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Oskarshamn site investigation

Drilling and sampling in soil

Installation of groundwater monitoring wells in the Laxemar area

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October 2004

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Keywords: Laxemar, Soil, Quaternary deposits, Geological characterization, Geotechnical characterization, Soil tubes.

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

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Abstract

Drilling and sampling of soil, and installation of groundwater monitoring wells were performed in the Laxemar area June 2004–September 2004. At 9 locations weight sounding were performed, at 13 locations soil/rock drilling were performed and at 19 location soil sampling were performed. Totally, 19 groundwater monitoring wells were installed.

The objective of the investigation was to obtain information on soil depth, soil composition and groundwater levels from boreholes distributed within the investigation area. The groundwater monitoring wells must enable both groundwater level measurements and characterization of hydraulic properties of the soil layer by slug tests. 14 of the 19 installed groundwater monitoring wells were used for the slug tests.

The drilling were performed by a track driven drilling rig, Geotech 604D.

The soil samplings were performed by auger drilling (\varnothing 82 mm). Air-rotary drilling with a casing driver system (NOEK), was used to check soil depth and to install groundwater monitoring wells. To assure that the bedrock was reached, the drilling continued approximately 1–3 m into the bedrock. Some groundwater monitoring wells were installed directly in the auger drilling hole.

The groundwater monitoring wells were installed inside the drill casing. PEH screens (outer \varnothing : 63 mm, inner \varnothing : 50 mm; length: 1–2 m; slot: 0.3 mm) and casings (outer \varnothing : 63 mm, inner \varnothing : 50 mm) were used. Filter sand (0.4–0.8 mm) and bentonite clay (Volclay SG40) were filled outside the well while the drill casing was pulled out.

The soil depth at the boreholes varied between 1.3 and 12.6 m. The composition of the soil at most location is a thin layer of topsoil or peat underlain by gyttja, sand, clay and till. The composition of the till varies from gravelly sandy till to clayey till.

Sammanfattning

Jordborring, jordprovtagning samt installation av grundvattenrör i Laxemarområdet utfördes under juni 2004 – september 2004. I 9 punkter utfördes viktsondering, i 13 punkter utfördes jord-bergsondering och i 18 punkter utfördes jordprovtagning. Totalt installerades 19 grundvattenrör.

Målet med undersökningen var att erhålla information om jorddjup, jordartssammansättning samt grundvattennivåer inom området. Grundvattenrören ska förutom för mätning av grundvattennivå användas för bestämning av jordlagrens hydrauliska egenskaper genom slugtester. 14 av de 19 installerade grundvattenrören användes till slugtesterna.

Borringarna utfördes med en borrhandsvagn, Geotech 604D.

Jordprovtagningen utfördes med skruvprovtagare (Ø: 82 mm). Foderrörsborring (NOEK) användes vid jorddjupsbestämning och vid installation av grundvattenrör. För att säkerställa att bergytan var nådd, borrades det ca 1–3 m ner i berget. Några grundvattenrör installerades direkt i skruvprovtagningshålen.

Grundvattenrören installerades i borrhandsröret. PEH-filter (yttre Ø: 63 mm, inre Ø: 50 mm; längd: 1–2 m; slitsvidd: 0,3 mm) och PEH-rör (yttre Ø: 63 mm, inre Ø: 50 mm) användes som grundvattenrör. Filtersand (0,4–0,8 mm) och bentonit (Volclay SG40) fylldes runt grundvattenröret medans borrhandsröret drogs upp.

Jorddjupen i borrhålen varierade mellan 1,3 och 12,6 m. Jordens sammansättning var i de flesta punkter ett tunt mulljordslager eller torv på gyttja, sand, lera och morän. Moränen varierar från grusig sandig till lerig morän.

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1 Introduction

A general programme for site investigations presenting survey methods has been prepared, SKB 2001a /1/, as well as a site-specific programme for the investigations in the Simpevarp area, SKB 2001b /2/. The geotechnical characterization of the Quaternary deposits and installation of soil tubes form part of the site characterization programme under item 1.1.8.1 in the work breakdown structure of the execution programme, SKB 2002 /3/.

The field campaign was carried out from June 2004 to September 2004 following the methodologies described in SKB MD 630.003, SKB MD 600.006, SKB MD 600.004, and in the activity plan AP PS 400-04-019 (SKB internal controlling documents). Data and results were delivered to the SKB site characterization database SICADA.

The aim of the geotechnical drilling campaign is to characterize the Quaternary deposits with respect to stratigraphy and composition. In addition, installation of soil tubes for groundwater sampling and monitoring was a key issue. This report describes the results and primary data evaluation of the characterization. The data is subsequently delivered for the site descriptive modelling. The commission was carried out by the WSP Group.

At 9 locations weight soundings were performed, at 13 locations soil/rock drillings were performed and at 19 locations soil samplings were performed. Totally, 14 groundwater monitoring wells were installed. The locations of the installed soil tubes are given in Figure 1-1 and Figure 1-2.

For information about the site investigation in the Simpevarp area which were performed in 2004 by WSP Group, see /4/ and /5/.

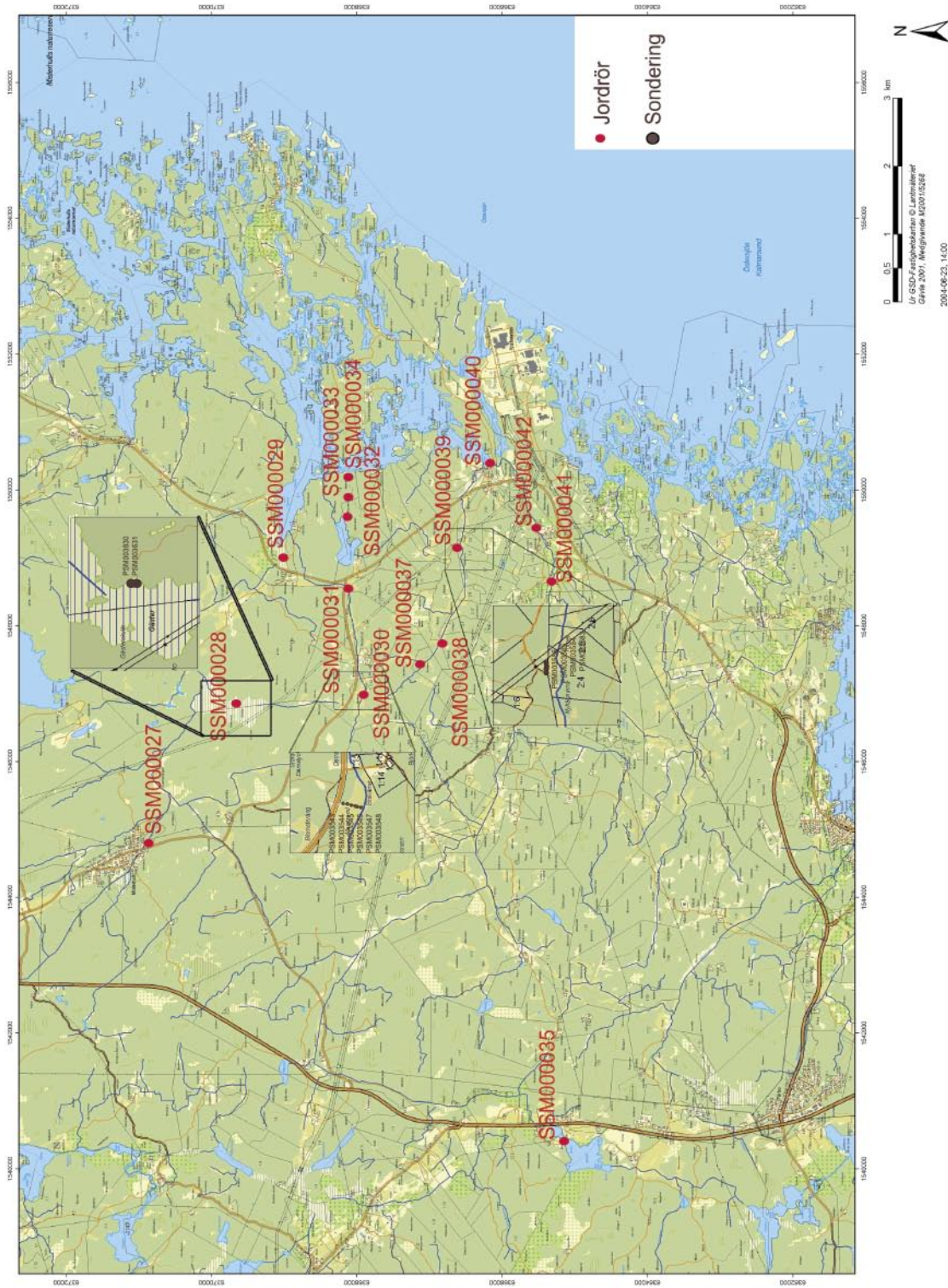


Figure I-1. Soil tubes and soil sounding in the Laxemar area.

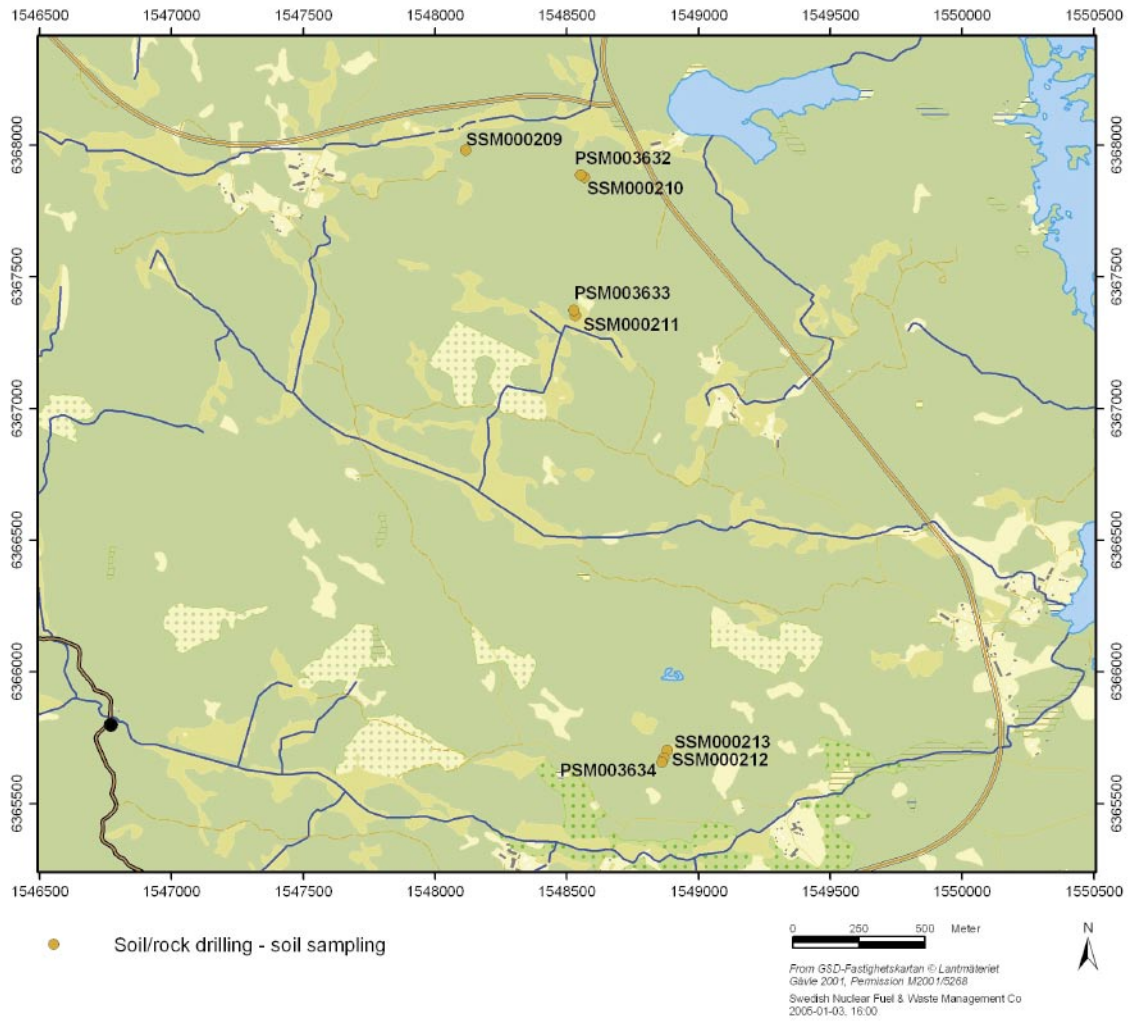


Figure 1-2. Soil tubes and soil sounding in the Laxemar area.

2 Objectives

The objective of this study is to obtain general information on soil depth, soil stratum, soil composition and groundwater levels from the boreholes distributed within the site investigation area.

The groundwater monitoring wells must enable both groundwater level measurements and characterisation of the hydraulic properties of the soil deposits by slug tests.

3 Equipment

The drillings and samplings of soil were performed with a track-driven drilling rig, Geotech 604 D.

The soil samplings were performed by auger drilling ($\varnothing = 82$ mm) and the soil/rock drilling was performed with air-rotary drilling with a casing driver system (NOEK).

4 Execution

The work was performed according to SKB's method description for soil drilling, soil mapping and according to Activity Plan AP PS 400-04-019 (SKB internal controlling documents) and included the following: preparation and mobilisation, drilling and sampling in soil, installation of groundwater monitoring wells, finishing of work, surveying of boreholes, environmental control programme and data handling.

4.1 Mobilisation and preparation

Before drilling commenced, service and function control of all equipment were conducted. It was checked that type of fuel, oil and grease was in accordance with SKB's instruction for chemical products used for drill works, SKB MD 600.006. Finally, the equipment was cleaned according to SKB's instruction, SKB MD 600.004.

Mobilisation onto the site included transport, cleaning of all in-hole equipment, preparation of the site, lining up the machine and final control of function. It also included transport of pipes, sand, bentonite, and sampling pots for soil as well as all other necessary equipment.

4.2 Drilling and sampling in soil

The soil samplings were performed by auger drilling ($\varnothing = 82$ mm).

When the soil sampling was finished, air-rotary drilling with a casing driver system (NOEK) was performed in the same borehole. To ensure that the bedrock was reached, the drilling continued approximately 1–3 m into the bedrock. The soil sampling was performed within the activity according to AP PF 400-04-019 and the results are presented separately. The client received the soil samplings.

The soil samplings were marked with borehole ID (e.g. SSM000028:1) and the soil samplings for environmental studies were marked as above but with the additional "M" (e.g. SSM000028:1M).

The characterisation of the soil was done in the field.

4.3 Installation of groundwater monitoring wells

Groundwater monitoring wells were installed inside the drill casing. PEH screens (\varnothing : 63/50 mm, length: 1–2 m, slot: 0.3 mm) and PEH casings (\varnothing : 63/50 mm) were used. Filter sand (0.4 – 0.8 mm) and bentonite clay (Volclay SG40) were filled outside the well while the drill casing was pulled out. A PEH cap was installed at the top to prevent debris entering the casing.

Some groundwater monitoring wells were installed directly in the auger drilling hole.

After installation, function tests were performed. Water was either pumped out or blown out by air.

4.4 Completion of work

The rig was removed and the site was cleaned.

4.5 Surveying

After finishing the work, all investigation points were temporarily surveyed by precision GPS, x-, and y-coordinates. The accuracy of the coordinates is ± 10 m. After completion SKB executed a precision survey and the actual coordinates were documented in the Sicada database.

A few of the boreholes (PSM003543-48, PSM003630-34) were not surveyed by SKB. The coordinates from the precision GPS survey are used instead.

4.6 Environmental programme

Checklists according to SKB's routine for the environmental programme were signed by the Activity Leader and were filed in SKB's archive.

4.7 Data handling

Records for the following items: Activities, cleaning of equipment, installation of groundwater monitoring wells and pore pressure devices, and discrepancy reports have been collected by the Activity Leader for quality control and storage.

5 Results

The location of all boreholes is shown in Figure 1-1 and Figure 1-2 and coordinates and borehole types are listed in Table 5-1.

The soil depth at the boreholes varied between 1.3 and 12.6 m. The composition of the soil at most location is a thin layer of topsoil or peat underlain by gyttja, sand, clay and till. The composition of the till varies from gravelly sandy till to clayey till.

Drawings of all boreholes are presented in Appendix 1, and photos of the sites after completion of work in Appendix 2.

Table 5-1. Coordinates and type for all boreholes.

Borehole	Northing	Easting	Elevation	Type
SSM000027	6370908,457	1544779,145	9.211	Soil sampling, groundwater monitoring well
SSM000028	6369642,670	1546933,108	4.091	Weight sounding, soil sampling, groundwater monitoring well
SSM000029	6368975,702	1548879,095	1.257	Soil sampling, groundwater monitoring well
SSM000030	6367907,748	1546986,153	11.190	Soil/rock drilling, soil sampling, groundwater monitoring well
SSM000031	6368132,651	1548562,650	6.318	Soil sampling, groundwater monitoring well
SSM000032	6367970,561	1549397,481	2.812	Soil sampling, groundwater monitoring well
SSM000033	6368095,404	1549884,138	5.817	Soil sampling, groundwater monitoring well
SSM000034	6368089,977	1550122,872	0.478	Soil sampling, groundwater monitoring well
SSM000035	6365137,081	1540387,450	27.108	Soil sampling, groundwater monitoring well
SSM000037	6367185,645	1547490,006	12.695	Soil/rock drilling, soil sampling, groundwater monitoring well
SSM000039	6366619,896	1549136,075	11.699	Soil sampling, groundwater monitoring well
SSM000040	6366207,045	1550351,240	1.159	Soil sampling, groundwater monitoring well
SSM000041	6365332,746	1548655,277	4.154	Soil sampling, groundwater monitoring well
SSM000042	6365540,811	1549487,958	3.350	Soil sampling, groundwater monitoring well
SSM000209	6367980,830	1548118,377	10.850	Soil sampling, groundwater monitoring well
SSM000210	6367877,080	1548567,865	11.313	Soil/rock drilling, soil sampling, groundwater monitoring well
SSM000211	6367353,169	1548533,850	15.268	Soil/rock drilling, soil sampling, groundwater monitoring well
SSM000212	6365673,710	1548869,822	13.583	Soil/rock drilling, soil sampling, groundwater monitoring well
SSM000213	6365702,618	1548881,451	12.381	Soil/rock drilling, soil sampling, groundwater monitoring well
PSM003543 ¹	6368038	1546969	–	Weight sounding
PSM003544 ¹	6368014	1546969	–	Weight sounding
PSM003545 ¹	6367988	1546969	–	Weight sounding
PSM003546 ¹	6367960	1546969	–	Weight sounding
PSM003547 ¹	6367935	1546969	–	Weight sounding
PSM003548 ¹	6367912	1546969	–	Weight sounding
PSM003583	6366619,345	1549163,466	10.437	Soil/rock drilling

PSM003584	6366619,456	1549147,494	10.813	Soil/rock drilling
PSM003585	6366619,460	1549136,100	11.163	Soil/rock drilling
PSM003586	6366620,016	1549130,312	11.280	Soil/rock drilling
PSM003630 ¹	6369640	1546928	–	Weight sounding
PSM003631 ¹	6369640	1546925	–	Weight sounding
PSM003632 ¹	6367887	1548553	–	Soil/rock drilling
PSM003633 ¹	6367373	1548528	–	Soil/rock drilling
PSM003634 ¹	6365658	1548862	–	Soil/rock drilling

¹ Boreholes surveyed by precision GPS.


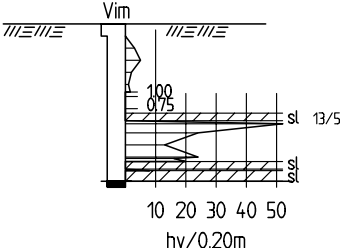
6 References

- /1/ **SKB, 2001a.** Site investigations: Investigation methods and general execution programme. TR-01-29 Svensk Kärnbränslehantering AB. (In Swedish).
- /2/ **SKB, 2001b.** Geovetenskapligt program för platsundersökning vid Simpevarp. R-01-44. Svensk Kärnbränslehantering AB. (In Swedish).
- /3/ **SKB, 2002.** Execution programme for the initial site investigations at Simpevarp. P-02-06. Svensk Kärnbränslehantering AB. (In Swedish).
- /4/ **SKB, 2004.** Oskarshamn site investigation. Drilling and sampling in soil – Installation of groundwater monitoring wells. P-04-121 Svensk Kärnbränslehantering AB.
- /5/ **SKB, 2004.** Oskarshamn site investigation. Slug tests in groundwater monitoring wells in soil in the Simpevarp area. P-04-122 Svensk Kärnbränslehantering AB.

Appendix 1

Borehole profiles

Appendix 1

		LAXEMAR BOREHOLE PSM003543	
		Company rep. Lennart Adestam and Torbjörn Johansson Client: Svensk Kärnbränslehantering AB	Northing :6368038 Easting :1546969 Coordinate system : RT90-RHB70
Depth (m)	Description	Samples	
0 1 2 3 4 5 6 7 8 9 10 11 12			GEOLOGICAL LOG 0-0,4m Topsoil 0,4-1,4m clay 1,4-2,2m cobble-bearing gravelly sand 2,2-2,6m till



LAXEMAR BOREHOLE PSM003544

Company rep.
Lennart Adestam and Torbjörn Johansson


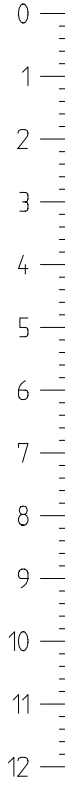
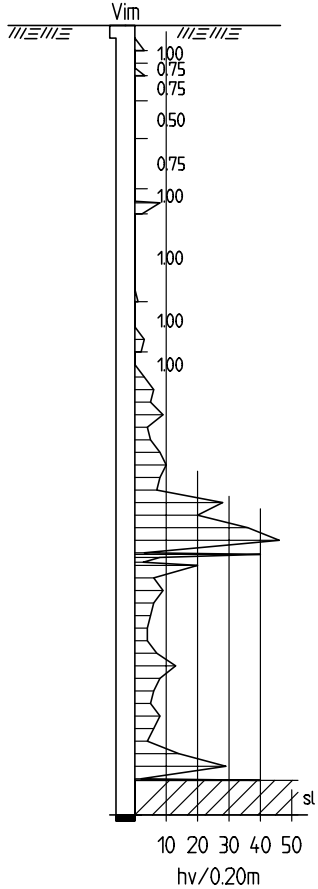
Northing :6368014
Easting :1546969


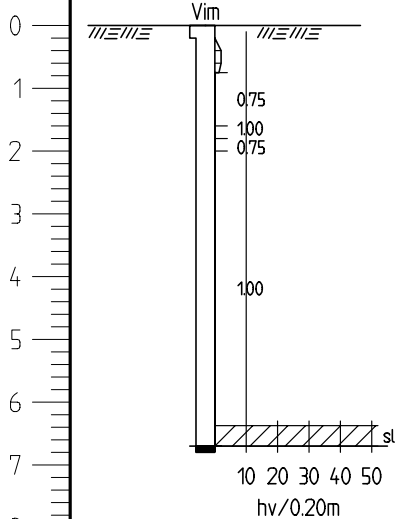
Date of completion: 2004-09-09


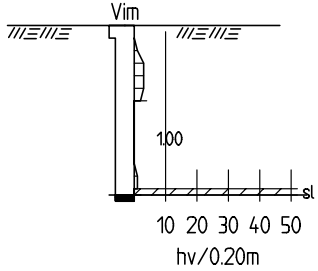
Coordinate system : RT90-RHB70


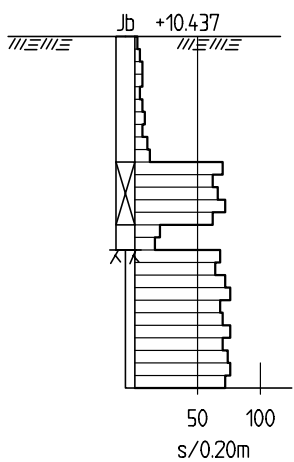
Client: Svensk Kärnbränslehantering AB


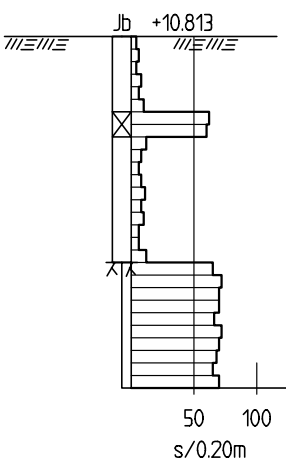
Depth (m)	Description	Samples	
<p>0 1 2 3 4 5 6 7 8 9 10 11 12</p>			<p>GEOLOGICAL LOG</p> <p>0-0,4m Topsail 0,4-5,6m clay 5,6-7,0m gravelly sand 7,0-7,6m fill</p>


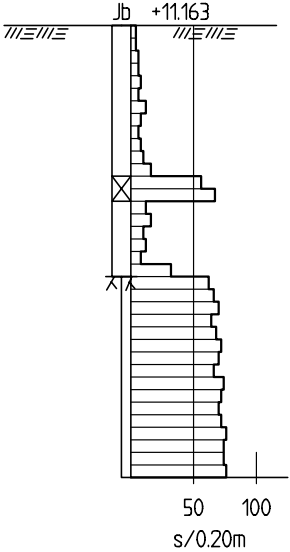
		<p>LAXEMAR BOREHOLE PSM003545</p>	
<p>Company rep. Lennart Adestam and Torbjörn Johansson</p> <p>Client: Svensk Kärnbränslehantering AB</p>		<p>Northing :6367988 Easting :1546969 Date of completion: 2004-09-09 Coordinate system : RT90-RHB70</p>	
<p>Depth (m)</p>	<p>Description</p>	<p>Samples</p>	
			<p>GEOLOGICAL LOG</p> <ul style="list-style-type: none"> 0-0,4m Topsoil 0,4-5,6m clay 5,6-7,5m silty clay 7,5-11,8m gravelly sand 11,8-12,6m fill


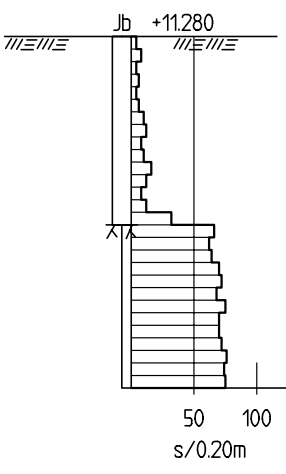
		LAXEMAR BOREHOLE PSM003547	
Company rep. Lennart Adestam and Torbjörn Johansson Client: Svensk Kärnbränslehantering AB		Northing :6367935 Easting :1546969 Date of completion: 2004-09-09 Coordinate system : RT90-RHB70	
Depth (m)	Description	Samples	
0 1 2 3 4 5 6 7 8 9 10 11 12	 <p>The diagram shows a vertical borehole log. The depth axis on the left ranges from 0 to 12 meters. The borehole is labeled 'Vim' at the top. Soil layers are indicated by different patterns: horizontal lines for peat (0-0.8m), wavy lines for gyttja (0.8-1.6m), diagonal lines for clay (1.6-6.4m), and a hatched pattern for till (6.4-6.8m). A scale at the bottom indicates 'hv/0.20m' with markers at 10, 20, 30, 40, and 50. A 'sl' label is at the bottom right of the borehole.</p>		<p>GEOLOGICAL LOG</p> <p>0-0,8m Humus-bearing peat 0,8-1,6m gyttja 1,6-6,4m clay 6,4-6,8m till</p>


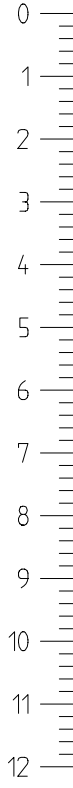
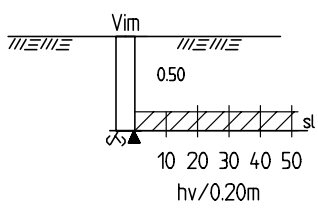
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<p>Company rep. Lennart Adestam and Torbjörn Johansson</p> <p>Client: Svensk Kärnbränslehantering AB</p>		<p>Northing :6367912 Easting :1546969</p> <p>Date of completion: 2004-09-09</p> <p>Coordinate system : RT90-RHB70</p>	
<p>Depth (m)</p>	<p>Description</p>	<p>Samples</p>	
<p>0 1 2 3 4 5 6 7 8 9 10 11 12</p>			<p>GEOLOGICAL LOG</p> <p>0-1,0m Humus-bearing peat 1,0-2,2m gyttja 2,2-2,6m clay 2,6-2,7m till</p>


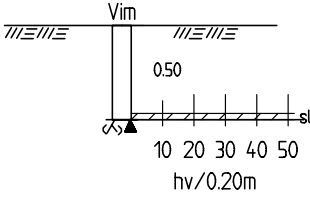
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<p>Depth (m)</p>	<p>Description</p>	<p>Samples</p>	
<p>0 1 2 3 4 5 6 7 8 9 10 11 12</p>			<p>GEOLOGICAL LOG</p> <p>0-0,2m Sandy topsoil 0,2-2,0m cobble-bearing gravelly sand 2,0-3,0m boulders 3,0-3,4m fill</p>


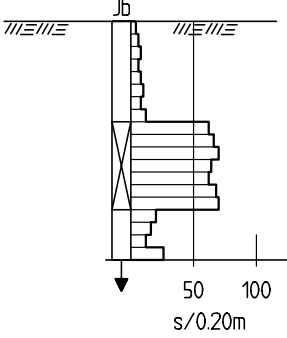
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<p>Depth (m)</p>	<p>Description</p>	<p>Samples</p>	
<p>0 1 2 3 4 5 6 7 8 9 10 11 12</p>			<p>GEOLOGICAL LOG</p> <p>0-0.2m Sandy topsoil 0.2-1.2m gravelly sand 1.2-1.6m boulders 1.6-3.0m cobble-bearing gravelly sand 3.0-3.8m till</p>


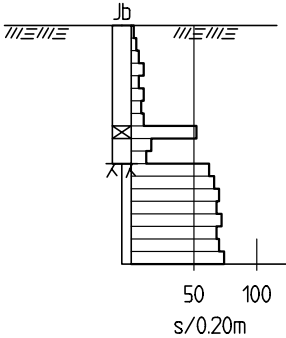
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<p>Depth (m)</p>	<p>Description</p>	<p>Samples</p>	
<p>0 1 2 3 4 5 6 7 8 9 10 11 12</p>			<p>GEOLOGICAL LOG</p> <p>0-0,2m Sandy topsoil 0,2-2,4m cobble-bearing gravelly sand 2,4-2,8m boulders 2,8-4,1m sandy till</p>


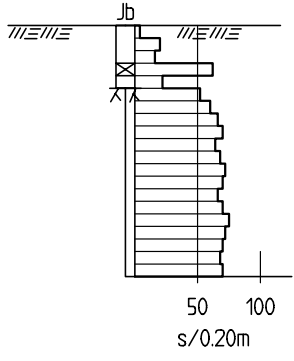
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<p>Depth (m)</p>	<p>Description</p>	<p>Samples</p>	
<p>0 1 2 3 4 5 6 7 8 9 10 11 12</p>			<p>GEOLOGICAL LOG</p> <p>0-0.2m Sandy topsoil 0.2-2.0m cobble-bearing gravelly sand 2.0-3.0m sandy till</p>


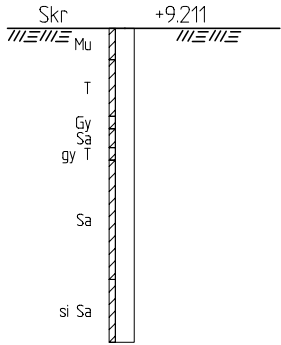
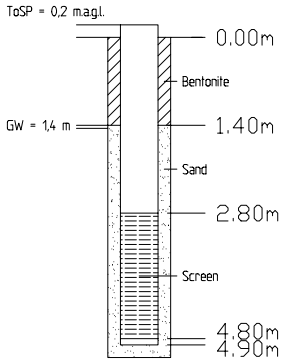
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<p>Depth (m)</p>	<p>Description</p>	<p>Samples</p>	
			<p>GEOLOGICAL LOG</p> <p>0-1,0m Gyttja-bearing peat 1,0-1,5m gyttja</p>


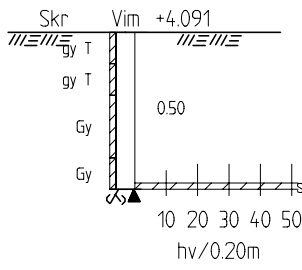
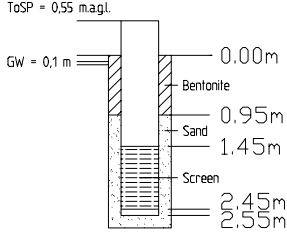
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<p>Company rep. Lennart Adestam and Torbjörn Johansson</p> <p>Client: Svensk Kärnbränslehantering AB</p>		<p>Northing :6369640 Easting :1546925</p> <p>Date of completion: 2004-06-09</p> <p>Coordinate system : RT90-RHB70</p>	
<p>Depth (m)</p>	<p>Description</p>	<p>Samples</p>	
<p>0 1 2 3 4 5 6 7 8 9 10 11 12</p>			<p>GEOLOGICAL LOG</p> <p>0-1,0m Gyttja-bearing peat 1,0-1,5m gyttja</p>


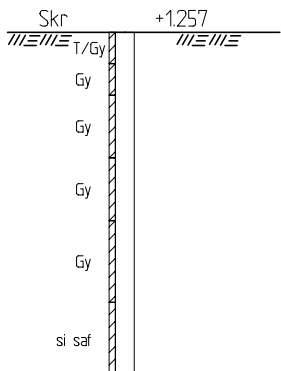
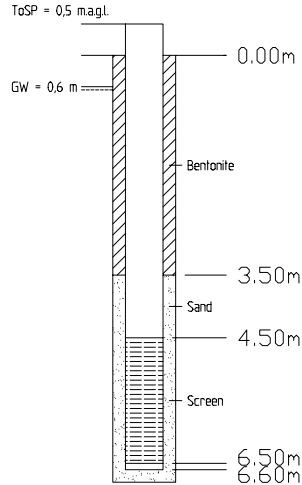
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<p>Company rep. Lennart Adestam and Torbjörn Johansson</p> <p>Client: Svensk Kärnbränslehantering AB</p>		<p>Northing :6367887 Easting :1548553 Date of completion: 2004-06-28</p> <p>Coordinate system : RT90-RHB70</p>	
<p>Depth (m)</p>	<p>Description</p>	<p>Samples</p>	
<p>0 1 2 3 4 5 6 7 8 9 10 11 12</p>			<p>GEOLOGICAL LOG</p> <p>0-1,6m Sand 1,6-3,0m boulders 3,0-3,8m sandy till</p>


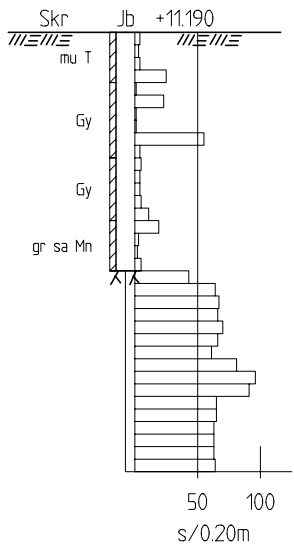
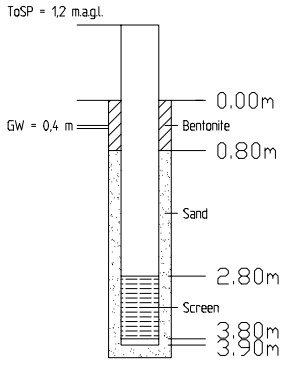
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<p>Company rep. Lennart Adestam and Torbjörn Johansson</p> <p>Client: Svensk Kärnbränslehantering AB</p>		<p>Northing :6367373 Easting :1548528 Date of completion: 2004-06-30</p> <p>Coordinate system : RT90-RHB70</p>	
<p>Depth (m)</p>	<p>Description</p>	<p>Samples</p>	
<p>0 1 2 3 4 5 6 7 8 9 10 11 12</p>			<p>GEOLOGICAL LOG</p> <p>0-0,3m Clayey topsoil 0,3-1,6m clayey silt 1,6-1,8m boulders 1,8-2,2m silty sandy fill</p>


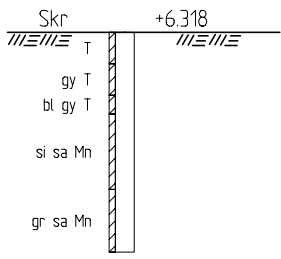
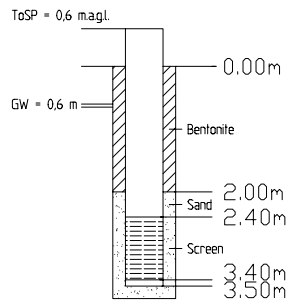
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<p>Company rep. Lennart Adestam and Torbjörn Johansson</p> <p>Client: Svensk Kärnbränslehantering AB</p>		<p>Northing :6365658 Easting :1548862 Date of completion: 2004-07-05 Coordinate system : RT90-RHB70</p>	
<p>Depth (m)</p>	<p>Description</p>	<p>Samples</p>	
<p>0 1 2 3 4 5 6 7 8 9 10 11 12</p>			<p>GEOLOGICAL LOG</p> <p>0-0,2m Sandy topsoil 0,2-1,1m boulder-bearing gravelly sand</p>


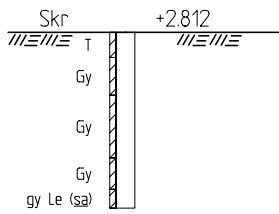
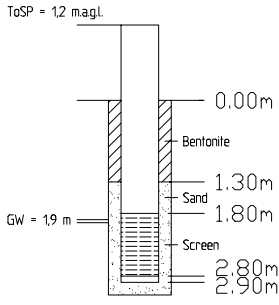
		LAXEMAR BOREHOLE SSM000027		
Company rep. Lennart Adestam and Torbjörn Johansson		Northing :6370908.457 Easting :1544779.145 Coordinate system : RT90-RHB70		Top of stand pipe :0.2 m.a.g.l. Total pipe length :5.10 m Groundwater level :1.4 m.b.g.l. Date of completion :2004-06-28
Client: Svensk Kärnbränslehantering AB				
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12		1 2 3 4 5 6 7		Drilling method : NOEK Borehole diameter : 120 mm sampling method : Auger CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 3.00 m SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 2.00 m Slot : 0.3 mm ANNULUS SEAL Material : Bentonite clay Total length : 1.40 m SAND PACK Grain size : 0.4-0.8 mm Total length : 3.70 m DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång Ø44 Drill bit : Stiff Ø54 GEOLOGICAL LOG 0-0.5m Topsoil 0.5-1.4m peat 1.4-1.6m gyttja 1.6-1.9m sand 1.9-2.1m gyttja-bearing peat 2.1-4.0m sand 4.0-5.0m silty sand
			ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level	


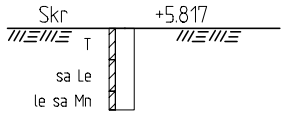
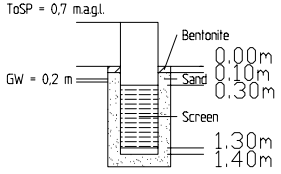
		LAXEMAR BOREHOLE SSM000028		
Company rep. Lennart Adestam and Torbjörn Johansson		Northing :6369642.670 Easting :1546933.108 Coordinate system : RT90-RHB70	Top of stand pipe :0,55 m.a.g.l. Total pipe length :3,10 m Groundwater level :0,1 m.b.g.l. Date of completion :2004-06-09	
Client: Svensk Kärnbränslehantering AB				
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12		1,1M 2,2M 3 4		Drilling method : Auger Borehole diameter : 82 mm sampling method : Auger CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 2,00 m SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 1,00 m Slot : 0,3 mm ANNULUS SEAL Material : Bentonite clay Total length : 0,95 m SAND PACK Grain size : 0,4-0,8 mm Total length : 1,80 m DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång Ø44 Drill bit : Shift Ø54 GEOLOGICAL LOG 0-1,0m Gyttja-bearing Peat 1,0-2,5m Gyttja
			ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level	


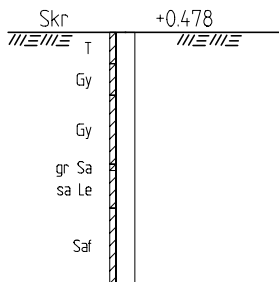
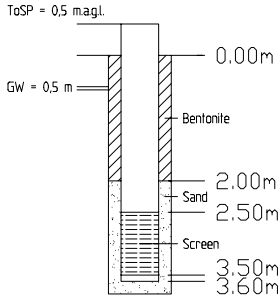
		LAXEMAR BOREHOLE SSM000029		
Company rep. Lennart Adestam and Torbjörn Johansson		Northing :6368975.702 Easting :1548879.095 Coordinate system : RT90-RHB70		Top of stand pipe :0,5 m.a.g.l. Total pipe length :7,10 m Groundwater level :0,5 m.b.g.l. Date of completion :2004-06-08
Client: Svensk Kärnbränslehantering AB				
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12		1 2 3 4 5 6		Drilling method : Auger Borehole diameter : 82 mm sampling method : Auger CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 5,00 m SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 2,00 m Slot : 0,3 mm ANNULUS SEAL Material : Bentonite clay Total length : 3,50 m SAND PACK Grain size : 0,4-0,8 mm Total length : 3,30 m DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång Ø44 Drill bit : Stiff Ø54 GEOLOGICAL LOG 0-0,5m Peat and gyttja 0,5-4,3m gyttja 4,3-5,5m silty fine sand
			ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level	


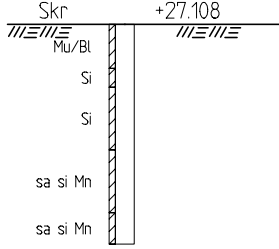
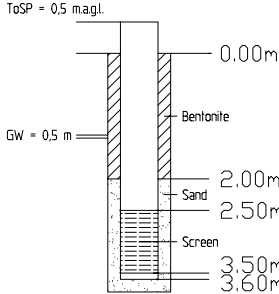
		<p>LAXEMAR BOREHOLE SSM000030</p>		
<p>Company rep. Lennart Adestam and Torbjörn Johansson</p>		<p>Northing :6367907.748 Easting :1546986.153</p>	<p>Top of stand pipe :1,2 m.a.g.l. Total pipe length :5,10 m Groundwater level :0,4 m.b.g.l. Date of completion :2004-09-10</p>	
<p>Client: Svensk Kärnbränslehantering AB</p>		<p>Coordinate system : RT90-RHB70</p>		
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
<p>0 1 2 3 4 5 6 7 8 9 10 11 12</p>		<p>1 2 3</p>		<p>Drilling method : NOEK Borehole diameter : 120 mm sampling method : Auger</p> <p>CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 4,00 m</p> <p>SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 1,00 m Slot : 0,3 mm</p> <p>ANNULUS SEAL Material : Bentonite clay Total length : 0,80 m</p> <p>SAND PACK Grain size : 0,4-0,8 mm Total length : 2,30 m</p> <p>DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång ϕ44 Drill bit : Shift ϕ54</p> <p>GEOLOGICAL LOG 0-0,8m Humus-bearing peat 0,8-3,0m gyttja 3,0-3,8m gravelly sandy till</p>
			<p>ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level</p>	


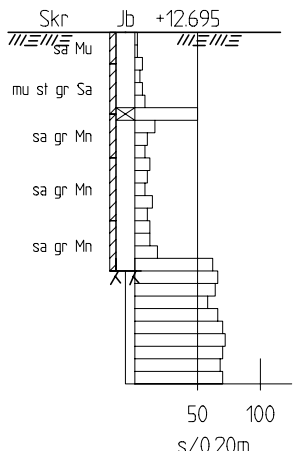
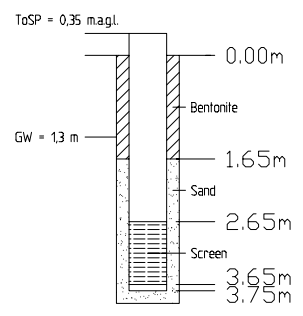
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Company rep. Lennart Adestam and Torbjörn Johansson		Northing :6368132.651 Easting :1548562.650 Coordinate system : RT90-RHB70		Top of stand pipe :0,6 m.a.g.l. Total pipe length :4,10 m Groundwater level :0,6 m.b.g.l. Date of completion :2004-06-10
Client: Svensk Kärnbränslehantering AB				
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12		1 2 3 4 5		Drilling method : NOEK Borehole diameter : 120 mm sampling method : Auger CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 3,00 m SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 1,00 m Slot : 0,3 mm ANNULUS SEAL Material : Bentonite clay Total length : 2,0 m SAND PACK Grain size : 0,4-0,8 mm Total length : 1,70 m DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång Ø44 Drill bit : Stiff Ø54 GEOLOGICAL LOG 0-0,5m Peat 0,5-1,0m gyttja-bearing peat 1,0-1,3m boulder and gyttja-bearing peat 1,3-2,5m silty sandy till 2,5-3,5m gravelly sandy till
			ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level	


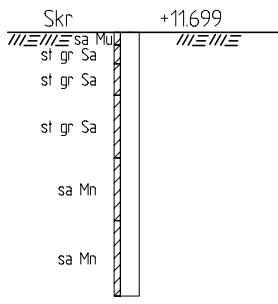
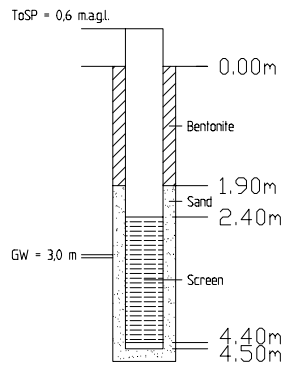
		LAXEMAR BOREHOLE SSM000032		
Company rep. Lennart Adestam and Torbjörn Johansson		Northing :6367970.561 Easting :1549397.481 Coordinate system : RT90-RHB70	Top of stand pipe :1,2 m.a.g.l. Total pipe length :4,10 m Groundwater level :1,9 m.b.g.l. Date of completion :2004-06-15	
Client: Svensk Kärnbränslehantering AB				
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12		1 2 3 4 5		Drilling method : Auger Borehole diameter : 82 mm sampling method : Auger CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 3,00 m SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 1,00 m Slot : 0,3 mm ANNULUS SEAL Material : Bentonite clay Total length : 1,30 m SAND PACK Grain size : 0,4-0,8 mm Total length : 1,80 m DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång Ø44 Drill bit : Shift Ø54 GEOLOGICAL LOG 0-0,4m Peat 0,4-2,5m gytja 2,5-2,8m gyttja-bearing clay with sand layer
			ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level	


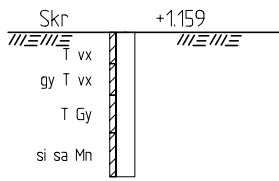
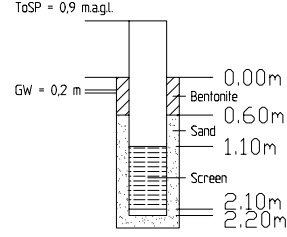
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Company rep. Lennart Adestam and Torbjörn Johansson		Northing :6368095.404 Easting :1549884.138 Coordinate system : RT90-RHB70		Top of stand pipe :0,7 m.a.g.l. Total pipe length :2,10 m Groundwater level :0,20 m.b.g.l. Date of completion :2004-06-15
Client: Svensk Kärnbränslehantering AB				
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12		1 2 3		Drilling method : Auger Borehole diameter : 82 mm sampling method : Auger CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 1,00 m SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 1,00 m Slot : 0,3 mm ANNULUS SEAL Material : Bentonite clay Total length : 0,10 m SAND PACK Grain size : 0,4-0,8 mm Total length : 1,50 m DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång Ø44 Drill bit : Stiff Ø54 GEOLOGICAL LOG 0-0,5m Peat 0,5-1,0m sandy clay 1,0-1,3m clayey sandy till
		ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level		


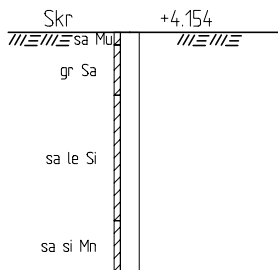
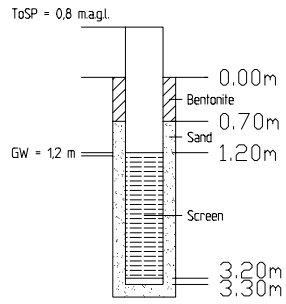
		LAXEMAR BOREHOLE SSM000034		
Company rep. Lennart Adestam and Torbjörn Johansson		Northing :6368089.977 Easting :1550122.872 Coordinate system : RT90-RHB70	Top of stand pipe :0,5 m.a.g.l. Total pipe length :4,10 m Groundwater level :0,5 m.b.g.l. Date of completion :2004-06-16	
Client: Svensk Kärnbränslehantering AB				
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12		1 2 3 4 5 6		Drilling method : Auger Borehole diameter : 82 mm sampling method : Auger CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 3,00 m SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 1,00 m Slot : 0,3 mm ANNULUS SEAL Material : Bentonite clay Total length : 2,00 m SAND PACK Grain size : 0,4-0,8 mm Total length : 1,80 m DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång Ø44 Drill bit : Shift Ø54 GEOLOGICAL LOG 0-0,5m Peat 0,5-2,1m gyttja 2,1-2,2m gravelly sand 2,2-2,8m sandy clay 2,8-4,0m fine sand
			ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level	


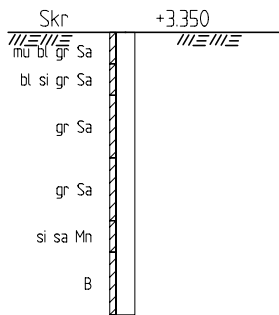
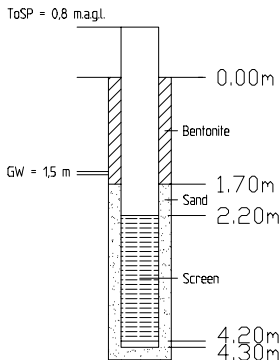
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Company rep. Lennart Adestam and Torbjörn Johansson		Northing :6365137.081 Easting :1540387.450 Coordinate system : RT90-RHB70		Top of stand pipe :0,5 m.a.g.l. Total pipe length :4,10 m Groundwater level :1,3 m.b.g.l. Date of completion :2004-06-09
Client: Svensk Kärnbränslehantering AB				
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12		1 2 3 4 5		Drilling method : NOEK Borehole diameter : 120 mm sampling method : Auger CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 3,00 m SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 1,00 m Slot : 0,3 mm ANNULUS SEAL Material : Bentonite clay Total length : 2,00 m SAND PACK Grain size : 0,4-0,8 mm Total length : 1,80 m DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång Ø44 Drill bit : Stiff Ø54 GEOLOGICAL LOG 0-0,7m Topsoil and boulders 0,7-2,0m Silt 2,0-3,5m Sandy silty till
		ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level		


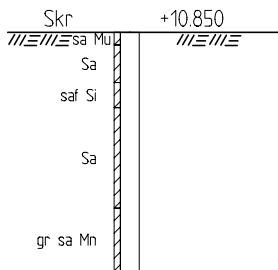
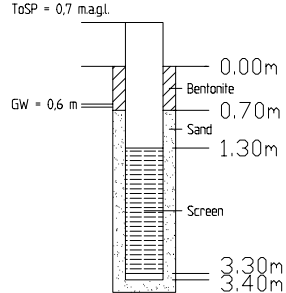
		LAXEMAR BOREHOLE SSM000037		
Company rep. Lennart Adestam and Torbjörn Johansson		Northing :6367185.645 Easting :1547490.006 Coordinate system : RT90-RHB70	Top of stand pipe :0,35 m.a.g.l. Total pipe length :4,10 m Groundwater level :1,3 m.b.g.l. Date of completion :2004-06-22	
Client: Svensk Kärnbränslehantering AB				
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12		1 2 3 4 5		Drilling method : NOEK Borehole diameter : 120 mm sampling method : Auger CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 3,00 m SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 1,00 m Slot : 0,3 mm ANNULUS SEAL Material : Bentonite clay Total length : 1,65 m SAND PACK Grain size : 0,4-0,8 mm Total length : 2,30 m DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång Ø44 Drill bit : Stift Ø54 GEOLOGICAL LOG 0-0,5m Sandy topsoil 0,5-1,3m humus- and cobble-bearing gravelly sand 1,3-3,8m sandy gravelly till 3,8m rock surface
			ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level	


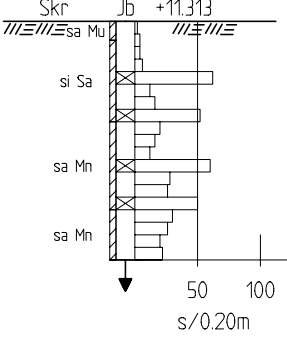
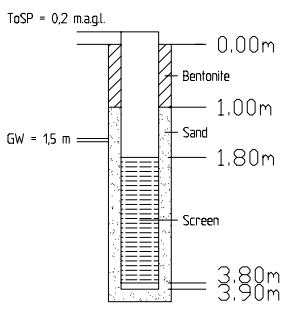
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Company rep. Lennart Adestam and Torbjörn Johansson		Northing :6366619.896 Easting :1549136.075 Coordinate system : RT90-RHB70		Top of stand pipe :0,6 m.a.g.l. Total pipe length :5,10 m Groundwater level :3,0 m.b.g.l. Date of completion :2004-06-21
Client: Svensk Kärnbränslehantering AB				
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12		1 2 3 4 5		Drilling method : NOEK Borehole diameter : 120 mm sampling method : Auger CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 3,00 m SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 2,00 m Slot : 0,3 mm ANNULUS SEAL Material : Bentonite clay Total length : 1,90 m SAND PACK Grain size : 0,4-0,8 mm Total length : 2,80 m DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång Ø44 Drill bit : Stiff Ø54 GEOLOGICAL LOG 0-0,2m Sandy topsoil 0,2-2,0m cobble-bearing gravelly sand 2,0-4,2m sandy till
		ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level		


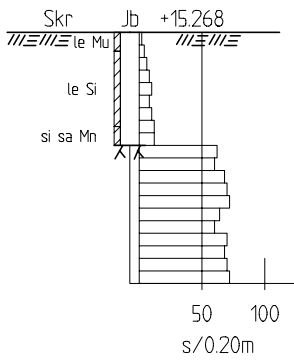
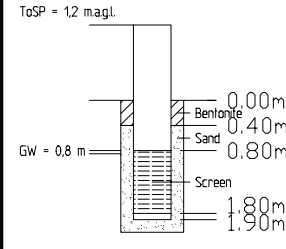
		LAXEMAR BOREHOLE SSM000040		
Company rep. Lennart Adestam and Torbjörn Johansson		Northing :6366207.045 Easting :1550351.240 Coordinate system : RT90-RHB70	Top of stand pipe :0,9 m.a.g.l. Total pipe length :3,10 m Groundwater level :0,2 m.b.g.l. Date of completion :2004-06-14	
Client: Svensk Kärnbränslehantering AB				
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12		1 2 3 4		Drilling method : Auger Borehole diameter : 82 mm sampling method : Auger CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 2,00 m SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 1,00 m Slot : 0,3 mm ANNULUS SEAL Material : Bentonite clay Total length : 0,60 m SAND PACK Grain size : 0,4-0,8 mm Total length : 1,80 m DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång Ø44 Drill bit : Shift Ø54 GEOLOGICAL LOG 0-0,5m Peat containing plant remains 0,5-1,0m gyttja-bearing peat containing plant remains 1,0-1,6m peat 1,6-2,3m silty sandy till
			ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level	


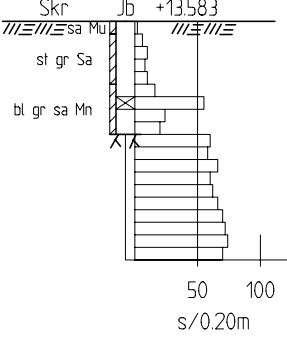
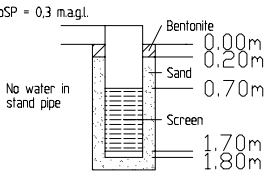
		LAXEMAR BOREHOLE SSM000041		
Company rep. Lennart Adestam and Torbjörn Johansson		Northing :6365332.746 Easting :1548655.277 Coordinate system : RT90-RHB70		Top of stand pipe :0,8 m.a.g.l. Total pipe length :4,10 m Groundwater level :1,2 m.b.g.l. Date of completion :2004-07-07
Client: Svensk Kärnbränslehantering AB				
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12		1 2 3		Drilling method : NOEK Borehole diameter : 120 mm sampling method : Auger CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 2,00 m SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 2,00 m Slot : 0,3 mm ANNULUS SEAL Material : Bentonite clay Total length : 0,70 m SAND PACK Grain size : 0,4-0,8 mm Total length : 2,30 m DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång Ø44 Drill bit : Stiff Ø54 GEOLOGICAL LOG 0-0,2m Sandy topsoil 0,2-1,0m gravelly sand 1,0-3,0m sandy clayey silt 3,0-3,8m sandy silty fill
			ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level	


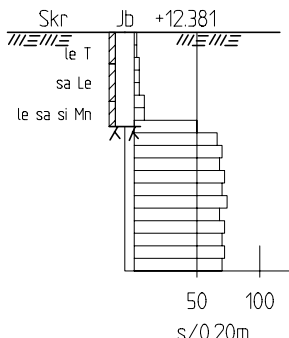
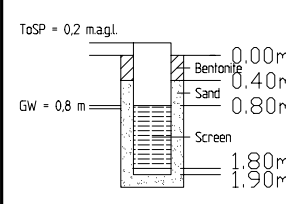
		LAXEMAR BOREHOLE SSM000042		
Company rep. Lennart Adestam and Torbjörn Johansson		Northing :6365540.811 Easting :1549487.958 Coordinate system : RT90-RHB70	Top of stand pipe :0.8 m.a.g.l. Total pipe length :5,10 m Groundwater level :15 m.b.g.l. Date of completion :2004-06-17	
Client: Svensk Kärnbränslehantering AB				
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12		1 1m 2 2m 3 4 5 6		Drilling method : NOEK Borehole diameter : 120 mm sampling method : Auger CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 3,00 m SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 2,00 m Slot : 0,3 mm ANNULUS SEAL Material : Bentonite clay Total length : 1,70 m SAND PACK Grain size : 0,4-0,8 mm Total length : 2,80 m DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång Ø44 Drill bit : Stift Ø54 GEOLOGICAL LOG 0-0,5m Humus- and boulder-bearing gravelly sand 0,5-1,0m boulder-bearing silty gravelly sand 1,0-3,0m gravelly sand 3,0-3,5m silty sandy till 3,5-4,5m rock or boulders
			ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level	

		LAXEMAR BOREHOLE SSM000209		
Company rep. Lennart Adestam and Torbjörn Johansson		Northing :6367980.830 Easting :1548118.377 Coordinate system : RT90-RHB70		Top of stand pipe :0,7 mag.l. Total pipe length :4,10 m Groundwater level :0,6 m.b.g.l. Date of completion :2004-06-29
Client: Svensk Kärnbränslehantering AB				
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12		1 2 3 4 5		Drilling method : NDEK Borehole diameter : 120 mm sampling method : Auger CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 2,00 m SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 2,00 m Slot : 0,3 mm ANNULUS SEAL Material : Bentonite clay Total length : 0,70 m SAND PACK Grain size : 0,4-0,8 mm Total length : 2,90 m DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång Ø44 Drill bit : Stiff Ø54 GEOLOGICAL LOG 0-0,2m Sandy topsoil 0,2-0,8m sand 0,8-1,2m fine sandy silt 1,2-2,8m sand 2,8-3,8m gravelly sandy till
			ToSP : Top of Stand Pipe mag.l. : meters above ground level m.b.g.l. : meters below ground level	

		LAXEMAR BOREHOLE SSM000210		
Company rep. Lennart Adestam and Torbjörn Johansson		Northing :6367877.080 Easting :1548567.865 Coordinate system : RT90-RHB70	Top of stand pipe :0,2 m.a.g.l. Total pipe length :4,10 m Groundwater level :1,5 m.b.g.l. Date of completion :2004-06-29	
Client: Svensk Kärnbränslehantering AB				
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12		1 2 3 4		Drilling method : NOEK Borehole diameter : 120 mm sampling method : Auger CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 2,00 m SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 2,00 m Slot : 0,3 mm ANNULUS SEAL Material : Bentonite clay Total length : 1,00 m SAND PACK Grain size : 0,4-0,8 mm Total length : 3,10 m DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång 44 Drill bit : Stift 454 GEOLOGICAL LOG 0-0,3m Sandy topsoil 0,3-1,6m silty sand 1,6-3,8m sandy till
			ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level	

		LAXEMAR BOREHOLE SSM000211		
Company rep. Lennart Adestam and Torbjörn Johansson		Northing :6367353.169 Easting :1548533.850 Coordinate system : RT90-RHB70		Top of stand pipe :12 m.a.g.l. Total pipe length :3,10 m Groundwater level :0,8 m.b.g.l. Date of completion :2004-06-30
Client: Svensk Kärnbränslehantering AB				
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12		1 4M 2 2M 3		Drilling method : NOEK Borehole diameter : 120 mm sampling method : Auger CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 2,00 m SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 1,00 m Slot : 0,3 mm ANNULUS SEAL Material : Bentonite clay Total length : 0,40 m SAND PACK Grain size : 0,4-0,8 mm Total length : 1,70 m DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång Ø44 Drill bit : Stiff Ø54 GEOLOGICAL LOG 0-0,3m Clayey topsoil 0,3-1,5m clayey silt 1,5-1,8m silty sandy till 1,8m rock surface
		ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level		

		<p>LAXEMAR BOREHOLE SSM000212</p>		
<p>Company rep. Lennart Adestam and Torbjörn Johansson</p>		<p>Northing :6365673.710 Easting :1548869.822</p>	<p>Top of stand pipe :0,3 m.a.g.l. Total pipe length :2,10 m Groundwater level :- Date of completion :2004-07-05</p>	
<p>Client: Svensk Kärnbränslehantering AB</p>		<p>Coordinate system : RT90-RHB70</p>		
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p>		<p>1 44</p> <p>2 24</p> <p>3</p>	<p>ToSP = 0,3 m.a.g.l.</p> 	<p>Drilling method : NOEK Borehole diameter : 120 mm sampling method : Auger</p> <p>CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 1,00 m</p> <p>SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 1,00 m Slot : 0,3 mm</p> <p>ANNULUS SEAL Material : Bentonite clay Total length : 0,20 m</p> <p>SAND PACK Grain size : 0,4-0,8 mm Total length : 1,80 m</p> <p>DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång ϕ44 Drill bit : Stift ϕ54</p> <p>GEOLOGICAL LOG 0-0,2m Sandy topsoil 0,2-1,0m cobble-bearing gravelly sand 1,0-1,8m boulder-bearing gravelly sandy till 1,8m rock surface</p>
			<p>ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level</p>	

		LAXEMAR BOREHOLE SSM000213		
Company rep. Lennart Adestam and Torbjörn Johansson		Northing :6365702.618 Easting :1548881.451 Coordinate system : RT90-RHB70		Top of stand pipe :0.2 m.a.g.l. Total pipe length :2.10 m Groundwater level :0.8 m.b.g.l. Date of completion :2004-07-06
Client: Svensk Kärnbränslehantering AB				
Depth (m)	Description	Samples	Groundwater monitoring well description	Borehole Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12		1 2 3		Drilling method : NOEK Borehole diameter : 120 mm sampling method : Auger CASING Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 1,00 m SCREEN Material : PEH Outer diameter : 63 mm Inner diameter : 50 mm Total length : 1,00 m Slot : 0.3 mm ANNULUS SEAL Material : Bentonite clay Total length : 0.40 m SAND PACK Grain size : 0.4-0.8 mm Total length : 1.70 m DRILLING EQUIPMENT Drilling rig : Geotech 604 Drill hammer : Furukawa HB2G Drill rod : Geostång Ø44 Drill bit : Stiff Ø54 GEOLOGICAL LOG 0-0.5m Clayey peat 0.5-1.1m sandy clay 1.1-1.5m clayey sandy silty till 1.5m rock surface
		ToSP : Top of Stand Pipe m.a.g.l. : meters above ground level m.b.g.l. : meters below ground level		

Photos of the borehole sites after completion of work

Borehole SSM000027



Borehole SSM000028



Borehole SSM000029





Borehole SSM000031



Borehole SSM00032



Borehole SSM000033





Borehole SSM000035





Borehole SSM000039



Borehole SSM000040



Borehole SSM000041



Borehole SSM000042



Borehole SSM000209





Borehole SSM000211





Borehole SSM000213

