P-04-273

Oskarshamn site investigation

Investigation of sediments, peat lands and wetlands

Stratigraphical and analytical data

Gert Nilsson, Geosigma AB

October 2004

Svensk Kärnbränslehantering AB
Swedish Nuclear Fuel
and Waste Management Co
Box 5864
SE-102 40 Stockholm Sweden
Tel 08-459 84 00
+46 8 459 84 00
Fax 08-661 57 19
+46 8 661 57 19

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Keywords: Lakes, Bays, Peat Land, Wetlands, Russian Peat Corer, Sediment, Gyttja, Glacial clay, LECO, Sulphur, Nitrogen, Carbon, Calcium Carbonate, Grain size.

Abstract

This document reports the results gained by the joint investigations of “Survey of sediment in lakes and bays” and “Investigation of peat lands and wetlands at Oskarshamn”, which are activities performed within the site investigation at Oskarshamn. The investigations consist of sampling, peat- and sediment classifications and laboratory analysis with respect to chemical and geological properties.

The aim of the studies is to gain knowledge of the stratigraphical sequence of the water-laid sediments overlaying the glacial till and/or bedrock, and – where applicable – the different peat layers that build up peat lands. Thus will this work give important information on the distribution and character of sedimentary deposits, which are not included in the regular mapping of unconsolidated Quaternary deposits.

The field work of these activities was carried out by Geosigma AB during August and September 2004. Analyses and evaluation were performed during September and October 2004.

Stratigraphical descriptions have been made for all sampling sites. Furthermore samples were taken for each classified lithological layer and analyzed with respect to grain size composition as well as content of calcium carbonate and the elements carbon, hydrogen, nitrogen and sulphur. In addition, samples have also been taken for future complementary analyses; pollen, diatoms, pollutants etc.

The stratigraphy of the sample sites (lakes, bays and wetlands) was found to be rather uniform. Differences between sampling sites, can mainly be assigned to the fact that the sampling sites are of different age, since they are not located at the same elevation. The inter site similarities, was also verified by the chemical analyses results.

Sammanfattning

Föreliggande rapport redovisar resultat av ”Kartläggning av sediment i sjöar och fjärdar” och ”Undersökning av torv och våtmarker”, vilka utgör en del av platsundersökningarna i Oskarshamn. Uppdraget har utgjorts av provtagning, jordartsklassificering och laboratorie-undersökningar för kemisk och geologisk karaktärisering.

Syftet med undersökningarna var att få kunskap om den stratigrafiska uppbyggnaden av vattenavsatta sediment och torvmarker. Undersökningar kommer därmed att kunna ge viktig kunskap om de kvartära avlagringarna i Platsundersökningsområdet.

Fältarbeten inom dessa aktiviteter utfördes av Geosigma under augusti och september 2004. Laboratorieanalyser och utvärderingsarbete utfördes under september och oktober.

Jordlagerföljder har bestämts för samtliga provtagningspunkter. Varje identifierat lager har provtagits. Analyser har utförts med avseende på kornstorleksfördelning och innehåll av kalciumkarbonat och elementen kol, väte, kväve och svavel. Prover har också sparats nedfrysta, för att möjliggöra framtida kompletterande analyser; pollen, diatomer, miljö-föroreningar m m.

Jordlagerföljden på de olika provtagningsplatserna befanns vara relativ likartad. Eventuella skillnader som trots allt har konstaterats, kan främst kopplas på vilken höjd över havet som provtagningsplatserna är belägna – och därmed till deras ålder. Att de vattenavsatta sedimenten uttagna från olika provtagningsplatser har likartad karaktär, verifierades också av den kemiska karaktäriseringen.

Contents

1 Introduction

This document reports the results gained by the joint investigations of "Survey of sediment in lakes and bays" and "Investigation of peat lands and wetlands at Oskarshamn", which are activities performed within the site investigation at Oskarshamn. The work was carried out in accordance with activity plans AP PS 400-04-005 and AP PS 400-04-006, respectively. In Table 1-1, controlling documents for performing these activities are listed. Both activity plans and method descriptions are SKB's internal controlling documents. Data references for the present activities are listed in Table 1-2. Data from the activities are stored in the database SICADA according to Table 1-2.

Table 1-1. Controlling documents for the performance of the activities.

Activity plan	Number	Version
Sedimentprovtagning i sjöar och fjärdar	AP PS 400-04-005	1.0
Torv- och våtmarksundersökningar	AP PS 400-04-006	1.0
Method descriptions	**Number**	**Version**
Metodbeskrivning för jordartskartering	SKB MD 131.001	1.0
Metodbeskrivning för torvarksundersökningar	SKB MD 131.002	1.0

Table 1-2. Data references.

Subactivity	Database	Identity number
Sampling of sediment, peat- and wetlands	SICADA	Field note Simpevarp 456
Stored samples	SKB-number	9303, 9304, 9305

The field work of these activities was carried out by Geosigma AB during August and September 2004. Analyses and evaluation were performed during September and October 2004.

An overview of the site investigation area in Oskarshamn, including the investigated locations is shown in Figure 1-1.

The investigation, which is a part of the characterization of Quaternary deposits within the site investigation area of Oskarshamn, consists of sampling, peat- and sediment classifications and laboratory analysis with respect to chemical and geological properties.

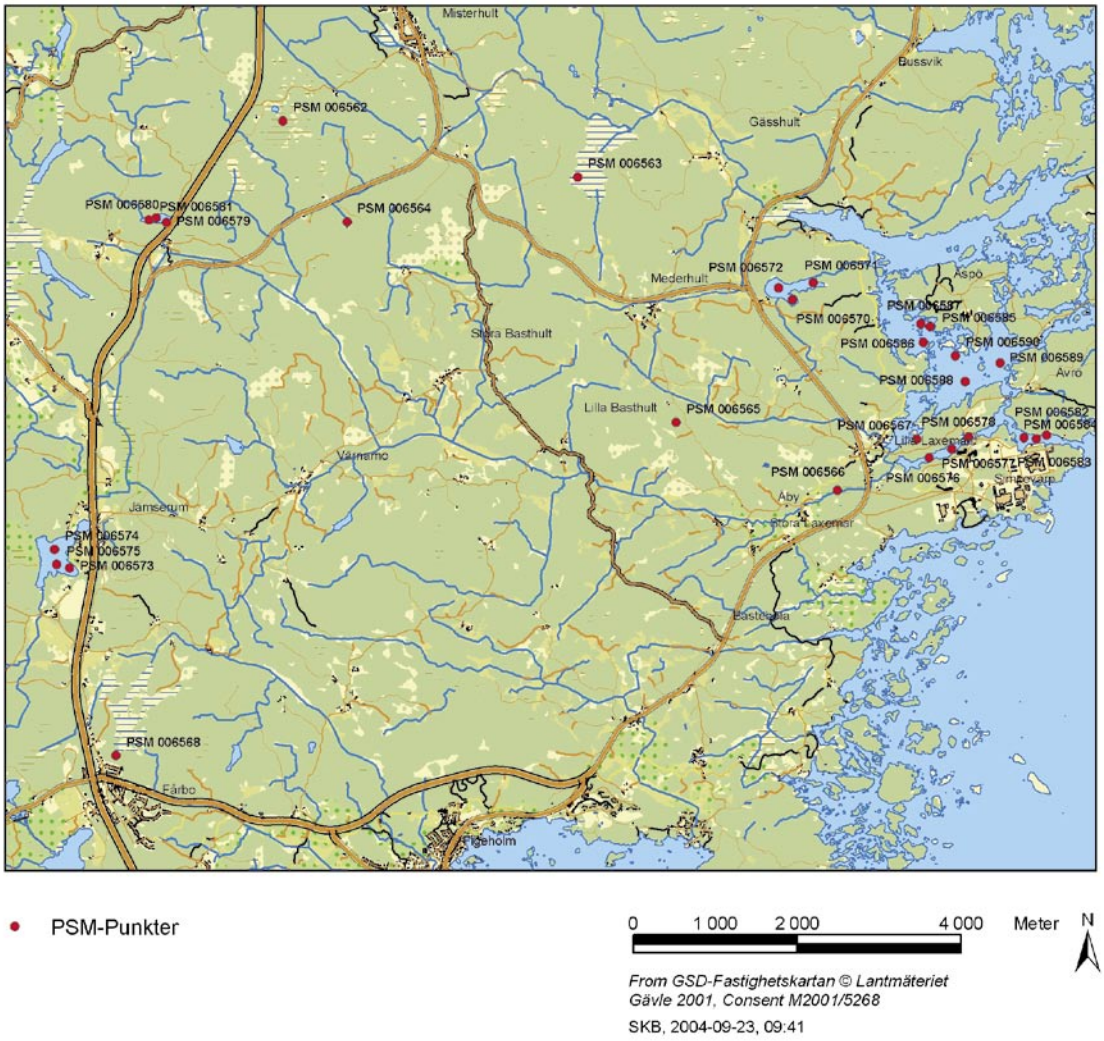

Figure 1-1. *General overview over the Oskarshamn site investigation area. Red dots represent the sampling sites.*

2 Objective and scope

The aim of the studies is to gain knowledge of the stratigraphical sequence of the water-laid sediments overlaying the glacial till and/or bedrock, and – where applicable – the different peat layers that build up peat lands. Thus, this work will give important information on the distribution and character of sedimentary deposits, which are not included in the regular mapping of unconsolidated Quaternary deposits.

Lakes and wetlands serve as discharge areas for groundwater, and knowledge about the hydrological characteristics of the soils and sediments are important in order to identify potential pathways of dispersal of radionuclides. The different sediment- and peat-layers that build up a peat land have normally been preserved for many thousands of years, thus representing an historic archive for the vegetational and climatic development of the landscape. The understanding of the development from a Baltic bay to a peat land thereby contributes to the knowledge about groundwater chemistry (historical and future) as well as hydro-geological changes in the landscape.

Stratigraphical descriptions have been made for all sampling sites. Furthermore, samples were taken and analyzed with respect to grain size composition as well as content of calcium carbonate and the elements carbon, hydrogen, nitrogen and sulphur. In addition, samples have also been taken for future complementary analyses; pollen, diatoms, pollutants etc.

3 Equipment

3.1 Description of equipment

To investigate the stratigraphic sequences, a Russian peat corer was used, length 1.5 meter, of which the sampler container constitutes a length of 1 meter. The Russian pet corer is supplied with about dozen aluminum rods, each 1.5 meter in length. Two types of peat corers were used, with a width of 40 and 50 mm respectively. The thinner corer was used at greater depths, where penetration with the thicker equipment was found to be unworkable.

The peat corer (width 40 mm) is shown in figure 3-1.

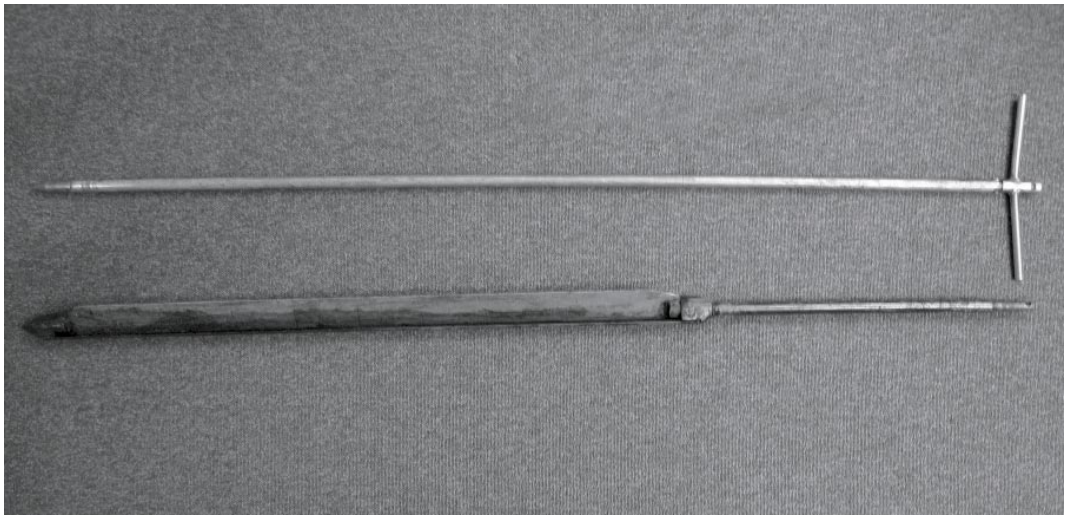

Figure 3-1. *Russian peat corer, width 40 mm (bottom) and probe used for gravel/till/bedrock probing (top).*

Figure 3-2. *Assembling of aluminum extension rods onto the Russian peat corer.*

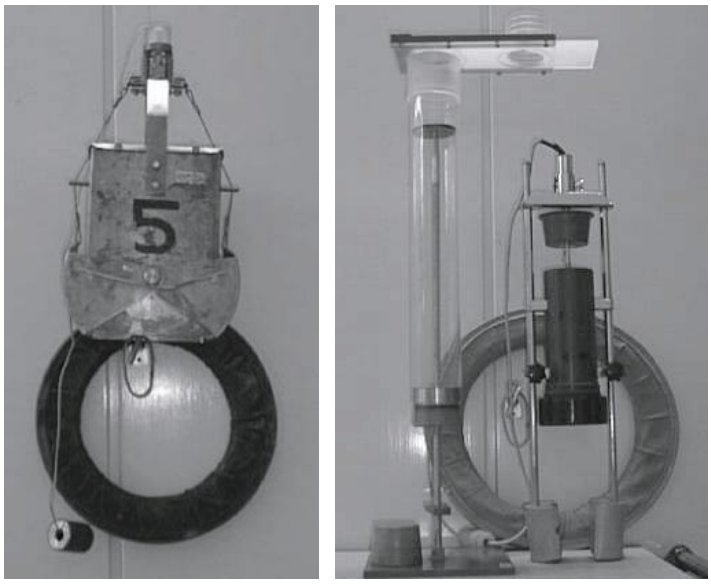

Figure 3-3. *Ekman dredge (left) and Willner gravity corer (right).*

The surface sediment was furthermore sampled using an Ekman dredge and a Willner gravity corer.

The Ekman dredge is a container that can be closed once buried in the sediment. This type of sampler yields much material per sampling, but tend to disturb the sampled sediment.

The Willner gravity corer consists of a pipe, which can be sealed when the sampler is buried into the sediment. The top end sealing creates a vacuum in the tube, which makes is possible to obtain long (up to 70 cm in length) undisturbed samples of the sediment column. To allow later analysis of historical sedimentation conditions, the material within the tube was cut into 2-cm thick slices.

A hand operated GPS-receiver (Garmin GPS 12 XL) was used for positioning the sampling points within the investigated area. The used GPS has an accuracy of approximately ± 5 meters. The sampling points within the peat land and wetland investigation were further positioned, with sub-meter accuracy. This positioning were conducted by Geocon AB.

Photographs of cores obtained with the Russian peat corer were taken using a Canon Powershot S60 digital camera.

4 Execution

4.1 General

This report includes stratigraphical and analytical data from the joint investigation of "Survey of sediment in lakes and bays" and "Investigation of peat land and wetland at Oskarshamn". The methods for the conducted investigations are described in SKB MD 131.001 and 131.002 (SKB's internal controlling documents). The investigation was performed in accordance with the method descriptions as well as the activity plans AP PS 400-04-005 and AP PS 400-04-006 (SKB's internal controlling documents).

Each sampling point was assigned a specific PSM number by SKB. The names and numbers of the investigated sampling points are given in Table 4-1 and their location in Figure 1-1.

Table 4-1. Localities investigated within this report.

No of locality listed in the activity plans	Name of sampling locality	Assigned PSM-number/IDCODE
Lake/Bay 1	Frisksjön	PSM 006570–72
Lake/Bay 2	Jämsen	PSM 006573–75
Lake/Bay 3	Söråmagasinet	PSM 006576–78
Lake/Bay 4	Plittorpsgöl	PSM 006579–81
Lake/Bay 5	Hamnfjärden	PSM 006582–84
Lake/Bay 6	Bay between Äspö-Laxemar	PSM 006585–87
Lake/Bay 7	Bay between Äspö-Hålö	PSM 006588–90
Peat land/Wetland 1	Klarebäcksmossen	PSM 006562
Peat land/Wetland 2	Gäster	PSM 006563
Peat land/Wetland 3	Långenmossen	PSM 006564
Peat land/Wetland 4	Hultenäs	PSM 006565
Peat land/Wetland 5	Röängen	PSM 006566
Peat land/Wetland 6	Hålö	PSM 006567
Peat land/Wetland 7	Stora Ficksjön	PSM 006568

Samples for different purposes have been collected at the same sampling object. To be able to distinguish between different samples collected at the same sampling object, the suffix A–F has been used together with the PSM number. Table 4-2 lists the use of the suffix. As an example; the archived sample collected at Hålö is named PSM 006567-C.

Table 4-2. The definition of suffix used together with IDCODE to distinguish between samples collected at the same sampling point for different purposes.

Suffix	Sample type	Sampler
-A	Geological characterization	Hand operated Russian peat-corer (samples collected from all sample points)
-B	Surface sediment 0–50 cm (sliced into layer of 2 cm)	Willner gravity corer (one sample per lake/bay locality)

Suffix	Sample type	Sampler
-C	Complete profile for archive, coated with plastic	Hand operated Russian peat-corer (one complete profile sampled per locality)
-D	Chemical characterization	Hand operated Russian peat-corer (samples collected from each lake/bay locality)
-E	Surface sediment or peatland soil 0–5 cm	Ekman dredge/spade (sample collected from each locality)
-F	Sample for analysis of pore water	Hand operated Russian peat-corer (two bay sampling sites, two lake sampling sites)

In addition to the sampling program indicated in Table 4-2, some extra samples have also been taken, thereby allowing later complementary analyses. Full records of the spare samples have been delivered to SKB and is stored in a freezer marked with the SKB-numbers 9303–9305.

4.2 Execution of field work

4.2.1 Pre-sampling preparations – sample point selection

The sampling localities were chosen by SKB and given in the Activity plans restraining the investigation. The choice of coring sites within each sampling locality was made on-site, and aimed to obtain as representative sequence of sediment- and peat-layer as possible.

At the peat land and wetland objects, the sampling points (1 per locality) were localized to expected maximum thickness of sediment and peat layers. At the Klarebäcksmossen bog and Gäster wetland (both fairly large in size), probing were also made along cross-sections, in order to ensure that the sampling covered the full sediment and peat sequence.

At the lake and bay sampling localities, the sampling points (3 per locality) were chosen from the area, shape and bottom morphology of the studied sites. The sampling sites were spread within each object, thereby sampling different parts and different depths at each lake or bay.

4.2.2 Sampling and soil type classification procedures

The field work was carried out in accordance with activity plans AP PS 400-04-005 and AP PS 400-04-006. The soil types were classified in accordance with method descriptions MD 131.001 and MD 131.002. Samples were collected for each classified lithological layer, in order to characterize the geological and chemical composition of theses layers.

The first full length Russian samples obtained at each sampling site, was coated in plastics and used as the archive specimen. Samples for later analyses of chemical and geological properties were taken from the subsequent corings.

Each identified layer from the corings was sampled individually and transferred into plastic bags. A none-diffusion type of plastic bag was used to store samples that were to be used for future analysis of pore water. In order to obtain sufficient material for later analyses,

extra cores were sampled at some localities. Extra corings were also done when the Russian peat corer yielded incomplete sediment cores (usually due to high water content). Before corings were performed with the Russian peat corer, depth to solid bottom was determined by probing the soil layers.

The surface sediment or soil material (taken with an Ekman dredge and a spade respectively), were transferred to plastic sample containers. In order to obtain sufficient material, the sampling with the Ekman dredge was repeated several times at each sampling point.

The sediment columns obtained with the Willner gravity corer, were sliced into 2 cm subsamples. The sub-samples were transferred into plastic sample containers.

All noted depths in the lake and bay sediment survey refer to centimeters below top sediment surface.

4.3 Sample preparations and chemical analysis

After completion of each field day, all collected samples were transferred to freezers (c –20°C). The samples were subsequently sent or transported (in batches of about 20) to the laboratories Sweco Geolab AB and BELAB AB for analyses of geological and chemical properties.

The analysis program used included:

- Grain size composition.
- Calcium Carbonate, $CaCO_3$.
- Total content of elements C, N, H and S.
- Ash and water content.
- pH.

The analyses were performed following analytical standards and good laboratory practice at the engaged laboratories.

The grain size analyses were carried out according to Swedish Standards /Standardiseringskommisionen i Sverige SIS, 1992a, b/.

The analyses of elemental C, N, H, S were carried out on a LECO element analyser according to SS 187177 and ASTN D 3172–79.

The $CaCO_3$ content was determined using Passon apparatus, /Talme and Almén, 1975/.

4.4 Data handling

Field data were noted into a notebook and in field protocols. The soil type classification protocols are included in this report (Appendix 1).

Photos from the sediment corings and the sample site surroundings are presented in Appendix 2.

Analytical data from the laboratory analyses are included in this report as Appendix 3 and 4.

Data from the field work and the laboratory analyses have been reported, together with the results of the laboratory analysis, to the SICADA database as Simpevarp according to Table 1-2.

The present report and the SICADA data delievery constitute the finalization of the activities “Survey of sediment in lakes and bays” and “Investigation of peat lands and wetlands”.

4.5 Nonconformities

The activity was performed according to the controlling documents for the activity, without any deviations that may affect the quality of the data.

5 Sample site characteristics

5.1 Lakes and bays

While “Söråmagasinet” and “Frisksjön” are shallow basins, recently isolated from the Baltic sea, “Jämsen” and “Plittorpsgöl” are fairly deep and considerably older.

“Hamnfjärden” is a narrow bay. The sediments of the bay are exposed to eroding conditions, since the effective fetch (a measurement of wind and wave erosion) is large during certain weather condition. Also, the cooling water outlet from the power plant possibly affects bottom conditions.

At the other two bays investigated, calmer conditions prevail. Both bays are rather shallow with protruding rocks and skerries or small forested islands. Abundant growth of sea-weed is a common feature of the bottoms.

Waterdepths and coordinates for each lake and bay sampling site are given in Appendix 5.

Table 5-1. Lake and bay sampling sites data.

Sampling site	Elevation (m a s l) /Brunberg et al. 2004/	Maximum thickness of sediment column (m)	Underlying material	Approximate no of years since Baltic sea separation
PSM 006570–72 Frisksjön	1.37	> 7 meter	Gyttja	~ 2,750–2,500 BP
PSM 006573–75 Jämsen	25.11	5.1 meter	Bed rock	~ 11,250 BP
PSM 006576–78 Söråmagasinet	1.94	> 5.4 meter	Gyttja	~ 2,000–3,000 BP*
PSM 006579–81 Plittorpsgöl	24.79	> 4 meter	gyttje Clay	~ 11,250 BP
PSM 006582–84 Hamnefjärden	–	> 2.76 meter	clay Gyttja	–
PSM 006585–87 Bay Äspö-Laxemar	–	> 5.08	Gravel	–
PSM 006588–90 Bay Äspö– Hålö	–	> 5.88	clay Gyttja	–

* Söråmagasinet is a man-made reservoir, isolated from Hamnefjärden during 1970 /Brunberg et al. 2004/.

5.2 Peat lands and wetlands

The seven peat land/wetland localities investigated in this study can roughly be divided into three groups.

“Gäster”, “Hålö” and “Stora Ficksjön” are to be regarded as true wetlands. These sites are overgrown by reed, and have gyttja as predominant soil type.

“Klarebäcksmossen” and “Långenmossen” are true peat lands. Klarebäcksmossen is a bog, while Långenmossen constitutes a fen. The predominating soil type of these sites is peat.

“Hultenäs” and “Röängen” constitute yet another group. The sites are located on dry land with just a thin layer of peat or water-laid sediments overlying the glacial till or bed rock.

The peat land localities are situated at various elevations, thus differing in age.

Coordinates for each peat land and wetland sampling site are given in Appendix 5.

Table 5-2. Peat land and wetland sampling sites data.

Sampling site	Elevation (m a s l) /Brunberg et al. 2004/	Thickness of peat/sediment column (m)	Underlying material	Approximate no of years since Baltic sea separation
PSM 006562 Klarebäcksmossen	27.15	5.24	Probable till	~ 11,250 PB
PSM 006563 Gäster	4.05	5.38	Probable stone/ boulder	~ 3,500–3,000 BP
PSM 006564 Långenmossen	18.99	> 2.60	Sandy layer	~ 11,250–11,000 BP
PSM 006565 Hultenäs	15.45	> 0.85	Silty clay layer	~ 7,500 BP
PSM 006566 Röängen	2.52	2.34	Bed rock	~ 3,500–3,000 BP
PSM 006567 Hålö	0.52	1.60	Bed rock	< 1,000 BP
PSM 006568 Stora Ficksjön	25.49	3.00	Probable stone/ boulder	~ 11,250 PB

Figure 5-1. *Dense reed vegetation at sampling location "Gäster".*

Figure 5-2. *The surroundings of sampling sites "Klarebäcksmossen" (left) and "Långenmossen" (right).*

Figure 5-3. *The surroundings of sampling site "Hultenäs". Note the close proximity to drier pine tree land area.*

6 Results

6.1 Stratigraphical sequence

A typical stratigraphy sequence in the sites investigated within this study, consists of, from bottom and up: glacial clay (varved), postglacial clays, silt-sand-gravel, clay gyttja and gyttja layers (and possibly peat). Prevailing eroding bottom conditions at lake/bay localities – giving a coarse bottom material – were found only at one sampling site (PSM 006582 – "Hamnfjärden"). The erosion is caused by wave action, but currents induced by the power plant cooling water outlet may also contribute to the eroding conditions.

The silty-gravely layer that constitutes a dividing line between the clay and gyttja sediment sequences, is wave-washed and fairly thick (5–10 cm). The contact between the clay and the silty-gravely layer is generally sharp and erosive (representing a hiatus – a break in the sedimentation record), while the upper margin is more gradual with increasing organic material and finer grain size (Figure 6-1).

At all sampling sites situated at elevations below c 5 m a s l, the gyttja/clay gyttja material immediately overlying the wave-washed layer consists of a greenish-brown sediment with dark strata, about 1–3 cm in width. Some isolated fragments of (and occasionally unbroken) mollusk shells were found within this gyttja sequence, thus indicating locally high amounts of calcium in the soils (Figure 6-2). The shell fragments tend to be abundant in some few of the layers.

Hydrogen sulphide odor was abundantly detected in the gyttja and clay gyttja sediment sequences. The odor indicates anaerobic conditions.

The clay immediate underlying the wave-washed sandy layer, is bluish and has a homogenic composition. A brownish type clay is found at greater depth. The brownish clay is more heterogenic, withholding strings of sand and silt (Figure 6-1, Figure 6-3).

The sandy/silty material within the brownish clays has been sampled, or indicated (by probing) at sites throughout the investigated area. Silty varves are especially evident at the lower-most part of the clay sequence (representing early Holocene history). Moreover, minerogenic and organic soils were found to be alternating at some sampling sites. This is shown in Figure 6-4. The alternating soil types suggest a complex landscape history, with fluctuating sea level, and rather sudden shifts in sedimentation environment.

Furthermore, also isolated sandy/silty layers were at some sampling sites found to be colored brown. This rust colored shade indicates anaerobic conditions, and may also reflect the element composition of the soil constituting the layer (Figure 6-3).

The detailed stratigraphical descriptions from each coring site – including layers, color, smell and comments – are compiled in Appendix 1. Stratigraphical data have also been stored in SICADA according to Table 1-2.

Photographs, showing the sediment/peat sequence from all sampling sites, are enclosed as Appendix 2. In some cases, several corings were made at a sampling site, which may cause some (minor) deviation as for soil type boundary locations between photographs, soil type protocols and the archived samples.

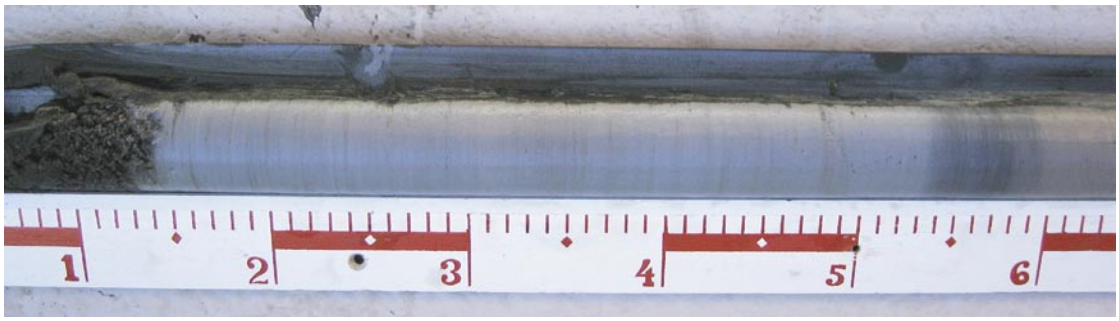

Figure 6-1. *Lake Söråmagasinet – PSM006578, depth 106–164 cm. Note the wave-washed sandy layer at the upper part of the sediment column. At depth c 158 cm a transition from bluish to brownish clay is evident, with a grey and black transition stage.*

Figure 6-2. *Shell at depth c 293 cm. Sampling location "Söråmagasinet" – PSM006576.*

Figure 6-3. *Sandy/silty layers within the lower glacial clay sequence – reflecting alternating conditions during early Holocene history. Also note the rust colored bottom silty sand layer – located just above the glacial till. "Stora Ficksjön" – depth c 280–300 cm.*

Figure 6-4. *Clay-mixed peat land soil, "Långenmossen" – depth c 70 cm.*

6.2 Laboratory analysis

At site Långenmossen (PSM006564) a highly calcareous layer (soil type “Bleke” in Swedish) were found at depth 190–232 cm. The calcium carbonate content of the other samples was found to be low, generally below 1%.

The carbon content of the samples generally varies between 10 and 25%. However, peat samples have considerably higher carbon content, whereas clay material sampled at greater depths has low nitrogen content.

The nitrogen content of the samples varies from 0 to about 2.5%. Most nitrogen is found in recent deposited gyttja samples, while clay material representing early Holocene has very low carbon content.

The hydrogen content generally varies between 2 and 3%. The peat samples, though, have higher hydrogen content (about 5%), while earlier deposited clays generally have a hydrogen content of below 1%.

The sulphur content of the analyzed samples varies between 0 and about 3.5%. The highest sulphur content is found in gyttja and clay gyttja samples. Low sulphur content can be correlated to clay material, peat land samples, or samples taken at specific localities; where the lack of sulphur reflects the local sedimentation conditions.

6.3 Inter-site comparisons

The stratigraphy of the sample sites (lakes, bays and wetlands) was found to be rather uniform. Differences between sampling sites can mainly be assigned to the fact that the sampling sites are of different age, since they are not located at the same elevation. The inter-site similarities were also verified by the chemical analyses results.

Recently deposited gyttja and clay gyttja material have been found to be overlying a wave-washed sandy layer. The accumulation of this organic rich gyttja sequence is likely to have started when the studied sites became protected by rising land areas. Ever since, the sedimentation has been relatively uniform, which is verified by the sedimentation records.

The maximum thickness of water-laid sediments obtained within this study (7 meters of gyttja), were sampled at Lake Frisksjön (PSM006572). The gyttja has a homogenic structure to c 3.2 meter depth, while the sediment column below this point consists of greenish-brown sediment with dark strata (about 1–3 cm in height). Assuming the homogenic gyttja reflects a lacustrine environment, this indicates a sedimentation rate of about 1.3 mm per year in Lake Frisksjön (which was separated from the Baltic Sea about 2,500 years before present). This rate is reasonable, and thus couples the green-brown/black structured gyttja to a marine environment.

The gyttja and clay gyttja layers at the higher situated lakes (Lake Jämsen and Lake Plittorpsgöl, c 25 m a s l), have a considerably lower content of sulphur, compared to clay and clay gyttja layers at the other lake/bay/wetland localities. These two lakes were also the only ones where hydrogen sulphur odor was not detected. The low sulphur content in Lake Jämsen and Lake Plittorpsgöl indicates oxidizing conditions and a sedimentation environment with limited loads of nutrients and organic matter. Furthermore, the gyttja sequence of Lake Jämsen seems to be low in nitrogen, in comparison with gyttja sediment sampled at other localities.

Since only two true peat lands have been investigated, inter-site comparison between peat lands is not easily conducted. The historic development of the fen Långenmossen and the bog Klarebäcksmossen differs and few features are found at both localities.

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Appendix 1

Protocols: Interpretation of soil layers

A: Soil type protocols – Lakes and bays

Version 1.0.1

INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Friskssjön	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 0065 70
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-26	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6368010	Y-COORD. 1549225	ELEVATION m a s l vy, 1.37 (water depth 2,6 m)

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-35	Dark brown **Gyttja (Gy)**, homogenous character High water content	Plant parts
35-100	Greenish brown **Gyttja (Gy)**, with black/grey bands	
100-200	Greenish brown **Gyttja (Gy)**, with black/grey bands Gets more firm character with increasing depth	Hydrogen Sulphide odor
200-300	Greenish brown **Gyttja (Gy)**, with black/grey bands Firm character	Hydrogen Sulphide odor
300-400	Greenish brown **Gyttja (Gy)**, with black/grey bands Very firm character	Distinct Hydrogen Sulphide odor. Sea shells at depth 314 and 329 Plant parts at depth 380 and 389.
400-500	Greenish brown **Gyttja (Gy)**, with black/grey bands Very firm character	Distinct Hydrogen Sulphide odor. Sea shells at depth 400,410 and some isolated at other levels.
500	Stop in possible **Till, Mn**	

Version 1.0.1

INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Frisksjön	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006571
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-26	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6368223	Y-COORD. 1549474	ELEVATION m a s l vy, 1.37 (water depth 2,7 m)

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-30	Dark brown **Gyttja (Gy)** – homogenous character High water content	
30-115	Dark brown **Gyttja (Gy)**– homogenous character More firm than overlying material	
115-440	Greenish brown **Gyttja (Gy)** with black bands Get a more firm character with increasing depth	Hydrogen Sulphide odor. Sea shells at depth 390, 410 cm.
440	Stop in the same layer (**Gy)**	

Version 1.0.1

INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Frisksjön	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006572
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-30	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6368158	Y-COORD. 1549051	ELEVATION m a s l vy, 1.37 (water depth 3,1 m)

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-15	No samples taken, wet material	
15-100	Dark brown/brownish green **Gyttja (Gy)** - homogenous character. High water content, gets fimer with increasing depth.	
100-320	Dark brown **Gyttja (Gy)** – homogenous character- fimer with increasing depth.	Plant parts at depth 132 cm
320-400	Brownish green **Gyttja (Gy)**, banded with black layers	Rather distinct Hydrogen Sulphide odor
400-500	Brownish green **Gyttja (Gy)**, banded with black layers	Some plant parts Rather distinct Hydrogen Sulphide odor
500-600	Brownish green **Gyttja (Gy)**, banded with black layers very firm	Some plant parts Rather distinct Hydrogen Sulphide odor
600-700	Brownish green **Gyttja (Gy)**, banded with black layers very firm	Some plant parts Rather distinct Hydrogen Sulphide odor
700	Stop, in the same layer (**Gy**)	

Version 1.0.1

INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Jämsen	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006573
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-19	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6364731	Y-COORD. 1540382	ELEVATION m a s l vy 25.11 (water depth 2.8)

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-5	No samples taken, wet material	
5-13	Brown to dark brown **silty clayey Gyttja (si le Gy)** black shades, sand grain components	Sediment surface is oxidized.
13-59	Dark brown **silty clayey Gyttja (si le Gy)** homogenous character	Some plant parts
59-80	Brownish grey **silty Clay (si Le)** homogenous character	
80-94	Brownish grey-grey **silty Clay (si Le)** with black shades	
94-100	Brownish grey **Clay (Le)**, homogenous character	
100-126	Brownish grey-grey **Clay (Le)** some gyttja, rather high water content	
126-134	Brownish grey **Sand (Sa)** (fine and medium grained sand)	
134	Stop with Russian peat corer, **Sand (Sa)**	
134-155	**Sandy/silty layer (Sa/si)**	Information gained from probing
155-256	**Clay (Le)**	Information gained from probing
256 ca	**Sandy/silty layer (Sa/si)**	Information gained from probing
256-278	**Clay (Le)**	Information gained from probing
278 ca	**Sandy/silty layer (Sa/si)**	Information gained from probing
278-449	**Clay (Le)**	Information gained from probing
449	Probing stop, probable **Stone/Boulder**	Information gained from probing

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INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Jämsen	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006574
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-20	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6364959	Y-COORD. 1540202	ELEVATION m a s l vy 25.11 (water depth 10.6)

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-230	Dark brown **Gyttja (Gy)** – homogenous character Surface layer (ca 5 cm) has a high water content Gets more firm character with increasing depth	
230-500	Dark brown **Gyttja (Gy)** – homogenous character Gets more firm character with increasing depth	
500	Stop in the same layer. very firm **Gyttja (Gy)**.	

Version 1.0.1

INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Jämsen	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 0065 75
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T T ammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-23	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6364771	Y-COORD. 1540223	ELEVATION m a s l vy 25.11 (water depth 5.8)

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-40	Dark brown **Gyttja (Gy)** homogenous character. High water content.	
40-260	Dark brown **Gyttja (Gy)**- homogenous character. firmness increases with depth	
260-385	Greyish brown-greenish grey **Gyttja (Gy)**	
385-400	Grey **Clay (Le),** with components of sand and silt 395-400 Banded with black layer.	
400-410	Brownish grey **Clay (Le)** with silt components	
410-425	Light grey **Clay (Le)**, banded with black bands.	
425-508	Light grey, **Clay (Le)** – glacial.	
508-510	**Sand (Sa)**	
510	Stop, **Rock.**	

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INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Söråsmagasinet	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006576
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-09	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6366184	Y-COORD. 1551173	ELEVATION m a s l vy 1.94, water depth 3.8.

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-5	Dark brown **Gyttja (Gy)** with black components wet character	
5-80	Dark brown/Greenish brown **Gyttja (Gy)** banded with black layer	
80-240	Dark brown/Greenish brown **Gyttja (Gy)** banded with black layer	Hydrogen Sulphide
240-540	Dark brown/Greenish brown **Gyttja (Gy)** banded with black layer-	Faint odor of Hydrogen Sulphide Sea shells at depth c. 293 cm.
540	Stop in assumed same layer **(Gy)**	

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INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Söråmagasinet	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006577
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-10	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6366079	Y-COORD. 1550896	ELEVATION m a s l vy 1.94 (water depth 2.6)

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-9	Dark greenish brown **Gyttja (Gy)** with black components Wet character	
9-120	Greenish brown **Gyttja (Gy)** with black components	Faint odor of Hydrogen Sulphide
120-210	Greenish brown **Gyttja (Gy)** with black components gets a more firm character wtih depth	Hydrogen Sulphide odor. some sea shells within ca 190-198
210-340	Greenish brown **Gyttja (Gy)**, banded with greyish black layer	Hydrogen Sulphide odor Sea shells at depth: 241, 247 and 252 cm
340	Stop in **Sand (Sa)**.	

Version 1.0.1

INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Söråmagasinet	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006578
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-10	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6366329	Y-COORD. 1551378	ELEVATION m a s l vy 1.94 (water depth 4.3)

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-6	Dark grey **Gyttja (Gy)** with black components wet character	
6-59	Brown **Gyttja (Gy)** with greyish black components	Faint Hydrogen Sulphide c. 50 cm
59-70	Brown **Gyttja (Gy)** homogenous character	
70-106	Brown **Gyttja (Gy)** with blackish grey layer	Sea shells at depth 74 and 84 cm
106-113	Coarse **Sand (Sa)**	Wave washed layer
113-153	Bluish grey **Clay (Le)** with thin greyish black layer	
153-158	Greyish black **Clay (Le)**, with black layer	
158-427	Light brownish grey glacial **Clay (Le)**, varved with dark grey thin layer, sand components in the material	
427-438	Light brownish grey glacial **Clay (Le)**, with several cm thick greyish black layers - some sand grains in the material.	
438-453	Light brownish grey **Clay (Le)**, glacial with some cm thick greyish black layers some sand grains in the material.	
453	Stop, **Rock/Boulder**	

Version 1.0.1

INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Plittorpsgöl	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006579
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-24	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6368958	Y-COORD. 1541565	ELEVATION m a s l vy 24.79 (water depth 2.6)

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-60	Dark brown **Gyttja (Gy)** homogenous character	Plant parts
60-135	Dark brown **Gyttja (Gy)** with grey shades	Plant parts, less abundant than depth 0-60 cm.
135-148	Dark brown **Gyttja (Gy)** with grey shades Fine grained sand component.	Plant parts at depth 143 cm.
148-190	Grey **Clay (Le)** some gyttja, sand component 148-160	
190-280	Grey **Clay (Le)**, sand component (medium grained sand)	
280	Stop in **Rock**	

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INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Plittorpssgöl	PROJECT Invastigat ion of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006580
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-24	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6369012	Y-COORD. 1541444	ELEVATION m a s l vy 24.79 (water depth 3.5)

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-15	Dark brown **Gyttja (Gy)** High water content	Plant parts
15-100	Dark brown **Gyttja (Gy)** More firm than overlying material	Plant parts
100-165	Dark brown **Gyttja (Gy)**, with grey shades	Plant parts
165-245	Dark brown **Gyttja (Gy)**, with grey shades Sandy components.	Some plant parts
245-248	**Sandy Clay (sa Le)**, gyttja component	
248-258	Greyish brown **Clay (Le)**, somewhat sandy	
258-332	Greenish grey-grey **gyttja Clay (gyLe)**	
332-343	Greyish brown **sandy Clay (sa Le)**	
343	Stop in the same layer **(sa Le)**	

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INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Plittorpsgöl	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006581
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-24	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6368988	Y-COORD. 1541356	ELEVATION m a s l vy 24.79 (water depth 6.5)

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-30	Dark brown **Gyttja (Gy)** High water content	Plant parts
30-100	Dark brown **Gyttja (Gy)** with grey shades somewhat more firm than overlying material	Plant parts
100-200	Dark brown **Gyttja (Gy)** with grey shades	Some plant parts
200-255	Dark brown-Greenish brown **Gyttja (Gy)** with grey shades	Some plant parts
255-300	Brownish grey **gyttja Clay (gyLe)**	
300-385	Brownish grey **gyttja Clay (gyLe)**, Gets more grey, and less gyttja, with depth	
385-400	Grey **gyttja Clay (gyLe)**.	

Version 1.0.1

INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Hamnfjärden	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006582
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-12	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6366354	Y-COORD. 1552329	ELEVATION m a s l - (water depth 2.3 meter)

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-12	**Gravel/stone (sa st Gr)** in sand matrix	Erosion bottom

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INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Hamnfjärden	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006583
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-12	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6366312	Y-COORD. 1552204	ELEVATION m a s l - (water depth 5.1 meter)

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-6	Greenish brown **clayey Gyttja (leGy)** with blackish grey bands High water content	
6-45	Greenish brown **clayey Gyttja (leGy)** with blackish grey bands more firm character than overlying material	Hydrogen Sulphide odor
45-100	Greenish brown **clayey Gyttja (leGy)** with blackish grey bands	Hydrogen Sulphide odor
100-120	Greenish brown **clayey Gyttja (leGy)** with blackish grey bands	Hydrogen Sulphide odor Plant parts at depth ca 115-125 cm.
120-200	Greenish brown **clayey Gyttja (leGy)** with blackish grey bands	Hydrogen Sulphide odor Some plant parts
200-276	Greenish brown **clayey Gyttja (leGy)** with blackish grey bands	Hydrogen Sulphide odor Plant parts at depth 200-210 cm.
276	Stop in the same layer **(leGy)**	

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INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Hamnfjärden	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006584
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-12	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6366322	Y-COORD. 1552054	ELEVATION m a s l - (water depth 3.9 meter)

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-5	No samples taken due to wet sediment material	
5-9	Dark brown-greenish brown slightly sandy **Gyttja (Gy)**, Black shades in the material	
9-71	Greenish brown **Gyttja (Gy)**, some sand grains in upper ca 10-15 cm	
71	Stop, **Rock/boulder**	

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INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Bay Äspö-Laxemar	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006585
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-17	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6367684	Y-COORD. 1550905	ELEVATION m a s l - water depth 1,7 meter

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-15	No samples taken due to high water content	
15-40	Brown **Gyttja (Gy)** with black components High water content	
40-135	Brown **Gyttja (Gy)** with black shades	
135-480	Brown-Greenish brown **clayey Gyttja (leGy)**, banded with greyish black layers.	Faint Hydrogen Sulphide odor Sea shells 419 and 434-435 cm.
480-482	**Sand (Sa)** (medium and coarse grained sand)	
482-508	Grey **Clay (Le)** homogenous character	
508	Stop **Gravel/Stone (Gr/St)**	

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INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Bay Äspö-Laxemar	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006586
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-17	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6367489	Y-COORD. 1550827	ELEVATION m a s l - water depth 2.5 meter

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-30	Dark brown-black **Gyttja (Gy)** High water content	
30-113	Dark brown **Gyttja (Gy)** homogenous character	Faint Hydrogen Sulphide odor
113-304	Brown-greenish brown **clayey Gyttja (leGy)**, with greyish black bands	Faint Hydrogen Sulphide odor
304	Stop in **Gravel/Stone (Gr/St)**	

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INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Bay Äspö-Laxemar	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006587
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-18	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6367718	Y-COORD. 1550792	ELEVATION m a s l - water depth 2.5 meter

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-36	Brown **Gyttja (Gy)** with black components High water content	Plant parts
36-80	Brown-Greenish brown **clayey Gyttja (leGy)**, banded with greyish black bands	Plant parts
80-311	Brown-Greenish brown **clayey Gyttja (leGy)**, banded with greyish black bands	Faint Hydrogen Sulphide odor Layer with sea shell fragments 180,218,249 cm.
311-317	**Sand (Sa)** medium grained sand-fine sand	
317	Stop in the same layer **(Sa)**	

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INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Bay Äspö - Hålö	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006588
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-16	METHOD/METHODS Sediment sampling with Russian peat corer, so il layers determination	
X-COORD. 6367008	Y-COORD. 1551332	ELEVATION m a s l - (water depth 4,5 meter)

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-10	Blackish brown **Gyttja (Gy)**	Abundant plant parts
10-109	Brown **Gyttja (Gy)** with black components / shades	Plant parts Faint Hydrogen Sulphide odor
109-441	Brown-greenish brown **clayey Gyttja (leGy)** Banded with blackish grey layer	Hydrogen Sulphide odor Sea shells at depth 273 cm

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INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Bay Äspö - Hålö	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006589
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-16	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6367240	Y-COORD. 1551761	ELEVATION m a s l - (water depth 3.8 meter)

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-10	Brown **Gyttja(Gy).**	
10-50	Brown **Gyttja (Gy),** black parts in upper part	Faint Hydrogen Sulphide odor
50-130	Brown **Gyttja (Gy)**, black component	Faint Hydrogen Sulphide odor
130-588	Brown-Greenish brown **clayey Gyttja (leGy)** banded with blackish grey layer of ca 1-3 cm.	Faint Hydrogen Sulphide odor Sea shells at depth 273,327,333 and 368 cm.
588	Stop in the same layer **(leGy)**	

Version 1.0.1

INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Bay Äspö - Hålö	PROJECT Invastigation of sediments in lakes and bays	BORE HOLE DESIGNATION PSM 006590
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO. AP PS 400-04-005
DATE 2004-08-17	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD. 6367328	Y-COORD. 1551217	ELEVATION m a s l - (water depth 3.6 meter)

DEPTH BELOW GROUND [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-85	Dark brown-black **Gyttja (Gy)**	Abundant plant parts in the material Dense sea-weed vegetation at the sampling locality
85	Stop, **Rock/boulder**	

B: Soil type protocols – Peat lands and wetlands

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INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

COMPANY Geosigma AB	Field Personnel Ida Florberger, Gert Nilsson, P -T Tammela	ACTIVITY PLAN NO AP PS 400-04-006
DATE 2004-08-06	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD.. 6370202	Y-COORD. 1542992	ELEVATION m a s l 27,15

DEPTH BELOW GROUND SURFACE [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-130	Light brown, *sphagnum* peat ("vitmosstorv"), **Peat,** S H3-4, B3-4, F0, V0, R0	
130-160	Light brown *eriophorum*/*sphagnum* peat ("tuvdun/vitmosstorv") **Peat,** ERS H3-4, B3, F2, V0, R0	
160-170	Brown *lignidi* / *carex* peat ("lövkärrtorv") **Peat,** LC H4-5, B3, F0, V1, R1	Stumps horizon at depth 150-170 cm. Woody remains indicated at 4 out of 10 ten probings.
170-310	Dark brown/brown, *sphagnum*/*carex* peat ("vitmoss/starrtorv") **Peat,** SC H4-5, B3, F0, V0, R1	
310-370	Dark brown/brown, *sphagnum*/*carex* peat ("vitmoss/starrtorv") **Peat,** SC H3-4, B3, F2-3 V0, R1	ER, *eriophorum* ("tuvdun") components
370-437	Brown **Gyttja (Gy)**	
437-462	Olive green **Gyttja (Gy)**	Slightly minerogenous
462-470	**Gravel (Gr)**	Wave washed layer, contains material up to 3 cm in diameter
470-524	Grey **Clay (Le)**	
524	Stop in probable **Till (Mn)**	

Version 1.0.1

INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Gäster	PROJECT Investigation of peat lands and wetlands	BORE HOLE DESIGNATION PSM 0065 63
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO AP PS 400-04-006
DATE 2004-09-02	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD.. 6369513	Y-COORD. 1546599	ELEVATION m a s l 4,05 m

DEPTH BELOW GROUND SURFACE [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-10	Water	
10-20	*Phragmites* (Reed) roots and plant parts,	
20-110	Brown **Gyttja (Gy)**	Abundant plant parts
110-215	Greenish brown **Gyttja (Gy)** homogenous character	
215-321	**clayey Gyttja (leGy)** Greyish brown base with black bands	
321-370	**clayey Gyttja (leGy)** Greenish brown base with black bands	
370-464	**clayey Gyttja (leGy)** Greenish brown base with blackish grey bands	
464-466	Grey **Clay (Le)** with sand components	
466-472	Grey coarse grained **Sand (Sa)**	Wave washed layer
472-530	Grey **Clay (Le)** silt and sand components	
530-538	Brownish grey **sandy, silty Clay (sa si Le)**	
538	Stop at probable **stone/boulder**	

Version 1.0.1

INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn/Långenmossen marsch	PROJECT Investigation of peat lands and wetlands	BORE HOLE DESIGNATION PSM 006564
COMPANY Geosigma AB	FIELD PERSONNEL Ida Florberger, Gert Nilsson, P -T Tammela	ACTIVITY PLAN NO AP PS 400-04-006
DATE 2004-09-03	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD.. 6368967	Y-COORD. 1543777	ELEVATION m a s l 18,99 m

DEPTH BELOW GROUND SURFACE [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-33	Dark brown/black *carex* peat **Peat**, C H7-8, B3, F0, R1, V0	
33-58	Brownish green fine detritus gyttja with *carex*- and grass roots **Gyttja** (**Gy)**	
58-68	Brownish green fine detritus gyttja with grey clay component. **Gyttja** (**Gy)**	
68-74	Grey **Clay (Le),** with thin layers of brown fine detritus gyttja.	
74-135	Olive green fine detritus **Gyttja (Gy),** with *carex*- and grass roots	
135-190	Dark brown "svämgyttja" **Gyttja (Gy**)	Four pale thin layers at depth 168-172 cm
190-232	Pale calcareous greyish green clayey fine detritus gyttja ("**Bleke"**) **clayey Gyttja (leGy)**	
232-240	Greenish brown clayey fine detritus gyttja, with light grey shades **clayey Gyttja (leGy)**	
240-260	Grey clayey, fine detritus gyttja **clayey Gyttja (leGy**)	
260	Stop in probable sand **Sand (SA)**	

Version 1.0.1

INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Hultenäs	PROJECT Investigation of peat lands and wetlands	BORE HOLE DESIGNATION PSM 0065 65
COMPANY Geosigma AB	FIELD PERSONNEL Ida Florberger, P-T Tammela	ACTIVITY PLAN NO AP PS 400-04-006
DATE 2004-09-07	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD.. 6366511	Y-COORD. 1547800	ELEVATION m a s l 15,45 m

DEPTH BELOW GROUND SURFACE [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-45	Dark brown (peat-) **Gyttja (Gy)** Some grains of sand are present	
45-85	Alternating light grey and brown **gyttja- and silty Clay (gy si Le)**	Densely packed – not possible to penetrate.
85-	Stop in **gyttja-/silty Clay (gy si Le)**	

Version 1.0.1

INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Röängen	PROJECT Investigation of peat lands and wetlands	BORE HOLE DESIGNATION PSM 0065 66
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO AP PS 400-04-006
DATE 2004-09-01	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD.. 6365684	Y-COORD. 1549770	ELEVATION m a s l 2,52 m

DEPTH BELOW GROUND SURFACE [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-38	Brown **clayey Gyttja (leGy)** solid and dry – gets even drier at increasing depth	
38-81	Brown clayey **Gyttja (leGy)** banded with black - dark brownish black layers (thickness 1-4 cm)	
81-84	Grey-greyish black **gyttja Clay (gyLe)** solid and dry	
84-133	Brown **clayey Gyttja (leGy)** moist	115-118 cm: no material gained due to the very moist character of the sediment
133-160	Brownish green - black **Gyttja (Gy)** dry	Some plant parts
160-218	Dark brown **Clay (Le)** 6 grey layers with silty/sandy components	
218-219	**Sand (Sa)**, with fine grained gravel component	Wave washed layer
219-234	Greyish blue **Clay (Le)**	
234	Stop in **Bed Rock**.	

Version 1.0.1

INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn / Hålö	PROJECT Investigation of peat lands and wetlands	BORE HOLE DESIGNATION PSM 0065 67
COMPANY Geosigma AB	FIELD PERSONNEL P-T Tammela, Ida Florberger	ACTIVITY PLAN NO AP PS 400-04-006
DATE 2004-09-07	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD.. 6366307	Y-COORD. 1550745	ELEVATION m a s l 0,52 m

DEPTH BELOW GROUND SURFACE [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-20	Reed (*phragmites*) roots and plant parts. water on the surface – very wet	
20-25	Greyish brown **Gyttja (Gy)**, moist character	Hydrogen Sulphide odor, plant parts (Reed)
25-55	Greenish brown **Gyttja (Gy)**, somewhat drier	Hydrogen Sulphide odor, plant parts (Reed)
55-60	Brown **Gyttja (Gy)**, blackish grey shades	Some plant parts (Reed)
60-113	Brown **Gyttja (Gy)**, blackish grey shades more firm than the material found at depth 55-60	
113-118	Fine grained **gravelly Sand (gr Sa)**	Wave washed layer
118-160	Grey **Clay (Le)**	
160	Stop at **Rock**	

Version 1.0.1

INTERPRETATION OF SOIL LAYERS

PROTOKOLL – P7 Protokoll_____av_____

AREA PLU Oskarshamn /Stora Frisksjön	PROJECT Investigation of peat lands and wetlands	BORE HOLE DESIGNATION PSM 0065 68
COMPANY Geosigma AB	FIELD PERSONNEL Gert Nilsson, P-T Tammela, Ida Florberger	ACTIVITY PLAN NO AP PS 400-04-006
DATE 2004-09-06	METHOD/METHODS Sediment sampling with Russian peat corer, soil layers determination	
X-COORD.. 6362433	Y-COORD. 1540953	ELEVATION m a s l 25,49 m

DEPTH BELOW GROUND SURFACE [cm]	GEOLOGICAL DESCRIPTION	REMARKS
0-15	Water, no samples taken.	
15-30	Dark brown **Gyttja (Gy),** very moist.	*Phragmites* (Reed) roots and plant parts
30-100	Brown **Gyttja (Gy)**	Plant parts.
100-158	Brown **silty clayey Gyttja (si leGy)**	
158-165	Greenish grey **gyttja Clay (gyLe)**	
165-205	Bluish grey **gyttja Clay (gyLe)**	
205-212	**clayey-silty Sand (le si Sa)**	
212-280	Greyish brown **Clay (Le)** slightly (thin layers of) silt/sand	
280-285	**silty Sand (si Sa)**	
285-293	**clayey Silt (le Si)**	
293-300	Brownish yellow silty **Sand (si Sa)**	
300	Stop in probable **stone/boulder.**	

Appendix 2

Photographs, archived samples

A: Photographs – Lakes and bays

Column PSM006570 - ”*Friskjön*”: 0–300 cm.
Increasing depth down - and rightwards.

PSM006570 - ”*Frisksjön*”: sediment column 300–500 cm.
Increasing depth down - and rightwards.

PSM006571 - ”*Friskjön*”: sediment column 0–300 cm.
Increasing depth down - and rightwards.

PSM006571 - ”*Frisksjön*”: sediment column 300–440 cm.
Increasing depth down - and rightwards.

PSM006572 - ”*Friskjön*”: sediment column 0–400 cm.
Increasing depth down - and rightwards.

PSM006572 - ”*Friskjön*”: sediment column 400–700 cm.
Increasing depth down - and rightwards.

PSM006573 - ”*Jämsen*”: sediment column 0–134 cm.
Increasing depth down - and rightwards.

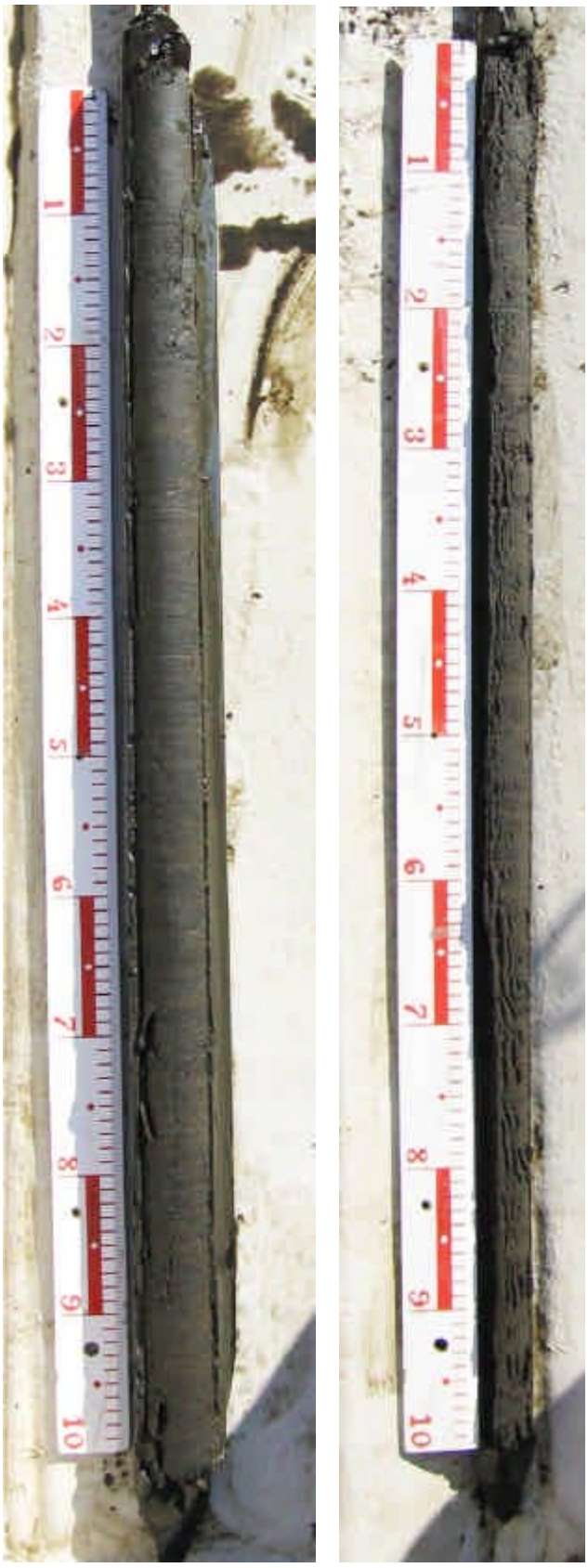
PSM006574 - ” *Jämsen*”: sediment column 0–300 cm.
Increasing depth down - and rightwards.

PSM006574 - ” *Jämsen*”: sediment column 300–370 and 400–500 cm. Increasing depth down - and rightwards.

PSM006575 - ” *Jämsen*”: sediment column 0–300 cm.
Increasing depth down - and rightwards.

PSM006575 - ” *Jämsen*”: sediment column 300–510 cm.
Increasing depth down - and rightwards.

PSM006576 - ”*Söråmagasinet*”: sediment column 0–300 cm. Increasing depth down - and rightwards.



PSM006576 - ”*Söråmagasinet*”: sediment column 276–376 cm and 400–500 cm. Increasing depth down - and rightwards.

PSM006577 - ”*Söråmagasinet*”: sediment column 0–200 cm. Increasing depth down - and rightwards.

PSM006577 - ”*Söråmagasinet*”: sediment column 200–340 cm. Increasing depth down - and rightwards.

PSM006578 - ”*Söråmagasinet*”: sediment column 0–300 cm. Increasing depth down - and rightwards.

PSM006578 - ”*Söråmagasinet*”: sediment column 300–453 cm.
Increasing depth down - and rightwards.

PSM006579 - ”*Plittorpsgöl*”: sediment column 0–200 cm. Increasing depth down - and rightwards.

PSM006580 - ”*Plittorpsgöl*”: sediment column 0–340 cm.
Increasing depth down - and rightwards.

PSM006581 - ”*Plittorpsgöl*”: sediment column 0–400 cm.
Increasing depth down - and rightwards.

PSM006583 - ”*Hamnfjärden*”: sediment column 0–274 cm.
Increasing depth down - and rightwards.

PSM006584 - ”*Hamnfjärden*”: sediment column 0–71 cm. Increasing depth down - and rightwards.

PSM006585 - ”*Äspö-Laxemar Bay*”: sediment column 0–300 cm. Increasing depth down - and rightwards.

PSM006585 - ”*Äspö-Laxemar Bay*”: sediment column 300–511 cm. Increasing depth down - and rightwards.

PSM006586 - ”*Äspö-Laxemar Bay*”: sediment column 0–300 cm. Increasing depth down - and rightwards.

PSM006587 - ”*Äspö-Laxemar Bay*”: sediment column 0–311 cm.
Increasing depth down - and rightwards.

PSM006588 - ”*Äspö – Hålö Bay*”: sediment column 0–300 cm. Increasing depth down - and rightwards.

PSM006588 - ”*Äspö – Hålö Bay*”: sediment column 300–441 cm. Increasing depth down - and rightwards.

PSM006589 - ”*Äspö – Hålö Bay*”: sediment column 0–453 cm.
Increasing depth down - and rightwards.

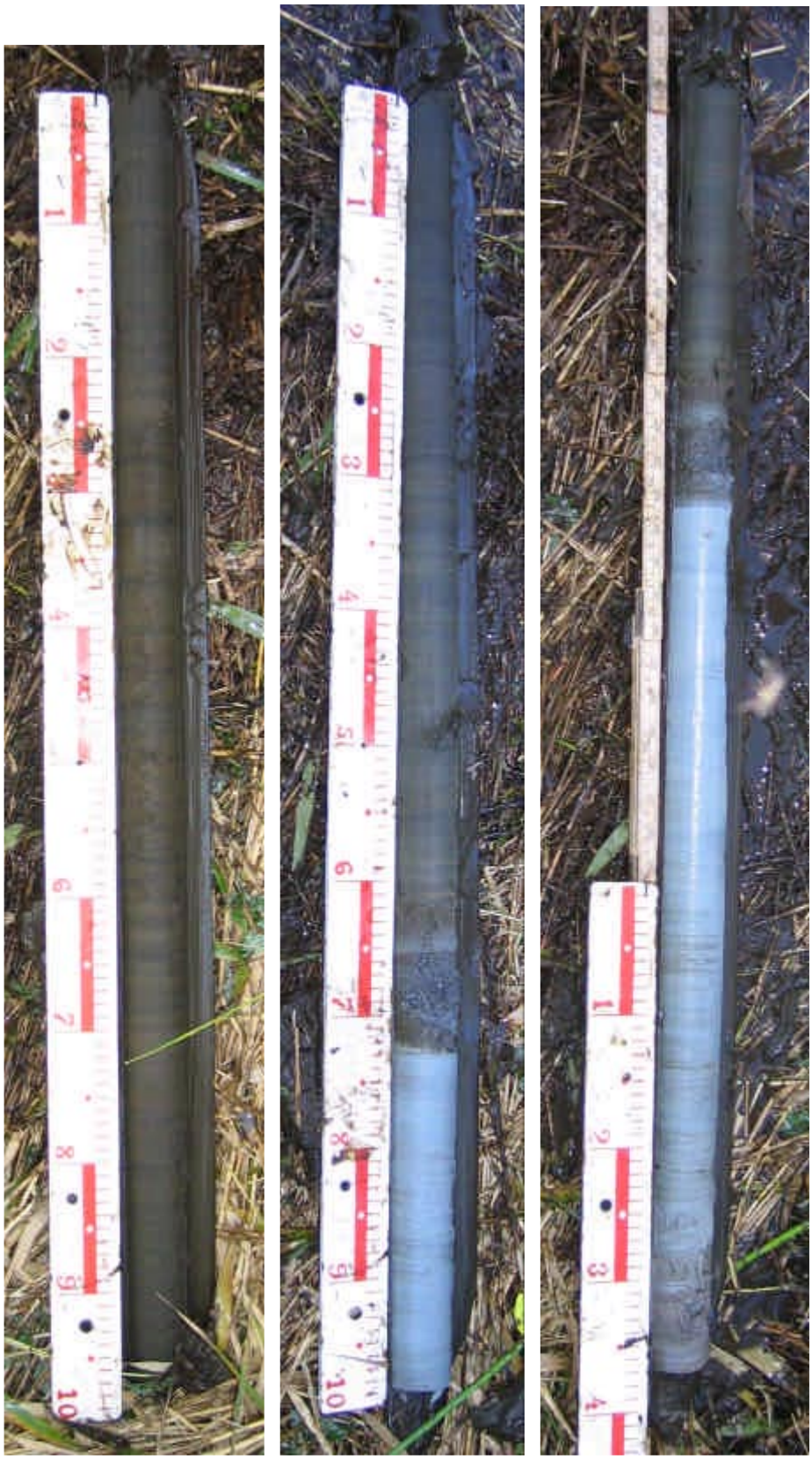
PSM006590 - ”*Äspö – Hålö Bay*”: sediment column 0–85 cm. Increasing depth down - and rightwards.

B: Photographs – Peat lands and wetlands

PSM006562 - ”*Klarebäcksmossen”,* peat/clay column 0–300 cm. Increasing depth down - and rightwards.

PSM006562 - ”*Klarebäcksmossen”,* peat/clay column 300–530 cm. Increasing depth down - and rightwards.

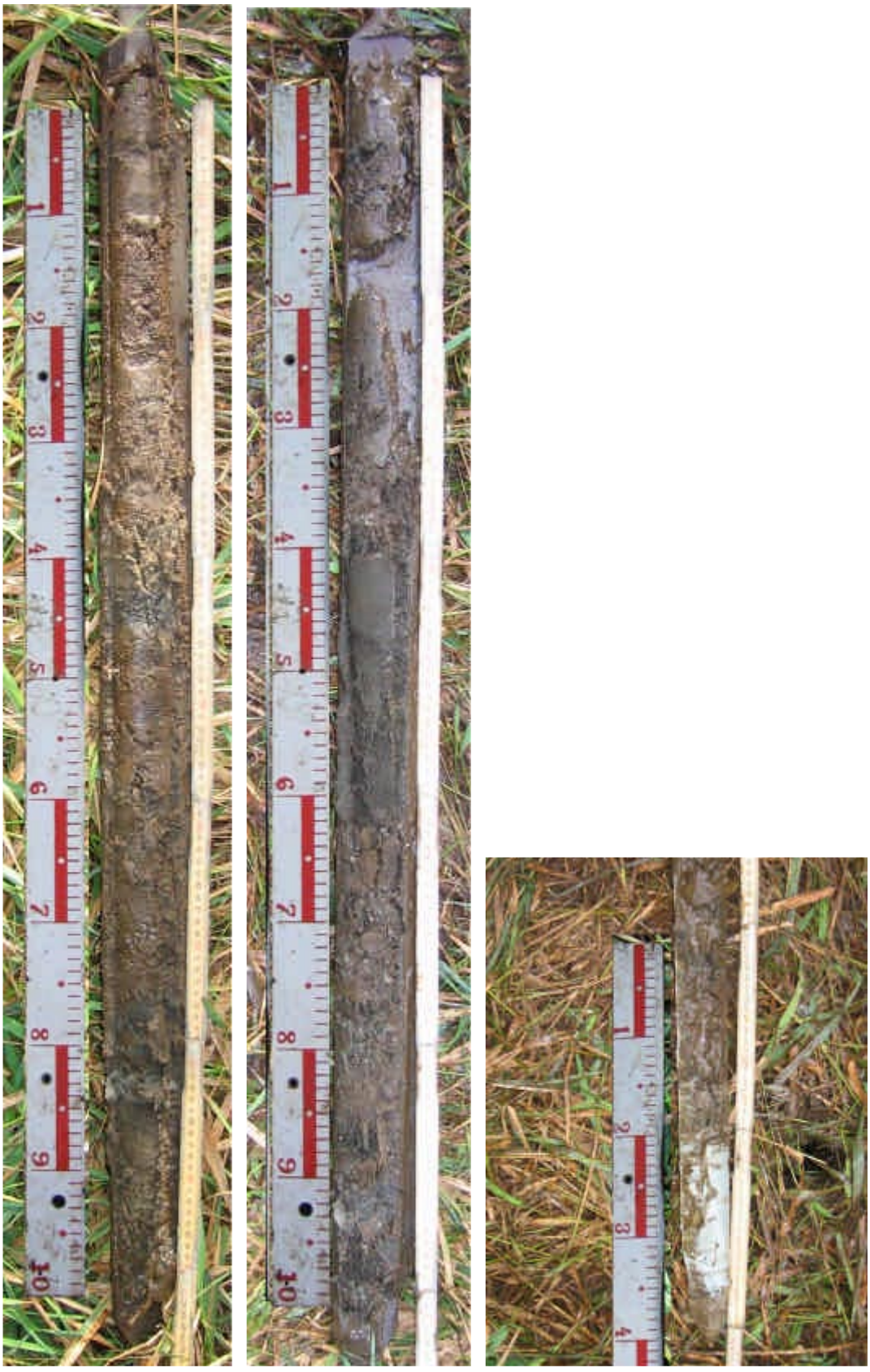
PSM006563 - ”*Gäster”,* gyttja/clay column 0–300 cm.
Increasing depth down - and rightwards.



PSM006563 - ”*Gäster”,* gyttja/clay column 300–537 cm.
Increasing depth down - and rightwards.

PSM006564 - ”*Långenmossen”,* peat/clay column 0–260 cm.
Increasing depth down - and rightwards.

PSM006565 - ”*Hultenäs”, gyttja/*peat/gyttja column 0–85 cm. Increasing depth down - and rightwards.



PSM006566 - ”*Röängen”,* gyttja/peat/clay column 0–234 cm.
Increasing depth down - and rightwards.

PSM006567 - ”*Hålö*”: gyttja/clay column 0–160 cm.
Increasing depth down - and rightwards.

PSM006568 - ”*St. Ficksjön*”: gyttja/clay column 0–300 cm. Increasing depth down - and rightwards.

Appendix 3

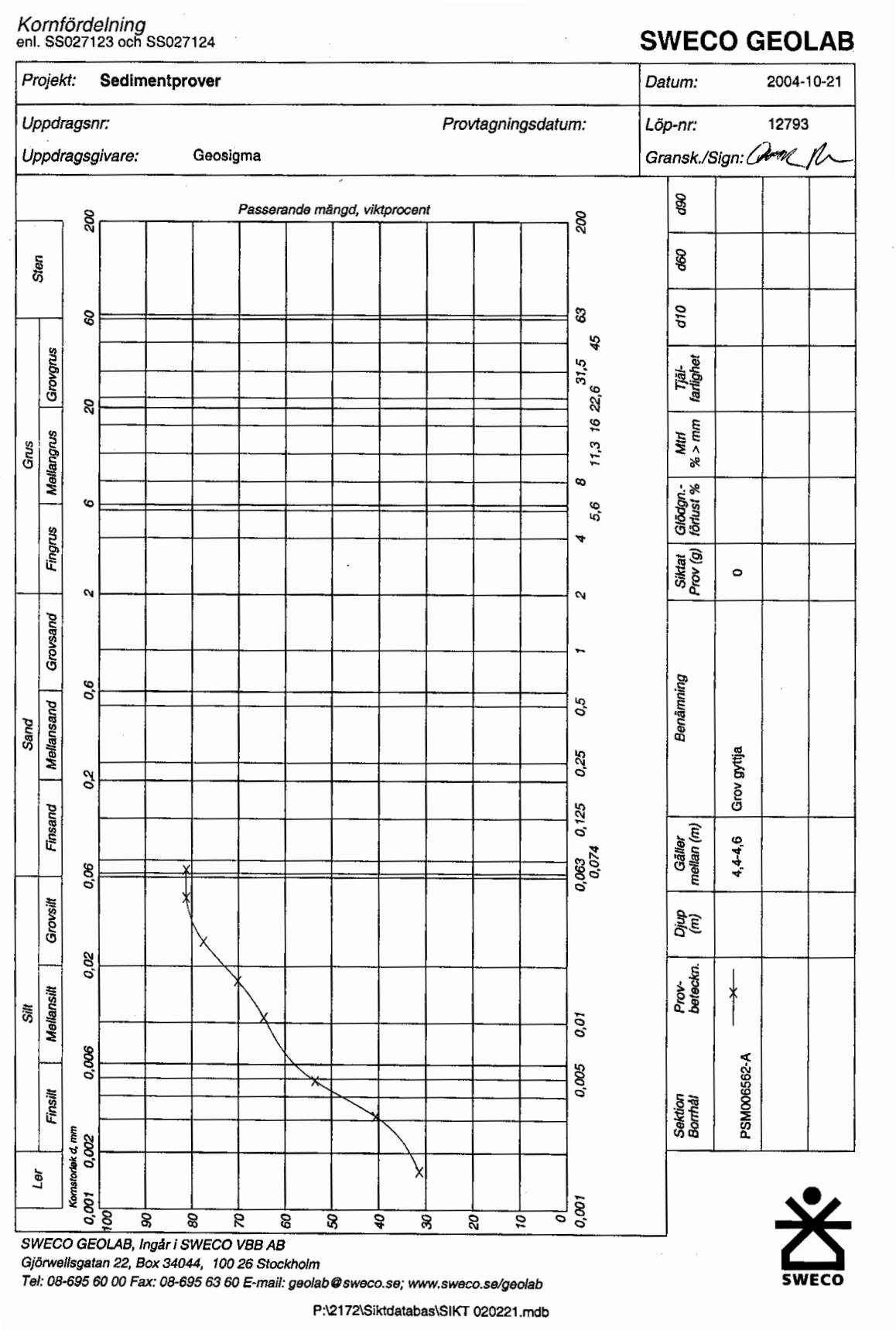
Results of laboratory analysis, Calcium Carbonate and C, H, N, S

Sampling site ID	Sampling site name	Sampling depth (cm) - from top soil/sediment surface	Present day elevation of sampling site (m a s l)	Water depth at sampling site	Water content	$CaCO_3$	H (%TS)	S (%TS)	C (%TS)	N (%TS)	Ash(%)	pH
PSM006562	**Klarabäcksmossen**	60-90	27.15	-	92.7	0	5.7	0.1	49.3	0.6		4.1
PSM006562	**Klarabäcksmossen**	320-370	27.15	-	90.3	0.2	5.5	0.23	56.5	1.5		5.4
PSM006562	**Klarabäcksmossen**	440-460	27.15	-	77.3	0.2	1.6	1.5	8.5	0.9		
PSM006563	**Gäster**	50-100	4.05	-	86	0.2	2.5	0.78	19	1.4		
PSM006563	**Gäster**	110-150	4.05	-	88.4	0.6	2.4	3.9	15.6	1.5		
PSM006563	**Gäster**	480-520	4.05	-	45.5	0.2	0.5	0.94	0.4	<0.1		
PSM006563	**Gäster**	400-464	4.05	-	78.8	0.1	1.8	1.7	11.2	1.5		
PSM006564	**Långenmossen**	35-58	18.99	-	89.6	0.3	4.6	3.2	34.6	2		6.4
PSM006564	**Långenmossen**	220-227	18.99	-	79.6	12	1.5	1.7	10.4	0.8		8.9
PSM006564	**Långenmossen**	245-260	18.99	-	70.5	0.3	0.9	1.4	3.6	0.3		7.5
PSM006565	**Hultenäs**	0-45	15.45	-	76.1	0.2	2.9	0.56	25.4	1.7		
PSM006565	**Hultenäs**	45-87	15.45	-	66.2	0.1	1.5	0.24	9.8	0.6		
PSM006566	**Röängen**	10-38	2.34	-	64.6	0.1	1.6	0.36	10.8	0.9		
PSM006566	**Röängen**	133-160	2.34	-	79.7	0.1	2.7	2	19.4	1.9		5.9
PSM006567	**Hålö**	25-55	0.52	-	85	0.2	2.5	0.25	15	1.6		
PSM006567	**Hålö**	60-100	0.52	-	87.2	0.1	2.3	2.5	15.8	2		
PSM006567	**Hålö**	128-160	0.52	-	49.1	0.2	0.5	1	0.3	<0.1		
PSM006568	**Stora Ficksjön**	40-100	25.49	-	83	0.2	2.1	0.71	15.6	1.1		
PSM006568	**Stora Ficksjön**	170-200	25.49	-	50	0.2	0.7	0.25	2.3	0.2		
PSM006568	**Stora Ficksjön**	212-280	25.49	-	36.3	0.2	0.2	<0.1	0.2	<0.1		
PSM006568	**Stora Ficksjön**	293-300	25.49	-	18	0.1	-	-	-	-		

sampling site ID	Sampling site name	Sampling depth (cm) - from top soil/sediment surface	Present day elevation of sampling site (m a s l)	Water depth at sampling site	Water content	$CaCO_3$	H (%TS)	S (%TS)	C (%TS)	N (%TS)	Ash(%)	pH
PSM006570	**Frisksjön**	0-35	1.37	2.1	88.2	0.4	3.3	2.5	26.8	2		
PSM006570	**Frisksjön**	35-100	1.37	2.1	88.7	0.2	2.8	3.4	18.8	2.1		
PSM006570	**Frisksjön**	400-500	1.37	2.1	81	0.3	2.2	2	15.3	2.1		
PSM006571	**Frisksjön**	30-100	1.37	2.7	87.7	0.2	3.3	3	26.4	2		
PSM006571	**Frisksjön**	115-200	1.37	2.7	83.1	0.4	2.4	2.9	15.2	1.9		
PSM006571	**Frisksjön**	300-400	1.37	2.7	82.7	0.1	2.9	2.4	20.5	2.5		
PSM006572	**Frisksjön**	15-100	1.37	3.1	86.1	0.5	2.5	1.2	17.4	1.6	65.1	
PSM006572	**Frisksjön**	100-200	1.37	3.1	90.6	0	3.1	1.1	24.2	2.1	54.5	
PSM006572	**Frisksjön**	500-600	1.37	3.1	85	0.2	2.9	2.2	19.5	2.4		
PSM006573	**Jämsen**	13-58	25.11	2.8	79.6	0.3	1.3	0.19	9.2	0.5	81.6	
PSM006573	**Jämsen**	100-126	25.11	2.8	50	0.6	0.3	0.1	0.7	0		
PSM006574	**Jämsen**	50-100	25.11	10.6	89.3	0.4	2.7	0.3	20.8	1.3	59.2	
PSM006574	**Jämsen**	450-500	25.11	10.6	65.6	0.6	2.9	0.39	23.7	1.4		
PSM006575	**Jämsen**	100-200	25.11	5.8	86.1	0.2	2.4	0.27	19.1	1.4		
PSM006575	**Jämsen**	260-300	25.11	5.8	82.8	0.4	1.9	0.34	12.7	1		
PSM006575	**Jämsen**	425-500	25.11	5.8	46.4	0.2	0.2	<0.1	0.5	0.1		
PSM006576	**Söråsmagasinet**	10-80	1.94	3.8	72.3	-	2	3.2	11.7	1.3	73.5	
PSM006576	**Söråsmagasinet**	100-170	1.94	3.8	71.2	-	2.2	3	13.9	1.6	69.5	
PSM006577	**Söråsmagasinet**	10-50	1.94	2.6	84.6	0.2	2.2	3.2	14.3	1.4		
PSM006577	**Söråsmagasinet**	120-160	1.94	2.6	83.4	0	2.1	2.5	12.9	1.7		
PSM006577	**Söråsmagasinet**	260-300	1.94	2.6	77.2	0.6	2.3	2.5	14.6	1.8		
PSM006578	**Söråsmagasinet**	10-60	1.94	4.3	83.4	0.5	1.8	2.4	10.9	1.4		
PSM006578	**Söråsmagasinet**	70-100	1.94	4.3	81.4	0.7	1.9	2	12.3	1.7		
PSM006578	**Söråsmagasinet**	115-150	1.94	4.3	49.3	0.2	0.4	0.75	0.4	0.1		
PSM006578	**Söråsmagasinet**	160-200	1.94	4.3	51.4	0.1	0.5	<0.1	0.4	0		

sampling site ID	Sampling site name	Sampling depth (cm) - from top soil/sediment surface	Present day elevation of sampling site (m a s l)	Water depth at sampling site	Water content	$CaCO_3$	H (%TS)	S (%TS)	C (%TS)	N (%TS)	Ash(%)	pH
PSM006579	**Plittorpsgöl**	0-60	24.79	2.6	87.9	0.4	3	0.32	23.8	1.6		
PSM006579	**Plittorpsgöl**	148-190	24.79	2.6	66.9	0	0.7	0.14	3	0.3		
PSM006580	**Plittorpsgöl**	15-100	24.79	3.5	92.5	0.4	4	0.44	36.9	2		
PSM006580	**Plittorpsgöl**	200-245	24.79	3.5	89.2	0.4	2.9	0.31	23.5	1.4		
PSM006580	**Plittorpsgöl**	258-300	24.79	3.5	62.1	0.5	0.7	0.21	2.5	0.3		
PSM006581	**Plittorpsgöl**	30-100	24.79	6.5	87.3	0	4	0.51	35.6	2.3	35.8	
PSM006581	**Plittorpsgöl**	200-255	24.79	6.5	86.7	0.3	3	0.36	23.2	1.5		
PSM006581	**Plittorpsgöl**	385-400	24.79	6.5	62.2	0.3	1.1	0.17	4.8	0.6		
PSM006583	**Hamnfjärden**	6-45	0	5.1	82.7	0.4	2	2.1	12.4	1.7		
PSM006583	**Hamnfjärden**	120-200	0	5.1	80.6	1.4	2	2	13.2	1.9		
PSM006584	**Hamnfjärden**	9-71	0	3.9	81.3	0.2	1.9	1.7	11.9	1.6		
PSM006585	**Bay between Äspö-Laxemar**	40-100	0	1.7	88.1	0.4	2.5	2.6	14.3	1.8	68.2	
PSM006585	**Bay between Äspö-Laxemar**	340-400	0	1.7	79.5	0.4	1.9	1.6	12.5	1.8		
PSM006585	**Bay between Äspö-Laxemar**	482-508	0	1.7	53.3	0.6	0.5	1.2	1	0		
PSM006586	**Bay between Äspö-Laxemar**	40-100	0	2.5	87.7	0.4	2.2	2.9	13.4	1.7		
PSM006586	**Bay between Äspö-Laxemar**	240-280	0	2.5	80	1.4	1.9	1.6	12.7	1.8		
PSM006587	**Bay between Äspö-Laxemar**	37-78	0	2.5	85.7	0.7	2.2	2.8	13.5	1.6		
PSM006587	**Bay between Äspö-Laxemar**	120-180	0	2.5	84.1	0.6	2.1	1.9	14.2	1.9		
PSM006588	**Bay between Äspö-HÅlö**	40-100	0	4.5	85.4	0.5	2.2	2.7	13.6	1.7	70.3	
PSM006588	**Bay between Äspö-HÅlö**	220-270	0	4.5	79.8	0.6	2.2	1.9	13.8	1.8		
PSM006589	**Bay between Äspö-HÅlö**	18-50	0	3.8	77.1	0.7	2	3.1	12.5	1.6		
PSM006589	**Bay between Äspö-HÅlö**	220-270	0	3.8	77.2	0.2	2.3	2	15.9	2.2		
PSM006590	**Bay between Äspö-HÅlö**	11-65	0	3.6	85.9	0.4	2.2	2.6	13.5	1.8		

Results of laboratory analysis, grain size



Kornfördelning
enl. SS027123 och SS027124

SWECO GEOLAB

Projekt: **Sedimentprover**	*Datum:* 2004-10-21
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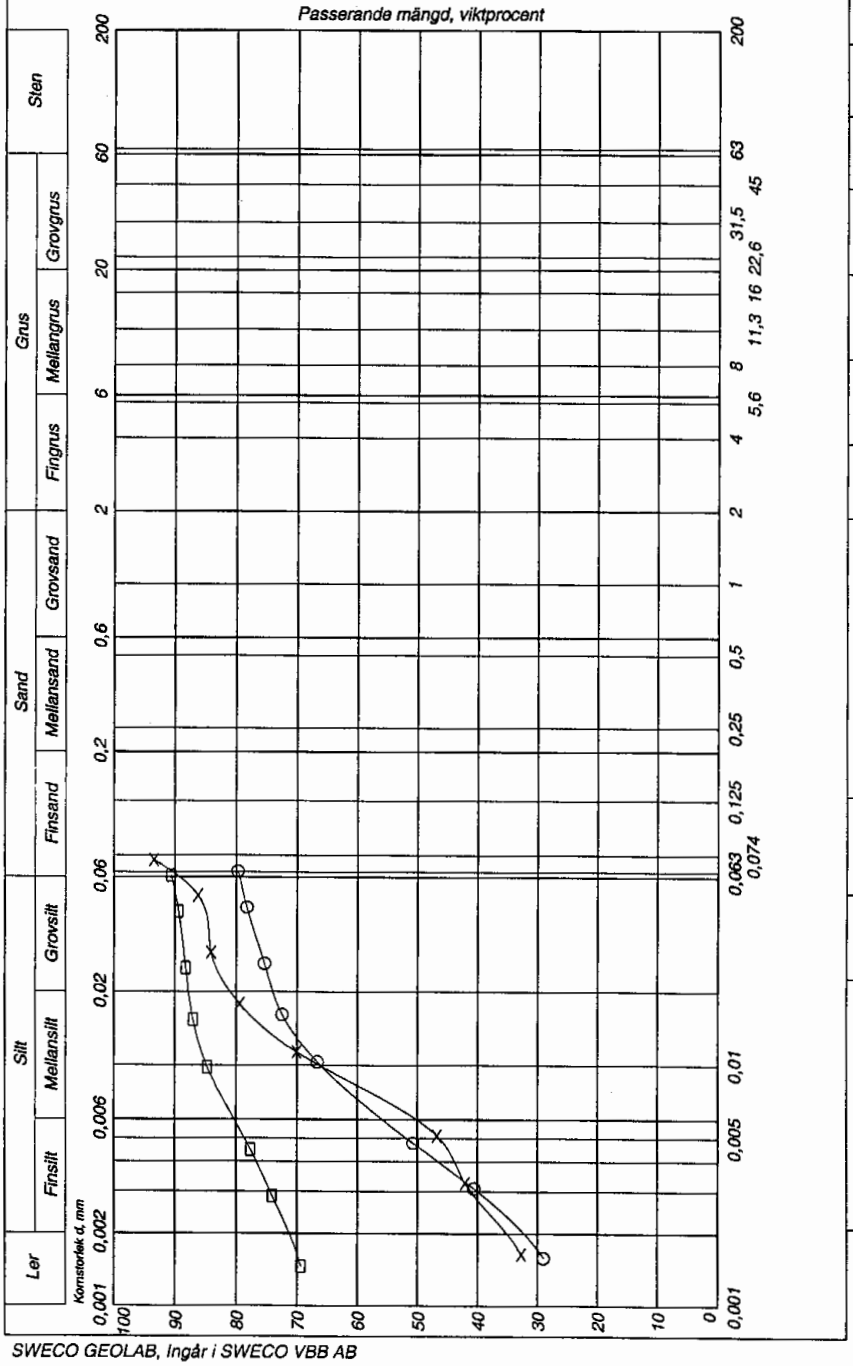

Sektion Borrhål	Prov-beteckn.	Djup (m)	Gäller mellan (m)	Benämning	Siktat Prov (g)	Glödgn.-förlust %	Mtrl % > mm	Tjäl-farlighet	d10	d60	d90
PSM006563	—×—		0,5-1,0	Grov gyttja	0						
PSM006563	—○—		4,0-4,64	Gyttja	0						
PSM006563	—□—		4,8-5,2	Lera med enstaka sandkorn	0						

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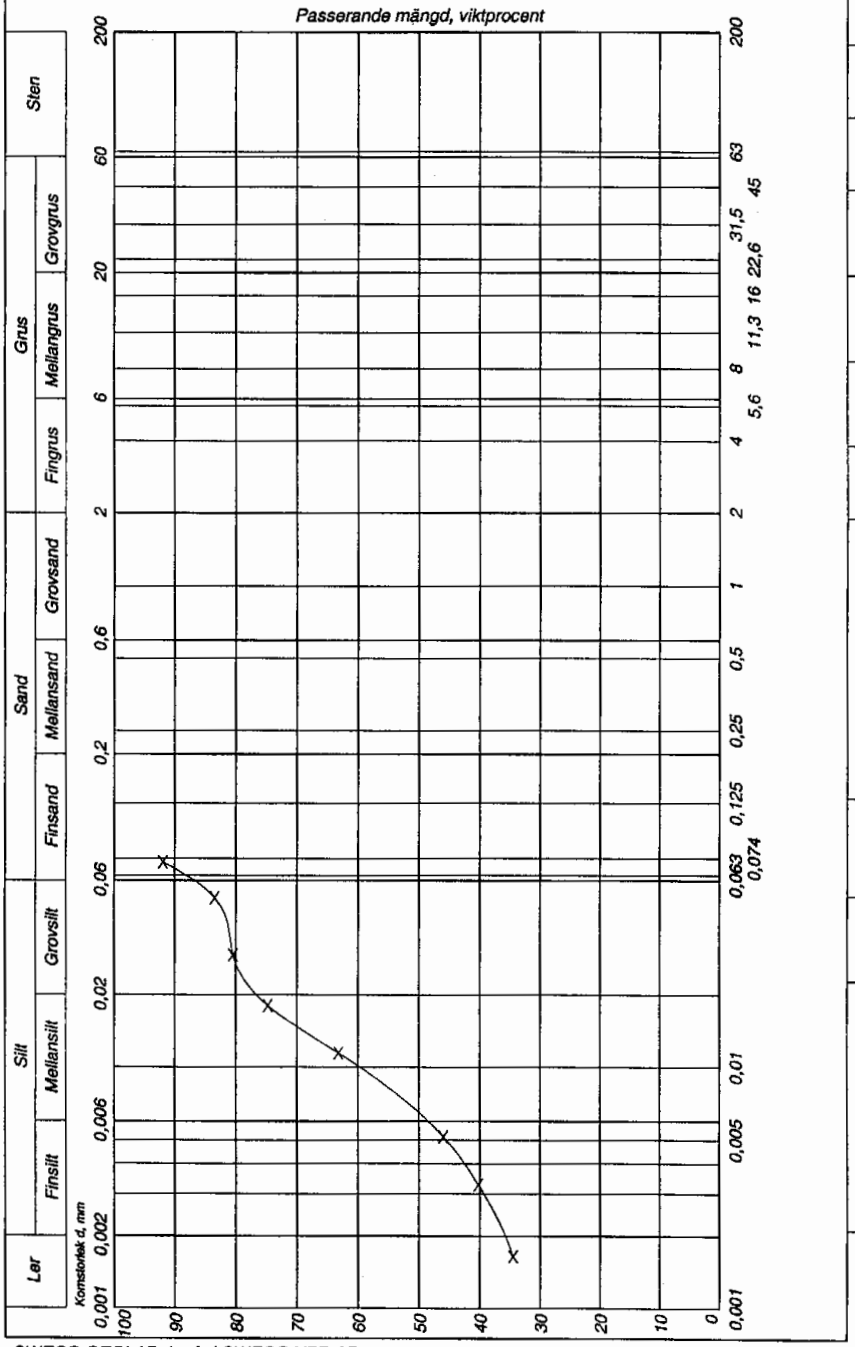

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PSM006563-A	—×—		1,1-1,5	Grov gyttja	0						

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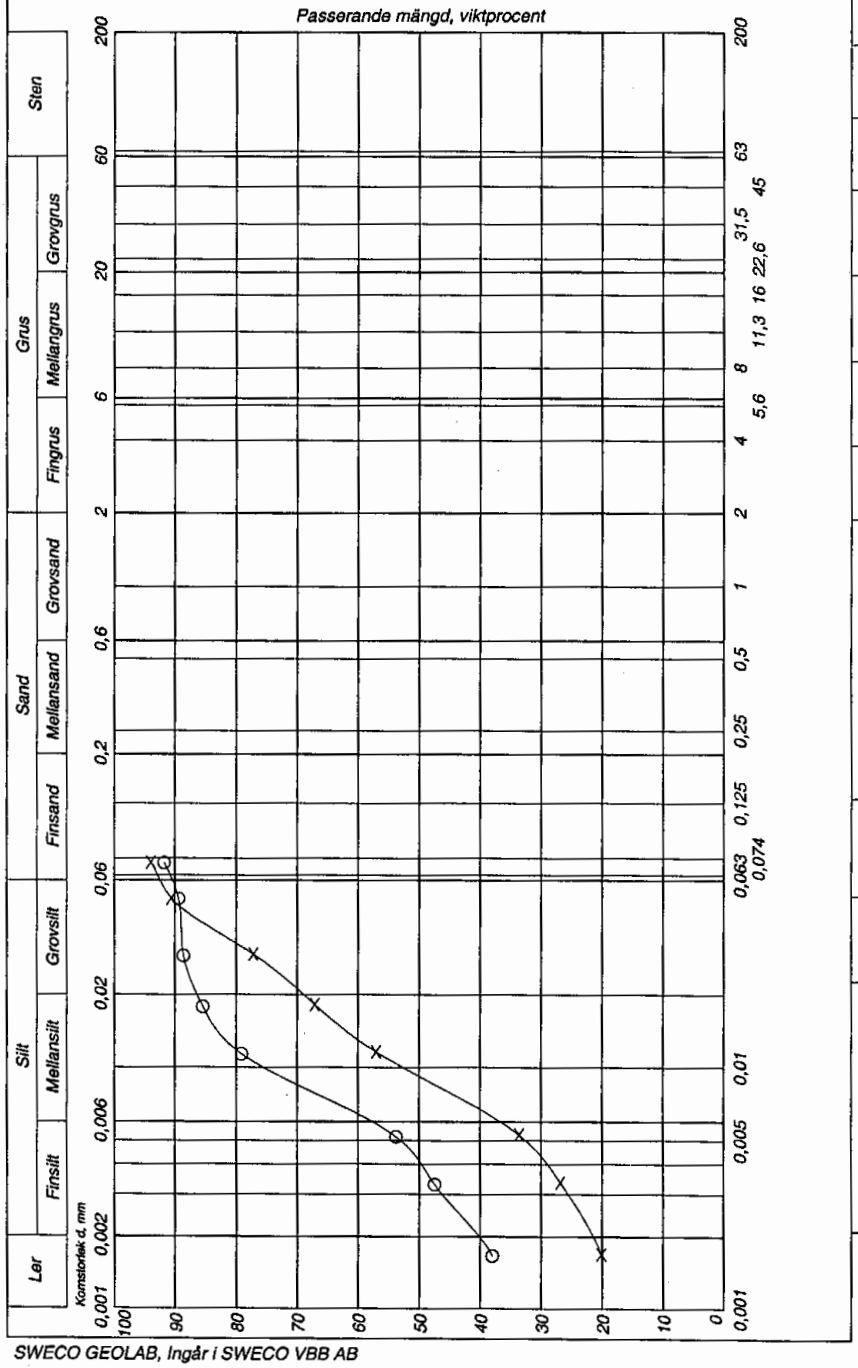

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PSM006564	— × —		2,0-2,27	Lerig gyttja	0						
PSM006564	— ○ —		2,45-2,60	Lerig gyttja	0						

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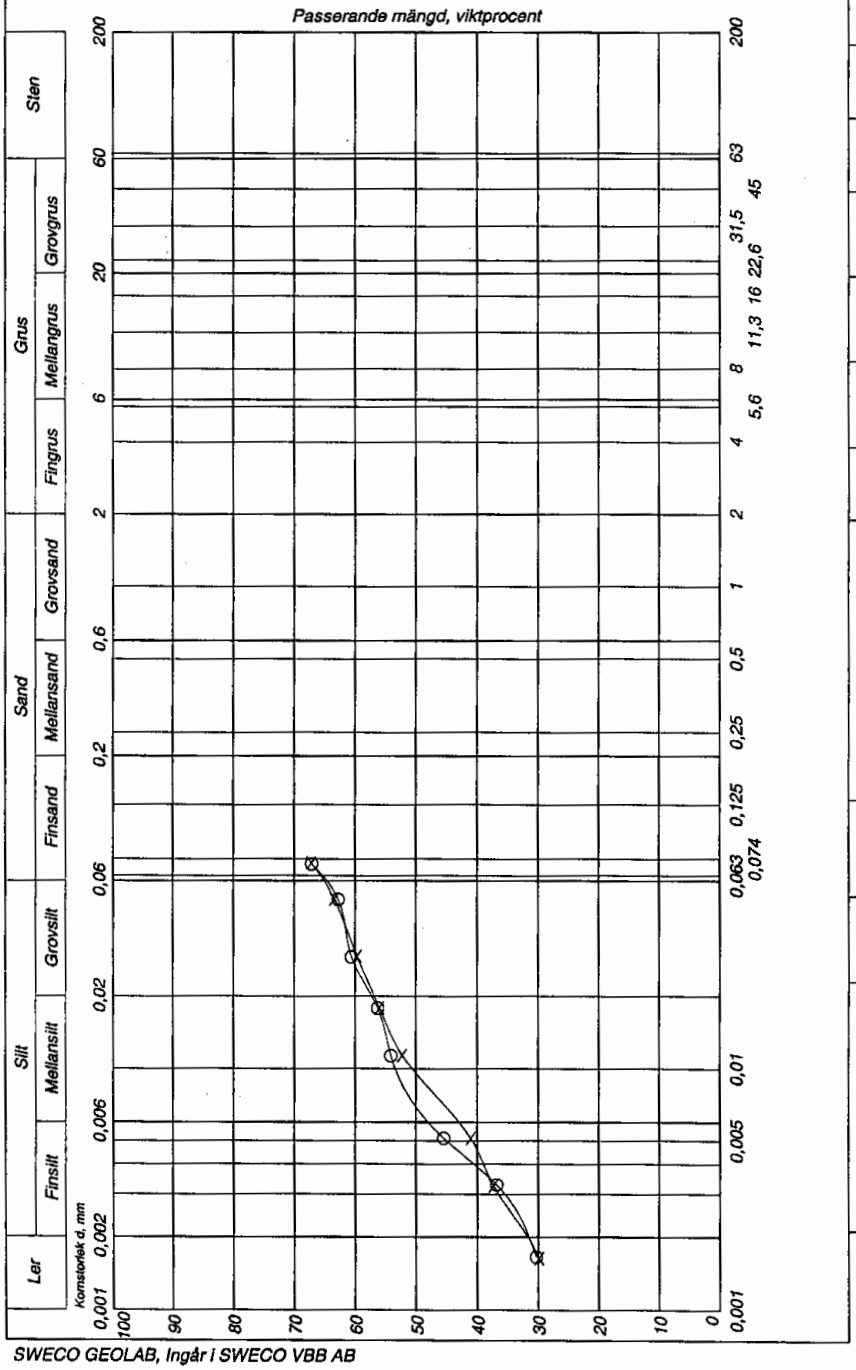

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PSM006565			0,0-0,45	Högförmultnad torv	0						
PSM006565			0,45-0,87	Rostfläckig siltig lerig gyttja	0						

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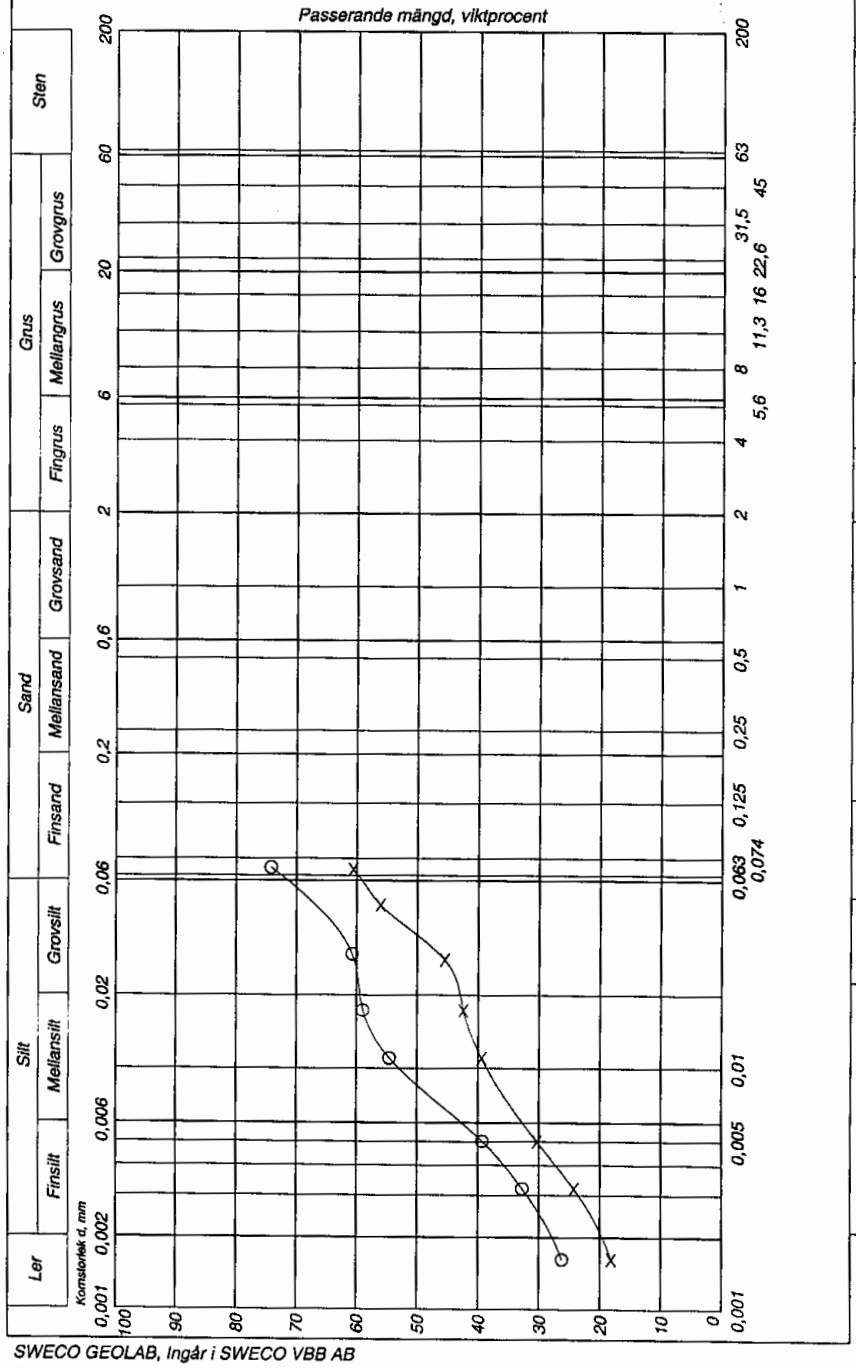

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PSM006566	— × —		0,1-0,38	Lerig gyttja	0						
PSM006566	— ○ —		1,33-1,6	Gyttja	0						

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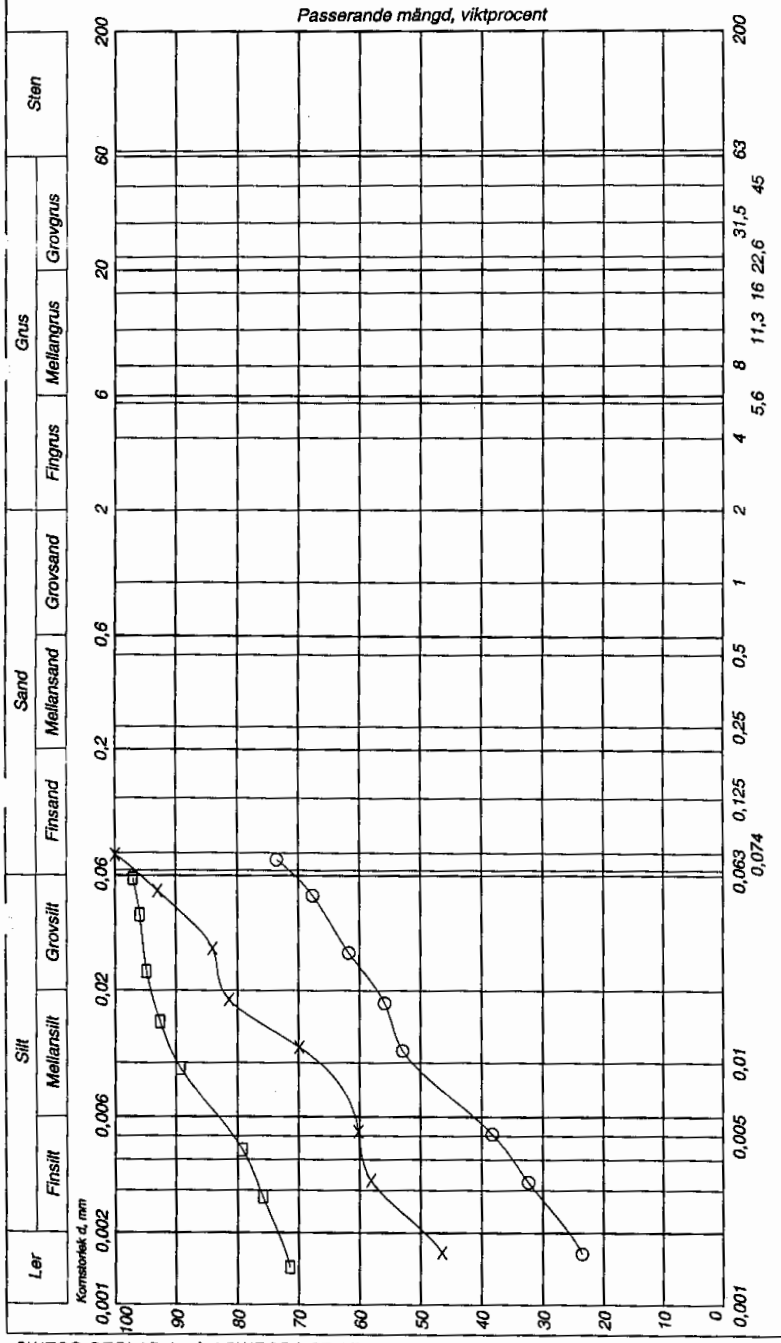

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PSM006567-A	×—×—		0,25-0,55	Grov gyttja	0						
PSM006567-A	○—○—		0,6-1,0	Grov gyttja	0						
PSM006567-A	□—□—		1,28-1,6	Lera	0						

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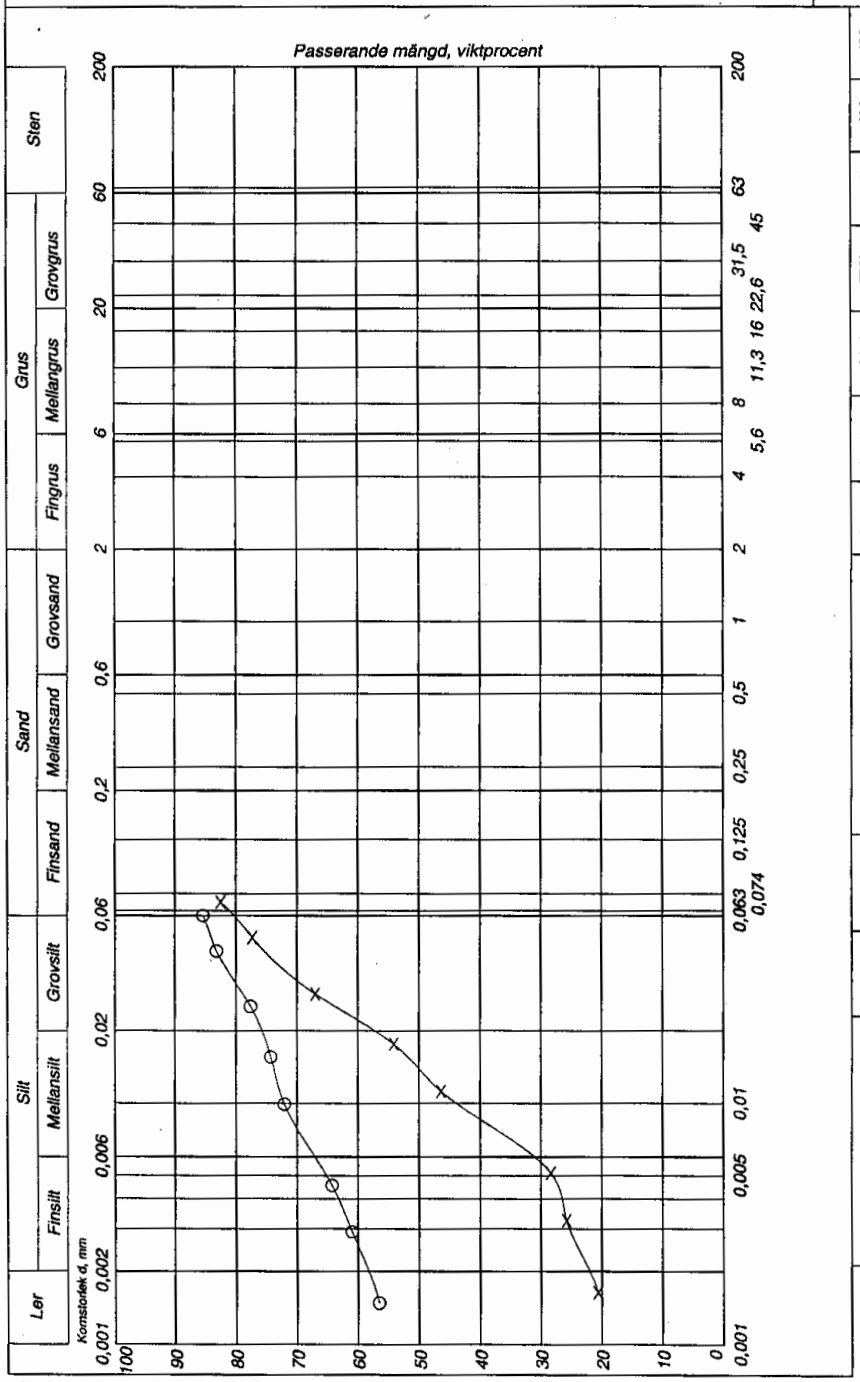

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PSM006568	— × —		0,4-1,0	Högförmultnad torv	0						
PSM006568	— ○ —		1,7-2,0	Gyttjig lera	0						

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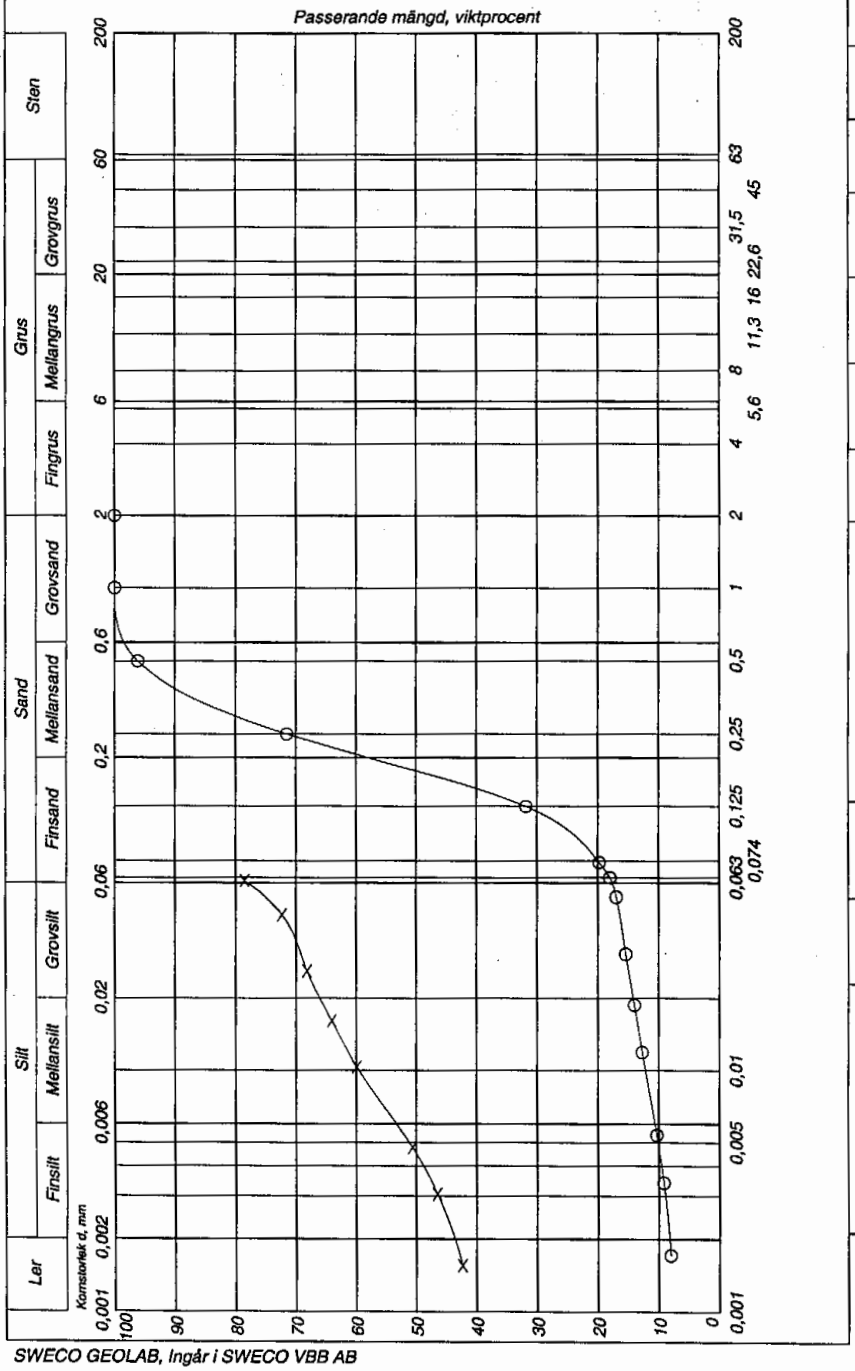

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PSM006568	—×—		2,12-2,8	Sandig lera	0						
PSM006568	—○—		2,93-3,0	Lerig sand	21						

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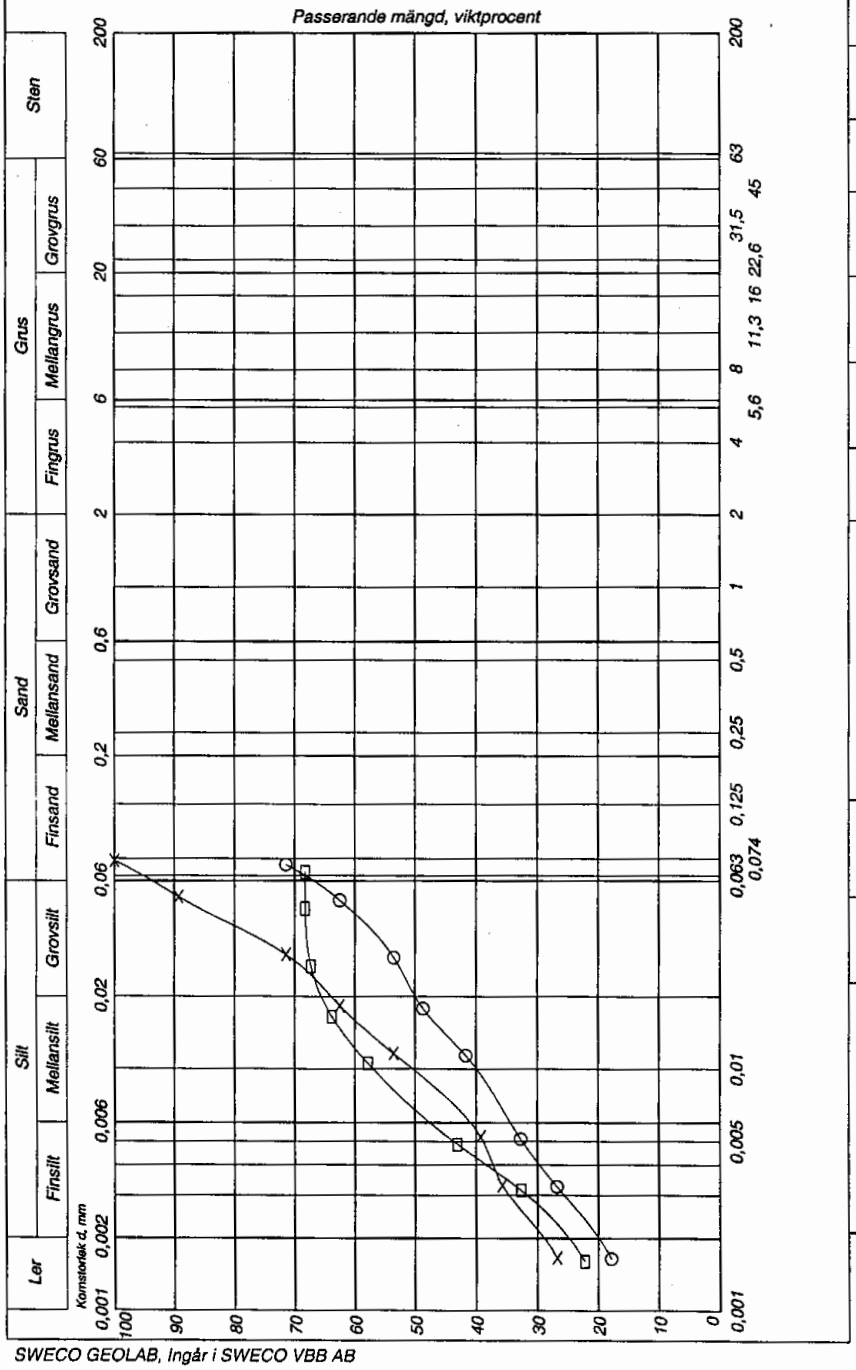

Sektion Borrhål	Prov-beteckn.	Djup (m)	Gäller mellan (m)	Benämning	Siktat Prov (g)	Glödgn.-förlust %	Mtrl % > mm	Tjäl-farlighet	d10	d60	d90
PSM006570-A	—×—		0-0,35	Högförmultnad torv	0						
PSM006570-A	—○—		0,35-1,0	Gyttja	0						
PSM006570-A	—□—		4,0-5,0	Grov gyttja	0						

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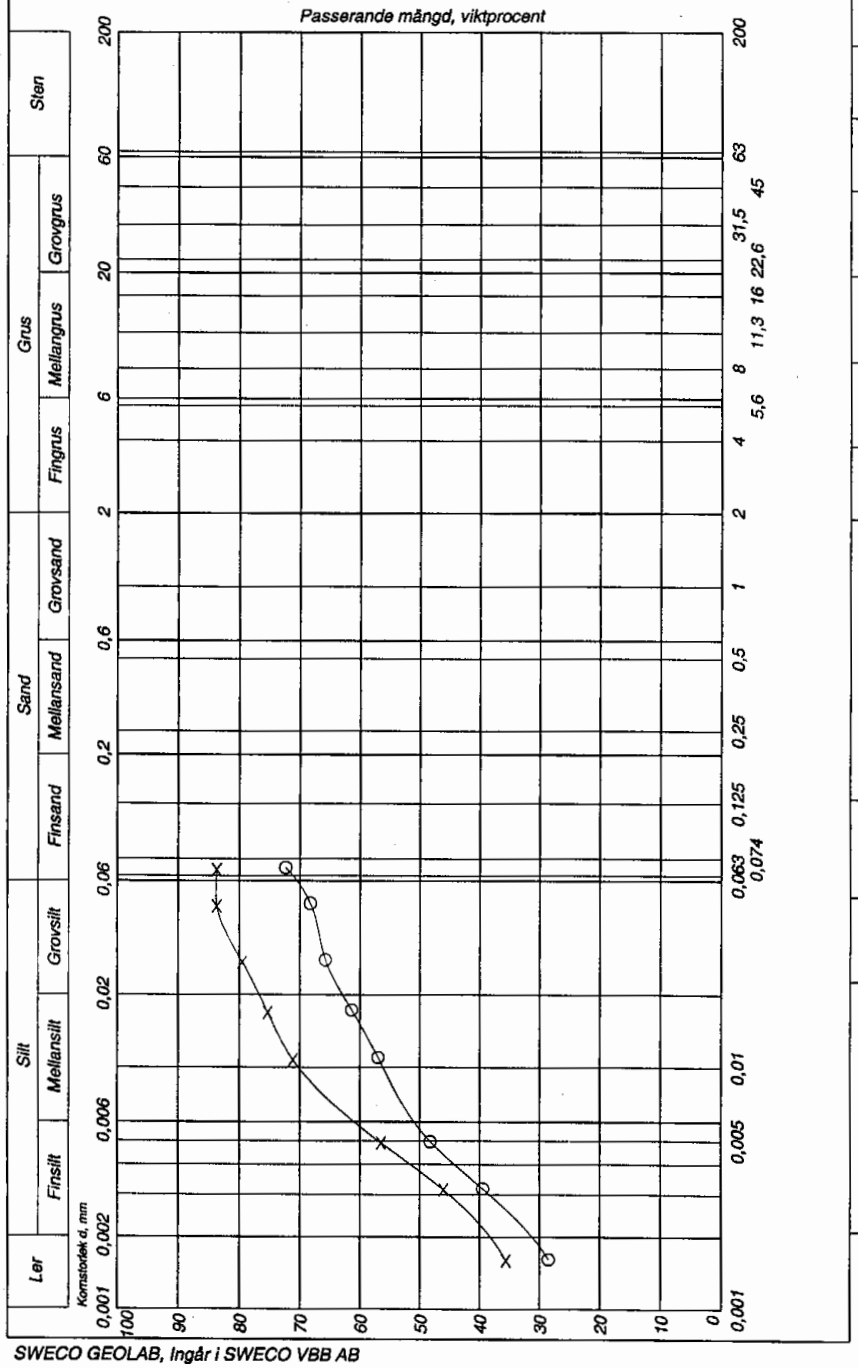

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PSM006571	—×—		1,15-2,0	Grov gyttja	0						
PSM006571	—○—		3,0-4,0	Grov gyttja	0						

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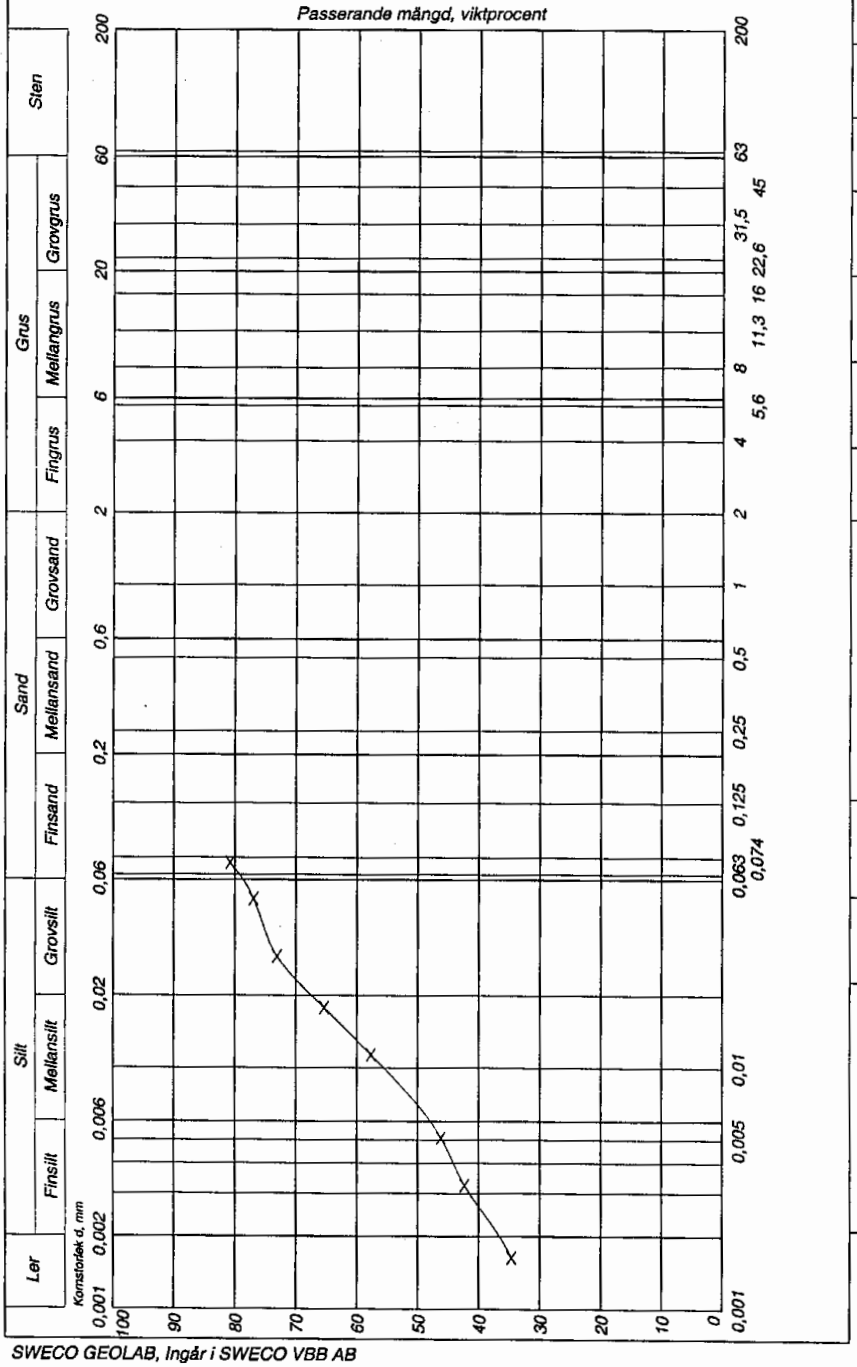

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PSM006571-A	—×—		0,3-1,0	Högförmultnad torv	0						

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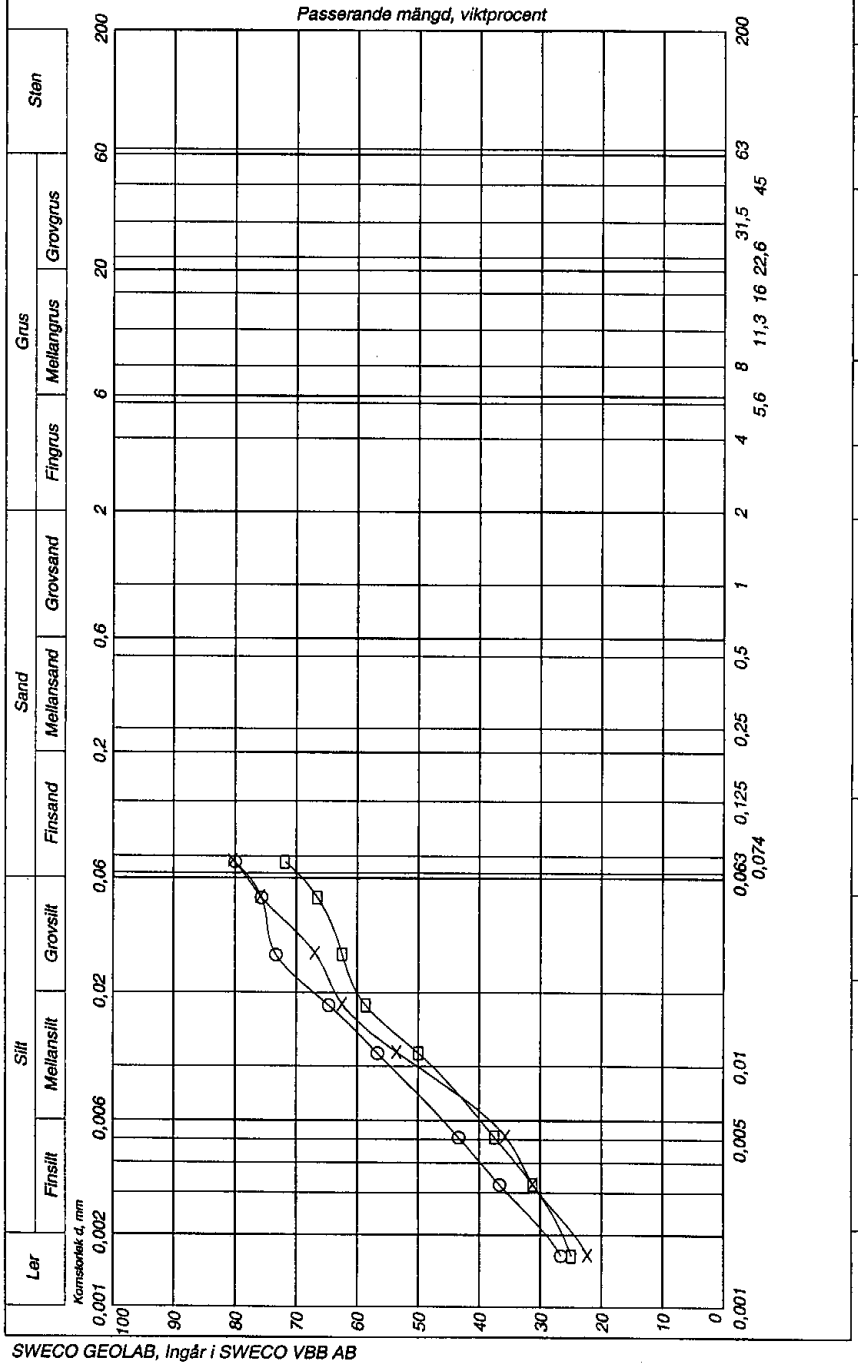

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PSM006572-A	—×—		0,15-1,0	Grov gyttja	0						
PSM006572-A	—○—		1,0-2,0	Grov gyttja	0						
PSM006572-A	—□—		5,0-6,0	Grov gyttja	0						

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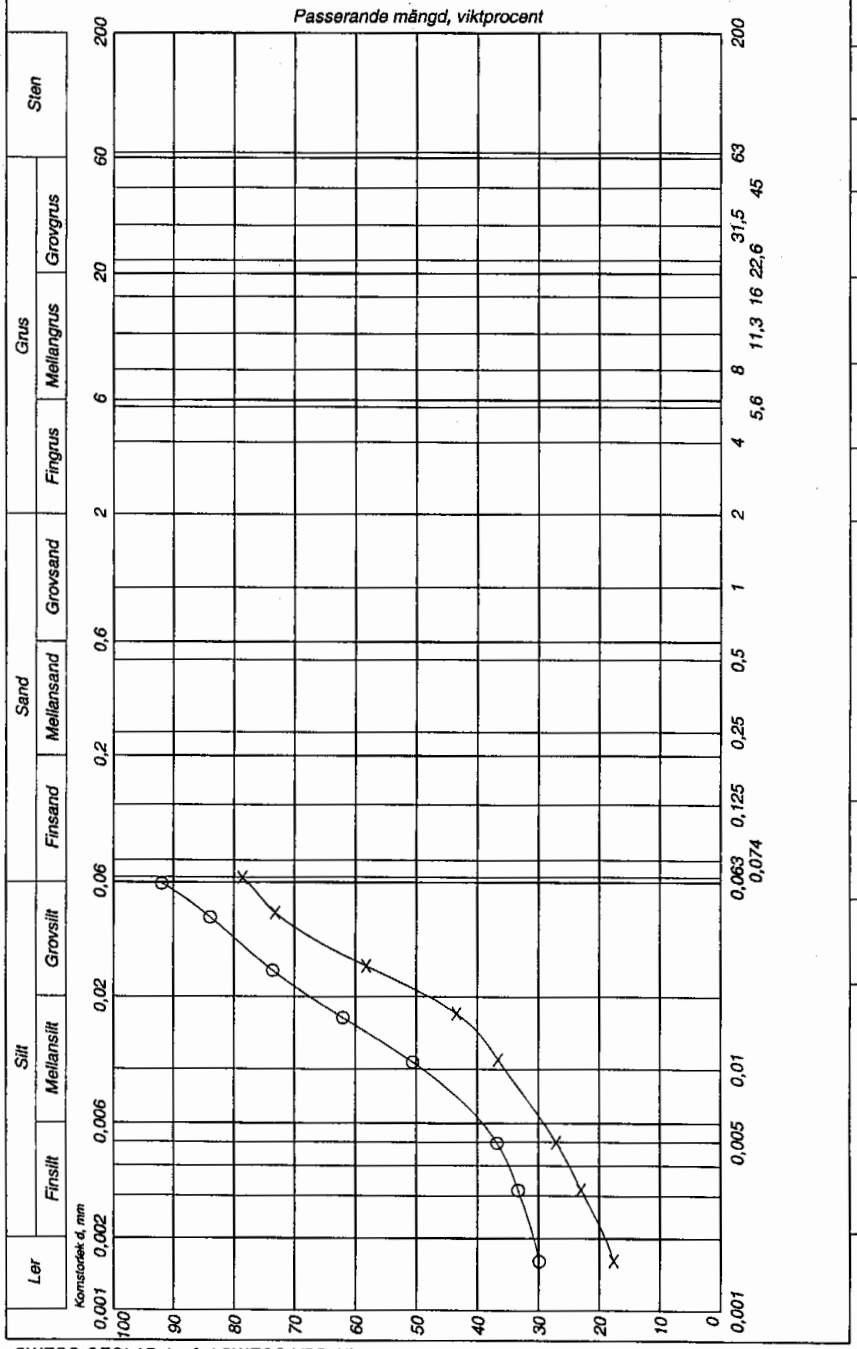

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PSM006573	—×—		0,13-0,58	Gyttja	0						
PSM006573	—○—		1,0-1,26	Gyttjig lera	0						

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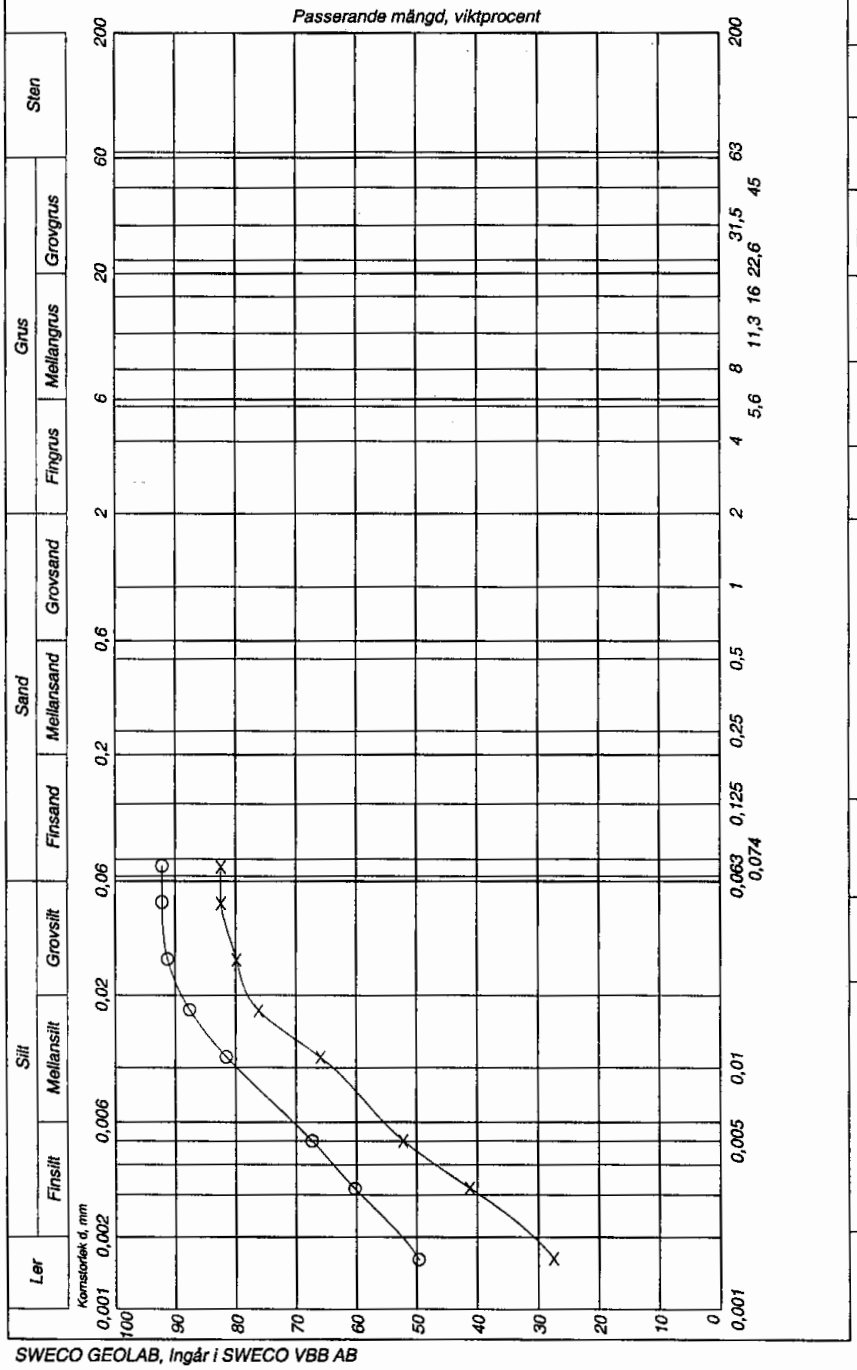

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PSM006574	—×—		0,5-1,0	Högförmultnad torv	0						
PSM006574	—○—		4,5-5,0	Högförmultnad torv	0						

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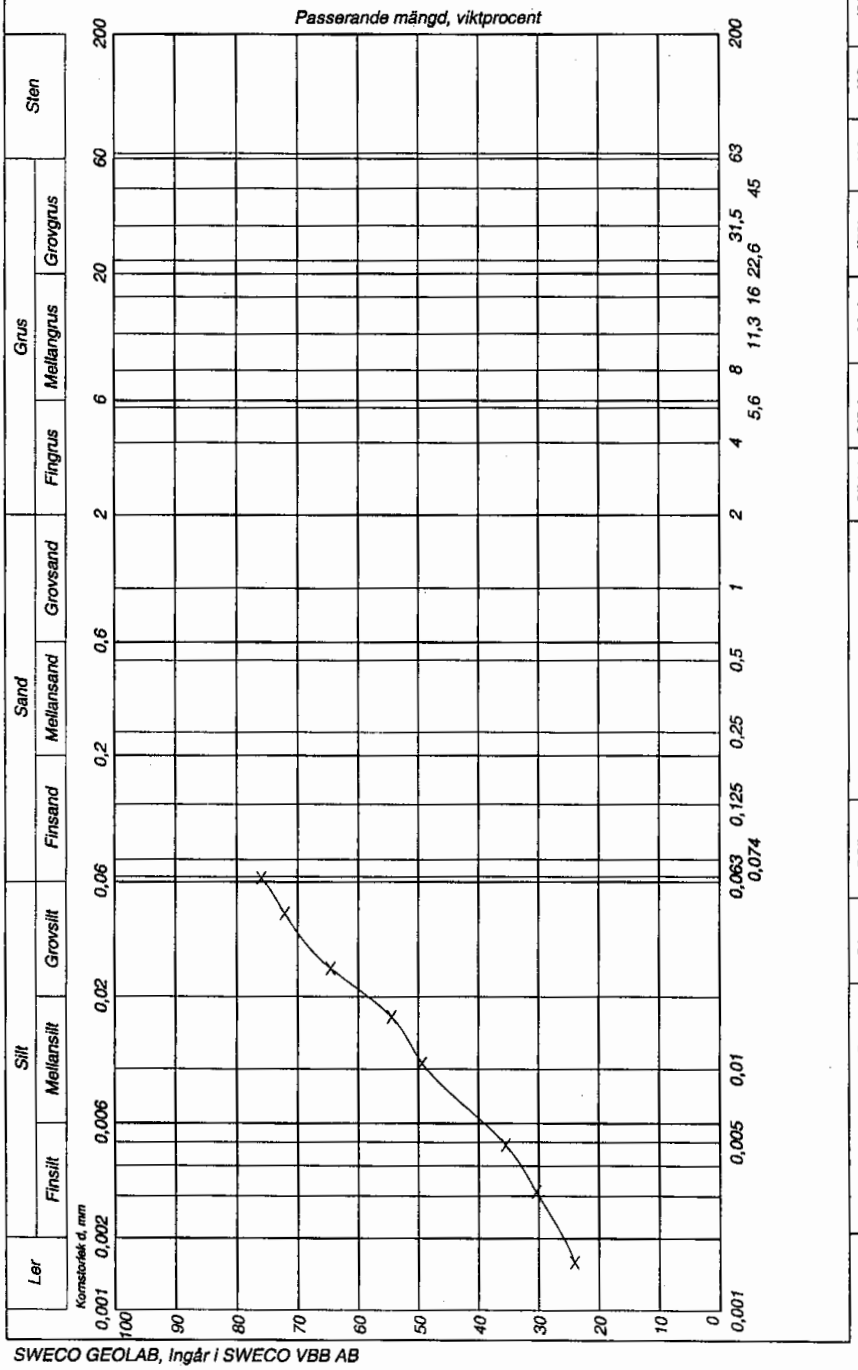

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PSM006575	—×—		2,6-3,85	Gyttja	0						

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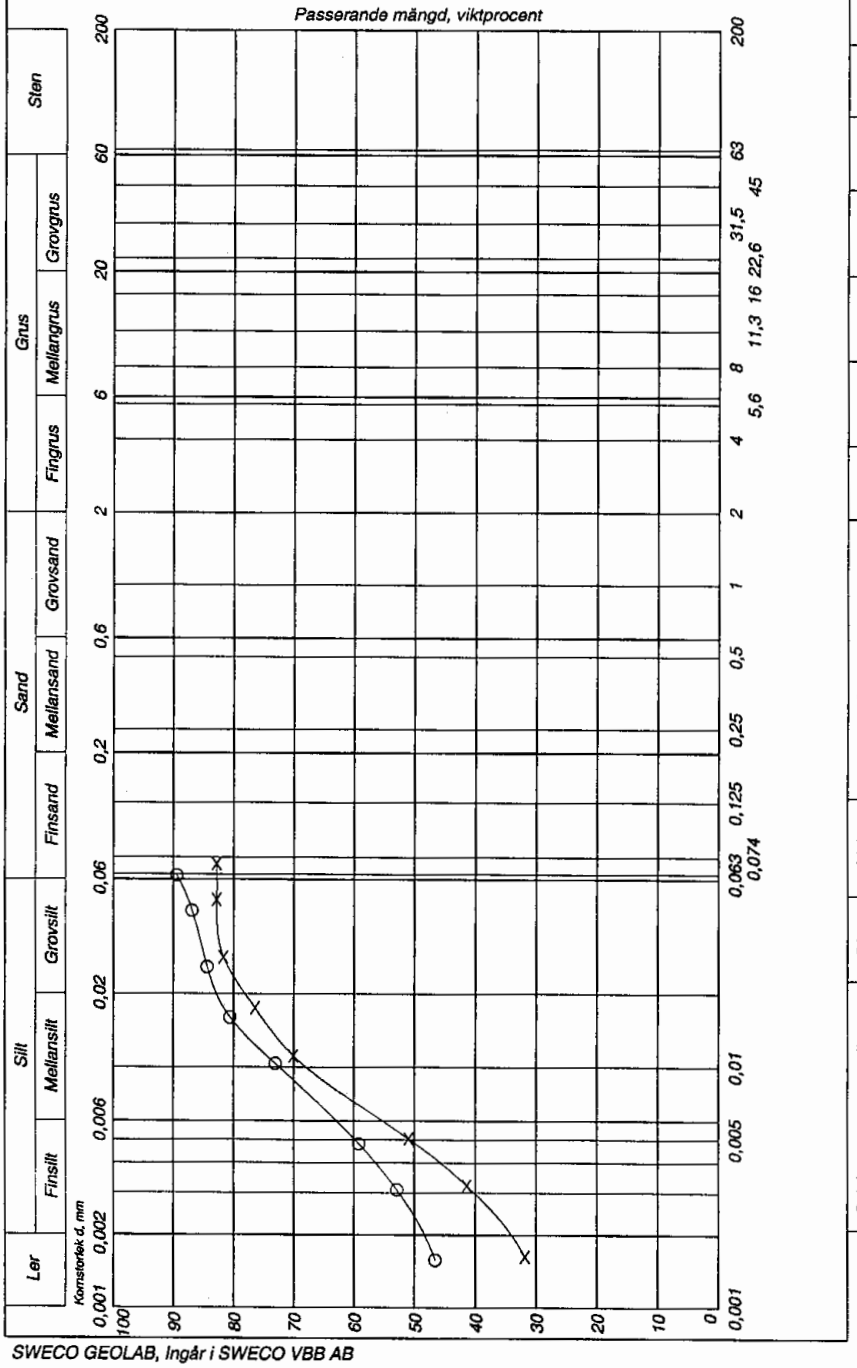

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PSM006575-A	— × —		1,0-2,0	Grov gyttja	0						
PSM006575-A	— ○ —		4,25-5,0	Lera	0						

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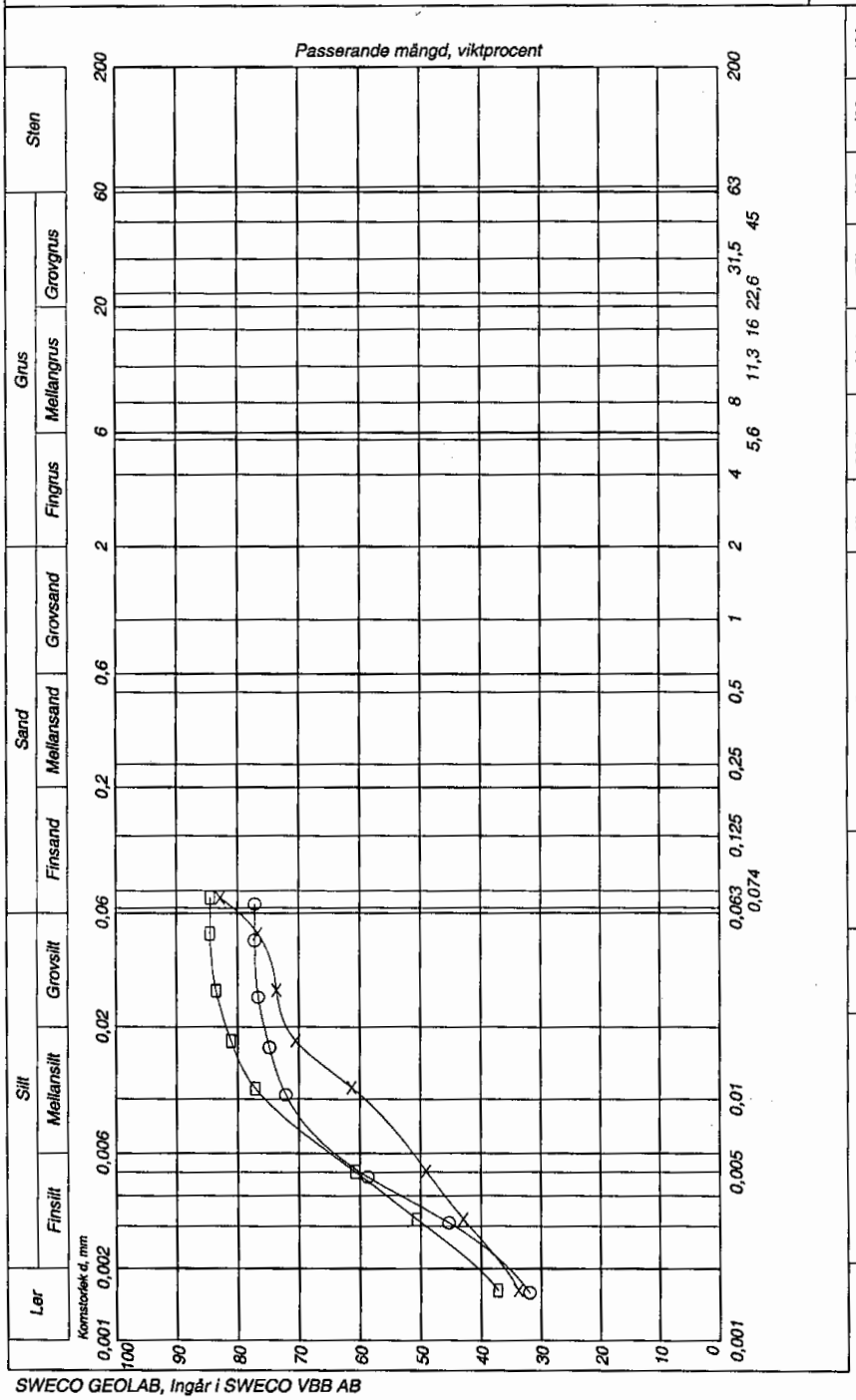

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PSM006577	—×—		0,1-0,5	Grov gyttja	0						
PSM006577	—○—		1,0-1,6	Gyttja	0						
PSM006577	—□—		2,6-3,0	Gyttja	0						

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Projekt: **Sedimentprover**	*Datum:* 2004-10-22
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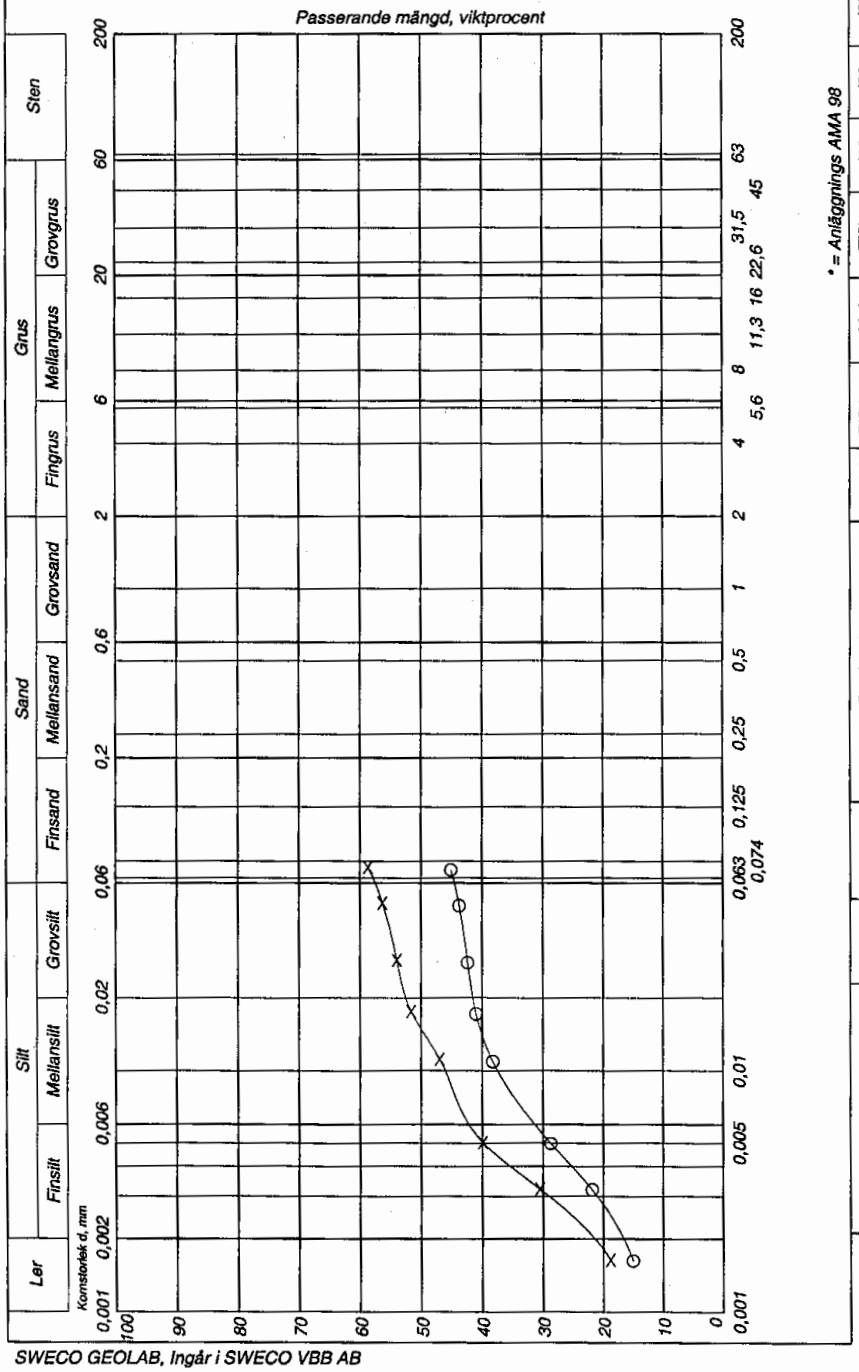

* = Anläggnings AMA 98

Sektion Borrhål	Prov-beteckn.	Djup (m)	Gäller mellan (m)	Benämning	Siktat Prov (g)	Glödgn.-förlust %	Mtrl % > mm	Tjäl-farlighet	d10	d60	d90
PSM006578	—×—		0,1-0,6	Grov gyttja	0			*			
PSM006578	—○—		0,7-1,0	Grov gyttja	0						

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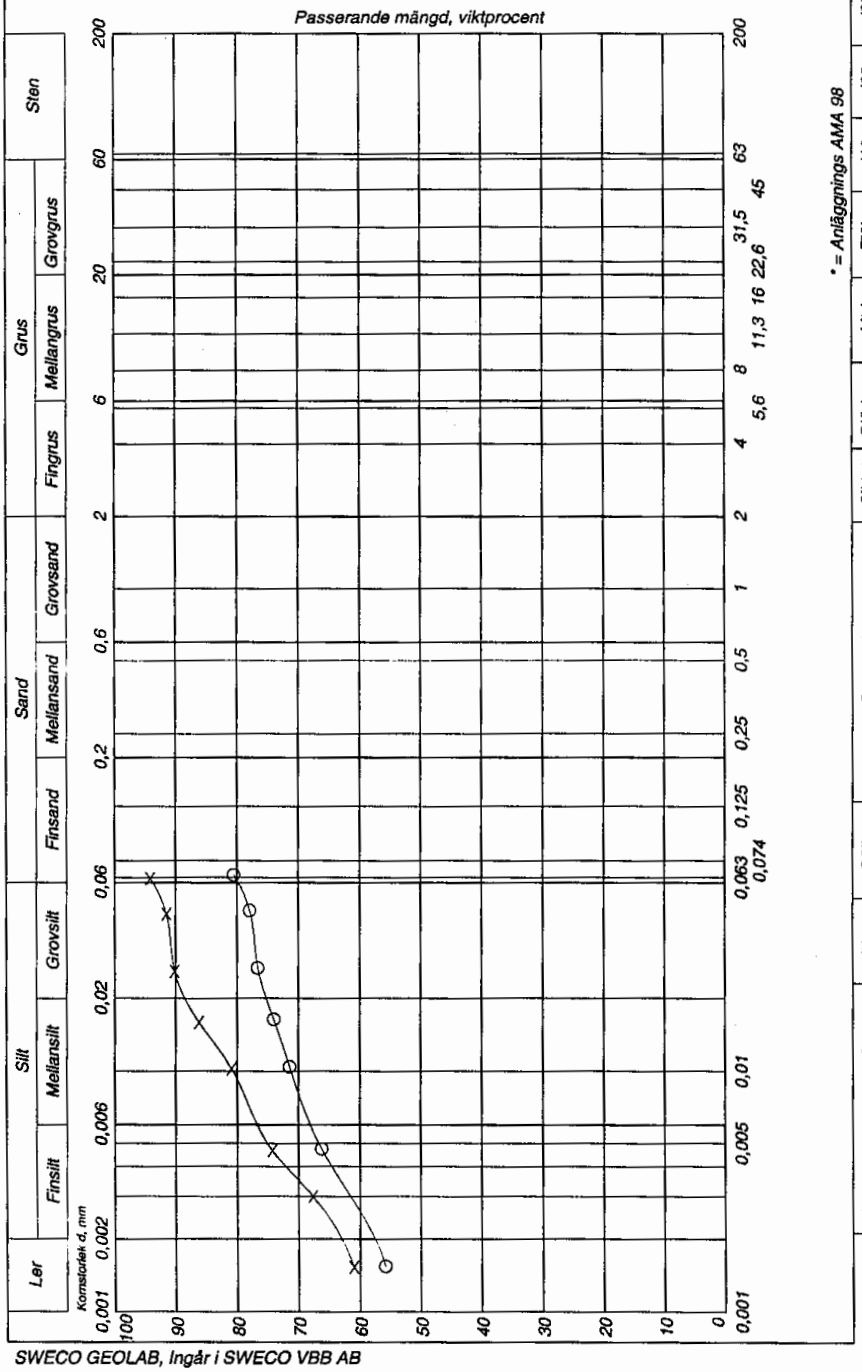

* = Anläggnings AMA 98

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PSM006578	—×—		1,15-1,5	Lera	0						
PSM006578	—○—		1,6-2,0	Sandig lera	0			*			

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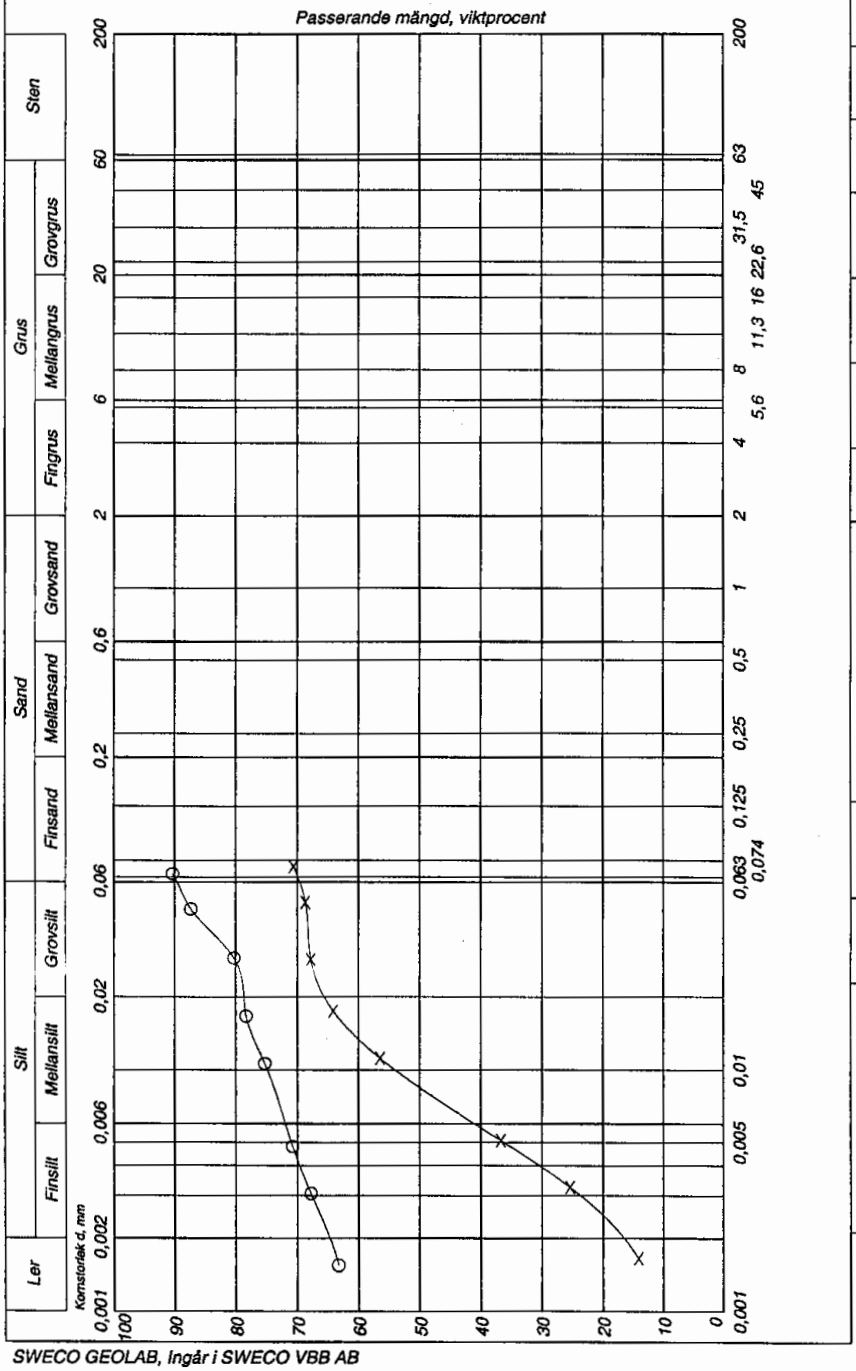

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PSM006579-A	—×—		0-0,6	Högförmultnad torv	0						
PSM006579-A	—○—		1,48-1,9	Något gyttjig lera	0						

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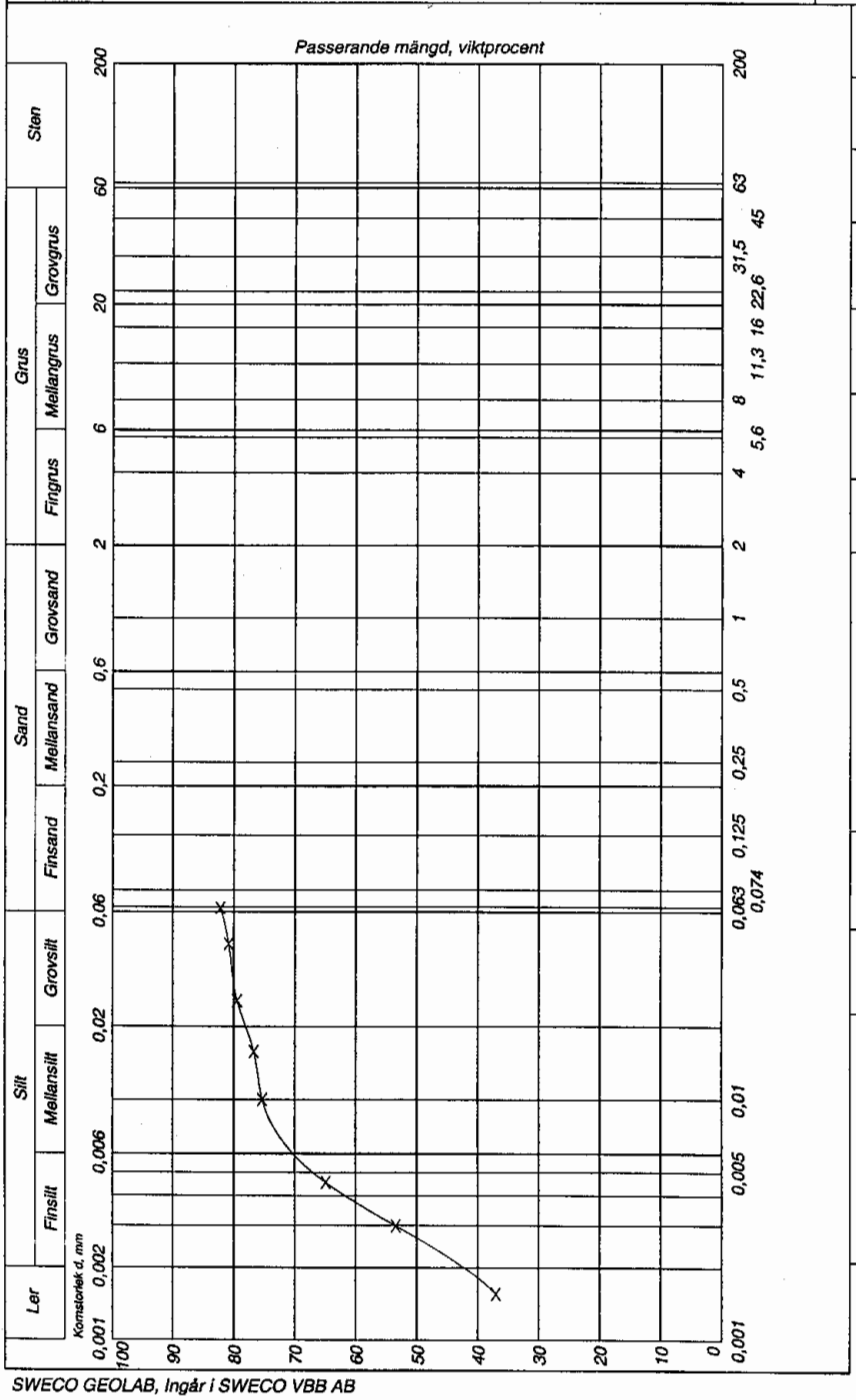

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PSM006580			0,4-1,0	Gyttja	0						

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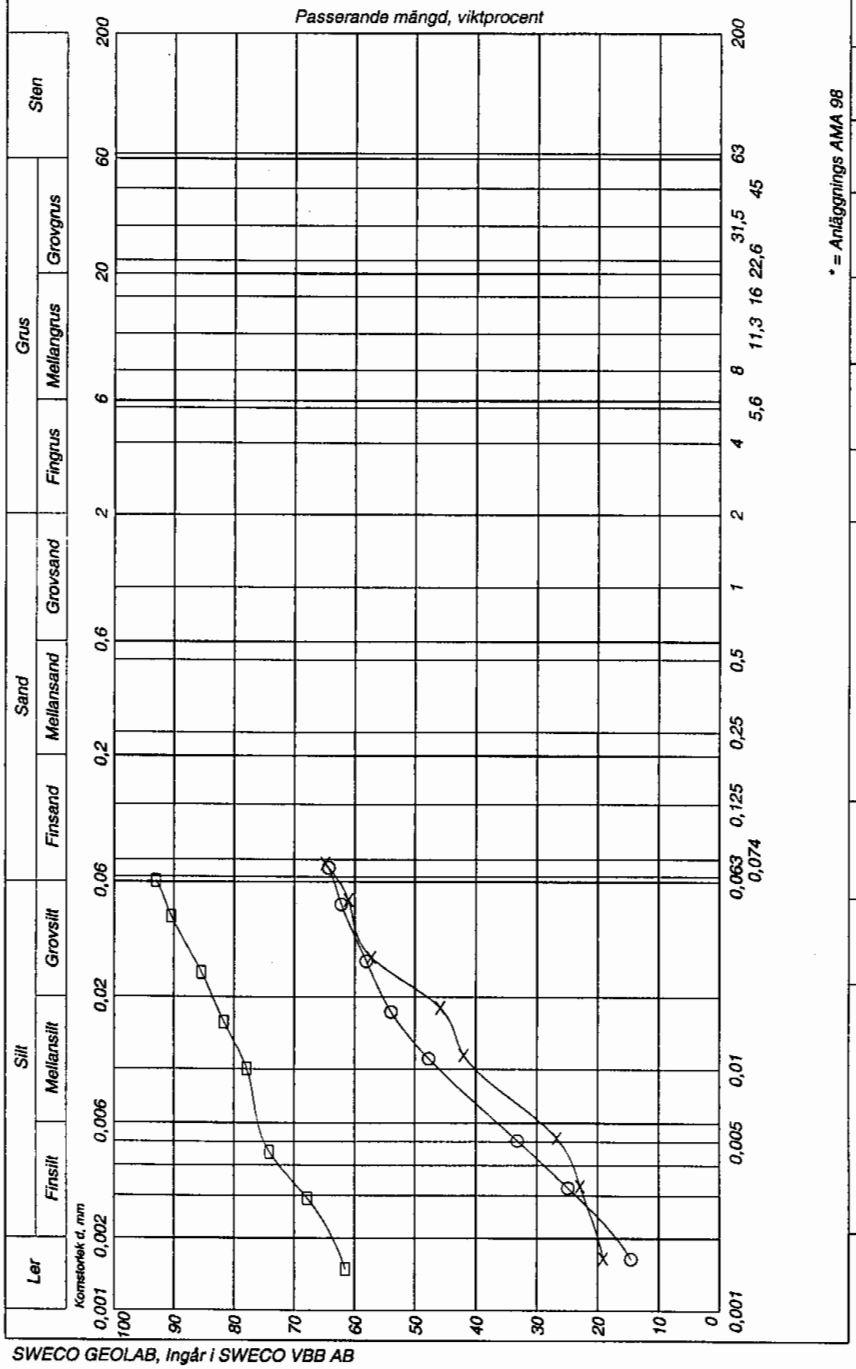

* = Anläggnings AMA 98

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PSM006580-A	—×—		0,15-1,0	Mellantorv	0			*			
PSM006580-A	—○—		2,0-2,45	Grov gyttja	0			*			
PSM006580-A	—□—		2,58-3,0	Gyttjig lera	0			*			

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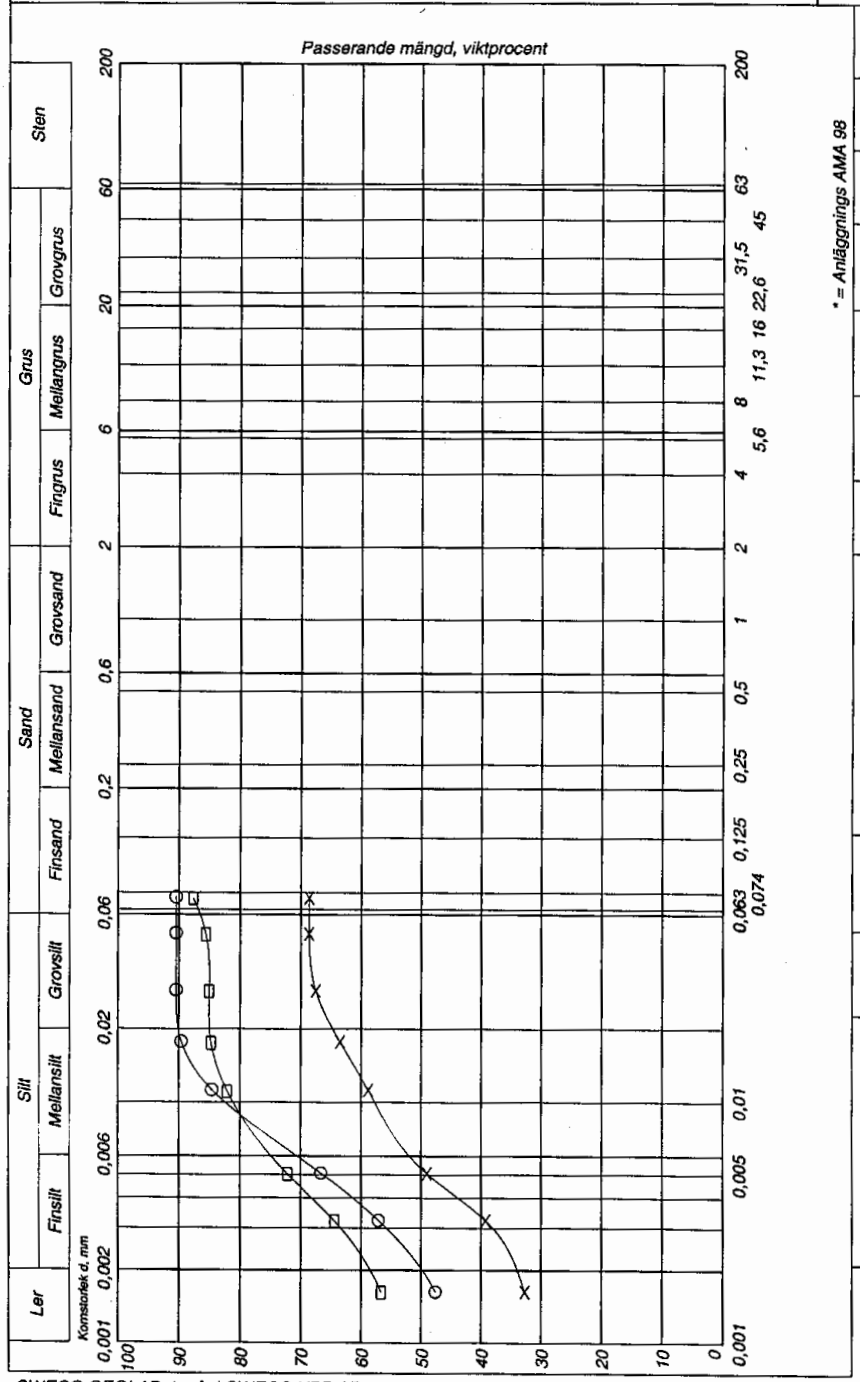

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PSM006581	—×—		0,3-1,0	Mellantorv	0			*			
PSM006581	—○—		2,0-2,55	Grov gyttja	0			*			
PSM006581	—□—		3,85-4,0	Lerig gyttja	0			*			

** = Anläggnings AMA 98*

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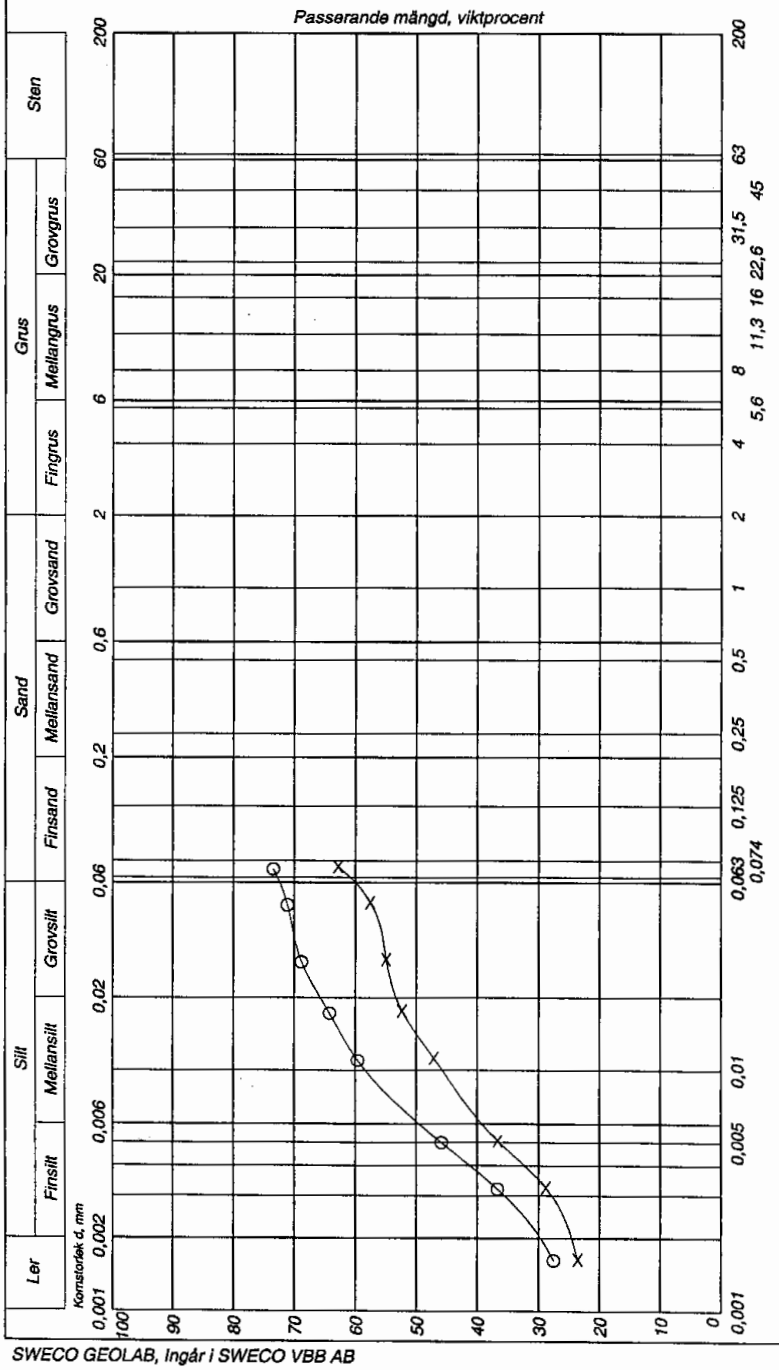

* = Anläggnings AMA 98

Sektion Borrhål	Prov-beteckn.	Djup (m)	Gäller mellan (m)	Benämning	Siktat Prov (g)	Glödgn.-förlust %	Mtrl % > mm	Tjäl-farlighet	d10	d60	d90
PSM006583	—×—		0,06-0,45	Grov gyttja	0			*			
PSM006583	—○—		1,2-2,0	Gyttja	0			*			

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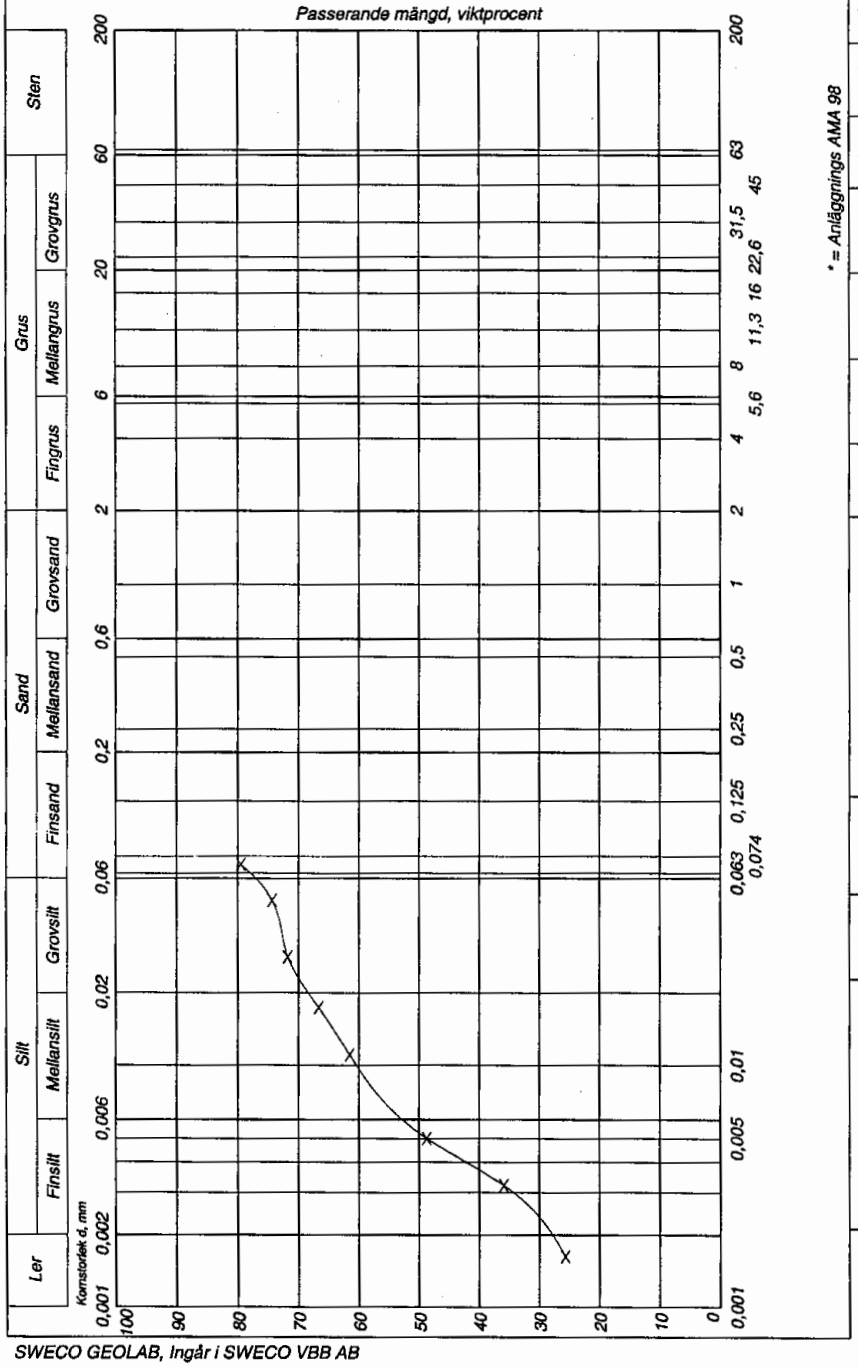

* = Anläggnings AMA 98

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PSM006584	—×—		0,09-0,71	Grov gyttja	0			*			

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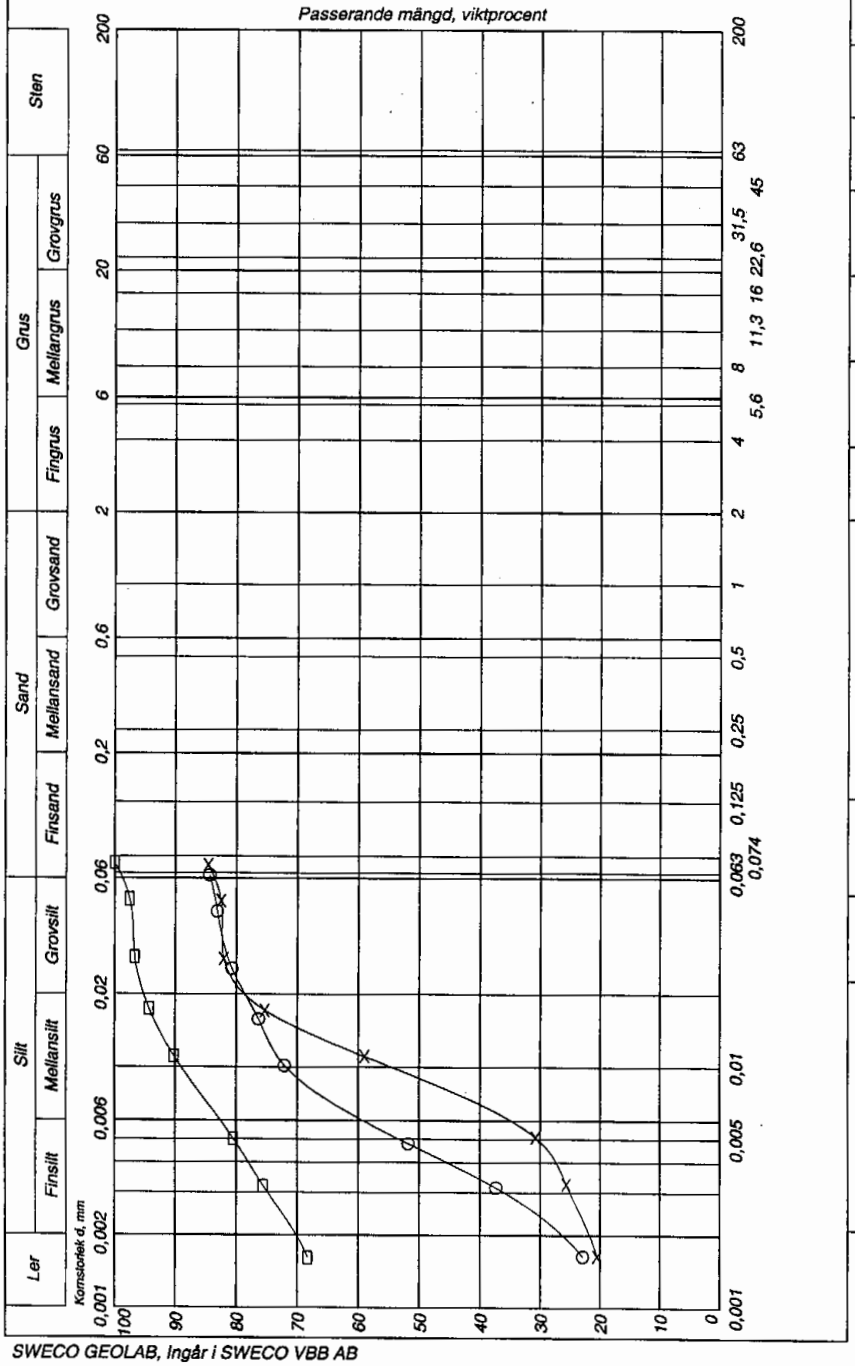

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PSM006585			0,4-1,0	Gyttja	0						
PSM006585			3,4-4,0	Lerig gyttja	0						
PSM006585			4,82-5,08	Lera	0						

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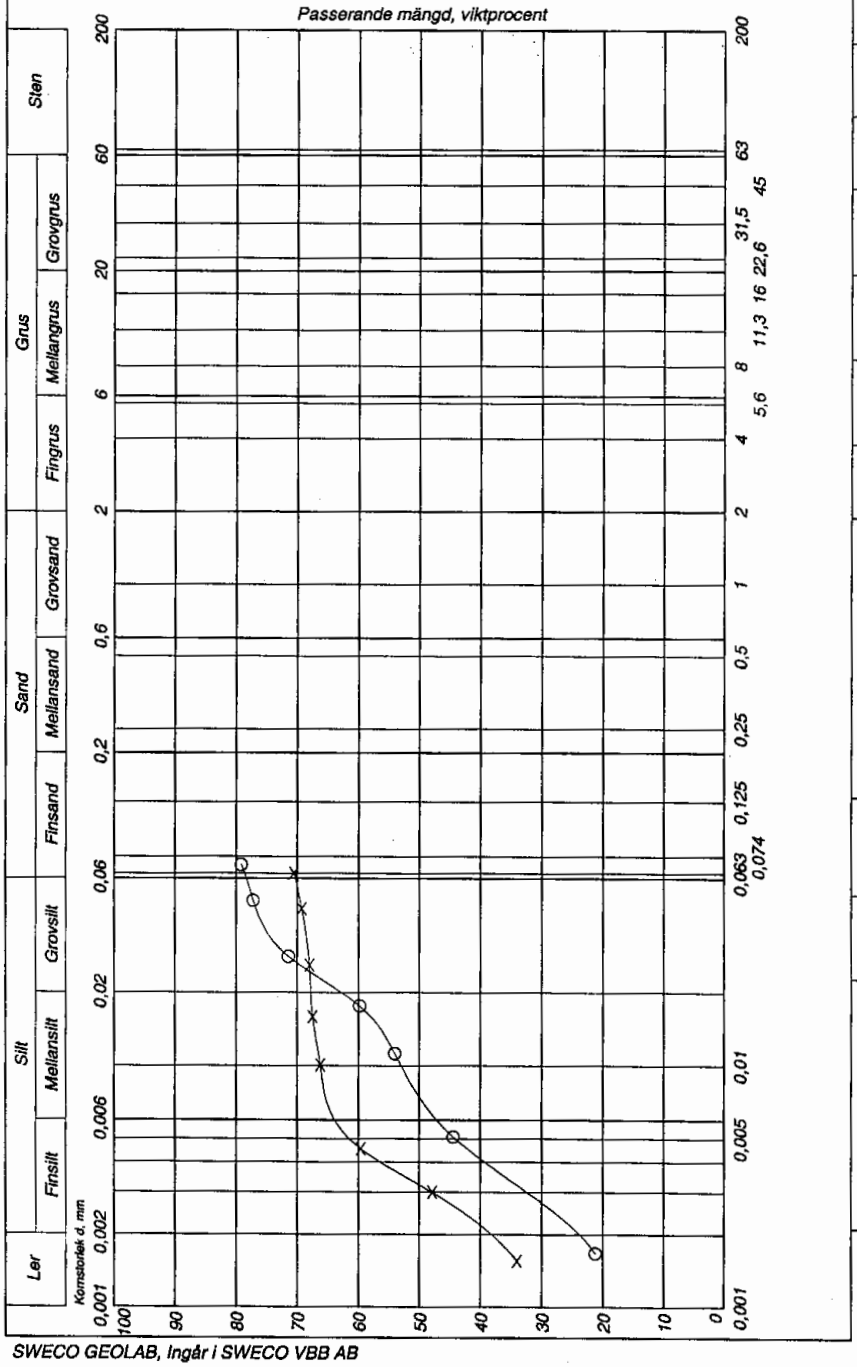

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PSM006586	—×—		0,4-1,0	Gyttja	0						
PSM006586	—○—		2,4-2,8	Lerig gyttja	0						

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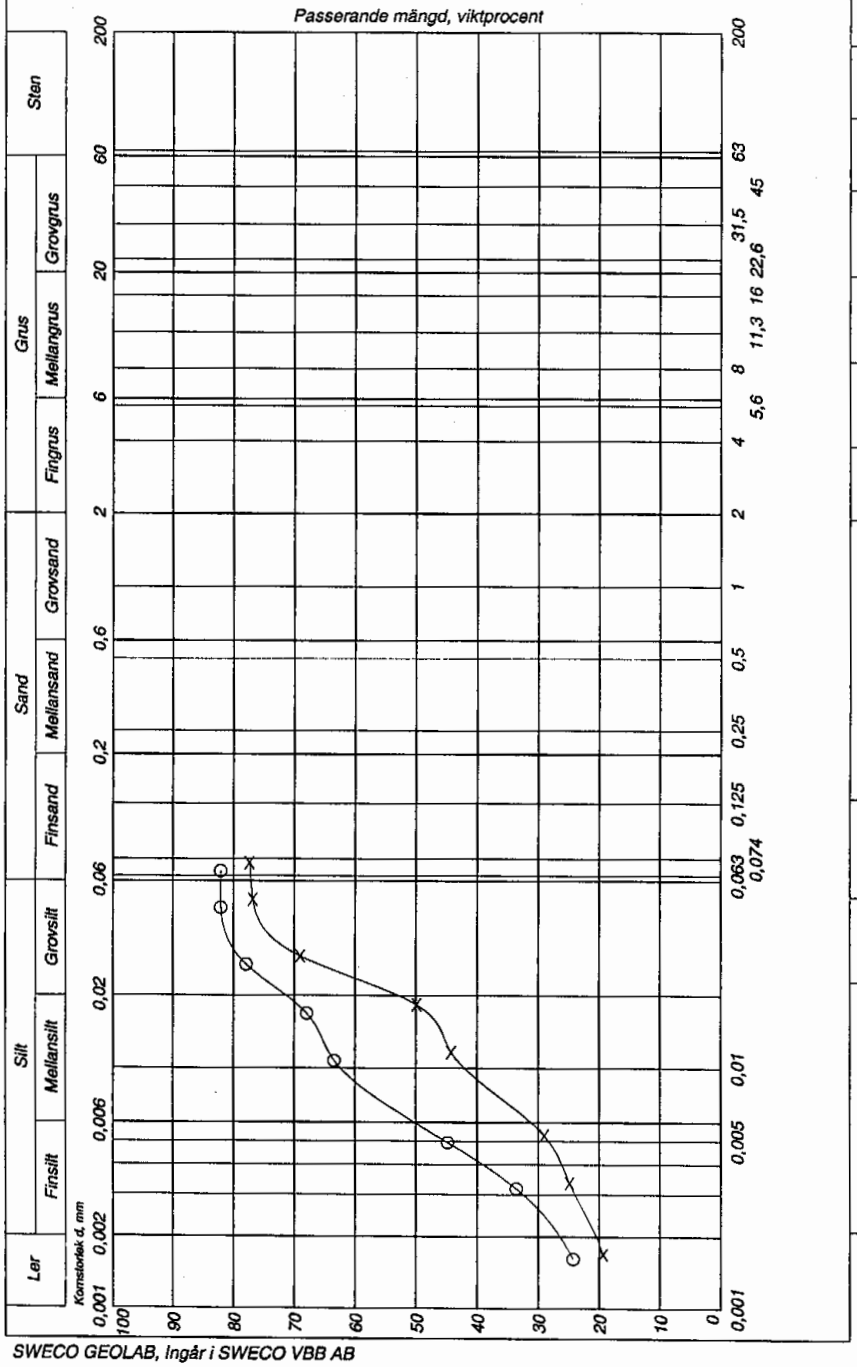

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PSM006587	—×—		0,37-0,78	Lerig gyttja	0						
PSM006587	—○—		1,2-1,8	Gyttja	0						

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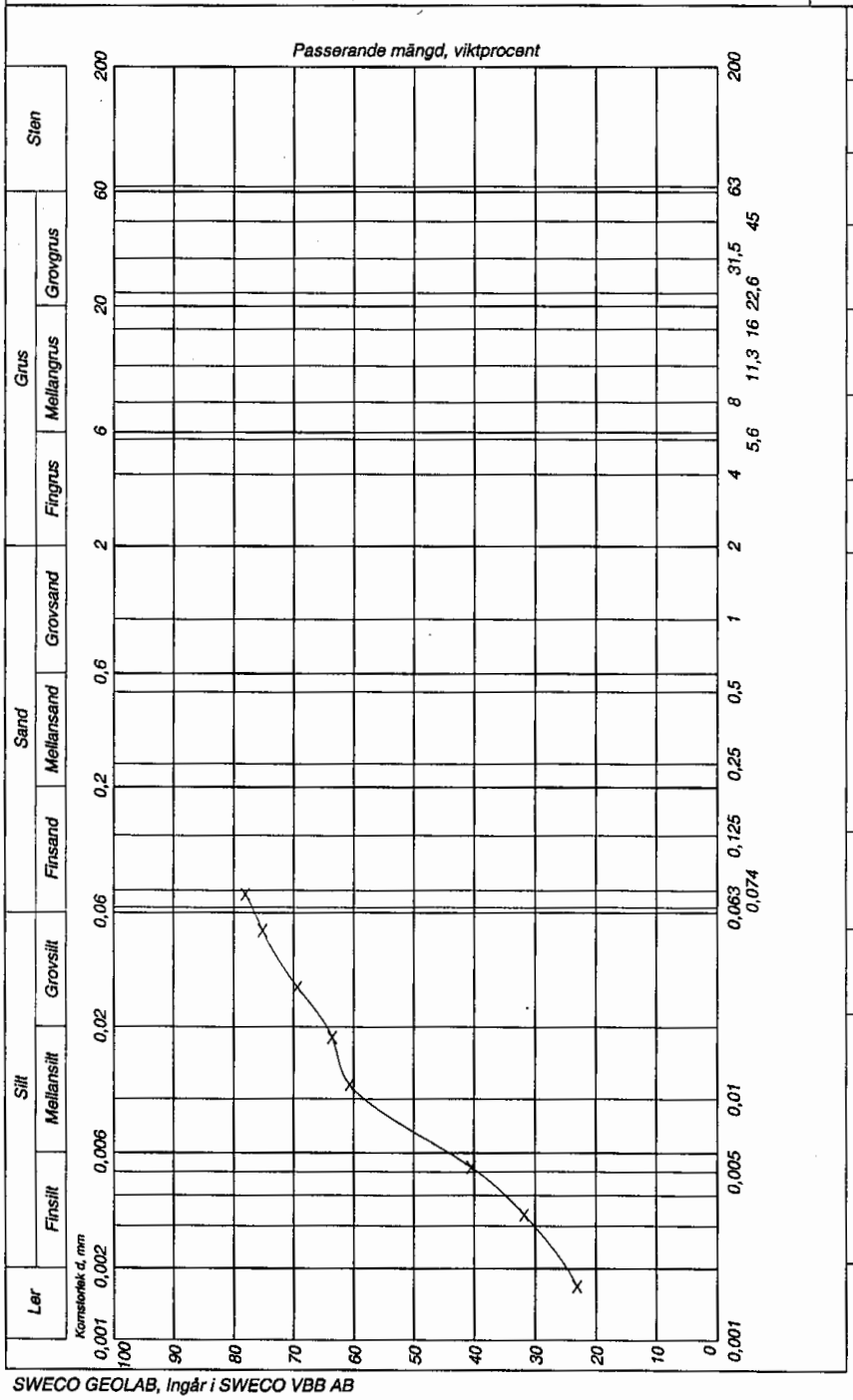

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PSM006588			2,2-2,7	Lerig gyttja	0						

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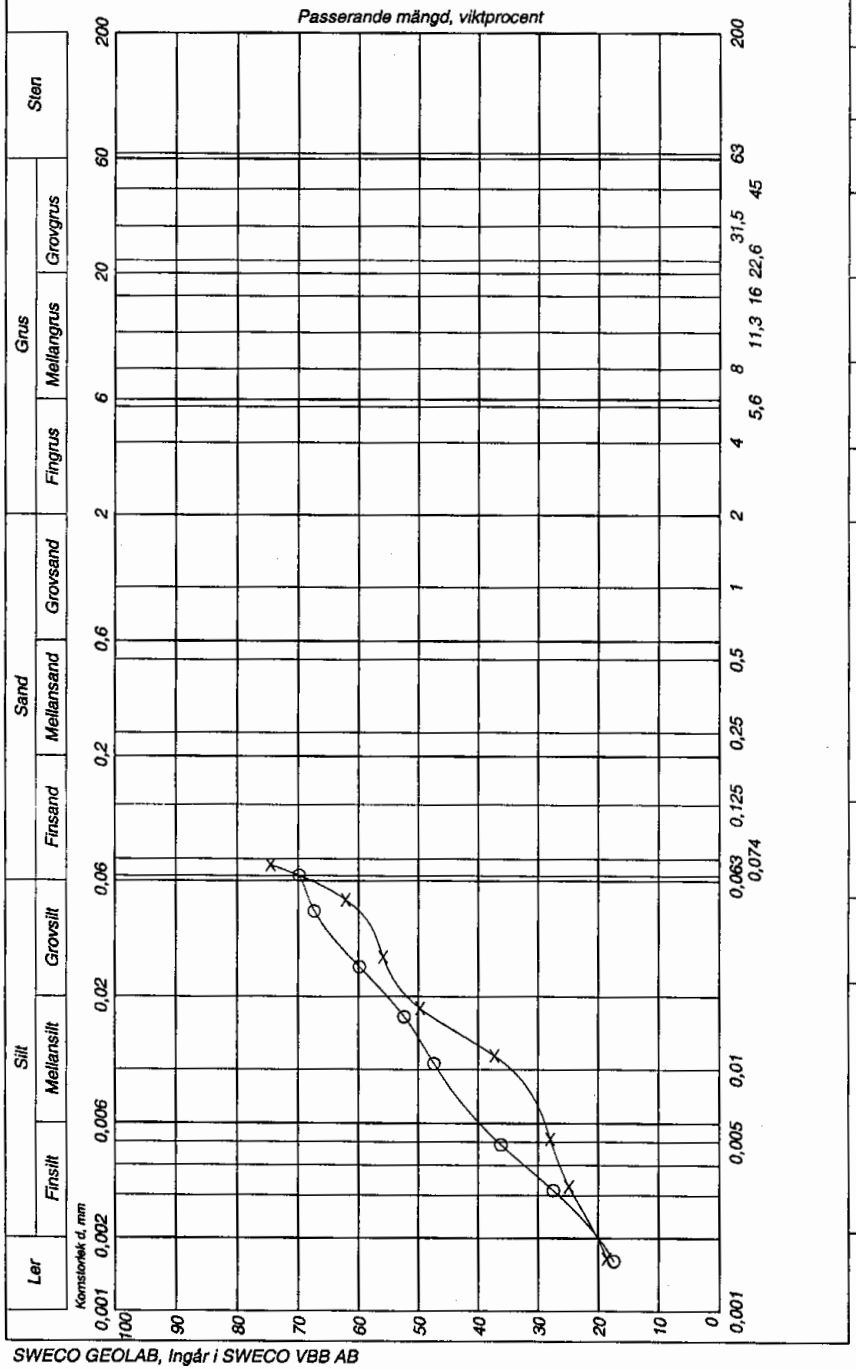

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PSM006589-A	—×—		0,18-0,5	Högförmultnad torv	0						
PSM006589-A	—○—		2,2-2,7	Högförmultnad torv	0						

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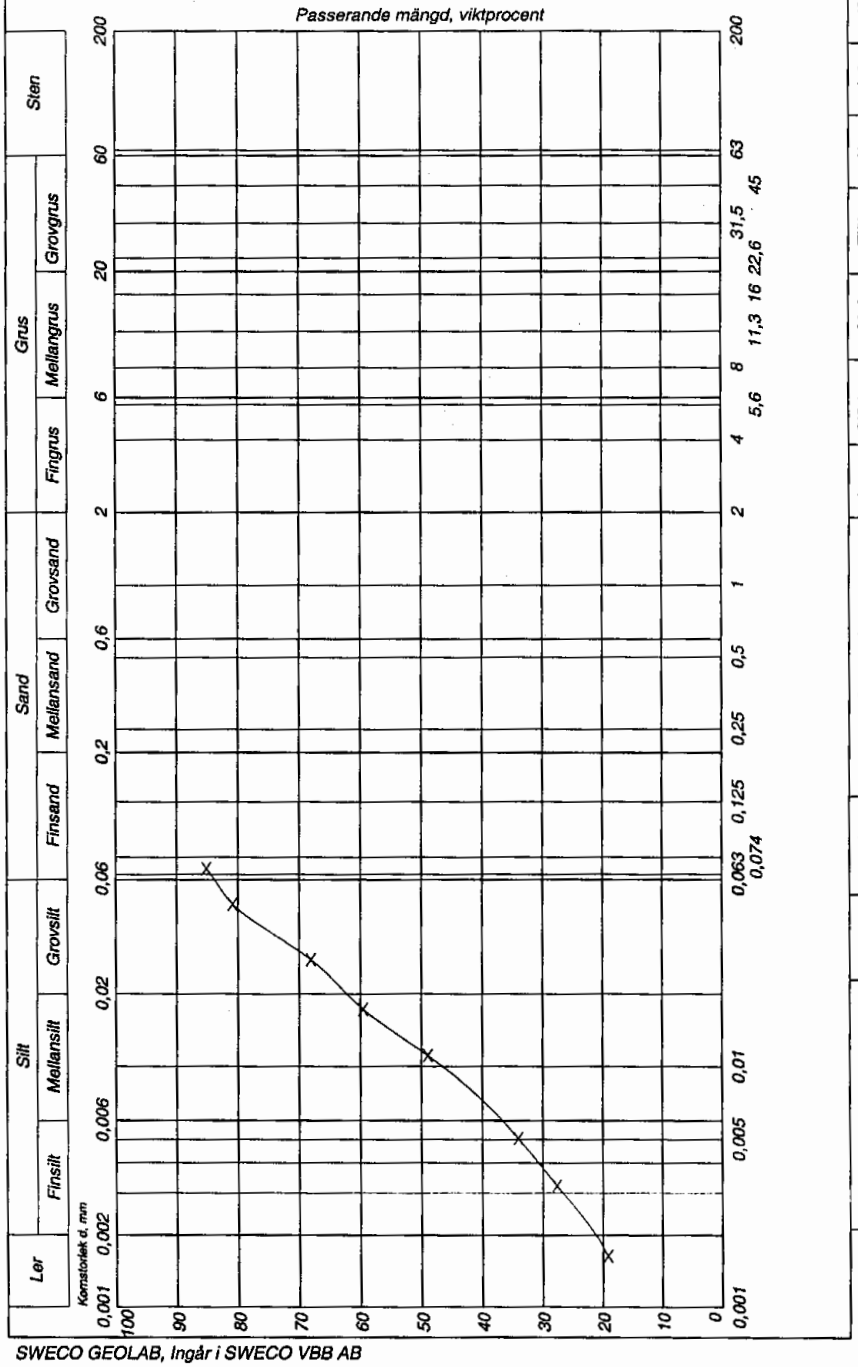

Sektion Borrhål	Prov-beteckn.	Djup (m)	Gäller mellan (m)	Benämning	Siktat Prov (g)	Glödgn.-förlust %	Mtrl % > mm	Tjäl-farlighet	d10	d60	d90
PSM006590-A	—×—		0,11-0,65	Grov gyttja	0						

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Appendix 5

Co-ordinates, sampling sites

PSM – number/ IDCODE	Name of sampling locality	Sample site water depth	Site elevation (m a s l)	Co-ordinates (RT 90 2.5gon W)	
PSM 006570	Frisksjön	2.6	1.37	6368010	1549225
PSM 006571	Frisksjön	2.7	1.37	6368223	1549474
PSM 006572	Frisksjön	3.1	1.37	6368158	1549051
PSM 006573	Jämsen	2.8	25.11	6364731	1540382
PSM 006574	Jämsen	10.6	25.11	6364959	1540202
PSM 006575	Jämsen	5.8	25.11	6364771	1540223
PSM 006576	Söråmagasinet	3.8	1.94	6366184	1551173
PSM 006577	Söråmagasinet	2.6	1.94	6366079	1550896
PSM 006578	Söråmagasinet	4.3	1.94	6366329	1551378
PSM 006579	Plittorpsgöl	2.6	24.79	6368958	1541565
PSM 006580	Plittorpsgöl	3.5	24.79	6369012	1541444
PSM 006581	Plittorpsgöl	6.5	24.79	6368988	1541356
PSM 006582	Hamnfjärden	2.3	-	6366354	1552329
PSM 006583	Hamnfjärden	5.1	-	6366312	1552204
PSM 006584	Hamnfjärden	3.9	-	6366322	1552054
PSM 006585	Bay between Äspö-Laxemar	1.7	-	6367684	1550905
PSM 006586	Bay between Äspö-Laxemar	2.5	-	6367489	1550827
PSM 006587	Bay between Äspö-Laxemar	2.5	-	6367718	1550792
PSM 006588	Bay between Äspö- Hålö	4.5	-	6367008	1551332
PSM 006589	Bay between Äspö- Hålö	3.8	-	6367240	1551761
PSM 0065890	Bay between Äspö- Hålö	3.6	-	6367328	1551217
PSM 00 65 62	Klarabäcksmossen	-	27.15	6370202	1542992
PSM 00 65 63	Gäster	-	4.05	6369513	1546599
PSM 00 65 64	Långenmossen	-	18.99	6368967	1543777
PSM 00 65 65	Hultenäs	-	15.45	6366511	1547800
PSM 00 65 66	Röängen	-	2.52	6365684	1549770
PSM 00 65 67	Hålö	-	-	6366307	1550745
PSM 00 65 68	Stora Ficksjön	-	25.49	6362433	1540953