	106.81	-80.69	271.99	0.415	0.734	0.78	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.88	1547949.90	-88.76	111.00	109.77	-80.63	272.01	0.415	0.734	0.80	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.90	1547949.41	-91.72	114.00	112.73	-80.62	272.02	0.415	0.734	0.83	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.91	1547948.92	-94.68	117.00	115.69	-80.63	271.98	0.415	0.734	0.85	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.93	1547948.44	-97.64	120.00	118.65	-80.63	271.98	0.415	0.734	0.87	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.95	1547947.95	-100.60	123.00	121.61	-80.63	272.01	0.415	0.734	0.89	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.97	1547947.46	-103.56	126.00	124.57	-80.61	272.07	0.415	0.734	0.91	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366413.98	1547946.97	-106.52	129.00	127.53	-80.61	272.06	0.415	0.734	0.93	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.00	1547946.48	-109.48	132.00	130.49	-80.62	272.04	0.415	0.734	0.96	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.02	1547945.99	-112.44	135.00	133.45	-80.60	272.03	0.415	0.734	0.98	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.04	1547945.50	-115.40	138.00	136.41	-80.59	272.23	0.415	0.734	1.00	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.06	1547945.01	-118.36	141.00	139.37	-80.56	272.28	0.415	0.734	1.02	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.08	1547944.52	-121.32	144.00	142.33	-80.56	272.33	0.415	0.734	1.04	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.10	1547944.03	-124.28	147.00	145.29	-80.56	272.33	0.415	0.734	1.06	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.12	1547943.54	-127.23	150.00	148.24	-80.56	272.35	0.415	0.734	1.09	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.14	1547943.04	-130.19	153.00	151.20	-80.54	272.38	0.415	0.734	1.11	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.16	1547942.55	-133.15	156.00	154.16	-80.53	272.43	0.415	0.734	1.13	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.18	1547942.06	-136.11	159.00	157.12	-80.57	272.47	0.415	0.734	1.15	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.20	1547941.57	-139.07	162.00	160.08	-80.57	272.53	0.415	0.734	1.17	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.22	1547941.08	-142.03	165.00	163.04	-80.56	272.58	0.415	0.734	1.20	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.24	1547940.58	-144.99	168.00	166.00	-80.50	272.64	0.415	0.734	1.22	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.27	1547940.09	-147.95	171.00	168.96	-80.50	272.72	0.415	0.734	1.24	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.29	1547939.59	-150.91	174.00	171.92	-80.48	272.77	0.415	0.734	1.26	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.32	1547939.10	-153.87	177.00	174.88	-80.48	272.85	0.415	0.734	1.28	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.34	1547938.60	-156.83	180.00	177.84	-80.48	272.83	0.415	0.734	1.30	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.36	1547938.11	-159.78	183.00	180.79	-80.46	272.86	0.415	0.734	1.33	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.39	1547937.61	-162.74	186.00	183.75	-80.48	272.79	0.415	0.734	1.35	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.41	1547937.11	-165.70	189.00	186.71	-80.47	272.75	0.415	0.734	1.37	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.44	1547936.62	-168.66	192.00	189.67	-80.47	272.72	0.415	0.734	1.39	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.46	1547936.12	-171.62	195.00	192.63	-80.47	272.56	0.415	0.734	1.41	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.48	1547935.63	-174.58	198.00	195.59	-80.50	272.50	0.415	0.734	1.43	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.50	1547935.13	-177.54	201.00	198.55	-80.49	272.40	0.415	0.734	1.46	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.52	1547934.64	-180.49	204.00	201.50	-80.49	272.29	0.415	0.734	1.48	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.54	1547934.14	-183.45	207.00	204.46	-80.44	272.27	0.415	0.734	1.50	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.56	1547933.64	-186.41	210.00	207.42	-80.44	272.27	0.415	0.734	1.52	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.58	1547933.14	-189.37	213.00	210.38	-80.44	272.28	0.415	0.734	1.54	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.60	1547932.65	-192.33	216.00	213.34	-80.44	272.28	0.415	0.734	1.56	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.62	1547932.15	-195.29	219.00	216.30	-80.44	272.32	0.415	0.734	1.59	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.64	1547931.65	-198.25	222.00	219.26	-80.44	272.35	0.415	0.734	1.61	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.66	1547931.15	-201.20	225.00	222.21	-80.43	272.44	0.415	0.734	1.63	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.68	1547930.65	-204.16	228.00	225.17	-80.42	272.36	0.415	0.734	1.65	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.70	1547930.15	-207.12	231.00	228.13	-80.38	272.22	0.415	0.734	1.67	Measured	2007-01-17 09:55

KLX18A	RT90-RHB70	6366414.72	1547929.65	-210.08	234.00	231.09	-80.38	272.10	0.415	0.734	1.69	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.74	1547929.15	-213.03	237.00	234.04	-80.35	272.09	0.415	0.734	1.72	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.76	1547928.65	-215.99	240.00	237.00	-80.32	272.13	0.415	0.734	1.74	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.78	1547928.14	-218.95	243.00	239.96	-80.32	272.13	0.415	0.734	1.76	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.80	1547927.64	-221.91	246.00	242.92	-80.29	272.13	0.415	0.734	1.78	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.82	1547927.13	-224.86	249.00	245.87	-80.29	272.10	0.415	0.734	1.80	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.83	1547926.63	-227.82	252.00	248.83	-80.29	272.13	0.415	0.734	1.83	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.85	1547926.12	-230.78	255.00	251.79	-80.29	272.14	0.415	0.734	1.85	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.87	1547925.62	-233.74	258.00	254.75	-80.28	272.20	0.415	0.734	1.87	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.89	1547925.11	-236.69	261.00	257.70	-80.31	272.09	0.415	0.734	1.89	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.91	1547924.61	-239.65	264.00	260.66	-80.31	272.13	0.415	0.734	1.91	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.93	1547924.10	-242.61	267.00	263.62	-80.31	272.25	0.415	0.734	1.93	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.95	1547923.60	-245.56	270.00	266.57	-80.31	272.27	0.415	0.734	1.96	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.97	1547923.09	-248.52	273.00	269.53	-80.31	272.42	0.415	0.734	1.98	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366414.99	1547922.59	-251.48	276.00	272.49	-80.32	272.44	0.415	0.734	2.00	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.01	1547922.08	-254.44	279.00	275.45	-80.31	272.51	0.415	0.734	2.02	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.04	1547921.58	-257.39	282.00	278.40	-80.31	272.53	0.415	0.734	2.04	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.06	1547921.07	-260.35	285.00	281.36	-80.25	272.70	0.415	0.734	2.06	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.08	1547920.56	-263.31	288.00	284.32	-80.19	273.09	0.415	0.734	2.09	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.11	1547920.05	-266.26	291.00	287.27	-80.11	273.22	0.415	0.734	2.11	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.14	1547919.54	-269.22	294.00	290.23	-80.07	273.06	0.415	0.734	2.13	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.17	1547919.02	-272.17	297.00	293.18	-80.06	272.98	0.415	0.734	2.15	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.19	1547918.50	-275.13	300.00	296.14	-80.05	272.92	0.415	0.734	2.17	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.22	1547917.98	-278.08	303.00	299.09	-80.04	272.92	0.415	0.734	2.19	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.25	1547917.47	-281.04	306.00	302.05	-80.06	272.92	0.415	0.734	2.22	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.27	1547916.95	-283.99	309.00	305.00	-80.06	273.03	0.415	0.734	2.24	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.30	1547916.43	-286.95	312.00	307.96	-80.06	273.16	0.415	0.734	2.26	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.33	1547915.91	-289.90	315.00	310.91	-80.06	273.38	0.415	0.734	2.28	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.36	1547915.40	-292.86	318.00	313.87	-80.05	273.38	0.415	0.734	2.30	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.39	1547914.88	-295.81	321.00	316.82	-80.04	273.37	0.415	0.734	2.33	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.42	1547914.36	-298.77	324.00	319.78	-80.03	273.47	0.415	0.734	2.35	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.46	1547913.84	-301.72	327.00	322.73	-80.02	273.47	0.415	0.734	2.37	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.49	1547913.32	-304.67	330.00	325.68	-80.00	273.45	0.415	0.734	2.39	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.52	1547912.80	-307.63	333.00	328.64	-80.00	273.45	0.415	0.734	2.41	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.55	1547912.28	-310.58	336.00	331.59	-79.98	273.31	0.415	0.734	2.43	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.58	1547911.76	-313.54	339.00	334.55	-79.98	273.26	0.415	0.734	2.46	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.61	1547911.24	-316.49	342.00	337.50	-79.98	273.16	0.415	0.734	2.48	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.64	1547910.72	-319.45	345.00	340.46	-79.97	273.31	0.415	0.734	2.50	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.67	1547910.20	-322.40	348.00	343.41	-79.96	273.31	0.415	0.734	2.52	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.70	1547909.67	-325.35	351.00	346.36	-79.96	273.34	0.415	0.734	2.54	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.73	1547909.15	-328.31	354.00	349.32	-79.96	273.37	0.415	0.734	2.56	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.76	1547908.63	-331.26	357.00	352.27	-79.95	273.37	0.415	0.734	2.59	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.79	1547908.11	-334.22	360.00	355.23	-79.94	273.63	0.415	0.734	2.61	Measured	2007-01-17 09:55



KLX18A	RT90-RHB70	6366415.82	1547907.58	-337.17	363.00	358.18	-79.94	273.62	0.415	0.734	2.63	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.86	1547907.06	-340.12	366.00	361.13	-79.94	273.61	0.415	0.734	2.65	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.89	1547906.54	-343.08	369.00	364.09	-79.94	273.51	0.415	0.734	2.67	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.92	1547906.02	-346.03	372.00	367.04	-79.94	273.51	0.415	0.734	2.69	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.95	1547905.49	-348.99	375.00	370.00	-79.94	273.65	0.415	0.734	2.72	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366415.99	1547904.97	-351.94	378.00	372.95	-79.94	273.74	0.415	0.734	2.74	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.02	1547904.45	-354.89	381.00	375.90	-79.94	273.75	0.415	0.734	2.76	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.06	1547903.92	-357.85	384.00	378.86	-79.94	273.72	0.415	0.734	2.78	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.09	1547903.40	-360.80	387.00	381.81	-79.94	273.66	0.415	0.734	2.80	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.12	1547902.88	-363.76	390.00	384.77	-79.94	273.60	0.415	0.734	2.82	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.16	1547902.35	-366.71	393.00	387.72	-79.95	273.58	0.415	0.734	2.85	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.19	1547901.83	-369.66	396.00	390.67	-79.95	273.57	0.415	0.734	2.87	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.22	1547901.31	-372.62	399.00	393.63	-79.97	273.57	0.415	0.734	2.89	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.25	1547900.79	-375.57	402.00	396.58	-79.97	273.58	0.415	0.734	2.91	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.29	1547900.27	-378.53	405.00	399.54	-79.96	273.57	0.415	0.734	2.93	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.32	1547899.74	-381.48	408.00	402.49	-79.94	273.73	0.415	0.734	2.96	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.35	1547899.22	-384.43	411.00	405.44	-79.94	273.75	0.415	0.734	2.98	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.39	1547898.70	-387.39	414.00	408.40	-79.95	273.78	0.415	0.734	3.00	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.42	1547898.18	-390.34	417.00	411.35	-79.96	273.74	0.415	0.734	3.02	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.46	1547897.66	-393.30	420.00	414.31	-79.97	274.00	0.415	0.734	3.04	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.50	1547897.13	-396.25	423.00	417.26	-79.97	274.19	0.415	0.734	3.06	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.53	1547896.61	-399.20	426.00	420.21	-79.93	274.26	0.415	0.734	3.09	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.57	1547896.09	-402.16	429.00	423.17	-79.93	274.35	0.415	0.734	3.11	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.61	1547895.57	-405.11	432.00	426.12	-79.94	274.16	0.415	0.734	3.13	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.65	1547895.04	-408.06	435.00	429.07	-79.97	274.17	0.415	0.734	3.15	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.69	1547894.52	-411.02	438.00	432.03	-79.97	274.30	0.415	0.734	3.17	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.73	1547894.00	-413.97	441.00	434.98	-79.97	274.58	0.415	0.734	3.19	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.77	1547893.48	-416.93	444.00	437.94	-79.97	274.70	0.415	0.734	3.22	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.82	1547892.96	-419.88	447.00	440.89	-79.98	274.82	0.415	0.734	3.24	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.86	1547892.44	-422.84	450.00	443.85	-80.00	274.92	0.415	0.734	3.26	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.90	1547891.92	-425.79	453.00	446.80	-80.01	274.88	0.415	0.734	3.28	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.95	1547891.40	-428.75	456.00	449.76	-80.02	274.75	0.415	0.734	3.30	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366416.99	1547890.89	-431.70	459.00	452.71	-80.02	274.51	0.415	0.734	3.32	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.03	1547890.37	-434.65	462.00	455.66	-80.02	274.40	0.415	0.734	3.35	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.07	1547889.85	-437.61	465.00	458.62	-80.02	274.37	0.415	0.734	3.37	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.11	1547889.33	-440.56	468.00	461.57	-80.01	274.44	0.415	0.734	3.39	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.15	1547888.81	-443.52	471.00	464.53	-80.00	274.43	0.415	0.734	3.41	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.19	1547888.29	-446.47	474.00	467.48	-80.00	274.43	0.415	0.734	3.43	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.23	1547887.77	-449.43	477.00	470.44	-80.00	274.07	0.415	0.734	3.45	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.26	1547887.25	-452.38	480.00	473.39	-80.00	273.95	0.415	0.734	3.48	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.30	1547886.73	-455.34	483.00	476.35	-79.99	274.01	0.415	0.734	3.50	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.34	1547886.21	-458.29	486.00	479.30	-79.98	274.26	0.415	0.734	3.52	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.38	1547885.69	-461.24	489.00	482.25	-79.97	274.29	0.415	0.734	3.54	Measured	2007-01-17 09:55

KLX18A	RT90-RHB70	6366417.42	1547885.17	-464.20	492.00	485.21	-79.97	274.36	0.415	0.734	3.56	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.46	1547884.65	-467.15	495.00	488.16	-79.97	274.36	0.415	0.734	3.59	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.50	1547884.13	-470.11	498.00	491.12	-79.97	274.68	0.415	0.734	3.61	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.54	1547883.61	-473.06	501.00	494.07	-79.97	274.89	0.415	0.734	3.63	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.59	1547883.09	-476.01	504.00	497.02	-79.97	275.14	0.415	0.734	3.65	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.63	1547882.57	-478.97	507.00	499.98	-79.95	275.20	0.415	0.734	3.67	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.68	1547882.05	-481.92	510.00	502.93	-79.94	275.49	0.415	0.734	3.69	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.73	1547881.52	-484.88	513.00	505.89	-79.93	275.61	0.415	0.734	3.72	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.78	1547881.00	-487.83	516.00	508.84	-79.91	275.53	0.415	0.734	3.74	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.84	1547880.48	-490.78	519.00	511.79	-79.90	275.63	0.415	0.734	3.76	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.89	1547879.95	-493.74	522.00	514.75	-79.89	275.75	0.415	0.734	3.78	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366417.94	1547879.43	-496.69	525.00	517.70	-79.88	275.87	0.415	0.734	3.80	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366418.00	1547878.91	-499.64	528.00	520.65	-79.88	276.01	0.415	0.734	3.82	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366418.05	1547878.38	-502.60	531.00	523.61	-79.88	276.14	0.415	0.734	3.85	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366418.11	1547877.86	-505.55	534.00	526.56	-79.86	276.28	0.415	0.734	3.87	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366418.17	1547877.33	-508.50	537.00	529.51	-79.86	276.38	0.415	0.734	3.89	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366418.23	1547876.81	-511.46	540.00	532.47	-79.86	276.46	0.415	0.734	3.91	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366418.29	1547876.28	-514.41	543.00	535.42	-79.86	276.52	0.415	0.734	3.93	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366418.35	1547875.76	-517.36	546.00	538.37	-79.86	276.56	0.415	0.734	3.95	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366418.41	1547875.23	-520.32	549.00	541.33	-79.84	276.60	0.415	0.734	3.98	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366418.47	1547874.71	-523.27	552.00	544.28	-79.84	276.95	0.415	0.734	4.00	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366418.53	1547874.18	-526.22	555.00	547.23	-79.84	276.95	0.415	0.734	4.02	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366418.60	1547873.66	-529.17	558.00	550.18	-79.82	276.99	0.415	0.734	4.04	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366418.66	1547873.13	-532.13	561.00	553.14	-79.80	277.10	0.415	0.734	4.06	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366418.73	1547872.60	-535.08	564.00	556.09	-79.78	277.35	0.415	0.734	4.09	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366418.80	1547872.07	-538.03	567.00	559.04	-79.75	277.50	0.415	0.734	4.11	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366418.87	1547871.54	-540.98	570.00	561.99	-79.75	277.77	0.415	0.734	4.13	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366418.94	1547871.01	-543.94	573.00	564.95	-79.73	277.80	0.415	0.734	4.15	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366419.01	1547870.49	-546.89	576.00	567.90	-79.73	277.80	0.415	0.734	4.17	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366419.09	1547869.96	-549.84	579.00	570.85	-79.72	277.79	0.415	0.734	4.19	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366419.16	1547869.42	-552.79	582.00	573.80	-79.72	277.85	0.415	0.734	4.22	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366419.23	1547868.89	-555.74	585.00	576.75	-79.69	277.79	0.415	0.734	4.24	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366419.31	1547868.36	-558.70	588.00	579.71	-79.69	277.89	0.415	0.734	4.26	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366419.38	1547867.83	-561.65	591.00	582.66	-79.69	277.99	0.415	0.734	4.28	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366419.45	1547867.30	-564.60	594.00	585.61	-79.69	278.06	0.415	0.734	4.30	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366419.53	1547866.77	-567.55	597.00	588.56	-79.69	278.07	0.415	0.734	4.32	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366419.61	1547866.24	-570.50	600.00	591.51	-79.69	278.07	0.415	0.734	4.35	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366419.68	1547865.70	-573.45	603.00	594.46	-79.68	278.06	0.415	0.734	4.37	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366419.76	1547865.17	-576.40	606.00	597.41	-79.69	278.11	0.415	0.734	4.39	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366419.83	1547864.64	-579.36	609.00	600.37	-79.69	278.11	0.415	0.734	4.41	Measured	2007-01-17 09:55
KLX18A	RT90-RHB70	6366419.89	1547864.24	-581.60	611.28	602.61	-79.69	278.11	0.415	0.734	4.43	Measured	2007-01-17 09:55

Number of rows: 205.

Printout from SICADA 2007-10-26 12:25:51.