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Oskarshamn site investigation

Boremap mapping of core drilled borehole KLX20A

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December 2007

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Keywords: KLX20A, Geology, Drill core mapping, Boremap, Fractures, BIPS, Laxemar.

Abstract

This report presents the Boremap mapping of KLX20A, which is a c. 458 m long core drilled borehole. The borehole was drilled with declination 271.5º and inclination –50.3º and mapping was conducted between 2006-05-29 and 2006-06-13.

The lithology in KLX20A consists of 83.3% quartz monzodiorite (501036), 13.1% dolerite (501027), 2.2% fine-grained diorite-gabbro (505102) and 1.1% fine-grained granite (511058).

Three sections have been highlighted based on anomalous fracture frequencies, alterations and structural features. These sections cover the following intervals: 170–182 m, 182–231 m and 258–270 m. In some cases these sections are associated with lithological changes.

Sammanfattning

Denna rapport presenterar boremapkarteringen av KLX20A som är ett ca 458 meter långt kärnborrhål. Borrhålet borrades med deklination 271,5º och inklination –50,3º och karterades mellan 2006-05-29 och 2006-06-13.

KLX20A utgörs av 83,3 % kvartsmonzodiorit (501036), 13,1 % diabas, 2,2 % finkornig diorit-gabbro (505102) och 1,1 % finkornig granit (511058).

Tio sektioner i KLX20A kan urskiljas baserat på förhöjd sprickfrekvens, sidobergsomvandlingar och geologiska strukturer. Sektionerna återfinns i följande intervall: 170–182 m, 182–231 m och 258–270 m. Dessa sektioner är ibland associerade med litologiska förändringar.

Contents

1 Introduction

This report gives a brief presentation of the data gained from the mapping of KLX20A 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 400-06-068. 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 1000 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.

Activity plan	Number	Version
Boremapkartering av KLX20A	AP PS 400-06-068	1.0
Method descriptions	**Number**	**Version**
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.

Rock type	Rock code	Rock Description
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 KLX20A is situated within the Laxemar area (Figure 1-1). KLX20A is a c 458 m long telescopic borehole with orientation 271.5/–50.3º. Mapping of the borehole was performed between 2006-05-29 and 2006-06-13.

Detailed mapping of the drill cores 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.

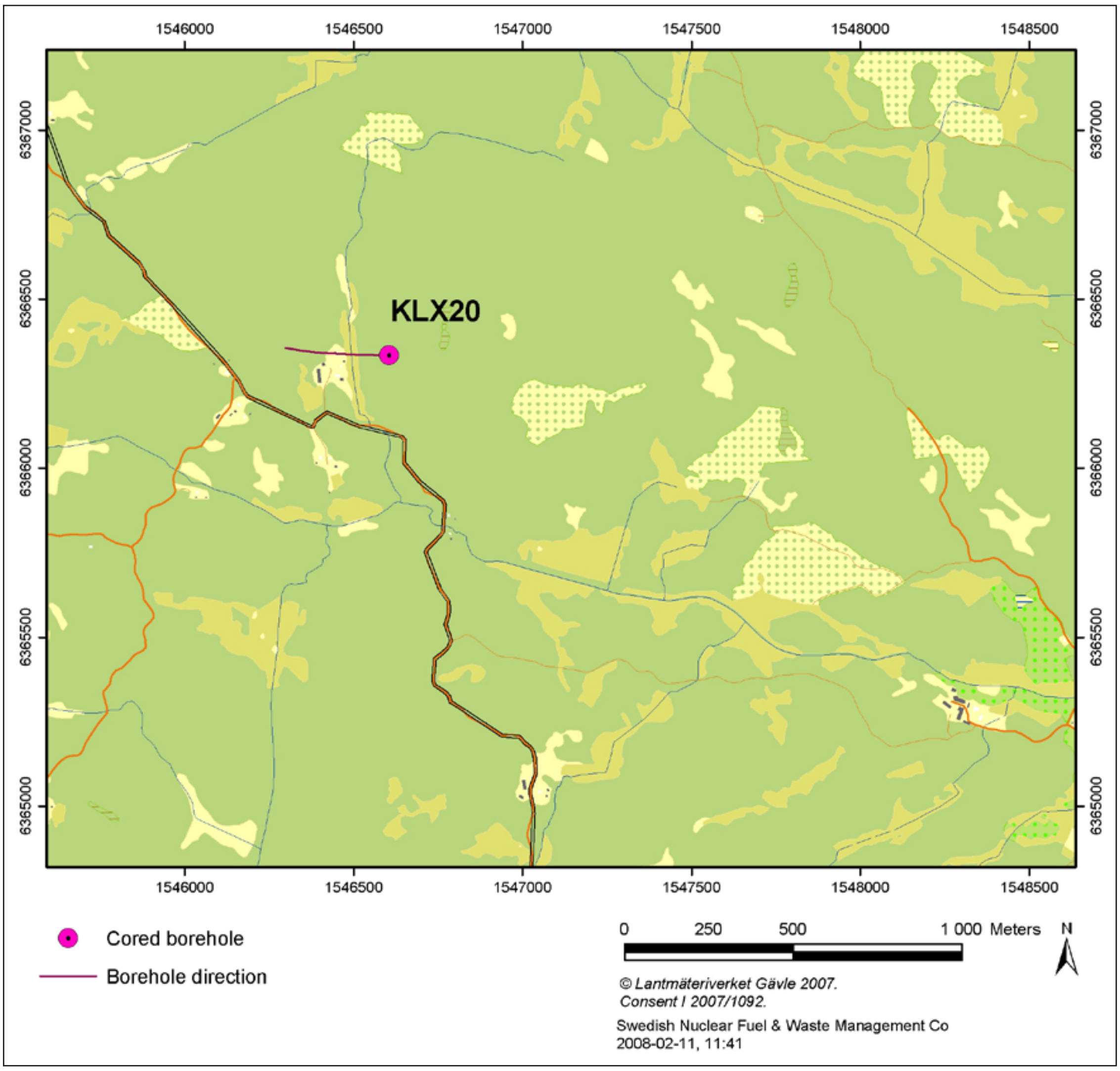


Figure 1-1. *Location of the core drilled borehole KLX20A.*

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 KLX20A. Geological structures will be correctly orientated 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 KLX20A 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 a 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 KLX20A covers the interval 100.64–457.01 m.

3.4 BIPS-image video film 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 KLX20A is presented in Table 3-1.

Table 3-1. BIPS-image quality in KLX20A.

From (m)	To (m)	Quality
101	240	Acceptable
240	260	Good
260	456	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 400-06-068 (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 Gunnar Rauséus (Geosigma AB) and Jan Ehrenborg (Mírab Mineral Resurser 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 and aperture, crush zones and sealed fracture network 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:

X1 Gypsum

X5 Bleached fracture walls

X6 Talc

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

X8 Fractures with epidotized/saussuritized walls.

X9 Apophyllite

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 ≥ 1 m and frequencies for parameters with a width < 1 m. Frequency information is treated as 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 ≥ 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 ≥ 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 ≥ 1 m wide* is an interval column. Sections with foliation ≥ 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 ≥ 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 ≥ 1 m wide*, interval column. This column includes longer sections with crush.

4.6 Nonconformities

Core loss occurs in intervals: 215.73–215.88 m, 277.01–277.07 m, 277.76–277.90 m and 307.48–307.58 m. Mapping in these intervals was conducted with BIPS-image only.

5 Results

5.1 General

Borehole KLX20A is oriented with declination 271.5° and inclination –50.3°. The drill core covers the interval 99.96–457.94 m with BIPS-image covering the interval 100.94–457.01 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 400-06-068). 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.

5.2 Lithology and structures

The lithology in KLX20A (Table 5-1) is dominated by quartz monzodiorite (501036) with a 49 m wide section of dolerite (501027) in the interval 182–231 m. Subordinated rock types are fine-grained diorite-gabbro (505102) and fine- grained granite (511058).

The dolerite section is highly deformed with an increased frequency of open fractures and sealed fracture network. Open fracture filling in the dolerite section is dominated by chlorite, clay minerals and talc. High joint alteration and slickensided fracture surfaces are also common in this section.

Three sections in KLX20A are recognized by anomalous fracture frequencies, alterations and structural features.

Table 5-1. Lithology distribution in KLX20A.

%	Rock types
83.3	Quartz monzodiorite (501036)
13.1	Dolerite (501027)
2.2	Fine-grained diorite-gabbro (505102)
1.1	Fine-grained granite (511058)

Section interval characteristics

1. 170–182 m. Increased frequency of open fractures and open fractures with aperture > 0.5 mm, sealed fracture networks, breccia, brittle ductile shear zones, foliation, saussuritization and red staining occurs within this section. This section consists of quartz monzodiorite (501036).
2. 182–231 m. This section is totally dominated by dolorite with an increased frequency of open fractures open fractures with aperture > 0.5 mm, increased joint alteration, sealed fracture networks and crush zones.
3. 258–270 m. Increased frequency of open fractures and open fractures with aperture > 0.5 mm, sealed fracture networks, brittle ductile shear zones, crush zones, foliation, epidotization, saussuritization and red staining occurs within this section.

5.3 Fracture mineralogy

Chlorite and calcite are the most frequently occurring minerals in both open and sealed fractures (Tables 5-3 and 5-4). Subordinate minerals in open fractures are clay minerals, pyrite, oxidized walls and talc, and in sealed fractures oxidized walls. Clay minerals are more abundant in open fractures but are almost absent in sealed fractures. This may reflect the fact that it is easier to detect clay minerals on open fracture surfaces than in sealed fractures. Open fractures in the dolerite section are characterized by higher frequency of clay mineral and chlorite mineral filling and elevated joint alteration. Associated with these fractures are minerals such as: talc, zeolite, gypsum and apophyllite.

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

%	Mineral
94.1	Chlorite
67.4	Clay minerals
63.0	Calcite
16.0	Oxidized walls
11.1	Pyrite
9.3	X6, talc
7.2	Epidote
4.8	Hematite
3.4	Quartz
3.0	X9, Apophyllite
2.7	X1, Gypsum
2.0	Zeolite
1.1	Prehnite
< 1.1	Unknown mineral, white feldspar, adularia, X8 Saussuritized walls, red feldspar, biotite, laumontite, fluorite, X7 no mineral

Table 5-4. Frequency of minerals and rock wall alteration in sealed fractures.

%	Mineral
59.2	Chlorite
52.9	Calcite
42.0	Oxidized walls
11.5	Epidote
11.2	Quartz
7.4	Prehnite
4.6	White feldspar
4.1	Clay minerals
3.1	Red feldspar
2.9	X5, bleached fracture walls
1.5	X8, saussuritized walls
< 1.5	Pyrite, hematite, laumontite, X6 talc, biotite, X7 no mineral

Geological summary table for KLX20A

GEOLOGICAL SUMMARY KLX20A — APPENDIX 1

Site	LAXEMAR
Borehole	KLX20A
Coordinate System	RT90-RHB70
Date of mapping	2006-05-29 08:59:00

ROCKTYPE
- Dolerite / Diabas
- Fine-grained granite
- Quartz monzodiorite
- Fine-grained diorite-gabbro

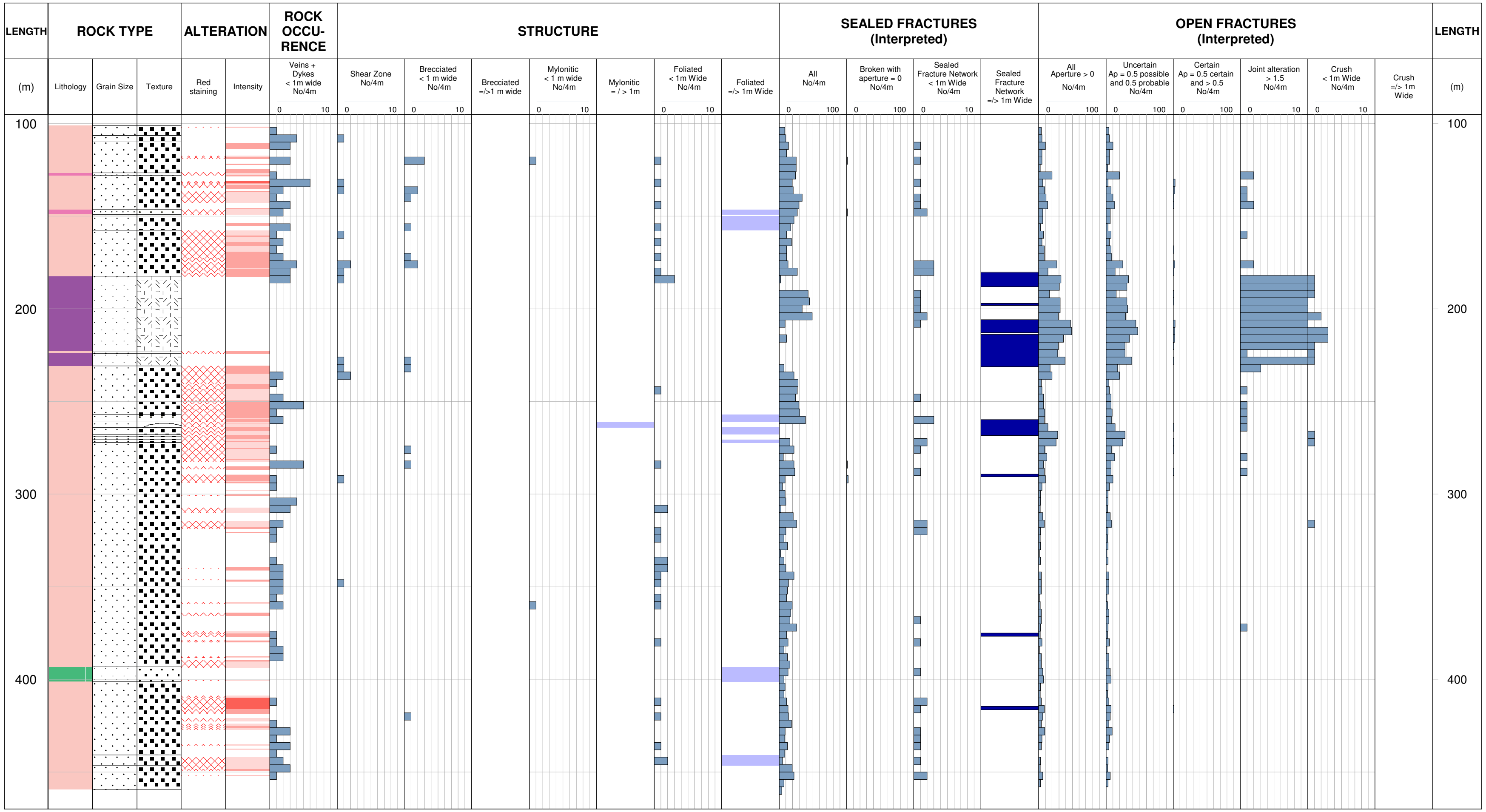
GRAINSIZE
- Fine-grained
- Fine to medium grained
- Medium-grained

TEXTURE
- Porphyritic
- Ophitic
- Equigranular
- Metamorphic

ALTERATION
- Red staining

INTENSITY
- Faint
- Weak
- Medium

STRUCTURE INTENSITY
- Weak
- Sealed network



Appendix 2

Search paths for the geological summary table

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

Appendix 3

BIPS-image for KLX20A

Borehole Image Report

Borehole Name:	KLX20A
Mapping Name:	KLX20A_GRJE
Mapping Range:	100.000 - 458.000 m
Diameter:	76.0 mm
Printed Range:	100.000 - 455.712
Pages:	19

Image File Information:

File:	D:\BIPSbilder\KLX20A\KLX20A_101-455m.BIP
Date/Time:	2006-05-09 11:14:00
Start Depth:	100.000 m
End Depth:	455.712 m
Resolution:	1.00 mm/pixel (depth)
Orientation:	Gravmetric
Image height:	355712 pixels
Image width:	360 pixels
BIP Version:	BIP-III
Locality:	LAXEMAR
Borehole:	KLX20A
Scan Direction:	Down
Color adjust:	0 0 0 (RGB)

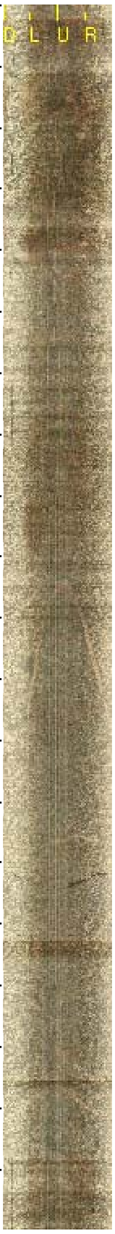
Printed: 2006-06-13 14:33:43 Scale: 1 : 20 Aspect: 150 % 1 (19)

Borehole: KLX20A
Mapping: KLX20A_GRJE

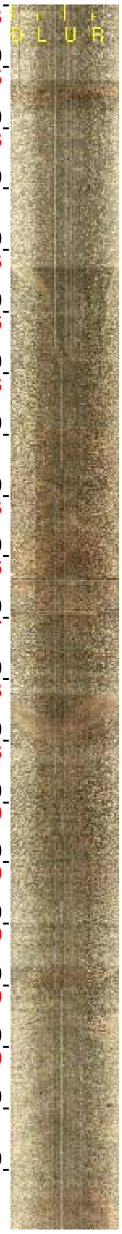
Depth range: 100.000 - 120.000 m
Azimuth: 271.5
Inclination: -50.3

100.000	100.000
100.200	100.203
100.400	100.405
100.600	100.608
100.800	100.810
101.000	101.013
101.200	101.215
101.400	101.418
101.600	101.621
101.800	101.823
102.000	102.026
102.200	102.228
102.400	102.431
102.600	102.633
102.800	102.836
103.000	103.039
103.200	103.241
103.400	103.444
103.600	103.646
103.800	103.849

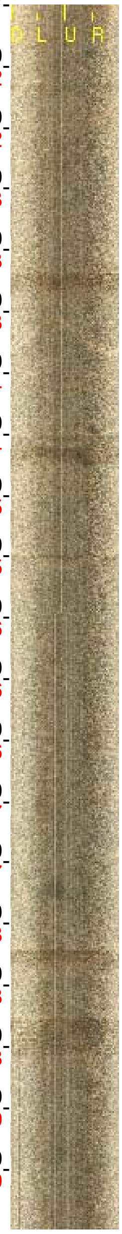
104.000	104.051
104.200	104.254
104.400	104.457
104.600	104.659
104.800	104.862
105.000	105.064
105.200	105.267
105.400	105.469
105.600	105.672
105.800	105.875
106.000	106.077
106.200	106.280
106.400	106.482
106.600	106.685
106.800	106.887
107.000	107.090
107.200	107.293
107.400	107.495
107.600	107.698
107.800	107.900



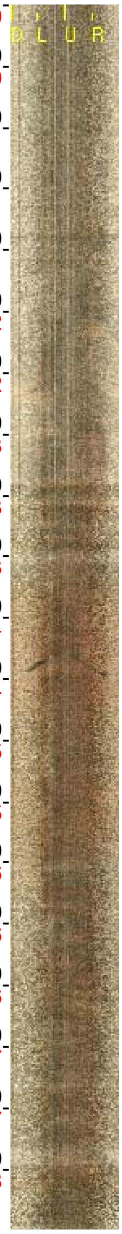
108.000	108.103
108.200	108.305
108.400	108.508
108.600	108.711
108.800	108.913
109.000	109.116
109.200	109.318
109.400	109.521
109.600	109.723
109.800	109.926
110.000	110.127
110.200	110.328
110.400	110.528
110.600	110.729
110.800	110.929
111.000	111.129
111.200	111.330
111.400	111.530
111.600	111.731
111.800	111.931



112.000	112.131
112.200	112.332
112.400	112.532
112.600	112.733
112.800	112.933
113.000	113.133
113.200	113.334
113.400	113.534
113.600	113.735
113.800	113.935
114.000	114.136
114.200	114.336
114.400	114.536
114.600	114.737
114.800	114.937
115.000	115.138
115.200	115.338
115.400	115.538
115.600	115.739
115.800	115.939



116.000	116.140
116.200	116.340
116.400	116.541
116.600	116.741
116.800	116.941
117.000	117.142
117.200	117.342
117.400	117.543
117.600	117.743
117.800	117.943
118.000	118.144
118.200	118.344
118.400	118.545
118.600	118.745
118.800	118.946
119.000	119.146
119.200	119.346
119.400	119.547
119.600	119.747
119.800	119.948

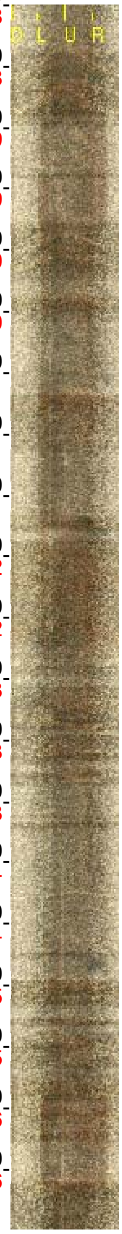


Printed: 2006-06-13 14:33:43   Scale: 1 : 20   Aspect: 150 %   2 (19)

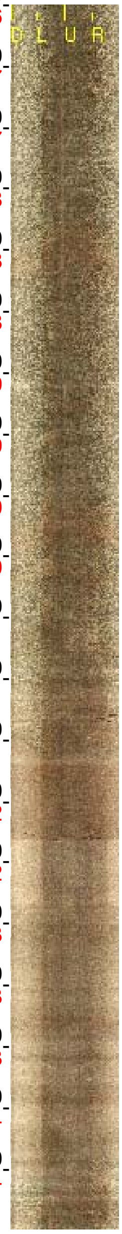
Borehole: KLX20A
Mapping: KLX20A_GRJE

Depth range: 120.000 - 140.000 m
Azimuth: 271.5
Inclination: -50.1

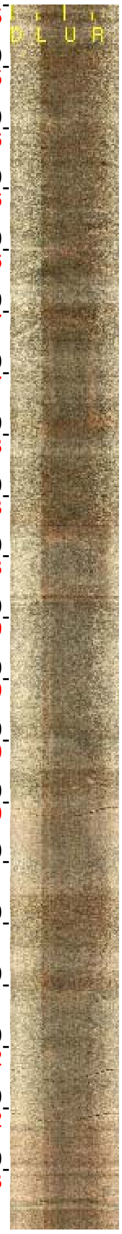
120.000	120.148
120.200	120.348
120.400	120.549
120.600	120.749
120.800	120.950
121.000	121.150
121.200	121.351
121.400	121.551
121.600	121.751
121.800	121.952
122.000	122.152
122.200	122.353
122.400	122.553
122.600	122.753
122.800	122.954
123.000	123.154
123.200	123.355
123.400	123.555
123.600	123.756
123.800	123.956



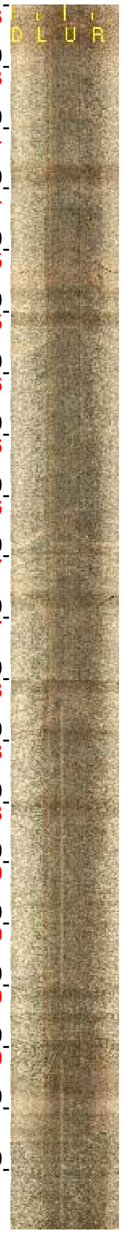
124.000	124.156
124.200	124.357
124.400	124.557
124.600	124.758
124.800	124.958
125.000	125.158
125.200	125.359
125.400	125.559
125.600	125.760
125.800	125.960
126.000	126.161
126.200	126.361
126.400	126.561
126.600	126.762
126.800	126.962
127.000	127.163
127.200	127.363
127.400	127.563
127.600	127.764
127.800	127.964



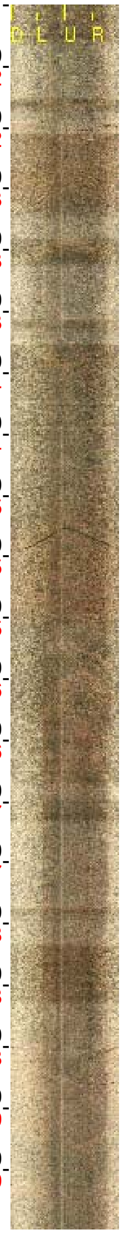
128.000	128.165
128.200	128.365
128.400	128.566
128.600	128.766
128.800	128.966
129.000	129.167
129.200	129.367
129.400	129.568
129.600	129.768
129.800	129.968
130.000	130.169
130.200	130.369
130.400	130.570
130.600	130.770
130.800	130.971
131.000	131.171
131.200	131.371
131.400	131.572
131.600	131.772
131.800	131.973



132.000	132.173
132.200	132.373
132.400	132.574
132.600	132.774
132.800	132.975
133.000	133.175
133.200	133.376
133.400	133.576
133.600	133.776
133.800	133.977
134.000	134.177
134.200	134.378
134.400	134.578
134.600	134.778
134.800	134.979
135.000	135.179
135.200	135.380
135.400	135.580
135.600	135.781
135.800	135.981



136.000	136.181
136.200	136.382
136.400	136.582
136.600	136.783
136.800	136.983
137.000	137.183
137.200	137.384
137.400	137.584
137.600	137.785
137.800	137.985
138.000	138.185
138.200	138.386
138.400	138.586
138.600	138.787
138.800	138.987
139.000	139.188
139.200	139.388
139.400	139.588
139.600	139.789
139.800	139.989

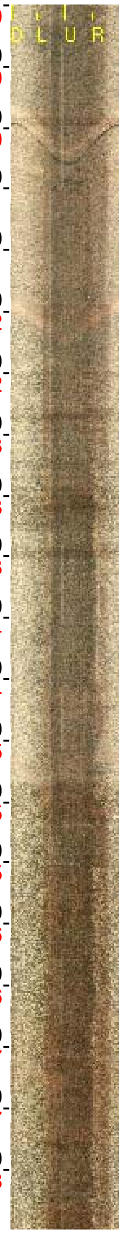


Printed: 2006-06-13 14:33:43 Scale: 1 : 20 Aspect: 150 % 3 (19)

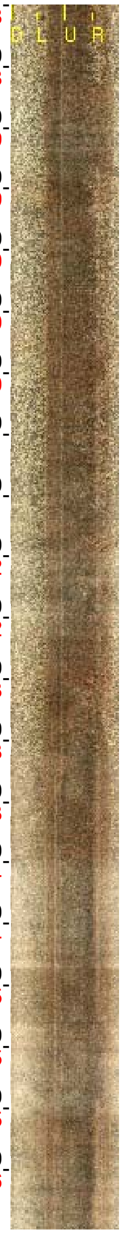
Borehole: KLX20A
Mapping: KLX20A_GRJE

Depth range: 140.000 - 160.000 m
Azimuth: 272.1
Inclination: -49.4

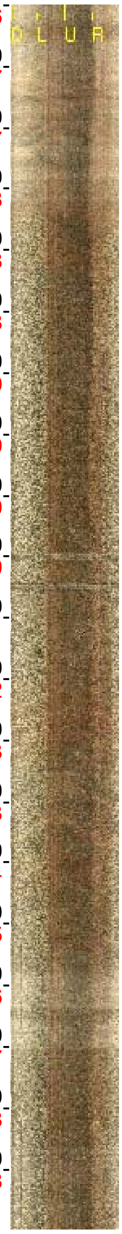
140.000	140.190
140.200	140.390
140.400	140.590
140.600	140.791
140.800	140.991
141.000	141.192
141.200	141.392
141.400	141.593
141.600	141.793
141.800	141.993
142.000	142.194
142.200	142.394
142.400	142.595
142.600	142.795
142.800	142.995
143.000	143.196
143.200	143.396
143.400	143.597
143.600	143.797
143.800	143.998



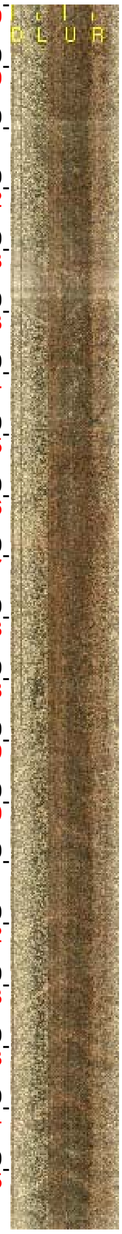
144.000	144.198
144.200	144.398
144.400	144.599
144.600	144.799
144.800	145.000
145.000	145.200
145.200	145.400
145.400	145.601
145.600	145.801
145.800	146.002
146.000	146.202
146.200	146.403
146.400	146.603
146.600	146.803
146.800	147.004
147.000	147.204
147.200	147.405
147.400	147.605
147.600	147.805
147.800	148.006



148.000	148.206
148.200	148.407
148.400	148.607
148.600	148.808
148.800	149.008
149.000	149.208
149.200	149.409
149.400	149.609
149.600	149.810
149.800	150.010
150.000	150.211
150.200	150.412
150.400	150.613
150.600	150.813
150.800	151.014
151.000	151.215
151.200	151.416
151.400	151.617
151.600	151.818
151.800	152.018



152.000	152.219
152.200	152.420
152.400	152.621
152.600	152.822
152.800	153.023
153.000	153.223
153.200	153.424
153.400	153.625
153.600	153.826
153.800	154.027
154.000	154.228
154.200	154.428
154.400	154.629
154.600	154.830
154.800	155.031
155.000	155.232
155.200	155.433
155.400	155.633
155.600	155.834
155.800	156.035



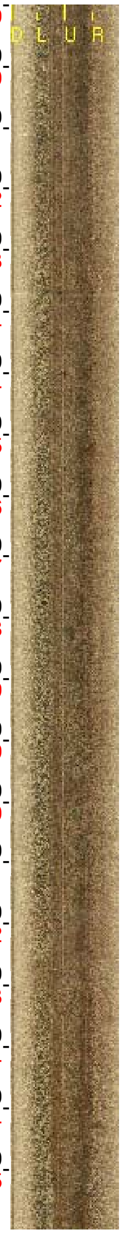
156.000	156.236
156.200	156.437
156.400	156.638
156.600	156.838
156.800	157.039
157.000	157.240
157.200	157.441
157.400	157.642
157.600	157.843
157.800	158.043
158.000	158.244
158.200	158.445
158.400	158.646
158.600	158.847
158.800	159.048
159.000	159.248
159.200	159.449
159.400	159.650
159.600	159.851
159.800	160.052

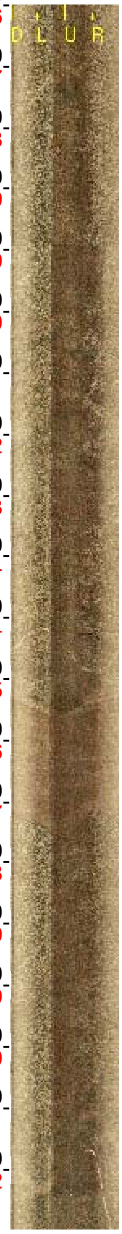
Printed: 2006-06-13 14:33:43 Scale: 1 : 20 Aspect: 150 % 4 (19)

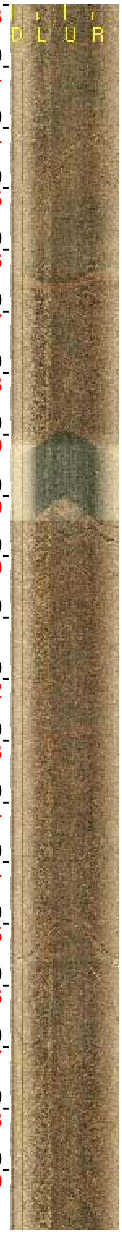
Borehole: KLX20A
Mapping: KLX20A_GRJE

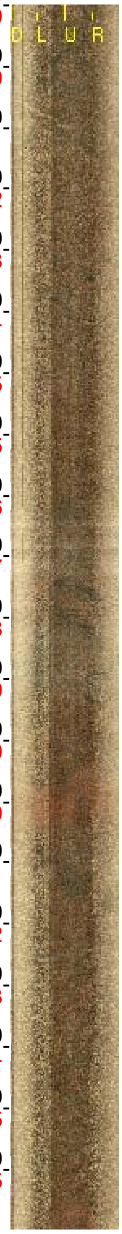
Depth range: 160.000 - 180.000 m
Azimuth: 272.6
Inclination: -48.7

160.000	160.253	164.000	164.269	168.000	168.286	172.000	172.303	176.000	176.319
160.200	160.453	164.200	164.470	168.200	168.487	172.200	172.504	176.200	176.520
160.400	160.654	164.400	164.671	168.400	168.688	172.400	172.704	176.400	176.721
160.600	160.855	164.600	164.872	168.600	168.889	172.600	172.905	176.600	176.922
160.800	161.056	164.800	165.073	168.800	169.089	172.800	173.106	176.800	177.123
161.000	161.257	165.000	165.274	169.000	169.290	173.000	173.307	177.000	177.324
161.200	161.458	165.200	165.474	169.200	169.491	173.200	173.508	177.200	177.525
161.400	161.658	165.400	165.675	169.400	169.692	173.400	173.709	177.400	177.725
161.600	161.859	165.600	165.876	169.600	169.893	173.600	173.909	177.600	177.926
161.800	162.060	165.800	166.077	169.800	170.094	173.800	174.110	177.800	178.127
162.000	162.261	166.000	166.278	170.000	170.294	174.000	174.311	178.000	178.328
162.200	162.462	166.200	166.479	170.200	170.495	174.200	174.512	178.200	178.529
162.400	162.663	166.400	166.679	170.400	170.696	174.400	174.713	178.400	178.730
162.600	162.864	166.600	166.880	170.600	170.897	174.600	174.914	178.600	178.930
162.800	163.064	166.800	167.081	170.800	171.098	174.800	175.114	178.800	179.131
163.000	163.265	167.000	167.282	171.000	171.299	175.000	175.315	179.000	179.332
163.200	163.466	167.200	167.483	171.200	171.499	175.200	175.516	179.200	179.533
163.400	163.667	167.400	167.684	171.400	171.700	175.400	175.717	179.400	179.734
163.600	163.868	167.600	167.884	171.600	171.901	175.600	175.918	179.600	179.935
163.800	164.069	167.800	168.085	171.800	172.102	175.800	176.119	179.800	180.135









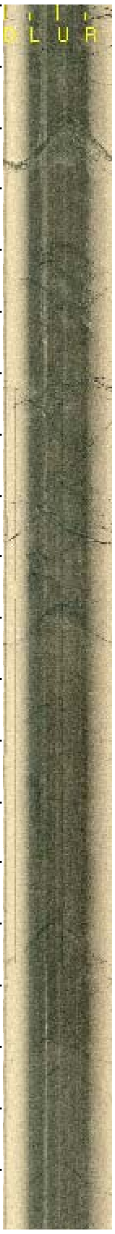
Printed: 2006-06-13 14:33:43 Scale: 1 : 20 Aspect: 150 % 5 (19)

Borehole: KLX20A
Mapping: KLX20A_GRJE

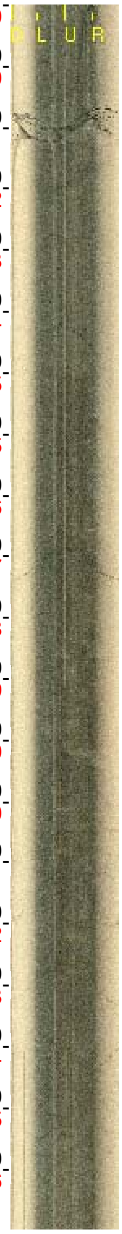
Depth range: 180.000 - 200.000 m
Azimuth: 272.6
Inclination: -48.2

180.000
180.336
180.200
180.537
180.400
180.738
180.600
180.939
180.800
181.140
181.000
181.340
181.200
181.541
181.400
181.742
181.600
181.943
181.800
182.144
182.000
182.345
182.200
182.545
182.400
182.746
182.600
182.947
182.800
183.148
183.000
183.349
183.200
183.550
183.400
183.750
183.600
183.951
183.800
184.152

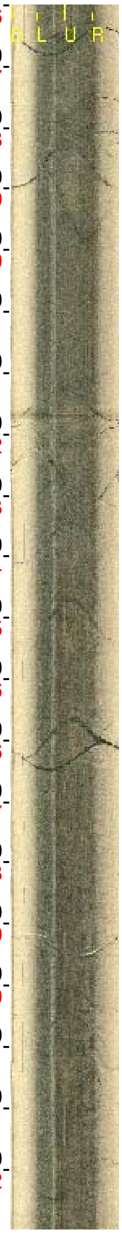
184.000
184.353
184.200
184.554
184.400
184.755
184.600
184.955
184.800
185.156
185.000
185.357
185.200
185.558
185.400
185.759
185.600
185.960
185.800
186.160
186.000
186.361
186.200
186.562
186.400
186.763
186.600
186.964
186.800
187.165
187.000
187.365
187.200
187.566
187.400
187.767
187.600
187.968
187.800
188.169



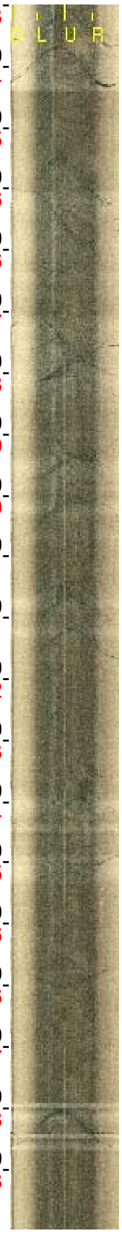
188.000
188.370
188.200
188.570
188.400
188.771
188.600
188.972
188.800
189.173
189.000
189.374
189.200
189.575
189.400
189.775
189.600
189.976
189.800
190.177
190.000
190.378
190.200
190.579
190.400
190.780
190.600
190.980
190.800
191.181
191.000
191.382
191.200
191.583
191.400
191.784
191.600
191.985
191.800
192.186



192.000
192.386
192.200
192.587
192.400
192.788
192.600
192.989
192.800
193.190
193.000
193.391
193.200
193.591
193.400
193.792
193.600
193.993
193.800
194.194
194.000
194.395
194.200
194.596
194.400
194.796
194.600
194.997
194.800
195.198
195.000
195.399
195.200
195.600
195.400
195.801
195.600
196.001
195.800
196.202



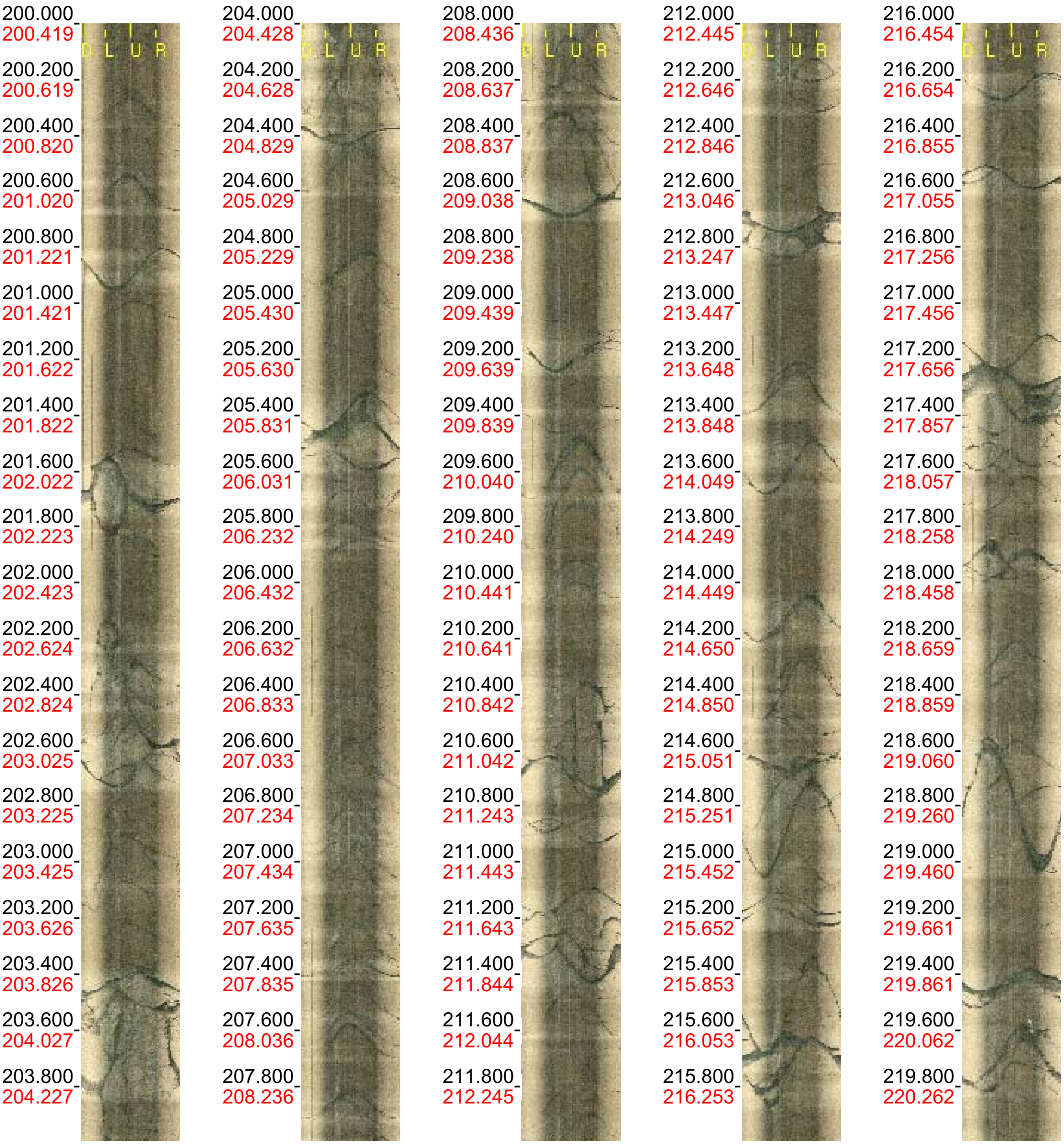
196.000
196.403
196.200
196.604
196.400
196.805
196.600
197.006
196.800
197.206
197.000
197.407
197.200
197.608
197.400
197.809
197.600
198.010
197.800
198.211
198.000
198.411
198.200
198.612
198.400
198.813
198.600
199.014
198.800
199.215
199.000
199.416
199.200
199.616
199.400
199.817
199.600
200.018
199.800
200.218



Printed: 2006-06-13 14:33:43 Scale: 1 : 20 Aspect: 150 % 6 (19)

Borehole: KLX20A
Mapping: KLX20A_GRJE

Depth range: 200.000 - 220.000 m
Azimuth: 273.1
Inclination: -48.1



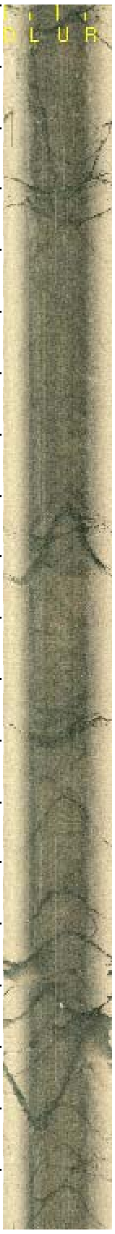
Printed: 2006-06-13 14:33:43   Scale: 1 : 20   Aspect: 150 %   7 (19)

Borehole: KLX20A
Mapping: KLX20A_GRJE

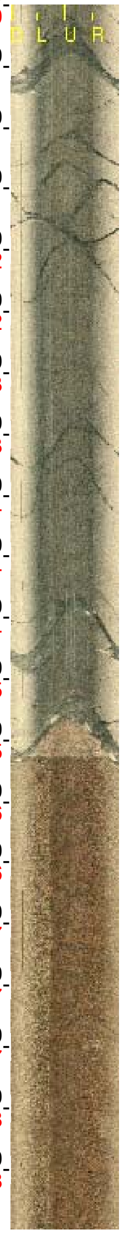
Depth range: 220.000 - 240.000 m
Azimuth: 273.1
Inclination: -47.9

220.000	220.463
220.200	220.663
220.400	220.863
220.600	221.064
220.800	221.264
221.000	221.465
221.200	221.665
221.400	221.866
221.600	222.066
221.800	222.267
222.000	222.467
222.200	222.667
222.400	222.868
222.600	223.068
222.800	223.269
223.000	223.469
223.200	223.670
223.400	223.870
223.600	224.070
223.800	224.271

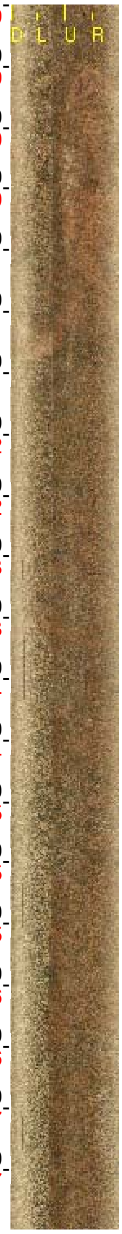
224.000	224.471
224.200	224.672
224.400	224.872
224.600	225.073
224.800	225.273
225.000	225.474
225.200	225.674
225.400	225.874
225.600	226.075
225.800	226.275
226.000	226.476
226.200	226.676
226.400	226.877
226.600	227.077
226.800	227.277
227.000	227.478
227.200	227.678
227.400	227.879
227.600	228.079
227.800	228.280



228.000	228.480
228.200	228.681
228.400	228.881
228.600	229.081
228.800	229.282
229.000	229.482
229.200	229.683
229.400	229.883
229.600	230.084
229.800	230.284
230.000	230.484
230.200	230.685
230.400	230.885
230.600	231.086
230.800	231.286
231.000	231.487
231.200	231.687
231.400	231.887
231.600	232.088
231.800	232.288



232.000	232.489
232.200	232.689
232.400	232.890
232.600	233.090
232.800	233.291
233.000	233.491
233.200	233.691
233.400	233.892
233.600	234.092
233.800	234.293
234.000	234.493
234.200	234.694
234.400	234.894
234.600	235.095
234.800	235.295
235.000	235.495
235.200	235.696
235.400	235.896
235.600	236.097
235.800	236.297



236.000	236.498
236.200	236.698
236.400	236.898
236.600	237.099
236.800	237.299
237.000	237.500
237.200	237.700
237.400	237.901
237.600	238.101
237.800	238.301
238.000	238.502
238.200	238.702
238.400	238.903
238.600	239.103
238.800	239.304
239.000	239.504
239.200	239.705
239.400	239.905
239.600	240.105
239.800	240.306

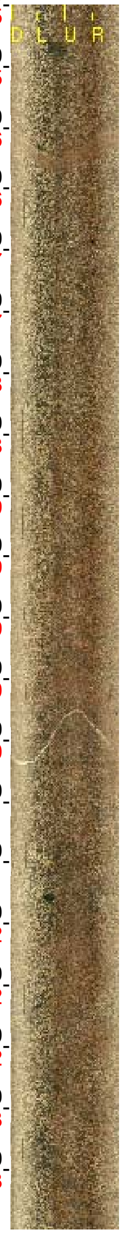
Printed: 2006-06-13 14:33:43   Scale: 1 : 20   Aspect: 150 %   8 (19)

Borehole: KLX20A
Mapping: KLX20A_GRJE

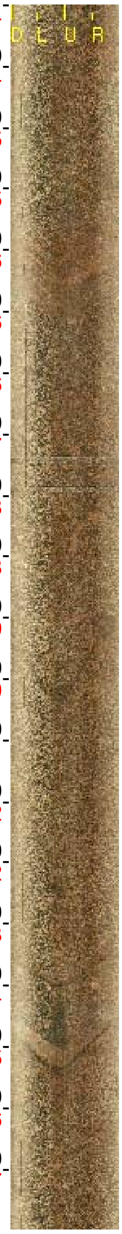
Depth range: 240.000 - 260.000 m
Azimuth: 272.9
Inclination: -48.3

240.000	240.506
240.200	240.707
240.400	240.907
240.600	241.108
240.800	241.308
241.000	241.508
241.200	241.709
241.400	241.909
241.600	242.110
241.800	242.310
242.000	242.511
242.200	242.711
242.400	242.912
242.600	243.112
242.800	243.312
243.000	243.513
243.200	243.713
243.400	243.914
243.600	244.114
243.800	244.315

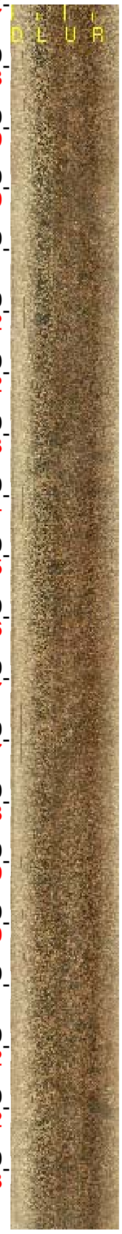
244.000	244.515
244.200	244.715
244.400	244.916
244.600	245.116
244.800	245.317
245.000	245.517
245.200	245.718
245.400	245.918
245.600	246.119
245.800	246.319
246.000	246.519
246.200	246.720
246.400	246.920
246.600	247.121
246.800	247.321
247.000	247.522
247.200	247.722
247.400	247.922
247.600	248.123
247.800	248.323



248.000	248.524
248.200	248.724
248.400	248.925
248.600	249.125
248.800	249.326
249.000	249.526
249.200	249.726
249.400	249.927
249.600	250.128
249.800	250.328
250.000	250.529
250.200	250.730
250.400	250.931
250.600	251.132
250.800	251.332
251.000	251.533
251.200	251.734
251.400	251.935
251.600	252.136
251.800	252.337



252.000	252.537
252.200	252.738
252.400	252.939
252.600	253.140
252.800	253.341
253.000	253.542
253.200	253.742
253.400	253.943
253.600	254.144
253.800	254.345
254.000	254.546
254.200	254.747
254.400	254.947
254.600	255.148
254.800	255.349
255.000	255.550
255.200	255.751
255.400	255.952
255.600	256.152
255.800	256.353

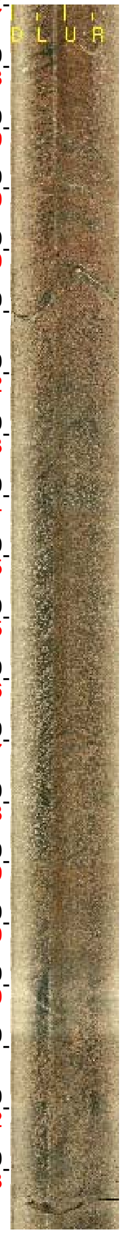
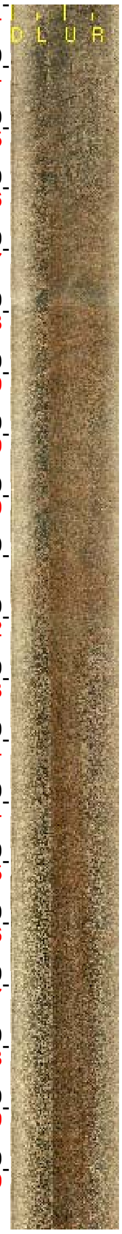
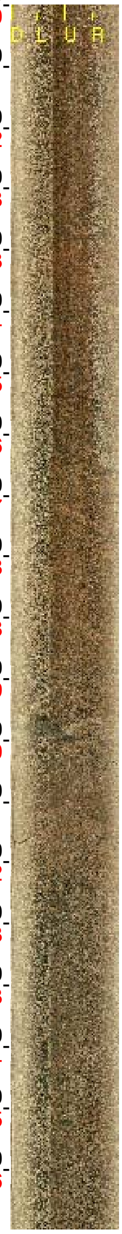


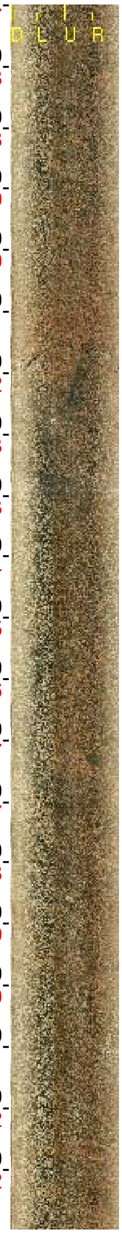
256.000	256.554
256.200	256.755
256.400	256.956
256.600	257.156
256.800	257.357
257.000	257.558
257.200	257.759
257.400	257.960
257.600	258.161
257.800	258.361
258.000	258.562
258.200	258.763
258.400	258.964
258.600	259.165
258.800	259.366
259.000	259.566
259.200	259.767
259.400	259.968
259.600	260.169
259.800	260.370

Printed: 2006-06-13 14:33:43   Scale: 1 : 20   Aspect: 150 %   9 (19)

Borehole: KLX20A
Mapping: KLX20A_GRJE

Depth range: 260.000 - 280.000 m
Azimuth: 272.9
Inclination: -48.2

260.000 / 260.571		264.000 / 264.587		268.000 / 268.604		272.000 / 272.620		276.000 / 276.637
260.200 / 260.771		264.200 / 264.788		268.200 / 268.804		272.200 / 272.821		276.200 / 276.838
260.400 / 260.972		264.400 / 264.989		268.400 / 269.005		272.400 / 273.022		276.400 / 277.038
260.600 / 261.173		264.600 / 265.190		268.600 / 269.206		272.600 / 273.223		276.600 / 277.239
260.800 / 261.374		264.800 / 265.390		268.800 / 269.407		272.800 / 273.423		276.800 / 277.440
261.000 / 261.575		265.000 / 265.591		269.000 / 269.608		273.000 / 273.624		277.000 / 277.641
261.200 / 261.776		265.200 / 265.792		269.200 / 269.809		273.200 / 273.825		277.200 / 277.842
261.400 / 261.976		265.400 / 265.993		269.400 / 270.009		273.400 / 274.026		277.400 / 278.043
261.600 / 262.177		265.600 / 266.194		269.600 / 270.210		273.600 / 274.227		277.600 / 278.243
261.800 / 262.378		265.800 / 266.395		269.800 / 270.411		273.800 / 274.428		277.800 / 278.444
262.000 / 262.579		266.000 / 266.595		270.000 / 270.612		274.000 / 274.628		278.000 / 278.645
262.200 / 262.780		266.200 / 266.796		270.200 / 270.813		274.200 / 274.829		278.200 / 278.846
262.400 / 262.980		266.400 / 266.997		270.400 / 271.014		274.400 / 275.030		278.400 / 279.047
262.600 / 263.181		266.600 / 267.198		270.600 / 271.214		274.600 / 275.231		278.600 / 279.247
262.800 / 263.382		266.800 / 267.399		270.800 / 271.415		274.800 / 275.432		278.800 / 279.448
263.000 / 263.583		267.000 / 267.600		271.000 / 271.616		275.000 / 275.633		279.000 / 279.649
263.200 / 263.784		267.200 / 267.800		271.200 / 271.817		275.200 / 275.833		279.200 / 279.850
263.400 / 263.985		267.400 / 268.001		271.400 / 272.018		275.400 / 276.034		279.400 / 280.051
263.600 / 264.185		267.600 / 268.202		271.600 / 272.219		275.600 / 276.235		279.600 / 280.252
263.800 / 264.386		267.800 / 268.403		271.800 / 272.419		275.800 / 276.436		279.800 / 280.452

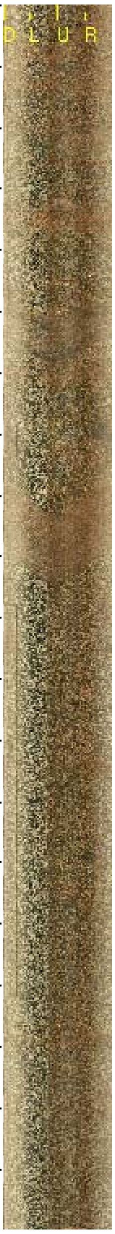


Printed: 2006-06-13 14:33:43 Scale: 1 : 20 Aspect: 150 % 10 (19)

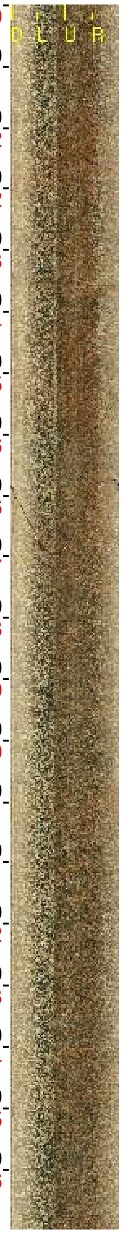
Borehole: KLX20A
Mapping: KLX20A_GRJE

Depth range: 280.000 - 300.000 m
Azimuth: 273.4
Inclination: -47.8

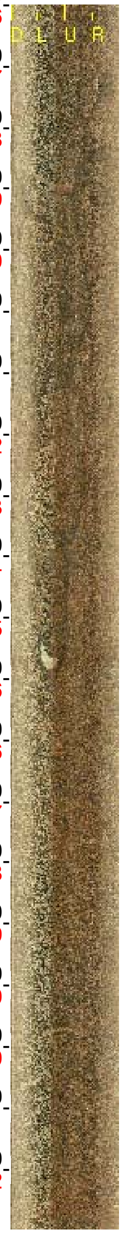
280.000	280.653
280.200	280.854
280.400	281.055
280.600	281.256
280.800	281.457
281.000	281.657
281.200	281.858
281.400	282.059
281.600	282.260
281.800	282.461
282.000	282.662
282.200	282.862
282.400	283.063
282.600	283.264
282.800	283.465
283.000	283.666
283.200	283.867
283.400	284.067
283.600	284.268
283.800	284.469



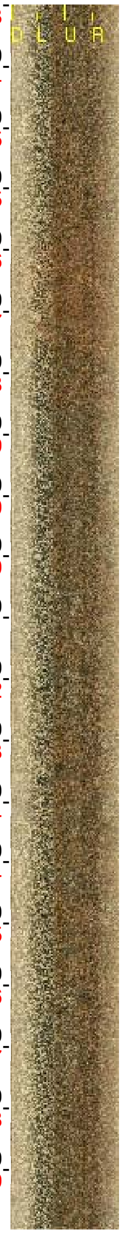
284.000	284.670
284.200	284.871
284.400	285.072
284.600	285.272
284.800	285.473
285.000	285.674
285.200	285.875
285.400	286.076
285.600	286.276
285.800	286.477
286.000	286.678
286.200	286.879
286.400	287.080
286.600	287.281
286.800	287.481
287.000	287.682
287.200	287.883
287.400	288.084
287.600	288.285
287.800	288.486



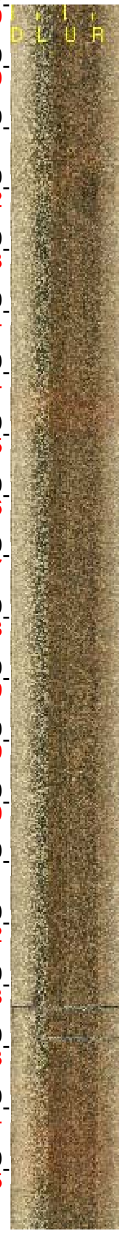
288.000	288.686
288.200	288.887
288.400	289.088
288.600	289.289
288.800	289.490
289.000	289.691
289.200	289.891
289.400	290.092
289.600	290.293
289.800	290.494
290.000	290.695
290.200	290.896
290.400	291.096
290.600	291.297
290.800	291.498
291.000	291.699
291.200	291.900
291.400	292.100
291.600	292.301
291.800	292.502



292.000	292.703
292.200	292.904
292.400	293.105
292.600	293.305
292.800	293.506
293.000	293.707
293.200	293.908
293.400	294.109
293.600	294.310
293.800	294.510
294.000	294.711
294.200	294.912
294.400	295.113
294.600	295.314
294.800	295.514
295.000	295.715
295.200	295.916
295.400	296.117
295.600	296.318
295.800	296.519



296.000	296.719
296.200	296.920
296.400	297.121
296.600	297.322
296.800	297.523
297.000	297.724
297.200	297.924
297.400	298.125
297.600	298.326
297.800	298.527
298.000	298.728
298.200	298.929
298.400	299.129
298.600	299.330
298.800	299.531
299.000	299.732
299.200	299.933
299.400	300.133
299.600	300.334
299.800	300.535

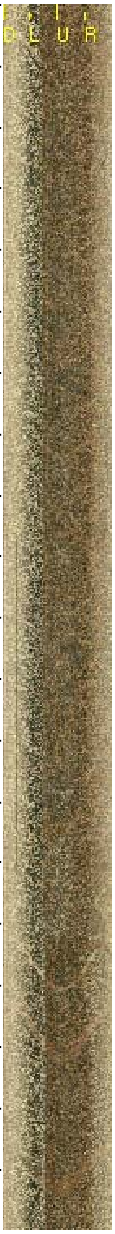


Printed: 2006-06-13 14:33:43 Scale: 1 : 20 Aspect: 150 % 11 (19)

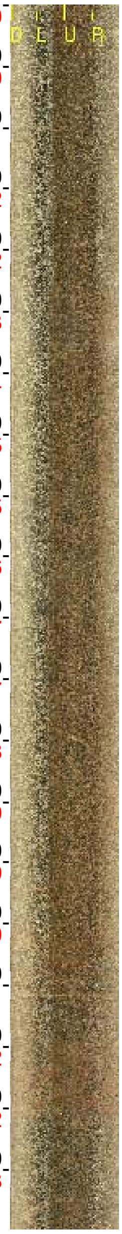
Borehole: KLX20A
Mapping: KLX20A_GRJE

Depth range: 300.000 - 320.000 m
Azimuth: 274.2
Inclination: -47.2

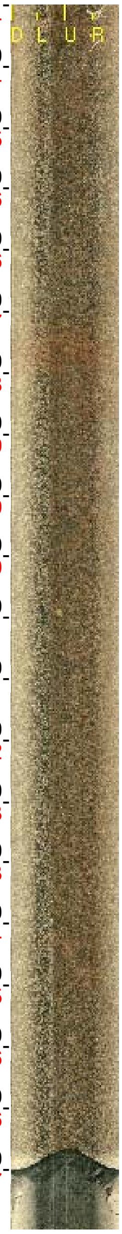
300.000	300.736
300.200	300.936
300.400	301.137
300.600	301.338
300.800	301.538
301.000	301.739
301.200	301.940
301.400	302.140
301.600	302.341
301.800	302.542
302.000	302.743
302.200	302.943
302.400	303.144
302.600	303.345
302.800	303.545
303.000	303.746
303.200	303.947
303.400	304.148
303.600	304.348
303.800	304.549



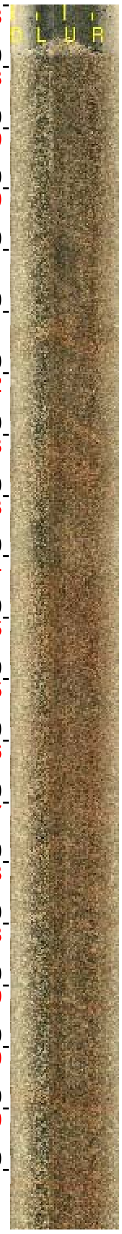
304.000	304.750
304.200	304.950
304.400	305.151
304.600	305.352
304.800	305.552
305.000	305.753
305.200	305.954
305.400	306.155
305.600	306.355
305.800	306.556
306.000	306.757
306.200	306.957
306.400	307.158
306.600	307.359
306.800	307.559
307.000	307.760
307.200	307.961
307.400	308.162
307.600	308.362
307.800	308.563



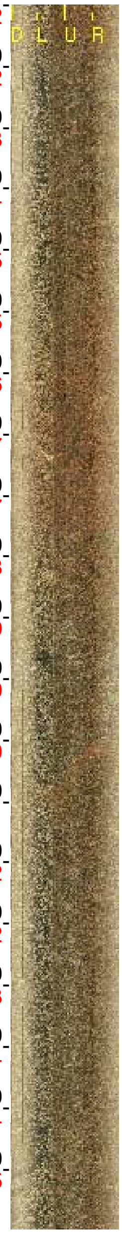
308.000	308.764
308.200	308.964
308.400	309.165
308.600	309.366
308.800	309.566
309.000	309.767
309.200	309.968
309.400	310.169
309.600	310.369
309.800	310.570
310.000	310.771
310.200	310.971
310.400	311.172
310.600	311.373
310.800	311.573
311.000	311.774
311.200	311.975
311.400	312.176
311.600	312.376
311.800	312.577



312.000	312.778
312.200	312.978
312.400	313.179
312.600	313.380
312.800	313.581
313.000	313.781
313.200	313.982
313.400	314.183
313.600	314.383
313.800	314.584
314.000	314.785
314.200	314.985
314.400	315.186
314.600	315.387
314.800	315.588
315.000	315.788
315.200	315.989
315.400	316.190
315.600	316.390
315.800	316.591



316.000	316.792
316.200	316.992
316.400	317.193
316.600	317.394
316.800	317.595
317.000	317.795
317.200	317.996
317.400	318.197
317.600	318.397
317.800	318.598
318.000	318.799
318.200	319.000
318.400	319.200
318.600	319.401
318.800	319.602
319.000	319.802
319.200	320.003
319.400	320.204
319.600	320.404
319.800	320.605



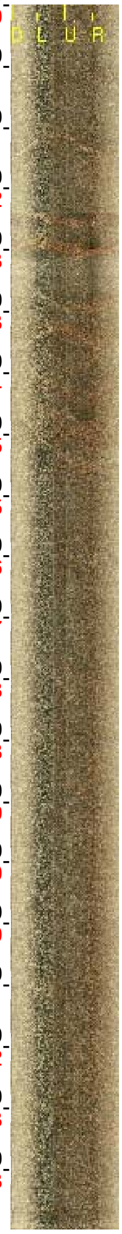
Printed: 2006-06-13 14:33:43   Scale: 1 : 20   Aspect: 150 %   12 (19)

Borehole: KLX20A
Mapping: KLX20A_GRJE

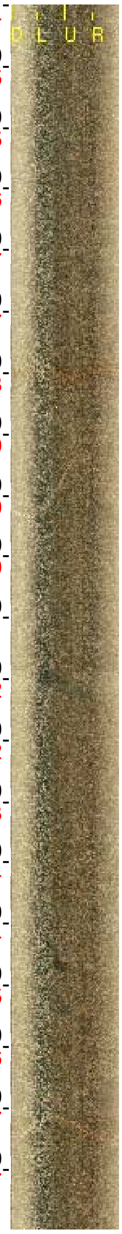
Depth range: 320.000 - 340.000 m
Azimuth: 274.7
Inclination: -46.3

320.000	320.806
320.200	321.007
320.400	321.207
320.600	321.408
320.800	321.609
321.000	321.809
321.200	322.010
321.400	322.211
321.600	322.411
321.800	322.612
322.000	322.813
322.200	323.014
322.400	323.214
322.600	323.415
322.800	323.616
323.000	323.816
323.200	324.017
323.400	324.218
323.600	324.418
323.800	324.619

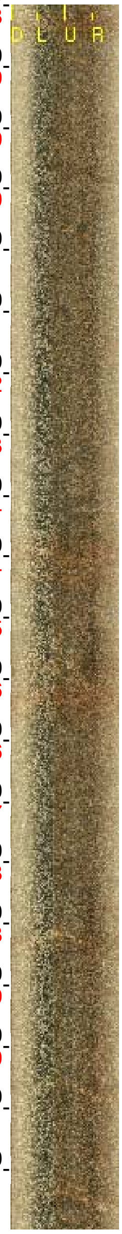
324.000	324.820
324.200	325.021
324.400	325.221
324.600	325.422
324.800	325.623
325.000	325.823
325.200	326.024
325.400	326.225
325.600	326.425
325.800	326.626
326.000	326.827
326.200	327.028
326.400	327.228
326.600	327.429
326.800	327.630
327.000	327.830
327.200	328.031
327.400	328.232
327.600	328.433
327.800	328.633



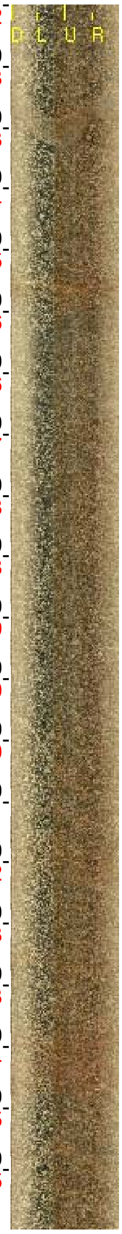
328.000	328.834
328.200	329.035
328.400	329.235
328.600	329.436
328.800	329.637
329.000	329.837
329.200	330.038
329.400	330.239
329.600	330.440
329.800	330.640
330.000	330.841
330.200	331.042
330.400	331.242
330.600	331.443
330.800	331.644
331.000	331.844
331.200	332.045
331.400	332.246
331.600	332.447
331.800	332.647



332.000	332.848
332.200	333.049
332.400	333.249
332.600	333.450
332.800	333.651
333.000	333.851
333.200	334.052
333.400	334.253
333.600	334.454
333.800	334.654
334.000	334.855
334.200	335.056
334.400	335.256
334.600	335.457
334.800	335.658
335.000	335.858
335.200	336.059
335.400	336.260
335.600	336.461
335.800	336.661



336.000	336.862
336.200	337.063
336.400	337.263
336.600	337.464
336.800	337.665
337.000	337.866
337.200	338.066
337.400	338.267
337.600	338.468
337.800	338.668
338.000	338.869
338.200	339.070
338.400	339.270
338.600	339.471
338.800	339.672
339.000	339.873
339.200	340.073
339.400	340.274
339.600	340.475
339.800	340.675

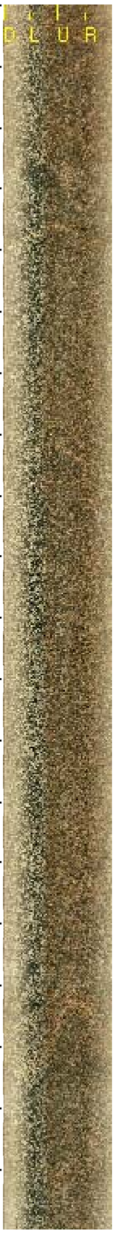


Printed: 2006-06-13 14:33:43 Scale: 1 : 20 Aspect: 150 % 13 (19)

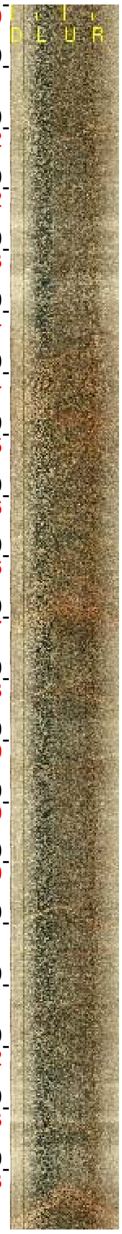
Borehole: KLX20A
Mapping: KLX20A_GRJE

Depth range: 340.000 - 360.000 m
Azimuth: 275.7
Inclination: -45.3

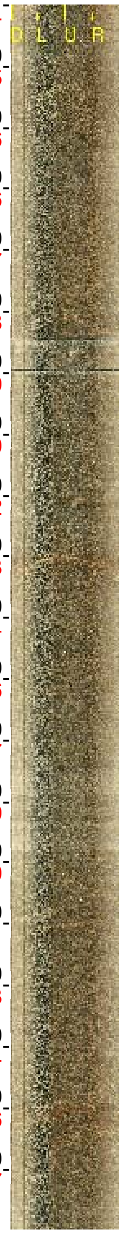
340.000	340.876
340.200	341.077
340.400	341.277
340.600	341.478
340.800	341.679
341.000	341.880
341.200	342.080
341.400	342.281
341.600	342.482
341.800	342.682
342.000	342.883
342.200	343.084
342.400	343.284
342.600	343.485
342.800	343.686
343.000	343.887
343.200	344.087
343.400	344.288
343.600	344.489
343.800	344.689



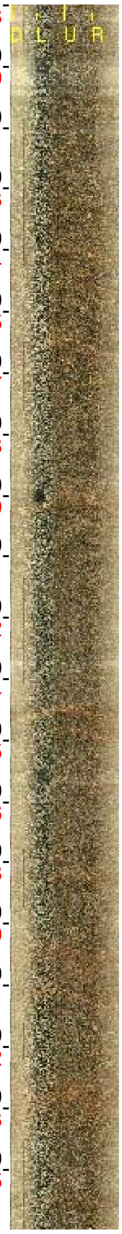
344.000	344.890
344.200	345.091
344.400	345.292
344.600	345.492
344.800	345.693
345.000	345.894
345.200	346.094
345.400	346.295
345.600	346.496
345.800	346.696
346.000	346.897
346.200	347.098
346.400	347.299
346.600	347.499
346.800	347.700
347.000	347.901
347.200	348.101
347.400	348.302
347.600	348.503
347.800	348.703



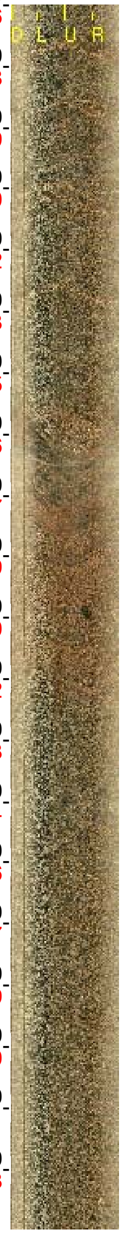
348.000	348.904
348.200	349.105
348.400	349.306
348.600	349.506
348.800	349.707
349.000	349.908
349.200	350.109
349.400	350.310
349.600	350.512
349.800	350.713
350.000	350.914
350.200	351.116
350.400	351.317
350.600	351.519
350.800	351.720
351.000	351.921
351.200	352.123
351.400	352.324
351.600	352.526
351.800	352.727



352.000	352.928
352.200	353.130
352.400	353.331
352.600	353.533
352.800	353.734
353.000	353.935
353.200	354.137
353.400	354.338
353.600	354.539
353.800	354.741
354.000	354.942
354.200	355.144
354.400	355.345
354.600	355.546
354.800	355.748
355.000	355.949
355.200	356.151
355.400	356.352
355.600	356.553
355.800	356.755



356.000	356.956
356.200	357.158
356.400	357.359
356.600	357.560
356.800	357.762
357.000	357.963
357.200	358.165
357.400	358.366
357.600	358.567
357.800	358.769
358.000	358.970
358.200	359.172
358.400	359.373
358.600	359.574
358.800	359.776
359.000	359.977
359.200	360.179
359.400	360.380
359.600	360.581
359.800	360.783

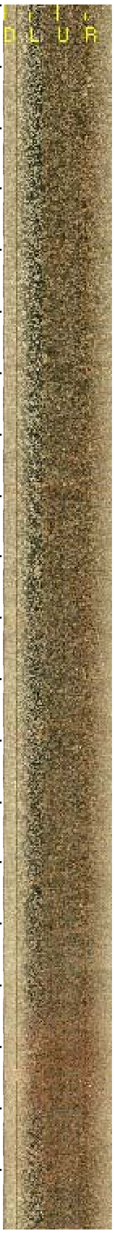


Printed: 2006-06-13 14:33:43 Scale: 1 : 20 Aspect: 150 % 14 (19)

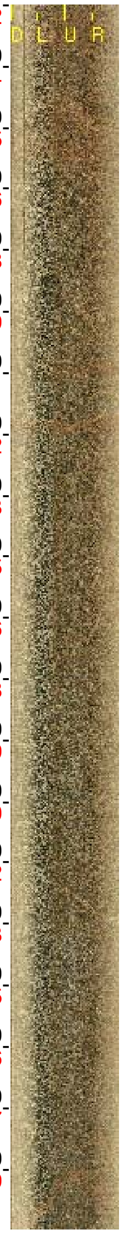
Borehole: KLX20A
Mapping: KLX20A_GRJE

Depth range: 360.000 - 380.000 m
Azimuth: 276.7
Inclination: -44.7

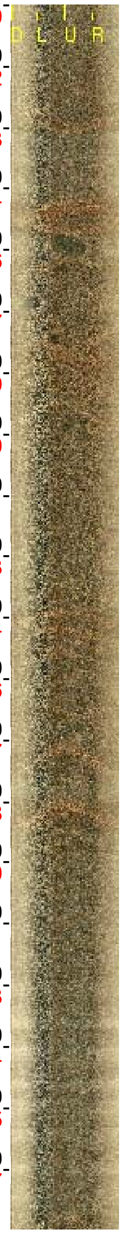
360.000	360.984
360.200	361.186
360.400	361.387
360.600	361.588
360.800	361.790
361.000	361.991
361.200	362.193
361.400	362.394
361.600	362.595
361.800	362.797
362.000	362.998
362.200	363.200
362.400	363.401
362.600	363.602
362.800	363.804
363.000	364.005
363.200	364.207
363.400	364.408
363.600	364.609
363.800	364.811



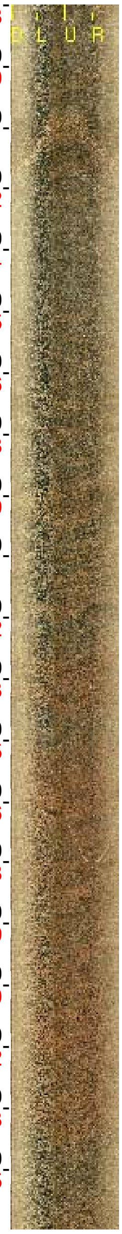
364.000	365.012
364.200	365.214
364.400	365.415
364.600	365.616
364.800	365.818
365.000	366.019
365.200	366.221
365.400	366.422
365.600	366.623
365.800	366.825
366.000	367.026
366.200	367.228
366.400	367.429
366.600	367.630
366.800	367.832
367.000	368.033
367.200	368.235
367.400	368.436
367.600	368.637
367.800	368.839



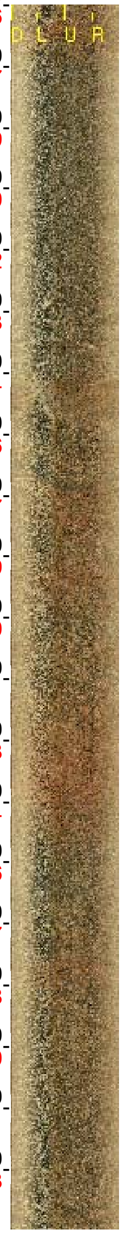
368.000	369.040
368.200	369.242
368.400	369.443
368.600	369.644
368.800	369.846
369.000	370.047
369.200	370.249
369.400	370.450
369.600	370.651
369.800	370.853
370.000	371.054
370.200	371.256
370.400	371.457
370.600	371.658
370.800	371.860
371.000	372.061
371.200	372.263
371.400	372.464
371.600	372.665
371.800	372.867



372.000	373.068
372.200	373.270
372.400	373.471
372.600	373.672
372.800	373.874
373.000	374.075
373.200	374.276
373.400	374.478
373.600	374.679
373.800	374.881
374.000	375.082
374.200	375.283
374.400	375.485
374.600	375.686
374.800	375.888
375.000	376.089
375.200	376.290
375.400	376.492
375.600	376.693
375.800	376.895



376.000	377.096
376.200	377.297
376.400	377.499
376.600	377.700
376.800	377.902
377.000	378.103
377.200	378.304
377.400	378.506
377.600	378.707
377.800	378.909
378.000	379.110
378.200	379.311
378.400	379.513
378.600	379.714
378.800	379.916
379.000	380.117
379.200	380.318
379.400	380.520
379.600	380.721
379.800	380.923

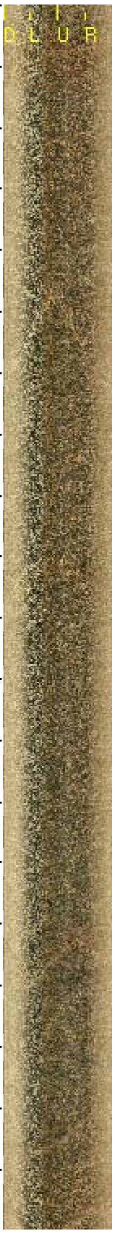


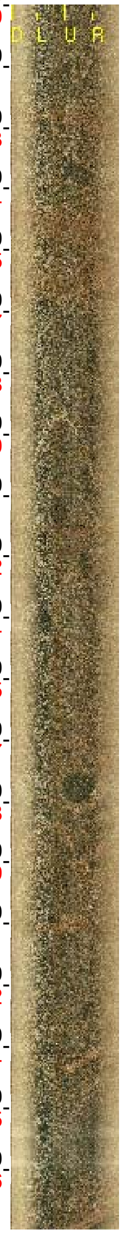
Printed: 2006-06-13 14:33:43 Scale: 1 : 20 Aspect: 150 % 15 (19)

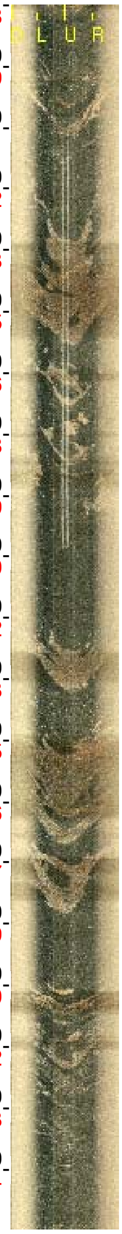
Borehole: KLX20A
Mapping: KLX20A_GRJE

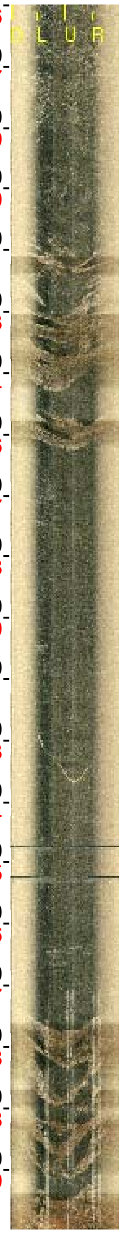
Depth range: 380.000 - 400.000 m
Azimuth: 277.5
Inclination: -44.1

Depth	Red depth	Depth	Red depth	Depth	Red depth	Depth	Red depth	Depth	Red depth
380.000	381.124	384.000	385.152	388.000	389.180	392.000	393.208	396.000	397.236
380.200	381.325	384.200	385.353	388.200	389.381	392.200	393.409	396.200	397.437
380.400	381.527	384.400	385.555	388.400	389.583	392.400	393.611	396.400	397.639
380.600	381.728	384.600	385.756	388.600	389.784	392.600	393.812	396.600	397.840
380.800	381.930	384.800	385.958	388.800	389.985	392.800	394.013	396.800	398.041
381.000	382.131	385.000	386.159	389.000	390.187	393.000	394.215	397.000	398.243
381.200	382.332	385.200	386.360	389.200	390.388	393.200	394.416	397.200	398.444
381.400	382.534	385.400	386.562	389.400	390.590	393.400	394.618	397.400	398.646
381.600	382.735	385.600	386.763	389.600	390.791	393.600	394.819	397.600	398.847
381.800	382.937	385.800	386.965	389.800	390.992	393.800	395.020	397.800	399.048
382.000	383.138	386.000	387.166	390.000	391.194	394.000	395.222	398.000	399.250
382.200	383.339	386.200	387.367	390.200	391.395	394.200	395.423	398.200	399.451
382.400	383.541	386.400	387.569	390.400	391.597	394.400	395.625	398.400	399.653
382.600	383.742	386.600	387.770	390.600	391.798	394.600	395.826	398.600	399.854
382.800	383.944	386.800	387.971	390.800	391.999	394.800	396.027	398.800	400.055
383.000	384.145	387.000	388.173	391.000	392.201	395.000	396.229	399.000	400.256
383.200	384.346	387.200	388.374	391.200	392.402	395.200	396.430	399.200	400.457
383.400	384.548	387.400	388.576	391.400	392.604	395.400	396.632	399.400	400.658
383.600	384.749	387.600	388.777	391.600	392.805	395.600	396.833	399.600	400.858
383.800	384.951	387.800	388.978	391.800	393.006	395.800	397.034	399.800	401.059





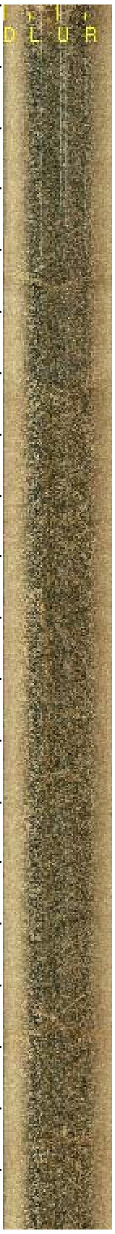




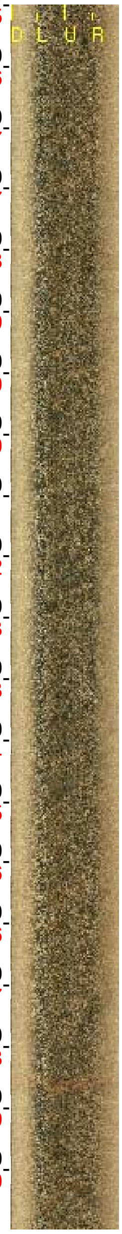
Borehole: KLX20A
Mapping: KLX20A_GRJE

Depth range: 400.000 - 420.000 m
Azimuth: 278.7
Inclination: -43.2

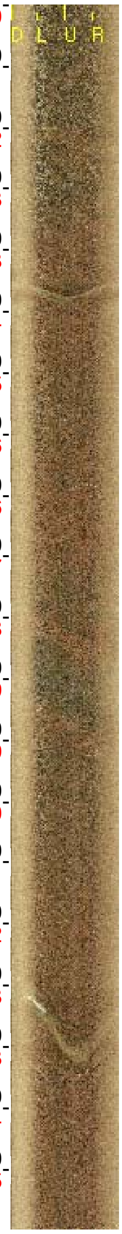
400.000
401.260
400.200
401.461
400.400
401.661
400.600
401.862
400.800
402.063
401.000
402.264
401.200
402.464
401.400
402.665
401.600
402.866
401.800
403.067
402.000
403.267
402.200
403.468
402.400
403.669
402.600
403.870
402.800
404.070
403.000
404.271
403.200
404.472
403.400
404.673
403.600
404.874
403.800
405.074



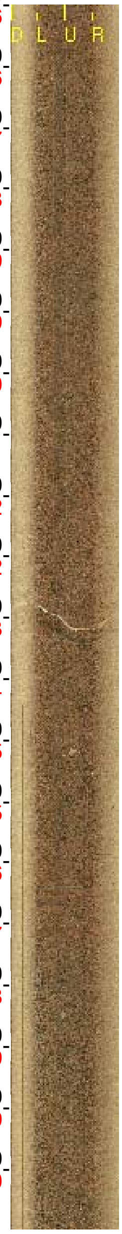
404.000
405.275
404.200
405.476
404.400
405.677
404.600
405.877
404.800
406.078
405.000
406.279
405.200
406.480
405.400
406.680
405.600
406.881
405.800
407.082
406.000
407.283
406.200
407.483
406.400
407.684
406.600
407.885
406.800
408.086
407.000
408.286
407.200
408.487
407.400
408.688
407.600
408.889
407.800
409.090



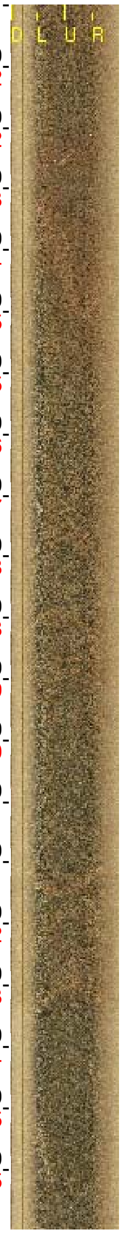
408.000
409.290
408.200
409.491
408.400
409.692
408.600
409.893
408.800
410.093
409.000
410.294
409.200
410.495
409.400
410.696
409.600
410.896
409.800
411.097
410.000
411.298
410.200
411.499
410.400
411.699
410.600
411.900
410.800
412.101
411.000
412.302
411.200
412.503
411.400
412.703
411.600
412.904
411.800
413.105



412.000
413.306
412.200
413.506
412.400
413.707
412.600
413.908
412.800
414.109
413.000
414.309
413.200
414.510
413.400
414.711
413.600
414.912
413.800
415.112
414.000
415.313
414.200
415.514
414.400
415.715
414.600
415.915
414.800
416.116
415.000
416.317
415.200
416.518
415.400
416.719
415.600
416.919
415.800
417.120



416.000
417.321
416.200
417.522
416.400
417.722
416.600
417.923
416.800
418.124
417.000
418.325
417.200
418.525
417.400
418.726
417.600
418.927
417.800
419.128
418.000
419.328
418.200
419.529
418.400
419.730
418.600
419.931
418.800
420.131
419.000
420.332
419.200
420.533
419.400
420.734
419.600
420.935
419.800
421.135

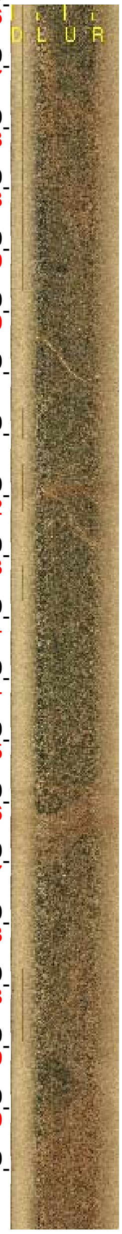


Printed: 2006-06-13 14:33:43 Scale: 1 : 20 Aspect: 150 % 17 (19)

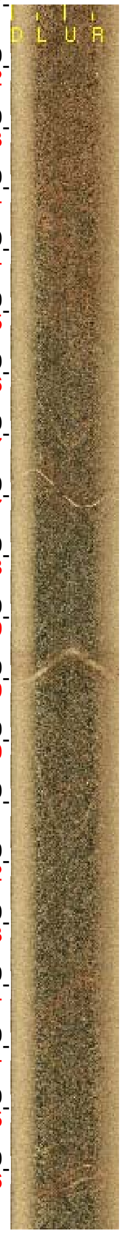
Borehole: KLX20A
Mapping: KLX20A_GRJE

Depth range: 420.000 - 440.000 m
Azimuth: 279.3
Inclination: -42.3

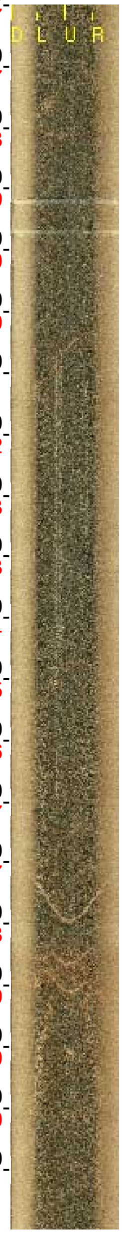
420.000 421.336
420.200 421.537
420.400 421.738
420.600 421.938
420.800 422.139
421.000 422.340
421.200 422.541
421.400 422.741
421.600 422.942
421.800 423.143
422.000 423.344
422.200 423.544
422.400 423.745
422.600 423.946
422.800 424.147
423.000 424.348
423.200 424.548
423.400 424.749
423.600 424.950
423.800 425.151



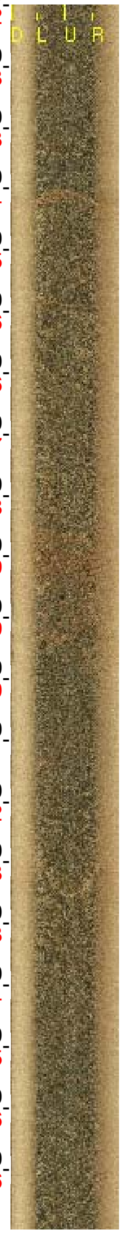
424.000 425.351
424.200 425.552
424.400 425.753
424.600 425.954
424.800 426.154
425.000 426.355
425.200 426.556
425.400 426.757
425.600 426.957
425.800 427.158
426.000 427.359
426.200 427.560
426.400 427.760
426.600 427.961
426.800 428.162
427.000 428.363
427.200 428.564
427.400 428.764
427.600 428.965
427.800 429.166



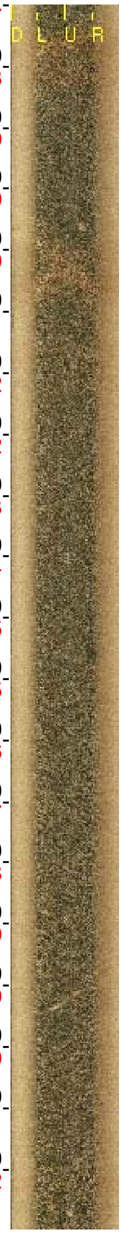
428.000 429.367
428.200 429.567
428.400 429.768
428.600 429.969
428.800 430.170
429.000 430.370
429.200 430.571
429.400 430.772
429.600 430.973
429.800 431.173
430.000 431.374
430.200 431.575
430.400 431.776
430.600 431.977
430.800 432.177
431.000 432.378
431.200 432.579
431.400 432.780
431.600 432.980
431.800 433.181



432.000 433.382
432.200 433.583
432.400 433.783
432.600 433.984
432.800 434.185
433.000 434.386
433.200 434.586
433.400 434.787
433.600 434.988
433.800 435.189
434.000 435.389
434.200 435.590
434.400 435.791
434.600 435.992
434.800 436.193
435.000 436.393
435.200 436.594
435.400 436.795
435.600 436.996
435.800 437.196



436.000 437.397
436.200 437.598
436.400 437.799
436.600 437.999
436.800 438.200
437.000 438.401
437.200 438.602
437.400 438.802
437.600 439.003
437.800 439.204
438.000 439.405
438.200 439.605
438.400 439.806
438.600 440.007
438.800 440.208
439.000 440.409
439.200 440.609
439.400 440.810
439.600 441.011
439.800 441.212

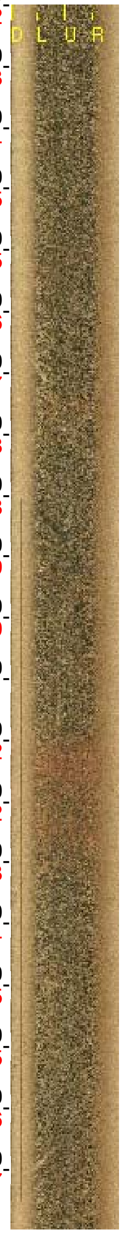


Printed: 2006-06-13 14:33:43   Scale: 1 : 20   Aspect: 150 %   18 (19)

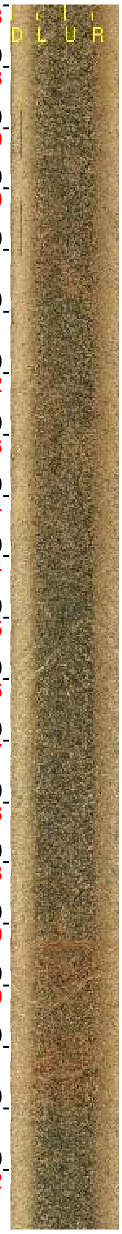
Borehole: KLX20A
Mapping: KLX20A_GRJE

Depth range: 440.000 - 455.712 m
Azimuth: 280.2
Inclination: -41.3

440.000
441.412
440.200
441.613
440.400
441.814
440.600
442.015
440.800
442.215
441.000
442.416
441.200
442.617
441.400
442.818
441.600
443.018
441.800
443.219
442.000
443.420
442.200
443.621
442.400
443.822
442.600
444.022
442.800
444.223
443.000
444.424
443.200
444.625
443.400
444.825
443.600
445.026
443.800
445.227



444.000
445.428
444.200
445.628
444.400
445.829
444.600
446.030
444.800
446.231
445.000
446.431
445.200
446.632
445.400
446.833
445.600
447.034
445.800
447.234
446.000
447.435
446.200
447.636
446.400
447.837
446.600
448.038
446.800
448.238
447.000
448.439
447.200
448.640
447.400
448.841
447.600
449.041
447.800
449.242



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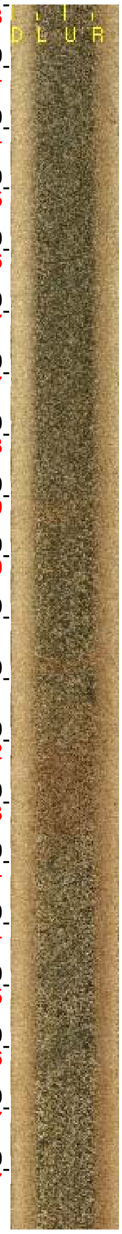

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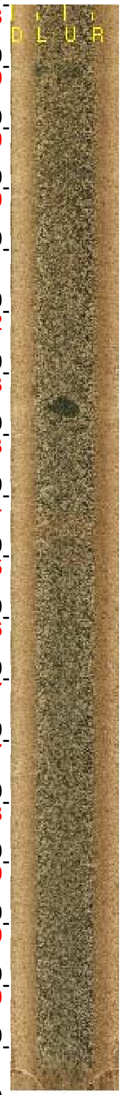

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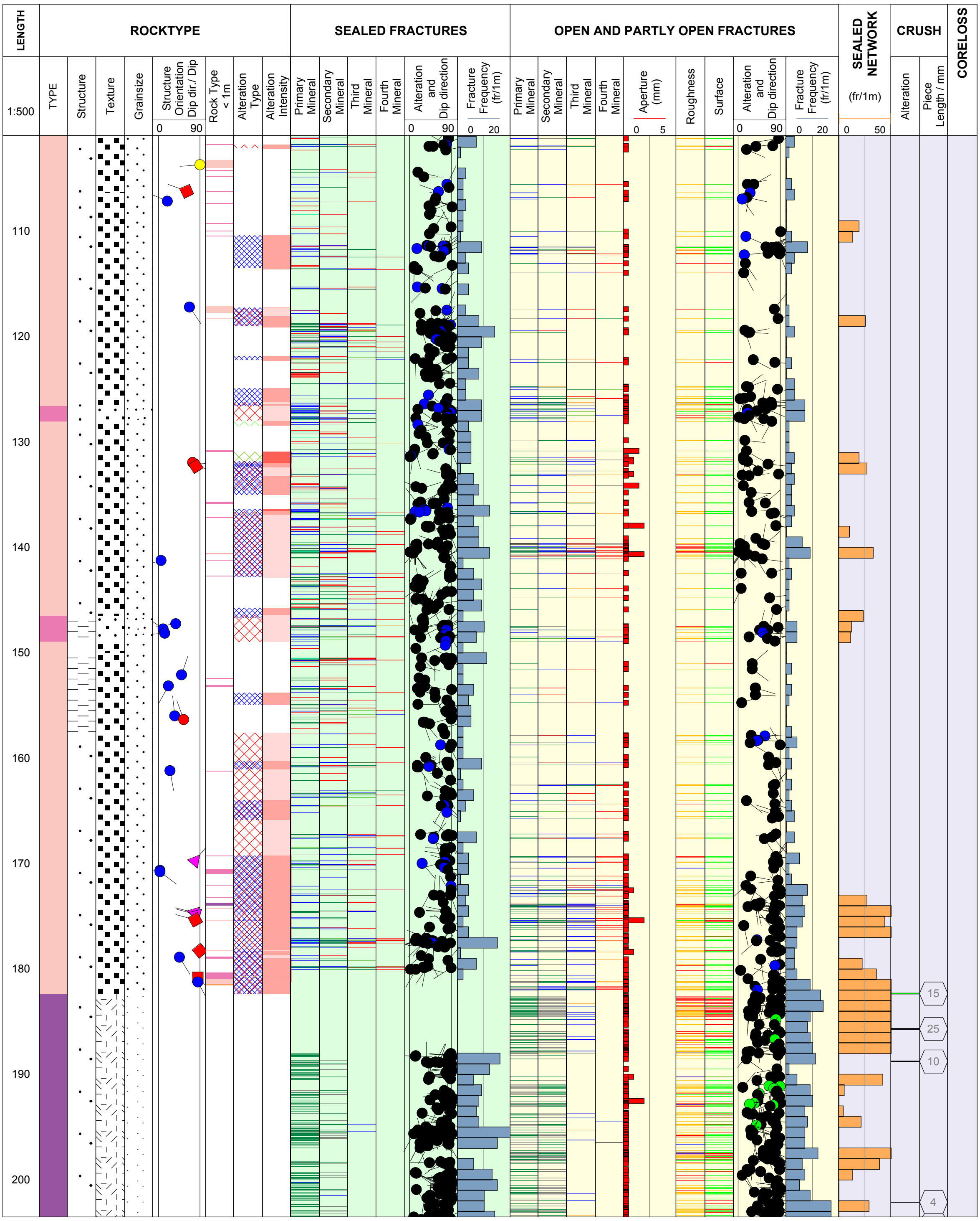
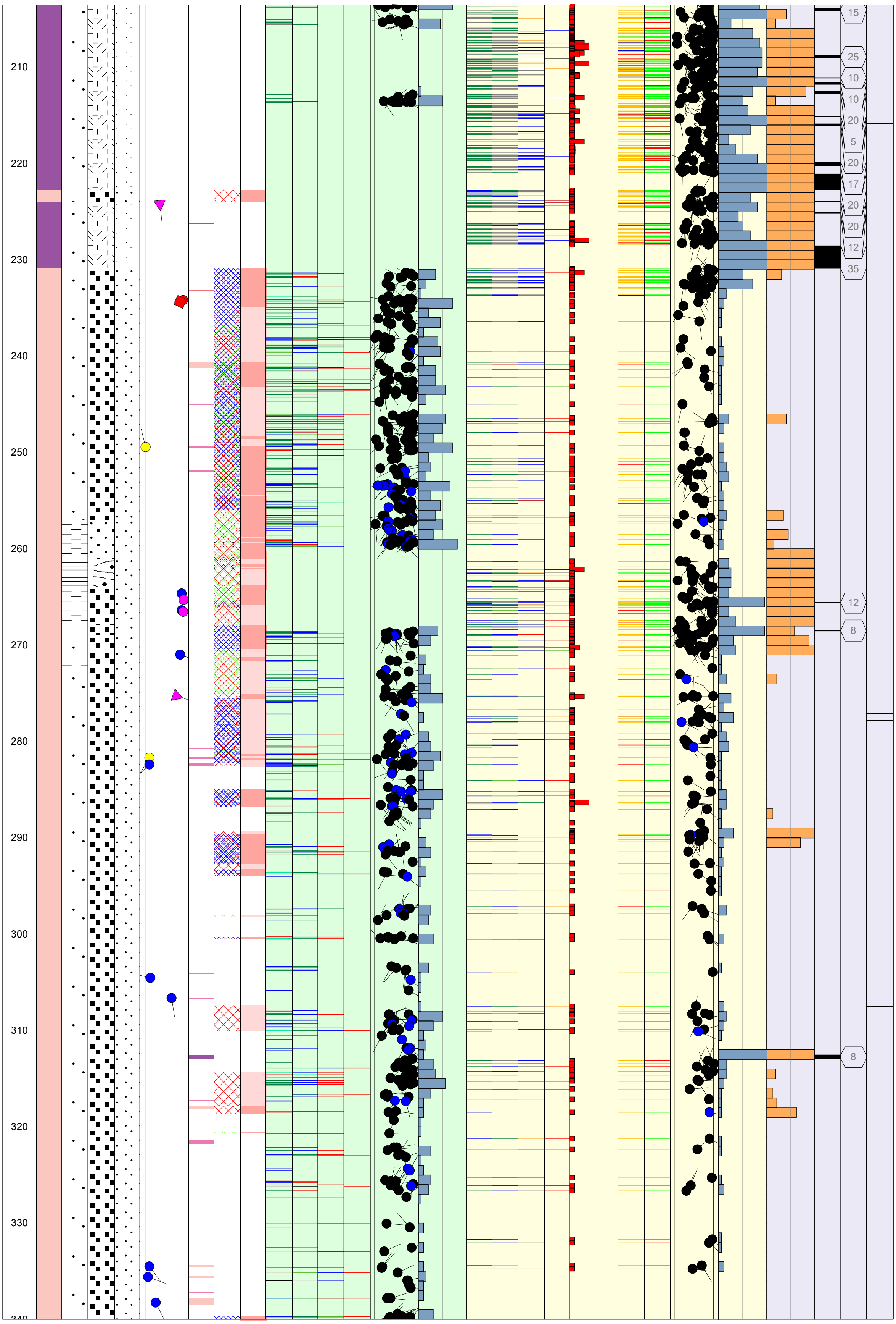
WellCad diagram for KLX20A

Title GEOLOGY IN KLX20A **Appendix:**

Site	LAXEMAR	**Coordinate System**	RT90-RHB70
Borehole	KLX20A	**Northing [m]**	6366334.57
Diameter [mm]	76	**Easting [m]**	1546604.89
Length [m]	457.920	**Elevation [m.a.s.l.]**	27.24
Bearing [°]	270.60	**Drilling Start Date**	2006-03-25 06:00:00
Inclination [°]	-50.02	**Drilling Stop Date**	2006-04-24 13:20:00
Date of coremapping	2006-05-29 08:59:00	**Plot Date**	2007-10-25 22:03:45
Rocktype data from	p_rock	**Signed data**	

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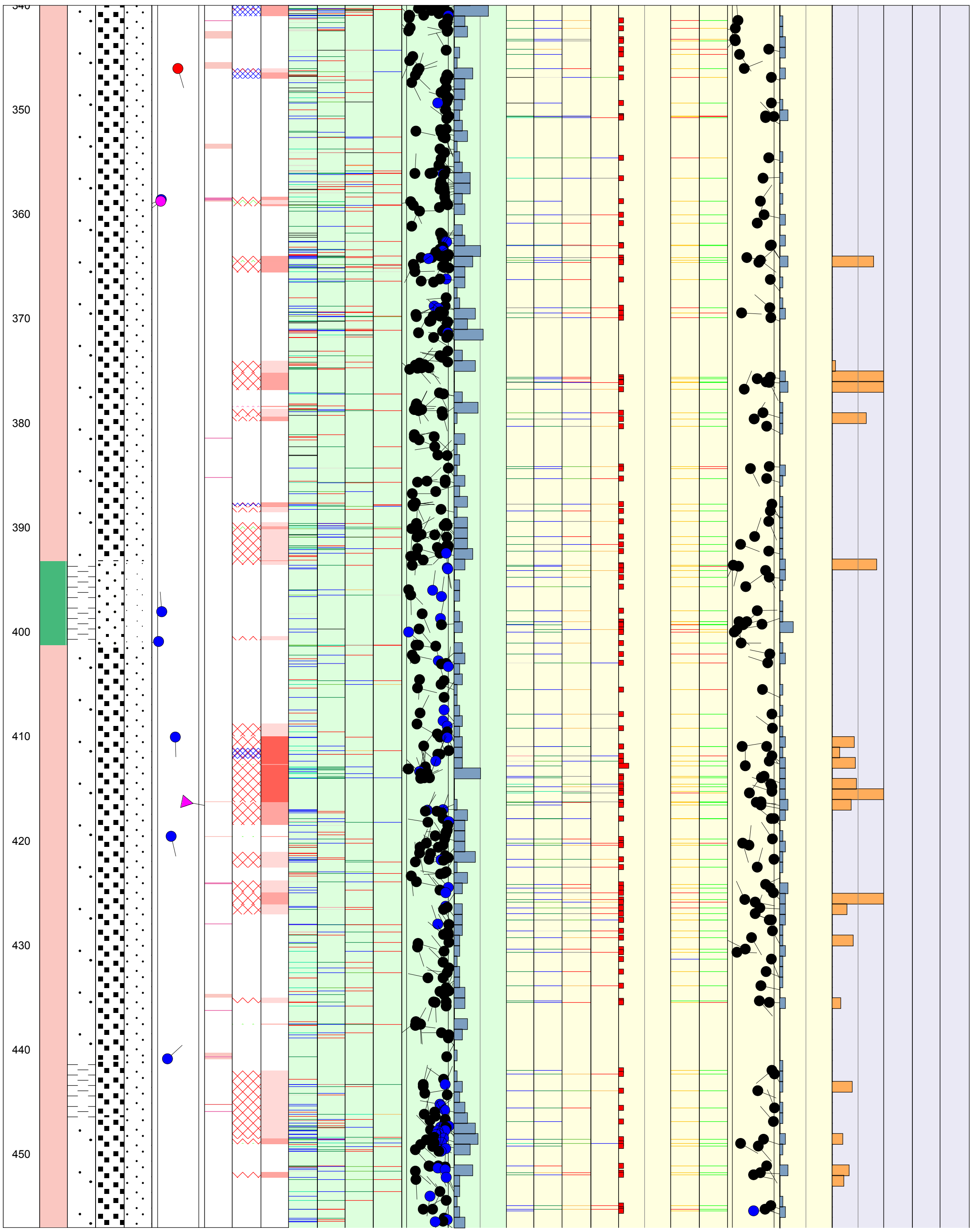
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Legend to WellCad diagram for KLX20A

Title LEGEND FOR LAXEMAR KLX20A

Site	LAXEMAR
Borehole	KLX20A
Plot Date	2007-10-25 22:03:45
Signed data	

ROCKTYPE LAXEMAR

- 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

ROCK ALTERATION TYPE

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

MINERAL

- Biotite
- Epidote
- White Feldspar
- Hematite
- Calcite
- Chlorite
- Quartz
- Red Feldspar
- Pyrite
- Clay Minerals
- Laumontite
- Prehnite

STRUCTURE

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

TEXTURE

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

GRAINSIZE

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

STRUCTURE ORIENTATION

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

ROCK ALTERATION 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

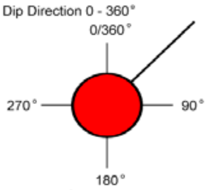
FRACTURE ALTERATION

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

FRACTURE DIRECTION

STRUKTURE ORIENTATION

Dip Direction 0 - 360°



Dip 0 - 90°

In-data: Borehole length and diameter for KLX20A

Hole diam T – Drilling: Borehole diameter

KLX20A, 2006-03-25 06:00:00 – 2006-04-24 13:20:00 (99.910 – 457.920 m)

Sub secup (m)	Sub seclow (m)	Hole diam (m)	Comment
99.910	100.900	0.0860	
100.900	457.920	0.0758	

Printout from SICADA 2006-05-30 11:31:08.

In-data: Reference marks for length adjustments for KLX20A

Reference mark T – Reference mark in drillhole

KLX20A, 2006-04-29 14:30:00 – 2006-04-30 13:30:00 (110.000 – 430.000 m)

Bhlen (m)	Rotation speed (rpm)	Start flow (l/min)	Stop flow (l/min)	Stop pressure (bar)	Cutter time (s)	Trace detectable	Cutter diameter (mm)	Comment
110.00	400.00	350		42.0	159	Yes		
150.00	400.00	400		44.0	211	Yes		
200.00	400.00	400		44.0	190	Yes		
250.00	400.00	400		42.0	213	Yes		
300.00	400.00	400		40.0	239	Yes		
350.00	400.00	400		42.0	193	Yes		
400.00	400.00	400		44.0	202	Yes		
430.00	400.00	400		44.0	208	Yes		Släppte kulan 10:10

Printout from SICADA 2006-05-15 16:46:39.

Appendix 8

In-data: Borehole deviation data for KLX20A

SICADA - object_location

Idcode	Coord System	Northing (m)	Easting (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
KLX20A	RT90-RHB70	6366334.57	1546604.89	27.24	0.00	0.00	-50.03	270.60	0.720	0.605	0.00	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366334.59	1546602.96	24.94	3.00	2.30	-50.03	270.60	0.720	0.605	0.04	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366334.61	1546601.03	22.64	6.00	4.60	-50.02	270.60	0.720	0.605	0.08	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366334.63	1546599.11	20.35	9.00	6.90	-49.98	270.64	0.720	0.605	0.11	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366334.66	1546597.18	18.05	12.00	9.19	-49.96	270.73	0.720	0.605	0.15	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366334.68	1546595.25	15.75	15.00	11.49	-49.96	270.78	0.720	0.605	0.19	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366334.71	1546593.32	13.45	18.00	13.79	-50.06	270.81	0.720	0.605	0.23	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366334.73	1546591.39	11.15	21.00	16.09	-50.10	270.82	0.720	0.605	0.26	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366334.76	1546589.47	8.85	24.00	18.39	-50.17	270.82	0.720	0.605	0.30	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366334.79	1546587.55	6.55	27.00	20.70	-50.20	270.82	0.720	0.605	0.34	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366334.82	1546585.63	4.24	30.00	23.00	-50.23	270.84	0.720	0.605	0.38	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366334.85	1546583.71	1.93	33.00	25.31	-50.28	270.87	0.720	0.605	0.41	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366334.88	1546581.80	-0.37	36.00	27.62	-50.33	270.93	0.720	0.605	0.45	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366334.91	1546579.88	-2.69	39.00	29.93	-50.41	271.04	0.720	0.605	0.49	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366334.94	1546577.97	-5.00	42.00	32.24	-50.46	271.10	0.720	0.605	0.53	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366334.98	1546576.06	-7.31	45.00	34.55	-50.45	271.14	0.720	0.605	0.57	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.02	1546574.15	-9.62	48.00	36.87	-50.45	271.14	0.720	0.605	0.60	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.06	1546572.24	-11.94	51.00	39.18	-50.47	271.12	0.720	0.605	0.64	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.09	1546570.34	-14.25	54.00	41.49	-50.50	271.06	0.720	0.605	0.68	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.13	1546568.43	-16.57	57.00	43.81	-50.55	270.99	0.720	0.605	0.72	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.16	1546566.52	-18.89	60.00	46.13	-50.56	270.99	0.720	0.605	0.75	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.19	1546564.62	-21.20	63.00	48.44	-50.57	271.02	0.720	0.605	0.79	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.23	1546562.71	-23.52	66.00	50.76	-50.62	271.06	0.720	0.605	0.83	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.26	1546560.81	-25.84	69.00	53.08	-50.64	271.06	0.720	0.605	0.87	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.30	1546558.91	-28.16	72.00	55.40	-50.66	271.07	0.720	0.605	0.90	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.34	1546557.01	-30.48	75.00	57.72	-50.67	271.13	0.720	0.605	0.94	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.37	1546555.11	-32.80	78.00	60.04	-50.69	271.13	0.720	0.605	0.98	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.41	1546553.21	-35.12	81.00	62.36	-50.69	271.08	0.720	0.605	1.02	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.44	1546551.31	-37.44	84.00	64.68	-50.70	270.97	0.720	0.605	1.06	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.48	1546549.41	-39.76	87.00	67.01	-50.71	270.97	0.720	0.605	1.09	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.51	1546547.51	-42.09	90.00	69.33	-50.75	271.00	0.720	0.605	1.13	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.54	1546545.61	-44.41	93.00	71.65	-50.66	271.03	0.720	0.605	1.17	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.58	1546543.71	-46.73	96.00	73.97	-50.73	271.08	0.720	0.605	1.21	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.61	1546541.81	-49.05	99.00	76.29	-50.70	271.13	0.720	0.605	1.24	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.65	1546539.91	-51.37	102.00	78.62	-50.70	271.18	0.720	0.605	1.28	Measured	2007-01-17 10:52

KLX20A	RT90-RHB70	6366335.69	1546538.01	-53.69	105.00	80.94	-50.63	271.21	0.720	0.605	1.32	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.73	1546536.11	-56.01	108.00	83.25	-50.63	271.22	0.720	0.605	1.36	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.77	1546534.20	-58.33	111.00	85.57	-50.61	271.24	0.720	0.605	1.39	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.81	1546532.30	-60.65	114.00	87.89	-50.59	271.26	0.720	0.605	1.43	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.86	1546530.39	-62.97	117.00	90.21	-50.54	271.30	0.720	0.605	1.47	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.90	1546528.49	-65.28	120.00	92.52	-50.50	271.38	0.720	0.605	1.51	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366335.95	1546526.58	-67.60	123.00	94.84	-50.39	271.51	0.720	0.605	1.55	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366336.00	1546524.66	-69.90	126.00	97.15	-50.27	271.61	0.720	0.605	1.58	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366336.06	1546522.74	-72.21	129.00	99.45	-50.16	271.67	0.720	0.605	1.62	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366336.11	1546520.82	-74.51	132.00	101.75	-50.05	271.71	0.720	0.605	1.66	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366336.17	1546518.89	-76.81	135.00	104.05	-49.95	271.77	0.720	0.605	1.70	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366336.23	1546516.96	-79.10	138.00	106.35	-49.84	271.89	0.720	0.605	1.73	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366336.30	1546515.03	-81.39	141.00	108.64	-49.73	272.11	0.720	0.605	1.77	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366336.37	1546513.09	-83.68	144.00	110.92	-49.61	272.24	0.720	0.605	1.81	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366336.45	1546511.14	-85.97	147.00	113.21	-49.53	272.20	0.720	0.605	1.85	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366336.52	1546509.19	-88.25	150.00	115.49	-49.45	272.24	0.720	0.605	1.88	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366336.60	1546507.24	-90.52	153.00	117.77	-49.36	272.26	0.720	0.605	1.92	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366336.68	1546505.29	-92.80	156.00	120.04	-49.27	272.32	0.720	0.605	1.96	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366336.76	1546503.33	-95.07	159.00	122.31	-49.18	272.39	0.720	0.605	2.00	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366336.84	1546501.37	-97.34	162.00	124.58	-49.09	272.52	0.720	0.605	2.04	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366336.93	1546499.41	-99.60	165.00	126.85	-48.98	272.63	0.720	0.605	2.07	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366337.02	1546497.44	-101.87	168.00	129.11	-48.89	272.63	0.720	0.605	2.11	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366337.11	1546495.47	-104.13	171.00	131.37	-48.83	272.65	0.720	0.605	2.15	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366337.21	1546493.49	-106.38	174.00	133.63	-48.77	272.67	0.720	0.605	2.19	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366337.30	1546491.52	-108.64	177.00	135.88	-48.72	272.71	0.720	0.605	2.22	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366337.39	1546489.54	-110.89	180.00	138.13	-48.64	272.81	0.720	0.605	2.26	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366337.49	1546487.56	-113.14	183.00	140.38	-48.60	273.01	0.720	0.605	2.30	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366337.60	1546485.57	-115.39	186.00	142.63	-48.59	273.05	0.720	0.605	2.34	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366337.70	1546483.59	-117.64	189.00	144.88	-48.59	273.07	0.720	0.605	2.37	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366337.81	1546481.61	-119.89	192.00	147.13	-48.56	273.13	0.720	0.605	2.41	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366337.92	1546479.63	-122.14	195.00	149.38	-48.54	273.20	0.720	0.605	2.45	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366338.03	1546477.64	-124.39	198.00	151.63	-48.50	273.19	0.720	0.605	2.49	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366338.14	1546475.66	-126.64	201.00	153.88	-48.48	273.11	0.720	0.605	2.53	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366338.25	1546473.67	-128.88	204.00	156.12	-48.49	273.11	0.720	0.605	2.56	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366338.36	1546471.69	-131.13	207.00	158.37	-48.50	273.12	0.720	0.605	2.60	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366338.47	1546469.70	-133.38	210.00	160.62	-48.50	273.17	0.720	0.605	2.64	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366338.57	1546467.72	-135.62	213.00	162.86	-48.50	273.05	0.720	0.605	2.68	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366338.68	1546465.73	-137.87	216.00	165.11	-48.53	273.05	0.720	0.605	2.71	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366338.78	1546463.75	-140.12	219.00	167.36	-48.56	273.02	0.720	0.605	2.75	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366338.89	1546461.77	-142.37	222.00	169.61	-48.64	273.19	0.720	0.605	2.79	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366339.00	1546459.79	-144.62	225.00	171.86	-48.69	272.98	0.720	0.605	2.83	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366339.10	1546457.81	-146.87	228.00	174.12	-48.72	272.96	0.720	0.605	2.87	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366339.20	1546455.84	-149.13	231.00	176.37	-48.74	272.87	0.720	0.605	2.90	Measured	2007-01-17 10:52

KLX20A	RT90-RHB70	6366339.30	1546453.86	-151.39	234.00	178.63	-48.77	272.86	0.720	0.605	2.94	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366339.40	1546451.89	-153.64	237.00	180.88	-48.78	272.86	0.720	0.605	2.98	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366339.50	1546449.91	-155.90	240.00	183.14	-48.80	272.93	0.720	0.605	3.02	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366339.60	1546447.94	-158.16	243.00	185.40	-48.80	272.93	0.720	0.605	3.05	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366339.70	1546445.97	-160.41	246.00	187.66	-48.81	272.93	0.720	0.605	3.09	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366339.80	1546443.99	-162.67	249.00	189.91	-48.79	272.93	0.720	0.605	3.13	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366339.90	1546442.02	-164.93	252.00	192.17	-48.76	272.93	0.720	0.605	3.17	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366340.00	1546440.04	-167.18	255.00	194.42	-48.73	272.93	0.720	0.605	3.20	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366340.10	1546438.07	-169.44	258.00	196.68	-48.72	272.92	0.720	0.605	3.24	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366340.20	1546436.09	-171.69	261.00	198.93	-48.69	272.92	0.720	0.605	3.28	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366340.31	1546434.11	-173.94	264.00	201.19	-48.69	272.94	0.720	0.605	3.32	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366340.41	1546432.13	-176.20	267.00	203.44	-48.64	272.94	0.720	0.605	3.36	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366340.51	1546430.15	-178.45	270.00	205.69	-48.61	272.94	0.720	0.605	3.39	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366340.61	1546428.17	-180.70	273.00	207.94	-48.55	273.01	0.720	0.605	3.43	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366340.72	1546426.19	-182.95	276.00	210.19	-48.46	273.12	0.720	0.605	3.47	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366340.83	1546424.20	-185.19	279.00	212.43	-48.42	273.29	0.720	0.605	3.51	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366340.95	1546422.21	-187.43	282.00	214.67	-48.35	273.40	0.720	0.605	3.54	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366341.07	1546420.22	-189.67	285.00	216.92	-48.30	273.50	0.720	0.605	3.58	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366341.19	1546418.23	-191.91	288.00	219.15	-48.23	273.63	0.720	0.605	3.62	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366341.32	1546416.23	-194.15	291.00	221.39	-48.15	273.75	0.720	0.605	3.66	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366341.45	1546414.23	-196.38	294.00	223.62	-48.06	273.86	0.720	0.605	3.69	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366341.59	1546412.23	-198.61	297.00	225.85	-47.92	273.98	0.720	0.605	3.73	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366341.73	1546410.22	-200.83	300.00	228.08	-47.78	274.12	0.720	0.605	3.77	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366341.88	1546408.21	-203.05	303.00	230.30	-47.62	274.15	0.720	0.605	3.81	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366342.03	1546406.19	-205.27	306.00	232.51	-47.49	274.30	0.720	0.605	3.85	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366342.18	1546404.16	-207.48	309.00	234.72	-47.34	274.42	0.720	0.605	3.88	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366342.34	1546402.13	-209.68	312.00	236.92	-47.21	274.54	0.720	0.605	3.92	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366342.50	1546400.10	-211.88	315.00	239.12	-47.07	274.60	0.720	0.605	3.96	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366342.67	1546398.06	-214.07	318.00	241.32	-46.95	274.60	0.720	0.605	4.00	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366342.83	1546396.02	-216.26	321.00	243.51	-46.81	274.71	0.720	0.605	4.03	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366343.00	1546393.97	-218.45	324.00	245.69	-46.67	274.74	0.720	0.605	4.07	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366343.17	1546391.91	-220.63	327.00	247.87	-46.50	274.85	0.720	0.605	4.11	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366343.35	1546389.85	-222.80	330.00	250.04	-46.38	274.95	0.720	0.605	4.15	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366343.53	1546387.79	-224.97	333.00	252.21	-46.27	275.18	0.720	0.605	4.18	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366343.72	1546385.72	-227.14	336.00	254.38	-46.14	275.39	0.720	0.605	4.22	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366343.92	1546383.65	-229.30	339.00	256.54	-46.01	275.46	0.720	0.605	4.26	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366344.12	1546381.58	-231.45	342.00	258.70	-45.90	275.66	0.720	0.605	4.30	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366344.33	1546379.50	-233.61	345.00	260.85	-45.78	275.83	0.720	0.605	4.34	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366344.55	1546377.41	-235.75	348.00	263.00	-45.70	275.87	0.720	0.605	4.37	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366344.76	1546375.33	-237.90	351.00	265.14	-45.60	276.11	0.720	0.605	4.41	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366344.99	1546373.24	-240.04	354.00	267.28	-45.50	276.29	0.720	0.605	4.45	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366345.23	1546371.15	-242.18	357.00	269.42	-45.40	276.46	0.720	0.605	4.49	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366345.47	1546369.05	-244.31	360.00	271.56	-45.30	276.62	0.720	0.605	4.52	Measured	2007-01-17 10:52

KLX20A	RT90-RHB70	6366345.71	1546366.95	-246.44	363.00	273.69	-45.16	276.76	0.720	0.605	4.56	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366345.96	1546364.85	-248.57	366.00	275.81	-45.05	276.87	0.720	0.605	4.60	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366346.22	1546362.75	-250.69	369.00	277.93	-44.89	277.01	0.720	0.605	4.64	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366346.48	1546360.63	-252.80	372.00	280.05	-44.76	277.12	0.720	0.605	4.67	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366346.75	1546358.52	-254.91	375.00	282.16	-44.65	277.28	0.720	0.605	4.71	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366347.02	1546356.40	-257.02	378.00	284.26	-44.50	277.44	0.720	0.605	4.75	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366347.30	1546354.27	-259.12	381.00	286.36	-44.37	277.59	0.720	0.605	4.79	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366347.59	1546352.15	-261.22	384.00	288.46	-44.26	277.67	0.720	0.605	4.83	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366347.88	1546350.02	-263.31	387.00	290.55	-44.10	277.84	0.720	0.605	4.86	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366348.17	1546347.88	-265.39	390.00	292.63	-43.98	277.94	0.720	0.605	4.90	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366348.48	1546345.74	-267.47	393.00	294.71	-43.88	278.18	0.720	0.605	4.94	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366348.79	1546343.60	-269.55	396.00	296.79	-43.78	278.42	0.720	0.605	4.98	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366349.11	1546341.46	-271.62	399.00	298.87	-43.68	278.72	0.720	0.605	5.01	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366349.44	1546339.31	-273.69	402.00	300.94	-43.59	278.69	0.720	0.605	5.05	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366349.77	1546337.16	-275.76	405.00	303.00	-43.47	278.74	0.720	0.605	5.09	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366350.10	1546335.01	-277.82	408.00	305.06	-43.35	278.87	0.720	0.605	5.13	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366350.44	1546332.85	-279.88	411.00	307.12	-43.23	279.03	0.720	0.605	5.16	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366350.79	1546330.69	-281.93	414.00	309.17	-43.12	279.16	0.720	0.605	5.20	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366351.14	1546328.52	-283.98	417.00	311.22	-43.01	279.21	0.720	0.605	5.24	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366351.49	1546326.36	-286.02	420.00	313.27	-42.85	279.34	0.720	0.605	5.28	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366351.85	1546324.18	-288.06	423.00	315.30	-42.74	279.45	0.720	0.605	5.32	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366352.22	1546322.01	-290.09	426.00	317.34	-42.55	279.66	0.720	0.605	5.35	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366352.59	1546319.83	-292.12	429.00	319.36	-42.41	279.82	0.720	0.605	5.39	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366352.97	1546317.64	-294.14	432.00	321.38	-42.23	279.96	0.720	0.605	5.43	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366353.36	1546315.45	-296.15	435.00	323.40	-42.08	280.09	0.720	0.605	5.47	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366353.75	1546313.26	-298.16	438.00	325.40	-41.94	280.22	0.720	0.605	5.50	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366354.16	1546311.06	-300.16	441.00	327.41	-41.76	280.50	0.720	0.605	5.54	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366354.57	1546308.86	-302.16	444.00	329.40	-41.61	280.66	0.720	0.605	5.58	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366354.98	1546306.65	-304.15	447.00	331.39	-41.45	280.82	0.720	0.605	5.62	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366355.41	1546304.44	-306.13	450.00	333.37	-41.30	281.10	0.720	0.605	5.65	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366355.85	1546302.23	-308.11	453.00	335.35	-41.09	281.48	0.720	0.605	5.69	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366356.31	1546300.01	-310.08	456.00	337.32	-41.04	281.69	0.720	0.605	5.73	Measured	2007-01-17 10:52
KLX20A	RT90-RHB70	6366356.60	1546298.59	-311.34	457.92	338.58	-41.04	281.69	0.720	0.605	5.75	Measured	2007-01-17 10:52

Number of rows: 154.
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