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REMEDIATION OF PAST POLLUTION FROM EX-MILITARY BASES AND INDUSTRIAL ZONES

Feasibility Study
Site Specific Report
Tapa Railway Depot, Engine Shed – JRK no. 43

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Summary

TAPA RAILWAY DEPOT ENGINE SHED has been entered in to the database of past pollution sites under the serial number 43. The territory of the Tapa Railway depot is an industrial site.

The owner of the Tapa Railway Depot is State company Eesti Raudtee (Estonian Railways). Tapa Railway Depot Engine Shed was established at 1876, it was reconstructed at year 1964 and obtained present days look at years 1967-1968 (main repair shop buildings). Tapa Railway Depot Engine Shed is the principal maintenance shop for locomotives of the Estonian Railway network.

The soil at Tapa Railway Depot Engine Shed territory is contaminated over the reference values for an industrial zone mainly with oil products at two areas: total 8700 m^2 (the volume is 14000 m^3). In borehole 4311 the copper content in soil was also over the reference values of an industrial zone. After snowmelt and heavy rainfall, the oil from limestone fissures arises (as free phase of oil products) with groundwater and therefore temporarily soil could be contaminated sporadically on larger areas.

Compared to previous reports results (1997 and 2000) and taking into account provided remediation and reconstruction works, the decreasing trend of soil contamination could be noticed.

The groundwater is contaminated with aromatic hydrocarbons, polycyclic aromatic compounds and mineral oil products. The spreading of contaminants with groundwater is relatively limited, both horizontally and vertically. After snowmelt and heavy rainfall, the oil from limestone fissures arises (as free phase of oil products) with groundwater and therefore the groundwater reference values are probably exceeded on larger areas than outlined soil contamination over the reference values for the industrial zone. At general the contaminated groundwater spreads within the same area where the reference values for the residential zone in soil are exceeded.

After contaminated soil clean-up works the groundwater contamination will be decreased, but due of oil products existing in fissures it always possible to hit some contaminated groundwater on Tapa Railway Depots area and on its surroundings. At the present time the Ordovician aquifer groundwater is contaminated with oil products for almost the entire territory of Tapa Town (generally caused by Tapa Military Air Base at Soviet time) and the identifying of contamination causer and source at nowadays is problematic on surrounding areas of Tapa Railway Depot Engine Shed. As in old jet fuel there are more

common the volatile organic compounds, the Tapa Military Air Base groundwater pollution is not main source of groundwater pollution at Engine Shed territory.

There is 50 tons of old black, oil residuals and oil products mix with water in the tanks. All of the storage containers and piping systems currently not used on the territory of the Tapa Railway Depot will have to be dismantled and removed.

Two new monitoring boreholes have been entered into the State Cadastral Register.

1 Introduction

Tapa Railway Depots (Engine Shed and Shed for railway carriages) are the principal maintenance shops for locomotives, wagons and carriages on the Estonian Railway network. The future vision for this area stays same as today.
Tapa Railway Depot Engine Shed was established at 1876. From year 1950 from the Engine Shed were separated Shed for railway carriages (main building 1956) and new Engine Shed depot was built. Tapa Railway Depot Engine Shed was reconstructed at year 1964 and it obtained present days look at years 1967-1968 (main repair shop buildings).
Tapa Engine Shed fuel and energy installations were reconstructed at year 2000 and the sewerage piping system was reconstructed at year 2003. Completed is the reconstruction of the locomotive standing lot nearby main maintenance building.

At year 1977 approximately 172 tons of diesel fuel flowed onto the ground surface and into the soil. By assumption diesel fuel from this accident dissolved also old being in its place static old oil (probably black oil) contamination in soil and limestone fissures. Black oil and diesel fuel outflow was detected at left bank bonds of Valgejõgi River after 638 days of accident.

At the present time the Ordovician aquifer groundwater is contaminated with oil products for almost the entire territory of Tapa Town (generally caused by Tapa Military Air Base at Soviet time) and the identifying of water contamination causer and source at nowadays is problematic on surrounding areas of Tapa Railway Depot.

2 Description of the area

Tapa Railway Depot Engine Shed area is situated in the eastern part of the Tapa Town on at intersection of Tallinn-Peterburg and Tapa-Pihkva railways.

2.1 Land ownership and borders of the cadastral unit

The territory of the Tapa Railway Depot Engine Shed is situated on land cadastral unit Tapa Railway Yard (cadastral no 79101:017:0006), land belongs to Estonian State.

Figure 2-1 Borders of land cadastral units (red lines) at nearby Tapa Railway Depot Engine Shed

2.2 Nearby settlement

Tapa Railway Depot Engine Shed area is situated in the eastern part of the Tapa Town. The neighbours are private households (residential zone by Regulation No 12 of 02 April 2004), small industrial areas (industrial zone by Regulation No 12 of 02 April 2004) and unused land of Tapa Town (residential zone by Regulation No 12 of 02 April 2004). Nearest private households are 50 m south from Tapa Railway Depot Engine Shed territory. The existing private wells are not closed, lot of them are used continuously but ongoing establishment of water supply pipes at whole Tapa Town will guarantee drinking water possibility at Engine Shed neighbourhood.

2.3 Present activities at the site

Tapa Railway Depot Engine Shed is working enterprise belonging to Estonian state; it's the main maintenance shop for locomotives in Estonia.

2.4 Prognosis for the future

Tapa Railway Depot Engine Shed will continue locomotive repairing works for Estonian Railway.

2.5 Description of previous production technology

Tapa Railway Depot Engine Shed was established at 1876. From year 1950 from the Engine Shed were separated Shed for railway carriages (main building 1956) and new Engine Shed depot was built.

Tapa Railway Depot Engine Shed was reconstructed at year 1964 and it obtained present days look at years 1967-1968 (main repair shop buildings). The Tapa Railway depot deal with locomotive repairing works for Estonian Railway and also for other customers if founded.

At year 1977 approximately 172 tons of diesel fuel flowed onto the ground surface and into the soil. By assumption diesel fuel from this accident dissolved also old being in its place static old oil contamination (black oil) in soil and limestone fissures.

By provided cleanup-works 20 tons of oil was collected from special excavation at Engine Shed territory. Black oil and diesel fuel outflow was detected at left bank bonds of Valgejõgi River after 638 days of accident.

By the earlier investigations there were highlighted next areas which could be appointed as oil contamination sources:

1. Former locomotive fuelling area (*see photo 1 and 2*) and former cellar storage (at total there was 13 tanks 25-60 m^3 for diesel oil, black oil, used oils and hydraulic oils tanks *see photo 3*), two black oil tanks remained *(see photo 4)*.
2. The locomotive standing lot nearby main maintenance building (this area is reconstructed and there is no more leakages from locomotives waiting repairing).
3. The old unused boilerhouse area, flotation installations, small underground tanks and waste oil storages (reconstructed, new boilerhouse built, sewerage piping system is connected to the Tapa Town sewerage system).
4. Unused underground ferroconcrete tank (for steam locomotives probably).
5. Locomotive wash area and old collecting channels *(see photo 5)*.

The soil contamination was detected randomly at whole Tapa Engine Shed depot and At Tapa Railway Yard area; it cannot be linked only to year 1977 accident.

2.6 Former investigations and findings

1. Groundwater pollution investigations of Tapa Town. Estonian Geological Survey, 1982.
2. Environmental Audit. Tapa Engine Shed. OÜ Georemest/AS Maves, 1996;
3. Investigations of potential pollution sources at Pandivere Water Protection Area. AS Maves, 1996;
4. Estonian Railways. Tapa Station. Rehabilitation and renewal project. Factual report on ground investigations. GIB Ltd, 1997;
5. Groundwater remediation works in Tapa military airfield. AS Maves 1997;
6. Environmental studies of Tapa Railway Depot, Engine Shed. AS E-Konsult 1997. a. E-416;
7. Reconstruction of Tapa Engine Shed fuel and energy installations. OÜ EstKonsult. 1998
8. Environmental assessment of reconstruction of Tapa Engine Shed energy installations. AS Maves, 1998;
9. Assessment of environment state at Estonian Railways AS Maves, 2000;
10. Groundwater and soil pollution investigations of Tapa Railway Depot Engine Shed. OÜ Salveesia, 2000.
11. Tapa Railway Yard Reconstruction. Phare Framework Contract - Transport FC351, Environmental Impact Assessment, (Cowi, BCEOM + AS Maves), 2000;

12. Remediation and Integrated Environmental assistance to the Estonian Railway. Working paper No. 3. Final Report, Task C. Remediation and monitoring. Krüger, January 2004. *Remediation method was Bioslurping or Multi-phase extraction. At total 1226 kg of oil from in summer period 2003.*

The earlier investigations have determined soil and water contamination over limits at the whole Tapa Engine Shed depot area but only contaminated groundwater area was outlined (Groundwater and soil pollution investigations of Tapa Railway Depot Engine Shed. OÜ Salveesia, 2000). The soil contamination was detected randomly at whole Tapa Engine Shed depot and At Tapa Railway Yard area; it cannot be linked only to year 1977 accident.

2.7 Topographical and climatic conditions

The Tapa Railway depot is situated on the limestone plateau of North-Estonia, in the northern side of the Pandivere upland. The absolute heights of the ground remain between 91 and 96 m, the relief lowers in the north-eastern and eastern direction towards Valgejõgi River valley.

The climatic conditions are typical for the inland area of Estonia, the average annual temperature is 4.2º C, the coldest month of the year is February (-7º C). Long-term minimum average air temperature of the month is -10º C; maximum average air temperature is 21.6º C. Daily average air temperature exceeds zero degree in the beginning of April. Absolute maximum and minimum air temperatures measured at Tapa are correspondingly 33º C (in July) and -38º C (in January).

Total amount of precipitation of the year is 710 mm, 65-70 % of the total precipitation of the year falls during the warm period of the year (smallest precipitation in February-March, biggest in August). On average, the permanent cover of snow starts in the second decade of December and lasts an approximate of 110 days, the average thickness of the snow is 30 cm. The prevailing winds blow from south-west.

2.8 Characterization of the surface water bodies

The nearest body of surface water is the Valgejõgi River (code 107920, situated 0.1 km north-east from the Tapa Railway Depot territory. Due thin topsoil there is no network of drainage ditches discharging stormwater into surface water bodies.

2.9 Geological and hydrogeological conditions

The studied Tapa Railway Depot is located on the outcrop area of upper Ordovician Vormsi (O_3vr) stage limestone bedrock. Total thickness of limestone complex is 125 - 135 m. Absolute elevation of limestone surface is between 87 m (at Valgejogi River valley) and 95 m. The upper part of limestone, with thickness up to 2 m (mostly 0.2-0.4m), has been weathered. The limestone also contains some layers of marl or clayey interlayer lenses.

Topsoil, covering the bedrock limestone is relatively thin, up to 4.1 m, mostly 1 - 2 m. The upper part of the quaternary cover is formed mostly everywhere from filling with the thickness between 0.4...4.0 m. As filling is used mainly earth-mixed sand, gravel, splinters, moraine, limestone slabs and construction waste. Under the filling is spread greyish yellow silty moraine (total thickness 0 - 2,0 m) containing 35...50% of coarse grained material, the lower part of layer transfers to local moraine consisting mainly of limestone slabs. Moraine is missing at some eastern part of the Tapa Railway Depot area where the lying depth of the limestone is small.
The locations of the boreholes and geological profiles are shown in Annex 1. Figure 3-2, the geological cross sections are presented in Annex 2.

Groundwater exists in three separate aquifers: Ordovician (limestones), Ordovician-Cambrian (sandstones) and Cambrian-Vendian (sandstones).

The water in the Ordovician limestone forms with water existing in the Quaternary deposits and fill (after rainfall and snowmelt) the uppermost groundwater aquifer. Permanent soil water aquifer is not forming in topsoil sediments due to the small thickness.

The approximate hydraulic conductivity of the soils:

- filling: depending on composition 1 m/day up to 10 m/day (sandy filling),
- silty moraine: 0.1 m/day.

The Ordovician aquifer consists of Vormsi and Lasmamäe stages limestone and dolomites with clayey interlayer lenses. The hydraulic conductivity of limestone depend presence of fissures and may vary within big limits. The average hydraulic conductivity of Vormsi stage limestone's in the area is 4 m/day (1 m/day in vertical direction). Groundwater in the fissure systems of the carbonate bedrock flows relatively fast and according to the drilling data the limestone has some fissured zones but there were no large cracks or fissures. The water level (28.07.2006) was 3.4-5.45 m below ground level (*the*

water level at 02.05.2000 was 3.2-4.2 below ground level) at an absolute height of 87.85-88.6 m. This level of groundwater shall be considered minimum water level since the investigations were carried out at the end of a dry period.

During the maximum the water level may rise about 1...2 m above the measured level. *According to the results of earlier investigations (Environmental studies of Tapa Railway Depot, Engine Shed. AS E-Konsult 1997. a. E-416) at the locomotive depot the groundwater table is at 2 - 3,5 m depth from the ground and may raise ca 1 m after snow melting in the spring.*

Ordovician aquifer groundwater is recharged by percolation of rain and snowmelt water through the unsaturated topsoil and by transitional groundwater flow from southwest. The area is drained by the Valgejõgi valley. The aquifer is unprotected from pollution from the ground level.

The groundwater flow occurs to east and north-east direction, at the western and central part of the area with gradient about 0.007 m/m, in the north-east and eastern part nearby Valgejõgi River valley 0.025 m/m.
According to the collected data the groundwater of this aquifer is used by some of private wells at Tapa Town. Nearest private households borewells (unregistered) are situated ca 50 m south from Tapa Railway Depots Engine Shed. These shallow wells are not registered in State Cadastral Register because in Soviet time there was not permanent requirement to register wells with depth less than 20 m (sometime this requirement was, sometime not). *At the present time the Ordovician aquifer groundwater is contaminated with oil products for almost the entire territory of Tapa Town (caused by Tapa Military Air Base at Soviet time) and thus is not potable as drinking water.*

Lower-Cambrian Volhovi, Latorpi, Varangu and Pakerordi stages clayey shale and clay form the Ordovician aquitard (thickness 6 m) separating the Ordovician aquifer and the Ordovician–Cambrian aquifer

The Ordovician–Cambrian aquifer underlies the Ordovician aquitard (at depth ca 134m from ground), the water bearing portion consists of fine-grained sandstone and siltstone of the Lower-Ordovician Pakerort Stage and the Lower-Cambrian Pirita Regional Stage. The thickness of the aquifer is 20-25 m. The hydraulic conductivity is 2-4 m/day and the aquifer transmissivity is in the range 40-100 m²/day. The main recharge area is the Pandivere Upland. Ordovician–Cambrian aquifer groundwater is used in Tapa Town on large areas, also in closeness to Railway Depot Engine Shed. The aquifer is relatively well protected from pollution from the ground

level. By calculations there is no direct danger of the spreading of the contaminated groundwater from Tapa Railway Depot Engine Shed area into the existing water supply wells taking water from Ordovician-Cambrian aquifer. The nearest working well is about 500 m northwest from the investigated area. The water level in the Ordovician–Cambrian aquifer is ca 32 m below the ground surface at an absolute height of 56 m.

Lower-Cambrian Lontova stage clay ("blue clay") forms the Lükati-Lontova regional aquitard (thickness 60 m) separating the Ordovician–Cambrian aquifer and Cambrian-Vendian aquifer.

Cambrian Vendian aquifer underlies Lükati-Lontova regional aquitard (at depth ca 215 m from ground). The water bearing are sand- and siltstones with interlayer's of clay. The hydraulic conductivity is typically 5 m/day, the aquifer transmissivity is ca 300 m²/day and the specific capacity of wells 0.3-1.0 l/sec/m drawdown. Cambrian-Vendian aquifer groundwater is not used today in Tapa Town for water supply. The potentiometric waterlevel at Tapa is at absolute height ca -2 m. The aquifer is protected from pollution from the ground. The nearest nonworking water supply well is situated about 800 m southwest from Railway Depot.
By calculations there is no any danger of the spreading of the contaminated groundwater into the Cambrian-Vendian aquifer system.

3 Existing facilities

3.1 Present storage conditions of the pollutants

The Tapa Railway depot will continue locomotive repairing works for Estonian Railway. At general the all the upgrading, and/or demolition and new installation of tanks and pipelines are left to state owned company Eesti Raudtee (Estonian Railways).

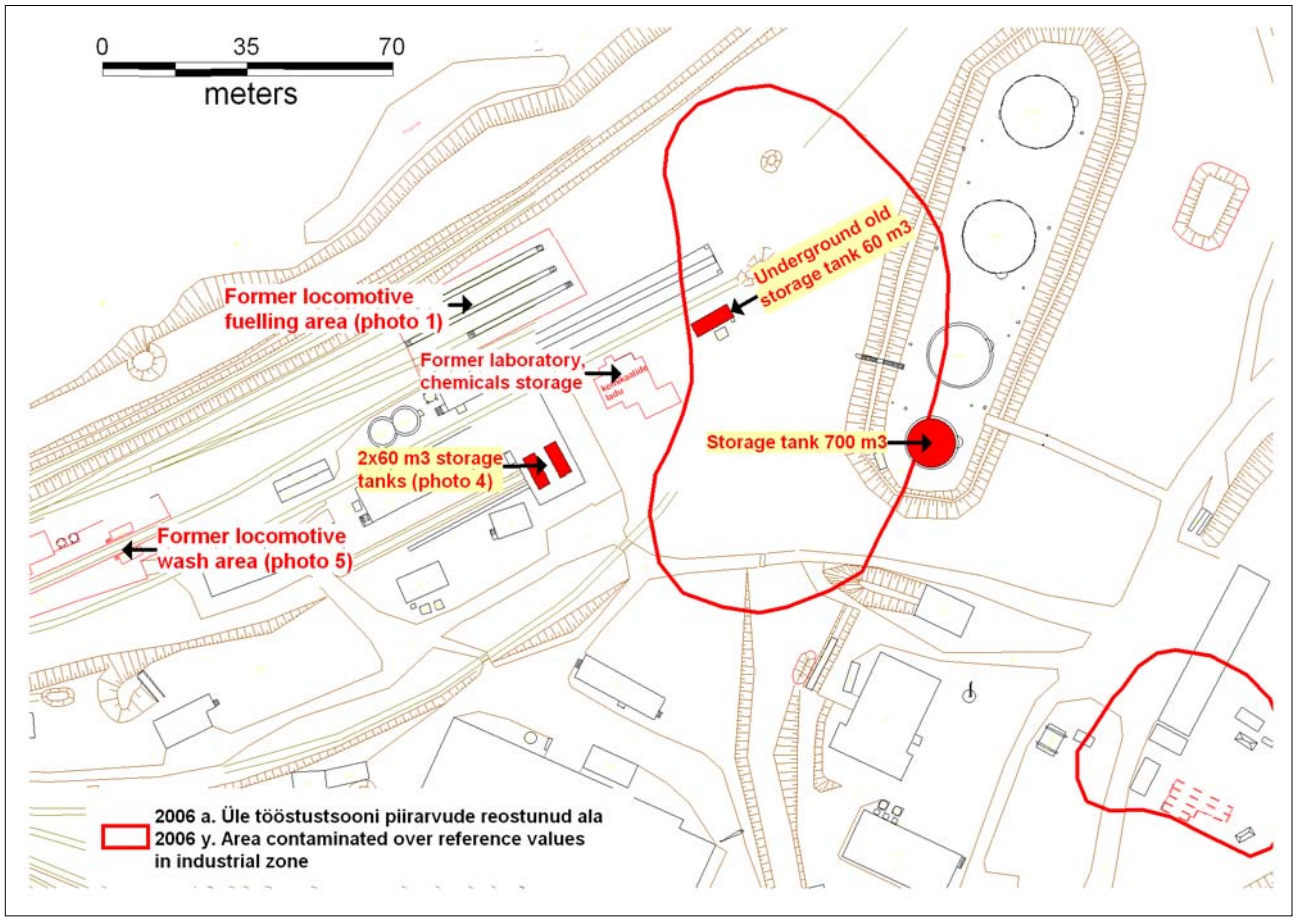


Figure 3-1 Unused tanks and facilities at Engine Shed territory

As the past pollution objects it's reasonable and could be demolished:

1. unused 700 m^3 over ground vertical steel tank (southernmost from group of 4 vertical tanks (2x2000 m^3, 1000 m^3 and 700 m^3) containing 20 tons of old black oil and oil residuals,
2. two horizontal 60 m^3 steel tanks in cellar storage (*photo 3 in Annex 5*) containing some 10m^3 of a black oil residuals (*photo 4 in Annex 5*),
3. an old 60 m^3unused underground ferroconcrete tank containing up to 20 m^3 of black oil residuals and oily water. This non

waterproof tank is said to have been emptied several times by previous years.

Between 60 m^3 storage tanks in cellar and 60 m^3 underground tank is an unused old laboratory/chemicals storage building what perhaps could be handled as past pollution object.
Former locomotive wash area, collecting channels and equipment maybe also handled as past pollution object if needed (*see photo 5*).

3.2 Technical condition of existing treatment facilities

At year 2000 the Tapa Railway Depot Engine Shed fuel and energy installations were reconstructed and the sewerage piping system was reconstructed at year 2003. Completed is the reconstruction of the locomotive standing lot nearby main maintenance building (excluded is soil and groundwater contamination by oil leakages from parking locomotives). The Tapa Railway Depot Engine Shed sewerage piping system is connected to the Tapa Town sewerage system. There is no network of drainage ditches discharging water into surface water bodies due thin topsoil. The stormwater from the Tapa Railway Depot area is connected to the Tapa Town stormwater runoff system.

3.3 Conditions of other facilities in the area

There are no other enterprises on the territory of the Tapa Railway Depot Engine Shed.

4 Extent of the fieldworks

4.1 Sampling methodology

Soil and water samples have been taken according to the methods described in Part I of the report. At total 31 boreholes were established for the research of soil and groundwater (Annex 1 and Annex 3). As on territory was provided thoroughgoing investigation also at years 2000 and 1997, the aim of current investigation was also observe changes take place in contamination during last 10 years.

4.2 Analysed parameters

Components of hazardous substances, detected in the samples, correspond to the list given in a table in Part I of the report.

4.3 Soil sampling

Soil samples were taken from 16 boreholes (total 26 samples analysed). The maximum depth of samples was 3.6 m (Annex 3 and Annex 4).

4.4 Groundwater and surface water sampling

The groundwater samples were taken (Ordovician aquifer) from the boreholes 4316, 4331, 257 (old 101) and no 260 (old 3M) and from private borewell at Koidu street 23 (Annex 4).

5 Identification of pollution

5.1 Amounts and types of pollutants

Volatile organic compounds, polycyclic aromatic compounds, heavy metals and mineral oil products were detected in the groundwater samples, these hazardous substances are some, described in Part I of the report. The results of the analyses are shown in Table 5.1.1 and in Annex 4.

In Table 5.1.1 the contents of hazardous substances exceeding the target value in groundwater is written in bold italics and the contents exceeding the reference value in bold and the cell is highlighted blue. The detected compounds are to a higher or lesser degree toxic and carcinogenic.

The groundwater in the Ordovician aquifer is polluted with aromatic compounds, polycyclic aromatic compounds and mineral oil products.

The total content of polycyclic aromatic compounds in water sample from borehole 4316 was 627.6µg/l exceeds the reference value of the groundwater by 62 times, highest was the content of a-methylnaphtalene 284µg/l (the reference values is 30µg/l). The content of mineral oil products in water sample from borehole 257 (old 101) was 1100 µg/l (the reference value is 600 µg/l), in borehole 4316 the content of mineral oil products was 59745 µg/l.
The total content of aromatics (mostly the auxiliary volatile organic compounds) in water sample from borehole 4316 was 3072 µg/l (the

reference value is 100 µg/l). The content of the volatile organic compounds and Chloroorganic aromatics in water sample from borehole 4316 was over target values, close to the reference values.

The content of heavy metals remained below the reference values (over target values were detected lead, arsenic, copper, chromium and zinc).

Table 5.1.1 Contents of hazardous substances found in water being over the reference precision limits (28.07.2006)

Dangerous substances	Maximum limits in groundwater		Water sampling points, date and depths (m)				
			no257 (old 101)	4316	4331	no 260 (old 3M)	Private well Koidu 23
	Target value	Reference value	28.07.06	28.07.06	28.07.06	28.07.06	28.07.06
			5,0-5,55	3,4-6,8	4,9-8,5	3,5-5,2	
	µg/l	µg/l	µg/l				
Volatile Organic Compounds							
Benzene	0.2	5		***0.45***			
Toluene	0.5	50		***7***			
Xylene	0.5	30		***29***			
Ethylbenzene	0.5	50		***7***			
Chloroorganic aromatics (total)	0.5	5		***5***			
Chlorobenzene	-	-		5			
Isopropylbenzene	-	-		530			
Propylbenzene	-	-		780			
1,3,5-trimethylbenzene	-	-		18			
tert-butylbenzene	-	-		19			
1,2,4-trimethylbenzene	-	-		410			
sec-butylbenzene	-	-		970			
p-isopropylbenzene	-	-		2			
Butylbenzene	-	-		300			
Extractive compounds	-	-					
Aliphatics >C5-C8	-	-		45			
Aliphatics >C8-C10	-	-		1200			
Aliphatics >C10-C12	-	-		6200			
Aliphatics >C12-C16	-	-	200	22000			
Aliphatics >C16-C35	-	-	900	29000			

Dangerous substances	Maximum limits in groundwater		Water sampling points, date and depths (m)				
			no257 (old 101)	4316	4331	no 260 (old 3M)	Private well Koidu 23
	Target value	Reference value	28.07.06	28.07.06	28.07.06	28.07.06	28.07.06
			5,0-5,55	3,4-6,8	4,9-8,5	3,5-5,2	
	µg/l	µg/l	µg/l				
Aromatics >C8-C10	-	-		1300			
Polycyclic aromatic hydrocarbons (PAH)	0.2	10		**627.6**		***0.24***	0.1
Anthracene	0.1	5		**16**			
Phenanthrene	0.05	2		**108**		***0.14***	
Pyrene	1	5		**20**			
Acenaphthene	1	30		***25***			
Chrysene	0.01	1		**9.6**			
Naphthalene	1	50		**67**			
a-methylnaphtalene	1	30		**284**		0.1	
b-methylnaphtalene	1	30		***11***			0.1
Acenaphtalene	-	-		4.4			
Benzo(a)pyrene	0.01	1		**2.8**			
Benzo(a)anthracene	-	-		5.8			
Benzo(b,k)fluorantene	-	-		3.4			
Indeno(1,2,3,c,d)pyrene	-	-		0.8			
Dibenzo(a,h)anthracene	-	-		0.4			
9H-Fluorene	-	-		57			
Fluoranthene	-	-		11			
Benzo(g,h,i)perylene	-	-		1.4			
Dibenzofuran	-	-		27			
Carbazole (Diphenylenimine)	-	-		1.8			
Heavy metals and other inorganic compounds							
Cadmium (Cd)	1	10	0.36		0.055		0.022

Dangerous substances	Maximum limits in groundwater		Water sampling points, date and depths (m)				
			no257 (old 101)	4316	4331	no 260 (old 3M)	Private well Koidu 23
	Target value	Reference value	28.07.06	28.07.06	28.07.06	28.07.06	28.07.06
			5,0-5,55	3,4-6,8	4,9-8,5	3,5-5,2	
	µg/l	µg/l	µg/l				
Lead (Pb)	10	200	***29***				
Strontium (Sr)	-	-	630	400	240	290	120
Arsenic (As)	5	100	***17***	1.4	1.1	0.23	0.46
Copper (Cu)	15	1000	***23***	0.53	3	0.41	0.82
Chromium (Cr)	10	200	***12***		0.23		
Nickel (Ni)	10	200		0.28	2.4		
Zinc (Zn)	50	5000	***120***	1.3	47	3.3	9.7
Aromatic hydrocarbons	1	100		**3072.45**			
Oil products total	20	600	***1100***	***59745***			

In Table 5.1.1 the contents of hazardous substances exceeding the target values of the water is written in bold italics and the contents exceeding the reference values in bold and highlighted blue. The detected compounds are more or less toxic and carcinogenic.

Volatile organic compounds (including BTEX-s), Chloroorganic compounds, mineral oil products, polycyclic aromatic hydrocarbons (PAH) and heavy metals were detected in the soil samples, these hazardous substances are some, described in Part I of the report. The detected compounds are to a higher or lesser degree toxic and carcinogenic. The test results are shown in Table 5.1.2-5.1.3 and in Annex 4. In Tables 5.1.2 and 5.1.3 the contents of hazardous substances exceeding the reference values of the industrial zone are shown in bold and the cell is highlighted brown; the contents of hazardous substances exceeding the reference values of a residential zone are shown in bold italics.

According to the results of the laboratory analyses, the soil is contaminated. The content of totals mineral oils exceeds the reference values of an industrial zone in the boreholes 4311 and 4312. In the borehole 4311 the copper content in soil was over the reference values of an industrial zone. In boreholes 4313 and 4325 free oil was detected in soil.

Compared to previous reports results (1997 and 2000) and taking into account provided remediation and reconstruction works, the decreasing trend of soil contamination could be highlighted.

Table 5.1.2 Contents of hazardous substances found in soil being over the reference precision limits (27-28.07.2006)

Dangerous substances	Maximum limits in soil, mg/kg			Soil sampling points and depths (m)											
				4301	4302	4302	4302	4306	4306	4307	4307	4308	4308	4309	4310
	Target value	Reference value in residential zone	Reference value in industrial zone	3,5-3,6	0,8-0,9	1,2-1,3	1,8-2,0	1,6-1,7	2,9-3,0	0,6-0,7	3,8-3,9	1,3-1,4	3,0-3,2	3,5-3,7	1,4-1,5
	mg/kg			mg/kg											
Volatile Organic Compounds	-	-	-												
Toluene	0.1	3	100	0.015							0.0091				
Xylene	0.1	5	30	1											
Chloroorganic aromatics (total)	0.2	5	100	0.28					0.049	0.0056	0.066		0.29	0.15	0.038
1,2,4-trichlorobenzene	0.1	0.5	30										0.1		
Isopropylbenzene	-	-	-						0.017		0.052		0.26		0.015
Propylbenzene	-	-	-						0.041		0.11		0.64		0.027
1,3,5-trimethylbenzene	-	-	-	0.45					0.0075		0.0096		0.0073		0.018
tert-butylbenzene	-	-	-	0.017					0.0053		0.009		0.033	0.019	0.014
1,2,4-trimethylbenzene	-	-	-	1.1	0.0055				0.016		0.07		0.06		0.12
sec-butylbenzene	-	-	-	0.045					0.16	0.025	0.33	0.013	1.2	0.055	0.05
p-isopropylbenzene	-	-	-	0.024	0.0063						0.0059		0.8		0.24
Butylbenzene	-	-	-		0.0098				0.082		0.21	0.018	0.7		0.013
Bromobenzene	0.1	0.5	30	0.28					0.049	0.0056	0.066		0.19	0.15	0.038
Extractive compounds	-	-	-												
Aliphatics >C8-C10	-	-	-	16									18	8.7	
Aliphatics >C10-C12	-	-	-	310					79	35	100		380	410	63
Aliphatics >C12-C16	-	-	-	1100		5.7			320	200	420	5.5	1600	1400	57
Aliphatics >C16-C35	-	-	-	1300	57	70			380	710	660	18	2200	1400	320

Table 5.1.2 Contents of hazardous substances found in soil being over the reference precision limits (27-28.07.2006)

Dangerous substances	Maximum limits in soil, mg/kg			Soil sampling points and depths (m)											
				4301	4302	4302	4302	4306	4306	4307	4307	4308	4308	4309	4310
	Target value	Reference value in residential zone	Reference value in industrial zone	3,5-3,6	0,8-0,9	1,2-1,3	1,8-2,0	1,6-1,7	2,9-3,0	0,6-0,7	3,8-3,9	1,3-1,4	3,0-3,2	3,5-3,7	1,4-1,5
	mg/kg			mg/kg											
Aromatics >C8-C10	-	-	-	21									36	8.5	
Aromatics >C10-C35	-	-	-	160					37		37		110	96	
Polycyclic aromatic hydrocarbons (PAH)	5	20	200	***44.72***	0.55	2.75	0.93		6.34	1.34	5.73	0.26	***23.38***	2.04	1.28
Anthracene	1	5	50	1.5		0.14			0.15		0.29		0.75	0.14	
Phenanthrene	1	5	50	***7.5***		0.14			0.91	0.19	1.2		***5.3***	0.58	
Pyrene	1	5	50	2.4	0.1	0.38	0.25		0.16	0.47	0.46	0.11	0.61		0.17
Acenaphthene	1	4	40	2.5					0.25		0.39		1.3	0.13	
Chrysene	0.5	2	20	0.86		0.19	0.12			0.27	0.23		0.27		
Naphthalene	1	5	100	3.8					0.21		0.25		1	0.25	0.13
a-methylnaphtalene	1	4	40	***16***					2.7		1.7		***10***	0.36	0.46
b-methylnaphtalene	1	4	40	3.6					1.3		0.1		0.27		0.29
Acenaphtalene	-	-	-	0.57	0.15	0.38			0.11		0.13		0.61	0.11	
Benzo(a)pyrene	0.1	1	10	0.28		0.24	0.11								
Benzo(a)anthracene	-	-	-	0.46		0.14				0.1	0.12				
Benzo(b,k)fluorantene	-	-	-	0.3	0.11	0.38	0.21			0.19		0.15			0.1
Indeno(1,2,3,c,d)pyrene	-	-	-	0.11		0.19									
9H-Fluorene	-	-	-	3.6					0.55	0.12	0.69		3	0.47	

Table 5.1.2 Contents of hazardous substances found in soil being over the reference precision limits (27-28.07.2006)

Dangerous substances	Maximum limits in soil, mg/kg			Soil sampling points and depths (m)											
				4301	4302	4302	4302	4306	4306	4307	4307	4308	4308	4309	4310
	Target value	Reference value in residential zone	Reference value in industrial zone	3,5-3,6	0,8-0,9	1,2-1,3	1,8-2,0	1,6-1,7	2,9-3,0	0,6-0,7	3,8-3,9	1,3-1,4	3,0-3,2	3,5-3,7	1,4-1,5
	mg/kg			mg/kg											
Fluoranthene	-	-	-	1.1		0.24	0.24				0.17		0.27		0.13
Benzo(g,h,i)perylene	-	-	-	0.14	0.19	0.33									
Dibenzofuran	-	-	-	1.4					0.32		0.39		1.9	0.29	
Carbazole (Diphenylenimine)	-	-	-	0.16									0.2		
Heavy metals and other inorganic compounds	-	-	-												
Cadmium (Cd)	1	5	20							0.25	0.29		0.29	0.34	
Lead (Pb)	50	300	600	2.6	15	40	20	2.2	3.8	15	4.4	16	2.2	3	8.4
Strontium (Sr)	-	-	-	180	48	89	66	170	230	14	190	340	140	230	39
Arsenic (As)	20	30	50	3.5		3.3	3.5	2.9	4.3	5.6	3.7	5.2	2.6	3.1	5.8
Copper (Cu)	100	150	500	4.3	25	110	30	4.2	5.1	12	3.8	7	2.8	2.1	9
Chromium (Cr)	100	300	800	6.2	3.8	5.6	11	2.9	9.1	27	17	14	3.2	3.9	12
Nickel (Ni)	50	150	500	3.4	3.2	6.2	9.3	2.1	5.5	11	5.1	14	3.2	2.3	7.9
Zinc (Zn)	200	500	1500	25	26	38	72	23	30	110	180	15	150	120	47
Aromatic hydrocarbons	1	10	100	2.651	0.0216				0.3288	0.025	0.8056	0.031	3.7003	0.074	0.497
Oil products total	100	500	5000	***2907***	57	75.7			***816***	***945***	***1217***	23.5	***4344***	***3323.2***	440

Table 5.1.3 Contents of hazardous substances found in soil being over the reference precision limits (27-28.07.2006)

Dangerous substances	Maximum limits in soil, mg/kg			Soil sampling points and depths (m)													
				4310	4310	4311	4311	4312	4312	4317	4317	4318	4322	4323	4327	4328	4329
	Target value	Reference value in residential zone	Reference value in industrial zone	1,9-2,0	3,5-3,6	0,4-0,5	0,9-1,0	1,0-1,1	2,4-2,5	1,3-1,5	2,2-2,3	2,5-2,65	3,5-3,6	1,9-2,0	1,9-2,0	1,8-2,0	0,9-1,0
	mg/kg			mg/kg													
Volatile Organic Compounds	-	-	-														
Benzene	0.05	0.5	5			0.026			0.057							0.012	
Toluene	0.1	3	100			0.028			0.007	0.01			0.011		0.007		
Xylene	0.1	5	30			0.13			0.1				0.17				
Ethylbenzene	0.1	5	50			0.007			0.041				0.005			0.006	
Chloroorganic aromatics (total)	0.2	5	100									0.15	0.04			0.031	
1,2-dichloroethane	0.1	2	50			0.063											
Isopropylbenzene	-	-	-						0.027			0.093	0.029				
Propylbenzene	-	-	-						0.068			0.21	0.067				
1,3,5-trimethylbenzene	-	-	-			0.14			0.037			0.024	0.015			0.008	
tert-butylbenzene	-	-	-		0.005				0.008			0.015	0.008				
1,2,4-trimethylbenzene	-	-	-			0.19		0.01	0.39			0.04	0.13			0.018	
sec-butylbenzene	-	-	-		0.008				0.053			0.57	0.18			0.006	
p-isopropylbenzene	-	-	-	0.26		0.028			0.11							0.021	
Butylbenzene	-	-	-			0.016			0.051			0.13	0.28				
Tetrachloroethene (perchloroethylene)	0.1	5	50			0.005											
Bromobenzene	0.1	0.5	30									0.15	0.04			0.031	
Bromodichloromethane	-	-	-													0.063	
Extractive compounds	-	-	-														

Table 5.1.3 Contents of hazardous substances found in soil being over the reference precision limits (27-28.07.2006)

Dangerous substances	Maximum limits in soil, mg/kg			Soil sampling points and depths (m)													
				4310	4310	4311	4311	4312	4312	4317	4317	4318	4322	4323	4327	4328	4329
	Target value	Reference value in residential zone	Reference value in industrial zone	1,9-2,0	3,5-3,6	0,4-0,5	0,9-1,0	1,0-1,1	2,4-2,5	1,3-1,5	2,2-2,3	2,5-2,65	3,5-3,6	1,9-2,0	1,9-2,0	1,8-2,0	0,9-1,0
	mg/kg			mg/kg													
Aliphatics >C8-C10	-	-	-									14	6.9				
Aliphatics >C10-C12	-	-	-		13	31	22	<5	220		72	400	150			110	
Aliphatics >C12-C16	-	-	-		47	540	83	8.1	1600		340	1300	560			640	
Aliphatics >C16-C35	-	-	-	13	330	5800	2700	130	15000	100	410	1400	930	14	11	1700	63
Aromatics >C8-C10	-	-	-									20	20				
Aromatics >C10-C35	-	-	-			240			400			92	51			100	
Polycyclic aromatic hydrocarbons (PAH)	5	20	200		0.22	***71.3***	***30.9***	0.018	***134***	1.57	0.33	13.8	6.48		2.35	***38.7***	***26.1***
Anthracene	1	5	50			3	0.7		***7.5***			2	0.28			1.1	0.65
Phenanthrene	1	5	50			***17***	1.2		***32***	0.3		2.5	2		0.19	***5.9***	2
Pyrene	1	5	50			***9.3***	***10***		***19***	0.36		0.42	0.65		0.37	3.8	3
Acenaphthene	1	4	40			2.3	0.18		***5.4***			0.5	0.65			2	0.61
Chrysene	0.5	2	20		0.11	***6***	***3.7***		***11***	0.22		0.14	0.27		0.21	0.9	1.7
Naphthalene	1	5	100			2.8	0.35	0.018	4.5		0.33	0.75	0.31			***5.2***	2.6
a-methylnaphtalene	1	4	40			***5.8***	0.53		***14***			***5.1***	0.17			***10***	0.65
b-methylnaphtalene	1	4	40			***4.7***	0.53		4			0.19				***5.2***	1.5
Acenaphtalene	-	-	-			2.3	1.8		3.5			0.71	0.26			0.23	0.2
Benzo(a)pyrene	0.1	1	10			***1.6***	***2.6***		***3.3***				0.11		0.19	0.23	***1.7***
Benzo(a)anthracene	-	-	-			2.6	1.1		6.1				0.21		0.15	0.45	1.5
Benzo(b,k)fluorantene	-	-	-			2.3	2.8		3.5	0.2			0.13		0.39	0.28	3

Table 5.1.3 Contents of hazardous substances found in soil being over the reference precision limits (27-28.07.2006)

Dangerous substances	Maximum limits in soil, mg/kg			Soil sampling points and depths (m)													
				4310	4310	4311	4311	4312	4312	4317	4317	4318	4322	4323	4327	4328	4329
	Target value	Reference value in residential zone	Reference value in industrial zone	1,9-2,0	3,5-3,6	0,4-0,5	0,9-1,0	1,0-1,1	2,4-2,5	1,3-1,5	2,2-2,3	2,5-2,65	3,5-3,6	1,9-2,0	1,9-2,0	1,8-2,0	0,9-1,0
	mg/kg			mg/kg													
Indeno(1,2,3,c,d)pyrene	-	-	-			0.7	1.1		0.94	0.14					0.21	0.11	1.4
Dibenzo(a,h)anthracene	-	-	-			0.35	0.7		0.94								0.47
9H-Fluorene	-	-	-		0.11	6.1	0.35		9.4			1.3	1.2			2.1	0.45
Fluoranthene	-	-	-			3.2	0.7		6.8	0.14		0.19	0.24		0.41	1	3.2
Benzo(g,h,i)perylene	-	-	-			1.2	2.6		1.9	0.21			<0.10		0.23	0.23	1.5
Dibenzofuran	-	-	-			0.88	0.18		2.1			0.81	0.12			0.51	0.27
Carbazole (Diphenylenimine)	-	-	-			0.53	0.18		0.94			0.12					0.38
Heavy metals and other inorganic compounds	-	-	-														
Cadmium (Cd)	1	5	20			0.25	0.4	0.29		0.45			0.27		0.23		0.26
Lead (Pb)	50	300	600	3.2	3.1	120	220	12	190	210	3.9	6.8	6.4	6.5	71	7.2	88
Strontium (Sr)	-	-	-	130	220	160	71	250	260	240	190	120	180	160	140	140	86
Arsenic (As)	20	30	50	2.7	3.1	6	7.3	5.4	12	13	2.3	7.1	6.8	6.4	9	4.2	5.4
Copper (Cu)	100	150	500	5.5	4.3	***170***	**1100**	23	***350***	120	5.4	8	12	11	19	7.4	53
Chromium (Cr)	100	300	800	5	9.8	5.1	11	13	23	13	3	7	81	8.7	10	10	9.8
Nickel (Ni)	50	150	500	3.7	4.6	9.3	19	13	52	15	1.7	5.6	7.3	4.7	8.5	5.4	8.1
Zinc (Zn)	200	500	1500	23	29	59	190	43	160	69	41	76	47	38	69	38	87
Aromatic hydrocarbons	1	10	100	0.26	0.013	0.565		0.01	0.949	0.01		1.082	0.896		0.007	0.07	
Chlorinated aliphatic hydrocarbons (each compound)	0.1	5	50			0.068										0.063	
Oil products total	100	500	5000	13	390	**6611**	***2805***	138.1	**17220**	100	***822***	***3226***	***1718***	14	11	***2550***	63

5.2 Soil pollution

The status of the Tapa Railway depot Engine Shed territory has an industrial zone. The reference values, set for an industrial zone, are shown in Annex 4 (Minister of the Environment Regulation No 12 of 02 April 2004). According to the results of the soil sample analyses and the documented visual assessments, it can be stated that the soil is contaminated over the reference values for an industrial zone mainly with oil products at two areas: total 8700 m^2 (the volume is 14000 m^3). The following table 5.2.1 shows in detail the course of calculating the surface areas and cubic contents of the contaminated soil and soil to be removed if contaminated soil will be displaced.

With planning of the remediation actions it's may be rational to take into account as possible also the areas where the reference values for the residential zone are exceeded — to reduce the risk of temporarily exceeding of the reference values in soil for industrial zone:

The soil contamination on areas of Tapa Railway depot territory (industrial zone) depends from groundwater level. Often the free oil arises with groundwater table from limestone fissures and therefore we assume that on areas where by current investigation were detected only the exceeding of the reference values of oil products for the residential zone, there may temporarily and sporadically take place also the exceeding of the reference values of industrial zones.

Table 5.2.1 Calculation of the volume of the contaminated soil exceeding the reference values

			The contaminated layer estimated		The sum cubic content of the contaminated and uncontaminated soils if they removed	
		Area m^2	average thickness m	cubic content m^3	average thickness m	cubic content m^3
Contaminated over the reference values for an industrial zone	Northern area	6900	2.0	13800	3.0	20700
	Southern area	1800	0.1	200	2	3600
	TOTAL	8700		14000		24300
With planning of the remediation actions it's recommended to take into account as possible also the areas where the reference values for the residential zone are exceeded, to reduce the risk of temporarily exceeding of the reference values in soil for industrial zone.						
Contaminated over the reference values for the residential zone		*37200*	*1.5*	*55000*	*2.7*	*100000*
All total (over reference values for an industrial zone + over reference values for the residential zone)		*45900*		*69000*		*124300*

5.3 Water pollution

The groundwater is contaminated with aromatic hydrocarbons, polycyclic aromatic compounds and mineral oil products. Assessment of contamination situation shows that the spreading of contaminants with groundwater is relatively limited, both horizontally and vertically.

At general the contaminated groundwater spreads within the same area where the reference values for the residential zone in soil are exceeded. After snowmelt and heavy rainfall, the oil from limestone fissures arises (as free phase of oil products) with groundwater table and therefore the groundwater reference values are probably exceeded on areas where the soil contamination exceed the reference values of residential zone. According by existing reports, the free phase of oil products were detected in boreholes 247, 248, 249, 256, 323, 347 and 348.

It must be taken into account that by drill logs descriptions there are fissures in limestone containing oil products at depth 3-7 m from ground. This old oil in fissures may cause also soil contamination over reference values for industrial zone when it arises (as free phase of oil products) with groundwater table.

At the present time the Ordovician aquifer groundwater is contaminated with oil products for almost the entire territory of Tapa Town (generally caused by Tapa Military Air Base at Soviet time) and the identifying of contamination causer and source at nowadays is problematic on surrounding areas of Tapa Railway Depot. As in old jet fuel there are more common the volatile organic compounds, the Tapa Military Air Base groundwater pollution is not main source of groundwater pollution at Engine Shed territory.

After the contaminated soil clean-up works, the groundwater contamination will be decreased, but due of oil products existing in fissures it always possible to hit some contaminated groundwater on Tapa Railway depot area and on its surroundings.

5.4 Description of the existing monitoring network

There exist groundwater monitoring network established by previous investigations at years 1997 (8 water wells at year 1997, in 2 never water detected other 8 water wells at year 2000). Most of them are unnecessarily shallow, established for detecting of free oil phase on groundwater and for 2003 year remediation works (old wells are not registered in Estonian Water Cadastre). During current investigations only in two wells groundwater were detected.

The existing monitoring network upgraded by two new Ordovician aquifer monitoring wells no 4316 and no 4331. In detail the monitoring wells descriptions are presented in delivery acts of established monitoring wells in Annex 3.

Monitoring well 4316 is located on the northern area of Tapa Railway Depot Engine Shed territory nearby River Valgejõgi. The monitoring well opens the uppermost groundwater aquifer. The well part which works as a filter is in depth 1.82-6.8 meters from the ground.
The monitoring well is secured with a metal casing, which is closed with a metal cap, which can also be locked. The groundwater level (28.07.2006) was at a depth of 3.4 m, at an absolute height of 87.85 m.

Monitoring well 4331 is located on the south-eastern area of Tapa Railway Depot Engine Shed territory. The monitoring well opens the uppermost groundwater aquifer. The well part which works as a filter is in depth 4.72-8.5 meters from the ground. The monitoring well has been secured with a metal casing, which is closed with a metal cap, which can also be locked. The groundwater level (28.07.2006) was at a depth of 4.9 m, on an absolute height of 88.6 m.

6 Conclusion, simplified risk assessment

6.1 Risks for environment

At Tapa Railway Depot Engine Shed the soil and groundwater are contaminated with oil products (diesel mix with black oil or very old oil products). The large diesel fuel accident in year 1977 made older contamination more mobile.

There is still risk:

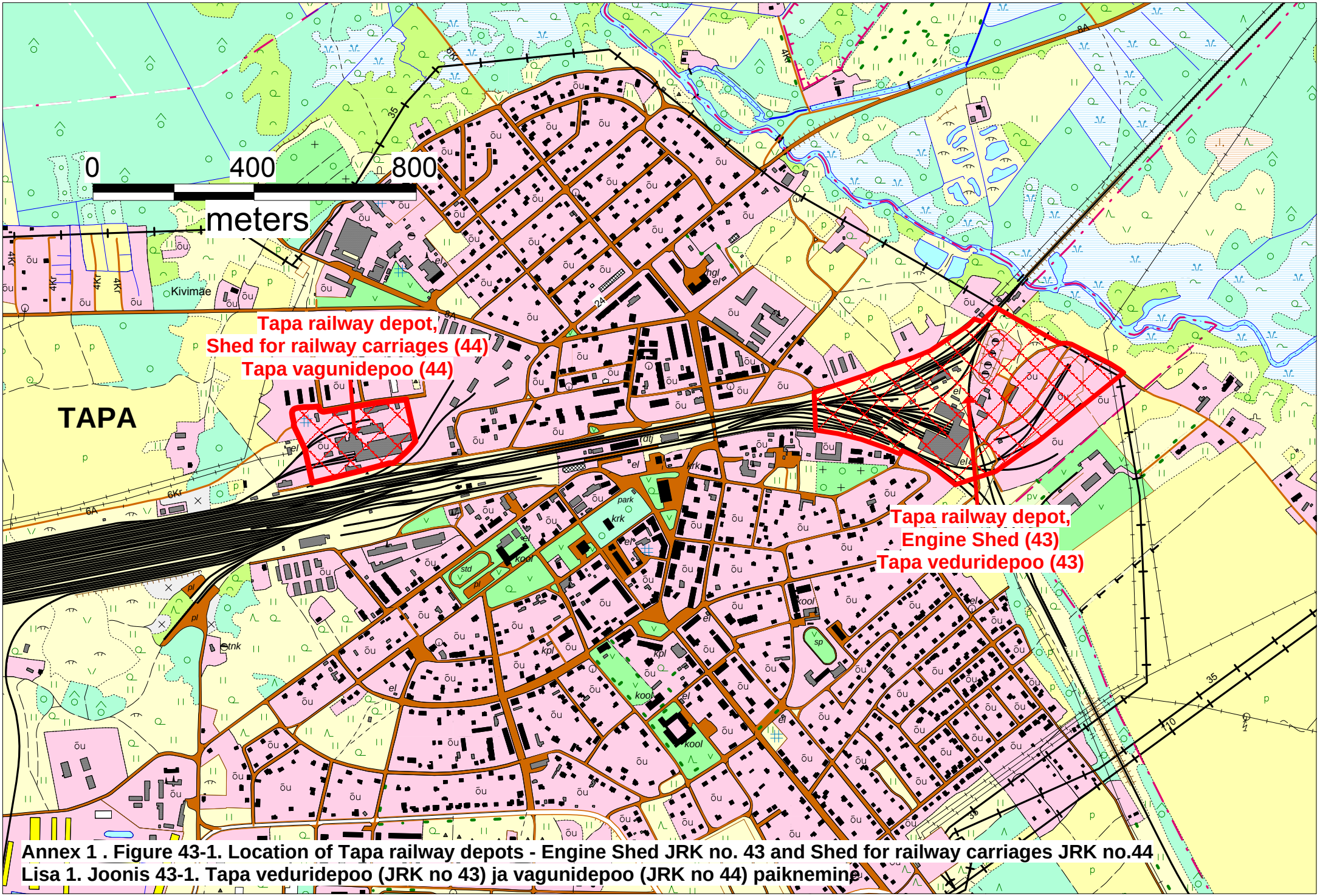
- of fire when black oil arises with groundwater into the unused underground storages,
- of Valgejõgi River contamination (fishes and other water biota).

The soil pollution is local and does not spread over the borders of Tapa Railway Depot Engine Shed territory. There is no direct risk of remained oil products contamination (from Tapa Railway depot Engine Shed) spreading further in groundwater aquifers.

6.2 Risks for residents

As the contaminated area of the Tapa Railway depot territory is watched and supervised there is no real risk of coming to contact with hazardous substances for people. The area is a guarded and occurrence of strangers to the territory is not probable.

By calculations there is no direct danger of the spreading of the contaminated groundwater from investigated area into the existing water supply wells of Tapa Town taking water from Ordovician-Cambrian aquifer systems.
At the present time the Ordovician aquifer groundwater is contaminated with oil products for almost the entire territory of Tapa Town (generally caused by Tapa Military Air Base at Soviet time) and the identifying of contamination causer and source at nowadays is problematic on surrounding areas of Tapa Railway Depot.



Annex 1 . Figure 43-1. Location of Tapa railway depots - Engine Shed JRK no. 43 and Shed for railway carriages JRK no.44
Lisa 1. Joonis 43-1. Tapa veduridepoo (JRK no 43) ja vagunidepoo (JRK no 44) paiknemine.

2006 a pinnas reostunud üle elutsooni ja alla tööstustsooni piirarvude
2006 soil contaminated over reference values in residential zone and below reference values in industrial zone

2006 a pinnase- ega veereostust ei tuvastatud
2006 no soil or water contamination over limits

2006 a vesi reostunud üle piirarvude
2006 water contaminated over reference values

Varasemates aruannetes vees ohtlikke ainete sisaldus siht- ja piirarvude vahel
By previous reports hazardous substances in water over target values and less than reference values

Varasemates uuringutes pinnase- ega veereostust ei tuvastatud
By previous reports no soil or water contamination over limits

Varasemates uuringutes pinnas reostunud üle elutsooni ja alla tööstustsooni piirarvude
By previous reports soil contaminated over reference values in residential zone and below reference values in industrial zone

Varasemates uuringutes vesi reostunud üle piirarvude või esineb vaba õlikiht
By previous reports oil products over reference values or free phase of oil products on water

2006 a pinnas haises, kuid sisaldused alla piirarve
2006 oil products smell, contents below reference values

Varasemates uuringutes naftasaadused pinnases üle sihtarvu kuid alla elutsooni piirarvu
By previous reports in soil oil producst over target value but below reference values in residential zone

2006 a pinnas reostunud üle tööstustsooni piirarvude
2006 soil contaminated over reference values in industrial zone

Varasemates uuringutes pinnas reostunud üle tööstustsooni piirarvude
By previous reports soil contaminated over reference values in industrial zone

2006 veeproov erakaevust, ohtlikke ainete sisaldus alla sihtarve
2006 water sample from private well, hazardous substances below target values

2006 a. Üle tööstustsooni piirarvude reostunud pinnasega ala
2006 y. Area contaminated over soil reference values in industrial zone

Üle elutsooni piirarvude reostunud pinnasega ala, põhjavesi üle piirarvude reostunud
Area where groundwater is contaminated over reference values, soil is contaminated over reference values in residential zone

Varasemate uuringute järgne maksimaalne reostuse levik pinnases ja põhjavees
By previous reports maximum spreading of contaminated soil or groundwater

0 50 100
metres

Annex 1. Figure 43-2. Sampling map and contaminated areas
Lisa 1. Joonis 43-2. Uuringupunktide paiknemine ning reostunud alad

private well at Koidu 23

2006 a pinnas reostunud üle elutsooni ja alla tööstustsooni piirarvude
2006 soil contaminated over reference values in residential zone and below reference values in industrial zone

2006 a pinnase- ega veereostust ei tuvastatud
2006 no soil or water contamination over limits

2006 a vesi reostunud üle piirarvude
2006 water contaminated over reference values

Varasemates aruannetes vees ohtlikke ainete sisaldus siht- ja piirarvude vahel
By previous reports hazardous substances in water over target values and less than reference values

Varasemates uuringutes pinnase- ega veereostust ei tuvastatud
By previous reports no soil or water contamination over limits

Varasemates uuringutes pinnas reostunud üle elutsooni ja alla tööstustsooni piirarvude
By previous reports soil contaminated over reference values in residential zone and below reference values in industrial zone

Varasemates uuringutes vesi reostunud üle piirarvude või esineb vaba õlikiht
By previous reports oil products over reference values or free phase of oil products on water

2006 a pinnas haises, kuid sisaldused alla piirarve
2006 oil products smell, contents below reference values

Varasemates uuringutes naftasaadused üle sihtarvu kuid alla elutsooni piirarvu
By previous reports oil producst in soil over target value but below reference values in residential zone

2006 a pinnas reostunud üle tööstustsooni piirarvude
2006 soil contaminated over reference values in industrial zone

Varasemates uuringutes pinnas reostunud üle tööstustsooni piirarvude
By previous reports soil contaminated over reference values in industrial zone

2006 veeproov erakaevust, ohtlikke ainete sisaldus alla sihtarve
2006 water sample from private well, hazardous substances below target values

2006 a. Üle tööstustsooni piirarvude reostunud pinnasega ala
2006 y. Area contaminated over soil reference values in industrial zone

Üle elutsooni piirarvude reostunud pinnasega ala, põhjavesi üle piirarvude reostunud
Area where groundwater is contaminated over reference values, soil is contaminated over reference values in residential zone

Varasemate uuringute järgne maksimaalne reostuse levik pinnases ja põhjavees
By previous reports maximum spreading of contaminated soil or groundwater

Valgejõgi

A
B
C
D

3
2.4
2.1
1.5
0.3
2.8
0.1
0.5
0.7
0.5
1.35
1.85
1.9
2.4
1

2003 a puhastustööde ala
2003 clean-up works area

0 50 100
meters

Annex 1. Figure 43-3. Contaminated areas and thickness of soil (m) contaminated over reference value in industrial zone
Lisa 1. Joonis 43-3. Reostunud alad ja üle tööstustsooni piirväärtuse reostunud kihtide paksus meetrites

2006 a pinnas reostunud üle elutsooni ja alla tööstustsooni piirarvude
2006 soil contaminated over reference values in residential zone and below reference values in industrial zone

2006 a pinnase- ega veereostust ei tuvastatud
2006 no soil or water contamination over limits

2006 a vesi reostunud üle piirarvude
2006 water contaminated over reference values

Varasemates aruannetes vees ohtlikke ainete sisaldus siht- ja piirarvude vahel
By previous reports hazardous substances in water over target values and less than reference values

Varasemates uuringutes pinnase- ega veereostust ei tuvastatud
By previous reports no soil or water contamination over limits

Varasemates uuringutes pinnas reostunud üle elutsooni ja alla tööstustsooni piirarvude
By previous reports soil contaminated over reference values in residential zone and below reference values in industrial zone

Varasemates uuringutes vesi reostunud üle piirarvude või esineb vaba õlikiht
By previous reports oil products over reference values or free phase of oil products on water

2006 a pinnas haises, kuid sisaldused alla piirarve
2006 oil products smell, contents below reference values

Varasemates uuringutes naftasaadused üle sihtarvu kuid alla elutsooni piirarvu
By previous reports in soil oil producst over target value but below reference values in residential zone

2006 a pinnas reostunud üle tööstustsooni piirarvude
2006 soil contaminated over reference values in industrial zone

Varasemates uuringutes pinnas reostunud üle tööstustsooni piirarvude
By previous reports soil contaminated over reference values in industrial zone

2006 veeproov erakaevust, ohtlikke ainete sisaldus alla sihtarve
2006 water sample from private well, hazardous substances below target values

2006 a. Üle tööstustsooni piirarvude reostunud pinnasega ala
2006 y. Area contaminated over soil reference values in industrial zone

Üle elutsooni piirarvude reostunud pinnasega ala, põhjavesi üle piirarvude reostunud
Area where groundwater is contaminated over reference values, soil is contaminated over reference values in residential zone

Varasemate uuringute järgne maksimaalne reostuse levik pinnases ja põhjavees
By previous reports maximum spreading of contaminated soil or groundwater

Valgejõgi

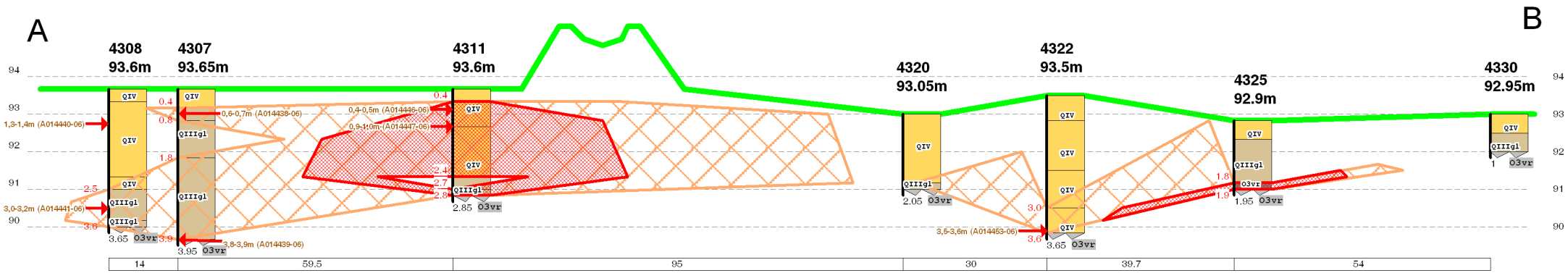
A B C D

2003 a puhastustööde ala
2003 clean-up works area

Annex 1. Figure 43-4. Contaminated areas and thickness of soil (m) contaminated over reference value in residential zone
Lisa 1. Joonis 43-4. Reostunud alad ja üle elutsooni piirväärtuse reostunud kihtide paksus meetrites

50 100

CROSS SECTION A-B, Tapa railway depot, Engine Shed(43)
LÄBILÕIGE A-B, Tapa veduridepoo (43)



Fill, sand, gravel, soil, rubbles, moraine, limestone scree
Täide, liiv, muld, killustik, saviliivmoreen, lubjakivirähk

Clayey silt moraine, 30-50% limestone pebbles and rubbles
Saviliivmoreen, jämepurdu 30-50%

Weathered limestone
Murenenud lubjakivi

Limestone
Lubjakivi

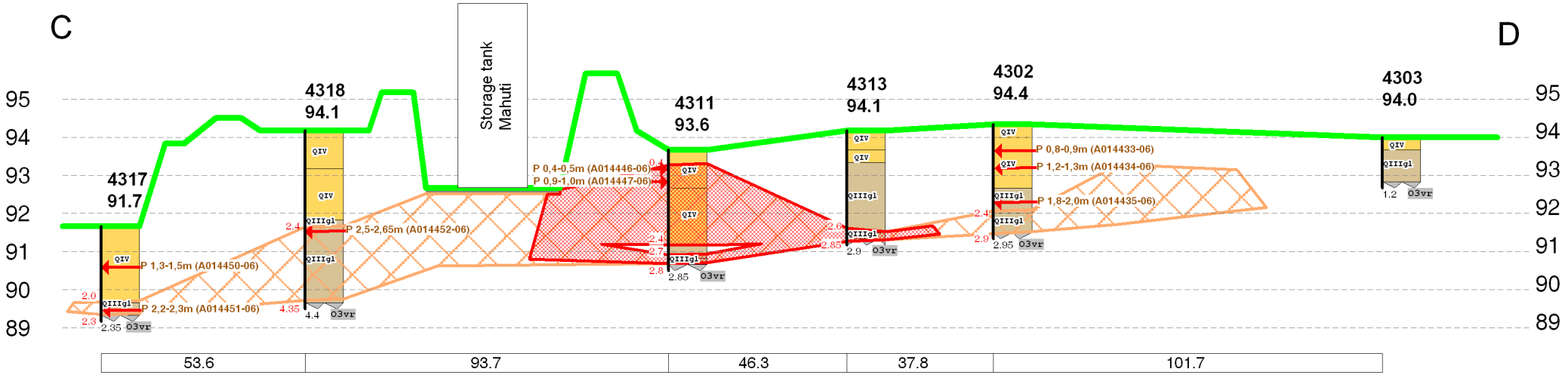
P 1,3-1,4m (A014440-06) Soil sample depth and analysis number
Pinnaseproovi sügavus ja analüüsi number

Ground relief
Maapinna reljeef

soil, where hazardous substances content is over reference value in industrial zone
pinnas, kus ohtlike ainete sisaldus on üle piirväärtuse tööstustsoonis

soil, where hazardous substances content is over reference value in residential zone
pinnas, kus ohtlike ainete sisaldus on üle piirväärtuse elutsoonis

CROSS SECTION C-D, Tapa railway depot, Engine Shed(43)
LÄBILÕIGE C-D, Tapa veduridepoo (43)



Fill, sand, gravel, soil, rubbles, moraine, limestone scree
Täide, liiv, muld, killustik, saviliivmoreen, lubjakivirähk

Clayey silt moraine, 30-50% limestone pebbles and rubbles
Saviliivmoreen, jämepurdu 30-50%

Limestone
Lubjakivi

P 1,3-1,4m (A014440-06) Soil sample depth and analysis number
Pinnaseproovi sügavus ja analüüsi number

Ground relief
Maapinna reljeef

soil, where hazardous substances content is over reference value in industrial zone
pinnas, kus ohtlike ainete sisaldus on üle piirväärtuse tööstustsoonis

soil, where hazardous substances content is over reference value in residential zone
pinnas, kus ohtlike ainete sisaldus on üle piirväärtuse elutsoonis

Descriptions of drill log

PA-4301

Absolute height of ground: 94.45m
X lambert 612670.7m Y lambert 6571512.7m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-2m QIV	fill: rubbles, brick debris, doesn't smell
2-2.1m QIV	soil: doesn't smell
2.1-2.2m QIIIlgl	clayey silt: brown, firm, doesn't smell
2.2-3.4m QIIIgl	clayey silt moraine: yellowish-grey, firm, consists 20% of coarse limestone rubble, doesn't smell; from 2,6 m 35-40% of coarse limestone rubble
3.4-3.6m QIIIgl	clayey silt moraine: black, firm, consists 35% of coarse limestone rubble, smells by oil products
3.6-3.65m O3vr	limestone
Water not appear	27.07.2006
Soil(P)- and water(V) samples, depth and no:	P 3,5-3,6m (A014432-06)

PA-4302

Absolute height of ground: 94.4m
X lambert 612660.2m Y lambert 6571480.1m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.4m QIV	fill: rubbles, soil, doesn't smell
0.4-1.8m QIV	fill: gravelly sand, dirty brown, medium compacted, humid, doesn't smell
1.8-2.4m QIIIgl	clayey silt moraine: upper 0,2 m dirty black, firm, humid, consists 30% of coarse limestone rubble, slightly smells by oil products; lower 0,4 m yellowish-grey, slightly smells by oil products
2.4-2.9m QIIIgl	clayey silt moraine: yellowish-grey, firm, consists 50% of coarse limestone rubble; lower 0,2 m grey, oily, smells by oil products
2.9-2.95m O3vr	limestone
Water not appear	27.07.2006
Soil(P)- and water(V) samples, depth and no:	P 0,8-0,9m (A014433-06); P 1,2-1,3m (A014434-06); P 1,8-2,0m (A014435-06)

PA-4303

Absolute height of ground: 94m
X lambert 612559.1m Y lambert 6571469.3m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.35m QIV	fill: rubbles, doesn't smell
0.35-1.15m QIIIgl	clayey silt moraine: yellowish-grey, firm, consists 50% of coarse limestone rubble, doesn't smell; from 0,85 m consists >50% of coarse limestone rubble
1.15-1.2m O3vr	limestone
Water not appear	27.07.2006

PA-4304

Absolute height of ground: 94.1m
X lambert 612498m Y lambert 6571469.5m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.6m QIV	fill: rubbles, gravelly sand, slag, doesn't smell
0.6-1.3m QIIIgl	clayey silt moraine: yellowish-grey, stiff, consists 30% of coarse limestone rubble, doesn't smell
1.3-1.35m O3vr	limestone
Water not appear	27.07.2006

PA-4305

Absolute height of ground: 93.95m
X lambert 612568.5m Y lambert 6571504.9m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.6m QIV	fill: soil, brick debris, rubbles, doesn't smell
0.6-1.5m QIIIgl	clayey silt moraine: yellowish-grey, stiff, consists 40% of coarse limestone rubble, doesn't smell
1.5-1.55m O3vr	limestone
Water not appear	27.07.2006

PA-4306

Absolute height of ground: 93.75m
X lambert 612626.1m Y lambert 6571531.9m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.6m QIV	fill: soil, rubbles, slag, doesn't smell
0.6-0.8m QIIIlgl	clayey silt: brown, firm, doesn't smell
0.8-2.3m QIIIgl	clayey silt moraine: yellowish-grey, stiff, consists 35% of coarse limestone rubble, doesn't smell
2.3-3.3m QIIIgl	clayey silt moraine: grey, stiff, consists 40% of coarse limestone rubble, dirty, oily, smells by oil products
3.3-3.35m O3vr	limestone: weathered part, oil on the limestone surface
Water not appear	27.07.2006
Soil(P)- and water(V) samples, depth and no:	P 1,6-1,7m (A014436-06); P 2,9-3,0m (A014437-06)

PA-4307

Absolute height of ground: 93.65m
X lambert 612668.7m Y lambert 6571554.6m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.4m QIV	fill: soil, rubbles, doesn't smell
0.4-0.8m QIIIlgl	clayey silt: dirty brown, firm, smells by oil products, between 0,6-0,8 m black
0.8-1.8m QIIIgl	clayey silt moraine: yellowish-grey, stiff, consists >50% of coarse limestone rubble, doesn't smell
1.8-3.9m QIIIgl	clayey silt moraine: yellowish-grey, stiff, consists >50% of coarse limestone rubble, smells by oil products
3.9-3.95m O3vr	limestone
Water not appear	27.07.2006
Soil(P)- and water(V) samples, depth and no:	P 0,6-0,7m (A014438-06); P 3,8-3,9m (A014439-06)

PA-4308

Absolute height of ground: 93.6m
X lambert 612658.1m Y lambert 6571563.7m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.3m QIV	fill: soil, rubbles, doesn't smell
0.3-2.2m QIV	fill: gravelly sand, black, low compacted, humid, smells by oil products; from 0,6 m black varigate with yellow, medium compacted, humid, smells by oil products
2.2-2.5m QIV	fill: fine sand, yellowish-grey, medium compacted, humid, doesn't smell
2.5-3.4m QIIIgl	clayey silt moraine: yellowish-grey, stiff, consists >50% of coarse limestone rubble, oily lines, smells by oil products
3.4-3.6m QIIIgl	local moraine: grey, dirty, oily, consists >50% of coarse limestone rubble, smells by oil products
3.6-3.65m O3vr	limestone
Water not appear	27.07.2006

Soil(P)- and water(V) samples, depth and no:	P 1,3-1,4m (A014440-06); P 3,0-3,2m (A014441-06)

PA-4309

Absolute height of ground: 93.3m
X lambert 612743.6m Y lambert 6571591.6m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-1m QIV	fill: upper 0,6 m rubbles mixed with soil, doesn't smell; lower 0,4 m ash, slag, doesn't smell
1-2.7m QIV	fill: gravelly sand, ash, doesn't smell
2.7-3.2m QIIIgl	clayey silt moraine: brown, firm, consists 50% of coarse limestone rubble, doesn't smell
3.2-3.7m QIIIgl	clayey silt moraine, grey, dirty, smells by oil products, lower 0,2 m oily
3.7-3.75m O3vr	limestone
Water not appear	27.07.2006
Soil(P)- and water(V) samples, depth and no:	P 3,5-3,7m (A014442-06)

PA-4310

Absolute height of ground: 93.85m
X lambert 612679.8m Y lambert 6571535.7m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-1.3m QIV	fill: upper 0,6 m rubbles, soil, doesn't smell; from 0,6 m slag, ash, doesn't smell
1.3-3.6m QIIIgl	clayey silt moraine: dirty black, firm, consists 25-30% of coarse limestone rubble, smells by oil products; from 2,0 m consists >50% of coarse limestone rubble
3.6-3.65m O3vr	limestone
Water not appear	27.07.2006
Soil(P)- and water(V) samples, depth and no:	P 1,4-1,5m (A014443-06); P 1,9-2,0m (A014444-06); P 3,5-3,6m (A014445-06)

PA-4311

Absolute height of ground: 93.6m
X lambert 612723.3m Y lambert 6571531.1m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-1m QIV	fill: soil and rubbles; from 0,4 m slag, gravelly sand, brick debris, black, smells by oil products, contaminated
1-2.4m QIV	fill: slag, dirty, smells by oil products
2.4-2.7m QIIIgl	clayey silt moraine: yellowish-grey, dirty, firm,consists 35% of coarse limestone rubble, doesn't smell
2.7-2.8m QIIIgl	clayey silt moraine: dirty, black, firm, consists 35% of coarse limestone rubble, smells by oil products
2.8-2.85m O3vr	limestone
Water not appear	27.07.2006
Soil(P)- and water(V) samples, depth and no:	P 0,4-0,5m (A014446-06); P 0,9-1,0m (A014447-06)

PA-4312

Absolute height of ground: 93.65m
X lambert 612723.4m Y lambert 6571494.6m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.4m QIV	fill: soil, rubbles, doesn't smell
0.4-3.8m QIV	fill: slag, medium sand, black, medium compacted, humid, smells by oil products, contaminated
3.8-4m QIIIgl	local moraine: grey, dirty, consists >50% of coarse limestone rubble; from 2,2 m very oily layer
4-4.05m O3vr	limestone
Water not appear	27.07.2006
Soil(P)- and water(V) samples, depth and no:	P 1,0-1,1m (A014448-06); P 2,4-2,5m (A014449-06)

PA-4313

Absolute height of ground: 94.1m
X lambert 612695.3m Y lambert 6571494.2m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.4m QIV	fill: soil, rubbles, medium sand, doesn't smell
0.4-0.5m QIV	fill: soil, rubbles, medium sand; oily, smells by oil products
0.5-0.7m QIV	fill: slag, doesn't smell
0.7-2.6m QIIIgl	clayey silt moraine: yellowish-grey, stiff, consists 15% of coarse limestone rubble, doesn't smell; from 1,0 m brown consists 10% of coarse limestone rubble, doesn't smell; from 2,4 m yellowish-grey, consists 35% coarse of limestone rubble, doesn't smell
2.6-2.85m QIIIgl	clayey silt moraine: grey, stiff, consists 35% of coarse limestone rubble, contaminated, very oily, smells by oil products
2.85-2.9m O3vr	limestone
Water not appear	27.07.2006

PA-4314

Absolute height of ground: 93.45m
X lambert 612793.3m Y lambert 6571496.1m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-1m QIV	fill: soil, rubbles, brick debris, doesn't smell
1-2.6m QIV	fill: brick debris, ash, slag, doesn't smell
2.6-3.4m QIIIgl	clayey silt moraine: yellowish-grey, stiff, consists 35-50% of coarse limestone rubble, doesn't smell
3.4-3.45m O3vr	limestone
Water not appear	27.07.2006

PA-4315

Absolute height of ground: 93.65m
X lambert 612821.3m Y lambert 6571544.5m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-2.5m QIV	fill: rubbles, pebbles, ash, slag, doesn't smell
2.5-3.6m QIIIgl	clayey silt moraine: yellowish-grey, firm, consists 35-50% of coarse limestone rubble, doesn't smell
3.6-3.65m O3vr	limestone: on the upper part water, doesn't smell
Water not appear	27.07.2006

PA-4316

Absolute height of ground: 91.25m
X lambert 612813.3m Y lambert 6571634.3m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.3m QIV	fill: soil, doesn't smell
0.3-0.7m QIV	fill: medium sand, pebbles, brown, doesn't smell
0.7-1m QIIIgl	clayey silt moraine: yellowish-grey, stiff, consists 35% of coarse limestone rubble, doesn't smell
1-6.8m O3vr	limestone: grey, upper 0,5 m weathered, lower fissured; at depth 3,7; 3,9; 4,2; 4,7 m dry oily fissures; water appears at 5,4 m (oily water)
Waterlevel from ground 3.4m	27.07.2006
Soil(P)- and water(V) samples, depth and no:	V 3,4-6,8m (V020059-06)

PA-4317

Absolute height of ground: 91.7m
X lambert 612782.4m Y lambert 6571633.2m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-2m QIV	fill: medum sand, black, low compacted, humid, doesn't smell
2-2.3m QIIIgl	local moraine: grey, consists >50% of coarse limestone rubble, smells by oil products
2.3-2.35m O3vr	limestone
Water not appear	27.07.2006
Soil(P)- and water(V) samples, depth and no:	P 1,3-1,5m (A014450-06); P 2,2-2,3m (A014451-06)

PA-4318

Absolute height of ground: 94.1m
X lambert 612801.2m Y lambert 6571583m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-1m QIV	fill: soil, gravelly sand, ash, moraine, dark grey, doesn't smell
1-2.25m QIV	fill: ash, doesn't smell
2.25-2.4m QIIIgl	clayey silt moraine: greyish-brown, firm, consists 35% coarse of limestone rubble, doesn't smell
2.4-4.35m QIIIgl	clayey silt moraine: black, firm, consists 35% of coarse limestone rubble, oily, smells by oil products; from 2,65 m grey, partly black, dirty, firm, consists 35-50% of coarse limestone rubble, oily, smells by oil produts
4.35-4.4m O3vr	limestone
Water not appear	27.07.2006
Soil(P)- and water(V) samples, depth and no:	P 2,5-2,65m (A014452-06)

PA-4319

Absolute height of ground: 93.4m
X lambert 612772.6m Y lambert 6571513m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.3m QIV	fill: soil, rubbles, clayey silt, doesn't smell
0.3-0.4m QIV	fill: soil, rubbles, clayey silt; oily, smells by oil products
0.4-0.9m QIV	fill: soil, rubbles, clayey silt, doesn't smell
0.9-2.3m QIIIgl	clayey silt moraine: yellowish-grey, firm, consists 35% of coarse limestone rubble, doesn't smell
2.3-3.1m QIIIgl	local moraine: consists >50% of coarse limestone rubble
3.1-3.15m O3vr	limestone: on the limestone surface dark line which smells slightly by oil products
Water not appear	27.07.2006

PA-4320
Absolute height of ground: 93.05m
X lambert 612765.7m Y lambert 6571446m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-1.8m QIV	fill: rubbles mixed with gravelly sand, doesn't smell
1.8-2m QIIIgl	clayey silt moraine, yellowish-grey, firm, consists >50% of coarse limestone rubble; consists single thin black lines, doesn't smell
2-2.05m O3vr	limestone
Water not appear	27.07.2006

PA-4321
Absolute height of ground: 93.45m
X lambert 612769.5m Y lambert 6571426.8m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.7m QIV	fill: rubbles, limestone scree, doesn't smell
0.7-1m QIIIgl	clayey silt moraine: yellowish-grey, stiff, consists 50% of coarse limestone rubble, doesn't smell
1-1.05m O3vr	limestone
Water not appear	27.07.2006

PA-4322
Absolute height of ground: 93.5m
X lambert 612780.7m Y lambert 6571420m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.6m QIV	fill: rubbles, limestone scree, doesn't smell
0.6-2m QIV	fill: clayey silt moraine: yellowish-grey, stiff, consists >50% of coarse limestone rubble, doesn't smell; from 1,0 m brown, firm, doesn't smell
2-3m QIV	fill: rubbles, limestone scree, doesn't smell
3-3.6m QIV	fill: rubbles, limestone scree, black, oily, smells by oil products
3.6-3.65m O3vr	limestone
Water not appear	27.07.2006
Soil(P)- and water(V) samples, depth and no:	P 3,5-3,6m (A014453-06)

PA-4323
Absolute height of ground: 93.05m
X lambert 612784.3m Y lambert 6571446.9m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.4m QIV	fill: rubbles, doesn't smell
0.4-2m QIIIgl	clayey silt moraine: yellowish-grey, consists >50% of coarse limestone rubble, doesn't smell
2.0-2.05m O3vr	limestone
Water not appear	27.07.2006
Soil(P)- and water(V) samples, depth and no:	P 1,9-2,0m (A014454-06)

PA-4324
Absolute height of ground: 93.55m
X lambert 612798.8m Y lambert 6571418.4m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.5m QIV	fill: brick debris, limestone scree, doesn't smell
0.5-0.6m QIV	soil: doesn't smell
0.6-1.4m QIIIgl	clayey silt moraine: yellowish-grey, stiff, consists 35% of coarse limestone rubble, doesn't smell; from 1,0 m consists 50% of coarse limestone rubble, doesn't smell
1.4-1.45m O3vr	limestone
Water not appear	27.07.2006

PA-4325
Absolute height of ground: 92.9m
X lambert 612817.1m Y lambert 6571435.7m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.5m QIV	fill: soil and limestone scree, doesn't smell
0.5-1.8m QIIIgl	clayey silt moraine: yellowish-grey, consists >50% of coarse limestone rubble, doesn't smell
1.8-1.9m O3vr	limestone: weathered, grey, dirty, very oily, smells by oil products
1.9-1.95m O3vr	limestone
Water not appear	27.07.2006

PA-4326
Absolute height of ground: 92.6m
X lambert 612831.9m Y lambert 6571474.1m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.5m QIV	fill: limestone scree, rubbles; from 0,5 m soil with stones, doesn't smell
0.5-1m QIV	fill: soil with brick debris, doesn't smell
1-2.45m QIIIgl	clayey silt moraine: yellowish-grey, firm, consists 30% of coarse limestone rubble, doesn't smell
2.45-2.5m O3vr	limestone
Water not appear	27.07.2006

PA-4327
Absolute height of ground: 93.55m
X lambert 612841m Y lambert 6571500.8m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.6m QIV	fill: rubbles, limestone scree, grey, doesn't smell
0.6-1m QIV	fill: rubbles, limestone scree, black, smells by oil products
1-2.5m QIV	fill: soil, medium sand, rubbles, black, smells by oil products
2.5-3.6m QIIIgl	local moraine: yellowish-grey, consists >50% of coarse limestone rubble, doesn't smell
3.6-3.65m O3vr	limestone
Water not appear	27.07.2006
Soil(P)- and water(V) samples, depth and no:	P 1,9-2,0m (A014455-06)

PA-4328
Absolute height of ground: 93.5m
X lambert 612862.1m Y lambert 6571543.8m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-1.5m QIV	fill: soil, rubbles, medium sand, brown, doesn't smell
1.5-3.9m QIV	fill: clayey silt moraine, dirty dark grey, firm, consists 35% of coarse limestone rubble, smells by oil products
3.9-4.4m QIIIgl	clayey silt moraine: yellowish-grey, consists >50% of coarse limestone rubble, doesn't smell
4.4-4.45m O3vr	limestone
Water not appear	27.07.2006
Soil(P)- and water(V) samples, depth and no:	P 1,8-2,0m (A014456-06)

PA-4329

Absolute height of ground: 92.75m
X lambert 612900.4m Y lambert 6571532.5m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.5m QIV	fill: rubbles, limestone scree, soil, medium sand, doesn't smell
0.5-2.5m QIV	fill: rubbles, limestone scree, soil, medium sand, black, dirty, smells by oil products; from 2,0 m smells by layers
2.5-3.6m QIIIgl	clayey silt moraine: yellowish-grey, consists >50% of coarse limestone rubble, doesn't smell
3.6-3.65m O3vr	limestone
Water not appear	27.07.2006
Soil(P)- and water(V) samples, depth and no:	P 0,9-1,0m (A014457-06)

PA-4330

Absolute height of ground: 92.95m
X lambert 612866.9m Y lambert 6571456.6m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-0.4m QIV	fill: upper 0,4 m soil, lower rubbles, doesn't smell
0.4-1m QIIIgl	clayey silt moraine: yellowish-grey, stiff, consists >50% of coarse limestone rubble, doesn't smell
1-1.05m O3vr	limestone
Water not appear	27.07.2006

PA-4331

Absolute height of ground: 93.5m
X lambert 612834.7m Y lambert 6571492.8m
DESCRIPTIONS OF LAYERS ARE FOLLOWING:

0-1m QIV	fill: rubbles, soil, limestone scree, grey, doesn't smell, smells from 0.6m
1-2.5m QIV	fill: soil, medium sand, rubbles, black, smells by oil products
2.5-3.6m QIIIgl	local moraine: yellowish-grey, consists >50% coarse of limestone rubble, doesn't smell
3.6-8.5m O3vr	limestone: grey, clayey, fissured; first fissure at depth 5,1 m (apperars water), doesn't smell
Waterlevel from ground 4.9m	28.07.2006
Soil(P)- and water(V) samples, depth and no:	V 4,9-8,5m (V020060-06)

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no 247 *PA-1 OÜ Salveesia, 2000. Tapa veduridepoo territooriumi pinnase ja põhjavee reostusuuring*
601 X lambert 612663.4m Y lambert 6571393.7m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.15m	Asfalt.
0.15-1.5m	Täide: killustik, kruus (reostunud, haiseb, must).
1.5-3.8m	Saviliivmoreen.
3.8-6m	Lubjakivi: peeneteraline, ülemine 0,8m purustunud.
Veetase maapinnast 4.38m	2.05.2000 vaba õli veepeal
Pinnase(P)- ja veepi	v 4,38m (A-270*)

no 248 *PA-2 OÜ Salveesia, 2000. Tapa veduridepoo territooriumi pinnase ja põhjavee reostusuuring*
602 X lambert 612654.8m Y lambert 6571378.1m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.1m	Asfalt.
0.1-0.4m	Täide: killustik (must, haisev, paakunud).
0.4-2m	Täide: liiv, kruus, muld (must, haisev, paakunud).
2-3.8m	Lubjakivi: õhukesekihiline, peeneteraline.
3.8-6m	
Veetase maapinnast 4.34m	2.05.2000 vaba õli veepeal, sisaldus üle piirarvu
Pinnase(P)- ja veepi	v 4,34m (A-271*)

no 249 *PA-3 OÜ Salveesia, 2000. Tapa veduridepoo territooriumi pinnase ja põhjavee reostusuuring*
603 X lambert 612632.4m Y lambert 6571387.9m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.15m	Asfalt.
0.15-0.3m	Killustik (sisaldab paakunud kütust, must, haisev).
0.3-2m	Täide: liiv, kruus, kivid, killustik (sisaldab paakunud kütust, must, haisev).
2-3.8m	Saviliivmoreen.
3.8-6m	Lubjakivi: peeneteraline.
Veetase maapinnast 4.2m	2.05.2000 vaba õli veepeal
Pinnase(P)- ja veepi	v 4,2m (A-272*)

no 250 *PA-4 OÜ Salveesia, 2000. Tapa veduridepoo territooriumi pinnase ja põhjavee reostusuuring*
604 X lambert 612619m Y lambert 6571401.1m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.15m	Asfalt.
0.15-0.3m	Killustik.
0.3-2.2m	Täide: killustik, liiv, kivid, muld.
2.2-3m	Saviliivmoreen.
3-3.8m	Paelahmakad saviliiva täitega (moreen).
3.8-6m	Lubjakivi.
Veetase maapinnast 4.43m	2.05.2000
Pinnase(P)- ja veepi	v 4,43 (A-273*) vees nafta üle sihtarvu

no 251 *PA-5 OÜ Salveesia, 2000. Tapa veduridepoo territooriumi pinnase ja põhjavee reostusuuring*
605 X lambert 612645.5m Y lambert 6571358.4m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.1m	Asfalt.
0.1-0.3m	Killustik (õline)
0.3-2.5m	Täide: liiv, killustik, savine muld (õline).
2.5-3.5m	Saviliivmoreen
3.5-3.8m	Paekivi tükid.
3.8-6m	Lubjakivi: peeneteraline.
Veetase maapinnast 4.47m	2.05.2000
Pinnase(P)- ja veepi	v 4,47m (A-274*) vees nafta üle piirarvu, peaks olema vaba õli kiht

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no 252 *PA-6 OÜ Salveesia, 2000. Tapa veduridepoo territooriumi pinnase ja põhjavee reostusuuring*
606 X lambert 612590.1m Y lambert 6571375.3m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.15m	Asfalt.
0.15-0.25m	Killustik.
0.25-2.5m	Täide: liiv, kruus.
2.5-3.8m	Lubjakivi: tükiline (purustunud?).
3.8-6m	Lubjakivi.

Veetase maapinnast 4.41m 2.05.2000
Pinnase(P)- ja veeprv 4,41m (A-275*) vees nafta üle sihtarvu

no 253 *PA-7 OÜ Salveesia, 2000. Tapa veduridepoo territooriumi pinnase ja põhjavee reostusuuring*
301 X lambert 612787.3m Y lambert 6571444.7m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-2.8m	Täitepinnas: saviliiv, kivid, all 0,4m moreen? Veepinnal nõrk õlikile.
2.8-4m	Lubjakivi: peeneteraline.

Veetase maapinnast 2.57m 2.05.2000
Pinnase(P)- ja veeprv 2,57m (A-276*) vees nafta üle piirarvu

no 254 *PA-8 OÜ Salveesia, 2000. Tapa veduridepoo territooriumi pinnase ja põhjavee reostusuuring*
201 X lambert 612800.7m Y lambert 6571593m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.1m	Täide: pinnas, kruus, liiv.
0.1-4m	Täide: valdavalt kivisöetolm, tuhk.
4-4.8m	Täide: liiv, saviliiv, kruus.
4.8-6m	Lubjakivi: peeneteraline.

Veetase maapinnast 4.29m 2.05.2000
Pinnase(P)- ja veeprv 4,29m (A-277*) vees nafta üle sihtarvu

no 255 *PA-9 OÜ Salveesia, 2000. Tapa veduridepoo territooriumi pinnase ja põhjavee reostusuuring*
202 X lambert 612764.3m Y lambert 6571503.1m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-3.3m	Täide: savikas liiv, kruus, killustik (puurimise käigus esines vees naftalisand).
3.3-4m	Saviliivmoreen.

Veetase maapinnast 3.05m 2.05.2000
Pinnase(P)- ja veeprv 3,05m (A-278*) vees nafta üle sihtarvu

no 256 *PA-10 OÜ Salveesia, 2000. Tapa veduridepoo territooriumi pinnase ja põhjavee reostusuuring*
501 X lambert 612695m Y lambert 6571567m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-3m	Täide: muld, liiv, veerised (must, õline, tugevalt reostunud, sügavusel 2,4-3m haiseb bensiini järele). Vaba õli voolab puurauku
3-4.2m	Liivsavimoreen.
4.2-5m	Lubjakivi: peenteraline.

Veetase maapinnast 3.01m 2.05.2000 vaba õli veepeal
Pinnase(P)- ja veeprv 3,01 (A-279*)

no 257 *PA-11 OÜ Salveesia, 2000. Tapa veduridepoo territooriumi pinnase ja põhjavee reostusuuring*
101 X lambert 612672m Y lambert 6571580.2m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.4m	Täide: liiv, kruus, savikas liiv.
0.4-1.2m	Täide: liiv.
1.2-4.3m	Saviliiv, kruus, kivid.
4.3-5.6m	Lubjakivi: peeneteraline.

Veetase maapinnast 4.22m 2.05.2000, 5.45m 28.07.2006.a.
Pinnase(P)- ja veeprv 4,22 (A-180*) vees nafta üle sihtarvu

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no 258 *PA-12 OÜ Salveesia, 2000. Tapa veduridepoo territooriumi pinnase ja põhjavee reostusuuring*
1M X lambert 612502.7m Y lambert 6571326.8m
GEOLOOGILISTE KIHTIDE KIRJELDUSED
0-3m Täide: kruus, liiv, saviliiv (bensiinilõhn, vees naftapiisad).
3-6m Lubjakivi: ülemine 0,5m lubjakivitükid, lõhe 5 ja 6m.
Veetase maapinnast 5.26m 2.05.2000
Pinnase(P)- ja veeprv 5,26m (A-281*) vees nafta üle piirarvu

no 259 *PA-13 OÜ Salveesia, 2000. Tapa veduridepoo territooriumi pinnase ja põhjavee reostusuuring*
2M X lambert 612627.3m Y lambert 6571267.9m
GEOLOOGILISTE KIHTIDE KIRJELDUSED
0-3m Täide: killustik, liiv.
3-6m Lubjakivi: peeneteraline, monoliitne.
Veetase maapinnast 4.65m 2.05.2000
Pinnase(P)- ja veeprv 4,65m (A-282*) vees nafta ja fenool üle sihtarvu

no 260 *PA-14 OÜ Salveesia, 2000. Tapa veduridepoo territooriumi pinnase ja põhjavee reostusuuring*
3M X lambert 612701.1m Y lambert 6571212.5m
GEOLOOGILISTE KIHTIDE KIRJELDUSED
0-3m Täide: killustik, liiv, mullane liiv, moreen.
3-5m Lubjakivi: peeneteraline, monoliitne.
Veetase maapinnast 3.2m 2.05.2000, 3.2 m 28.07.2006.a.
Pinnase(P)- ja veeprv 3,2m (A-283*) vees nafta ja fenool üle sihtarvu

no 261 *PA-1 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*
X lambert 609226.5m Y lambert 6570859.4m
GEOLOOGILISTE KIHTIDE KIRJELDUSED
0-2.4m Täide: liivsavi.
2.4-2.8m Moreen: liivsavi
2.8-4.1m Moreen: savine kruus.
4.1-4.3m Lubjakivi: murenenud.
Vett ei ilmunud 27.10.1997
Pinnase(P)- ja veeprp 0,5m (A-284*nafta üle elutsooni), p 1,5m (A-285*)

no 262 *PA-2 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*
X lambert 609827.1m Y lambert 6570923.3m
GEOLOOGILISTE KIHTIDE KIRJELDUSED
0-1.5m Täide: savine kruus.
1.5-1.8m Saviliiv.
1.8-3.5m Moreen: liivane möll, väheplastne.
3.5-3.8m Lubjakivi: murenenud.
Veetase maapinnast 1.4m 27.10.1997
Pinnase(P)- ja veeprp 1m (A-286*nafta üle elutsooni), p 1,5m (A-287*)

no 263 *PA-3 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*
X lambert 610358.1m Y lambert 6571024.6m
GEOLOOGILISTE KIHTIDE KIRJELDUSED
0-0.51m Täide: savine kruus.
0.51-1.7m Liivsavi: väheplastne.
1.7-2.01m Moreen: liivsavi.
2.01-2.5m Lubjakivi: murenenud.
Vett ei ilmunud 27.10.1997
Pinnase(P)- ja veeprp 0,5m (A-288*) nafta alla elutsooni
p 1,3m (A-289*)

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no 264 *PA-4 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 611094.2m Y lambert 6571194.9m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.3m	Täide: saviliiv.
1.3-2.2m	Moreen: liivsavi.
2.2-2.6m	Lubjakivi: murenenud.
Vett ei ilmunud	27.10.1997
Pinnase(P)- ja veepi	p 0,5m (A-290*nafta üle tööstustsooni), p 1,5 (A-291*)

no 265 *PA-5 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 611396.3m Y lambert 6571250.4m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.3m	Täide: saviliiv.
1.3-1.4m	Moreen: savikas kruus.
1.4-1.7m	Lubjakivi: murenenud.
Vett ei ilmunud	27.10.1997
Pinnase(P)- ja veepi	p 0,5m (A-292*nafta üle elutsooni)

no 266 *PA-6 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 612020.6m Y lambert 6571392.9m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1m	Täide: saviliiv, hästi kihistunud.
1-1.3m	Moreen: liivsavi.
1.3-2.21m	Moreen: savikas kruus.
2.21-2.8m	Lubjakivi: murenenud.
Vett ei ilmunud	27.10.1997
Pinnase(P)- ja veepi	p 0,5m (A-293*nafta üle elutsooni), p 1,2m (A294*)

no 267 *PA-7 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 612578.1m Y lambert 6571533.2m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.81m	Täide: saviliiv.
0.81-1.51m	Moreen: saviliiv, väheplastne.
1.51-2.51m	Moreen: savikas kruus.
2.51-2.8m	Lubjakivi: murenenud.
Vett ei ilmunud	27.10.1997
Pinnase(P)- ja veepi	p 0,5m (A-295*) nafta alla elutsooni p 1,2m (A-296*)

no 268 *PA-8 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 612491.1m Y lambert 6571403.5m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.81m	Ballast.
0.81-1.11m	Täide: savikas kruus, saviliiv, hästi kihistunud.
1.11-1.6m	Moreen: liivsavi.
1.6-2.6m	Moreen: savikas kruus.
Vett ei ilmunud	27.10.1997
Pinnase(P)- ja veepi	p 0,1m (A-297*)

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no 269 *TP1 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 609223.9m Y lambert 6570837.3m
GEOLOOGILISTE KIHTIDE KIRJELDUSED
0-0.2m Ballast.
0.2-0.6m Täide: savine kruus.
0.6-1m Täide: möll.
Vett ei ilmunud 27.10.1997
p 0,4m (A-298*) nafta alla elutsooni

no 270 *TP2 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 609554.4m Y lambert 6570902.1m
GEOLOOGILISTE KIHTIDE KIRJELDUSED
0-0.25m Ballast.
0.25-1m Täide: liivsavi, hästi kihistunud.
Vett ei ilmunud 27.10.1997

no 271 *TP3 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 610442.3m Y lambert 6571086.8m
GEOLOOGILISTE KIHTIDE KIRJELDUSED
0-0.55m Ballast.
0.55-1m Täide: savikas kruus.
1-1.1m Saviliiv.
Vett ei ilmunud 27.10.1997
p 0,6m (A-299*nafta üle elutsooni),

no 272 *TP4 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 610702.6m Y lambert 6571130.9m
GEOLOOGILISTE KIHTIDE KIRJELDUSED
0-0.4m Ballast.
0.4-0.9m Täide: saviliiv, hästi kihistunud.
0.9-1m Peenliiv.
Vett ei ilmunud 27.10.1997
p 0,7m (A-300*nafta üle elutsooni),

no 273 *TP5 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 611219.5m Y lambert 6571214.9m
GEOLOOGILISTE KIHTIDE KIRJELDUSED
0-0.1m Ballast.
0.1-1m Täide: saviliiv, hästi kihistunud.
Vett ei ilmunud 27.10.1997

no 274 *TP6 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 611511m Y lambert 6571243.7m
GEOLOOGILISTE KIHTIDE KIRJELDUSED
0-1m Täide: saviliiv, hästi kihistunud.
Vett ei ilmunud 27.10.1997
p 0,4m (A-301*nafta üle elutsooni)

no 275 *TP7 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 612172.8m Y lambert 6571421m
GEOLOOGILISTE KIHTIDE KIRJELDUSED
0-0.2m Ballast.
0.2-0.8m Täide: savikas kruus, hästi kihistunud.
0.8-1m
Vett ei ilmunud 27.10.1997

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no 276 *TP8 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 612283.5m Y lambert 6571410.7m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.3m	Ballast.
0.3-1m	Täide: savikas kruus, hästi kihistunud.
Vett ei ilmunud	27.10.1997
	p 0.3m nafta üle tööstustsooni)

no 277 *TP9 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 612437.6m Y lambert 6571477.4m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.3m	Ballast.
0.3-0.8m	Täide: savikas kruus.
0.8-1m	Täide: möll.
Vett ei ilmunud	27.10.1997
	p 0,6m (A-302*)

no 278 *TP10 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 612514.9m Y lambert 6571417.7m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.5m	Täide: savikas kruus.
0.5-0.8m	Liivsavi.
0.8-1m	Moreen: liivsavi.
Vett ei ilmunud	27.10.1997
	p 0.4m nafta üle elutsooni)

no 279 *TP11 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 612159.1m Y lambert 6571377.8m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.2m	Ballast.
0.2-1m	Täide: saviliiv, hästi kihistunud.
Vett ei ilmunud	27.10.1997

no 280 *TP12 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 611090.6m Y lambert 6571126.1m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.2m	Ballast.
0.2-0.8m	Täide: savikas kruus.
0.8-1m	Täide: liivsavi.
Vett ei ilmunud	27.10.1997

no 281 *TP13 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 610849.3m Y lambert 6571049.6m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.3m	Ballast.
0.3-0.8m	Täide: savikas kruus.
0.8-1m	Täide: saviliiv.
Vett ei ilmunud	27.10.1997
	p 0,7m nafta üle tööstustsooni

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no 282 *TP14 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 610464.3m Y lambert 6570958.1m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.4m	Ballast.
0.4-0.65m	Täide: savine kruus.
0.65-1m	Täide: möll.
Vett ei ilmunud	27.10.1997
Pinnase(P)- ja veep	p 0,2m (A-303*)

no 283 *TP15 GIB, 1997. Estonian Railways. Tapa station. Rehabilitation and renewal project. Factual report on ground investigations.*

X lambert 609830.8m Y lambert 6570886.9m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.7m	Täide: saviliiv.
0.7-1m	Moreen: savikas kruus.
Vett ei ilmunud	27.10.1997

no 320 *PA-1 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612752.1m Y lambert 6571454.9m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.1m	Täide: muld, liiv, veerised
1.1-1.8m	Saviliivmoreen: jämepurdu >40%
1.8-2.2m	lubjakivi
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 1.1m

no 321 *PA-2 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612730.7m Y lambert 6571459.9m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.8m	täide: muld, liiv, veerised, ülemine osa must reostunud
0.8-2.9m	saviliivmoreen, 2.6m peal õli
2.9-2.95m	lubjakivi või lahmakas
Veetase maapinnast 2.6m	10.09.1997
Pinnase(P)- ja veep	p 0.5m nafta üle elutsooni piirarvu
	p 2.6m

no 322 *PA-3 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612724.3m Y lambert 6571524.9m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-2.9m	täide: muld, liiv, veerised, must, haiseb, 2.2-2.9m tugevalt reostunud, õline
2.9-2.95m	lubjakivi või lahmakas
Veetase maapinnast 2m	10.09.1997
Pinnase(P)- ja veep	p 2.8m nafta üle elutsooni piirarvu

no 323 *PA-4 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612701.6m Y lambert 6571537.5m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-2m	täide: mullane liiv, kruus, reostunud alates 1.7m
2-4.1m	Täide: moreen
4.1-4.15m	lubjakivi või lahmakas
Veetase maapinnast 2.4m	10.09.1997, veepeal õlikiht
Pinnase(P)- ja veep	p 2.6m nafta üle tööstustsooni piirarvu

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no 324 *PA-5 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612657.1m Y lambert 6571511m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.9m	täide:muld, savikas liiv
1.9-2.3m	jämepurdmoreen
2.3-2.3m	lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 1.0m

no 325 *PA-6 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612679.1m Y lambert 6571533.7m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.2m	täide: lubjakivi lahmakad
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 2.4m

no 326 *PA-7 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612680.3m Y lambert 6571511.2m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.5m	täide: muld, liiv, veerised, pinnas reostunud alates 1.0 m
1.5-2.9m	saviliivmoreen
Veetase maapinnast 2.4m	10.09.1997
Pinnase(P)- ja veep	p 2.4m nafta ja PAH üle elutsooni piirarvu

no 327 *PA-8 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612657.1m Y lambert 6571497m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.2m	täide: mullane liiv, kruus
1.2-1.25m	veerised
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 0.6m nafta üle elutsooni piirarvu

no 328 *PA-9 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612645.5m Y lambert 6571487.5m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.6m	täide: kivid, mullane liiv, kruus
1.6-2.7m	saviliivmoreen
2.7-3.4m	jämepurdmoreen, 3.2m tugev naftasaaduste lõhn
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 3,2m nafta üle elutsooni piirarvu

no 329 *PA-10 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612620.7m Y lambert 6571471m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.5m	täide: kruus, killustik, reostunud, diisel maha voolanud
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 0.5m nafta üle elutsooni piirarvu

no 330 *PA-11 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612596.3m Y lambert 6571480.7m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.1m	täide: ülemises osas killustik, edasi muld, kruus
1.1-2.6m	saviliivmoreen
2.6-2.65m	lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 2.4m nafta üle elutsooni piirarvu

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no 331 *PA-12 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612563.1m Y lambert 6571475.3m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.5m	täide: muld, liiv, veerised
0.5-1.9m	jämepurdmoreen
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 1.8m

no 332 *PA-39 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612547m Y lambert 6571391m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.5m	täide: liiv, kruus
1.5-2.5m	saviliivmoreen
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 0.7

no 333 *PA-40 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612610.6m Y lambert 6571526.6m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.5m	täide: veerised, liiv
0.5-1.3m	saviliivmoreen
1.3-1.35m	lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 1.3m, pinnas reostunud, diiselkütus

no 334 *PA-41 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612777.7m Y lambert 6571665.4m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.5m	täide: liiv, kruus, veerised
1.5-2.4m	saviliivmoreen
2.4-2.4m	lubjakivi
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 0.8m

no 335 *PA-42 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612789.6m Y lambert 6571615.5m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.9m	täide: mullane liiv, kruus
1.9-3m	saviliiv
3-3.2m	saviliivmoreen
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 1.9m

no 336 *PA-43 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612816.8m Y lambert 6571587.8m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-2.3m	täide: mullane liiv, kruus, reostunud, haiseb, vana reostus
2.3-2.7m	saviliivmoreen
2.7-2.75m	lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 1.0m nafta ja PAH üle elutsooni piirarvu

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no 337 *PA-44 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612648.8m Y lambert 6571379.6m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1m	asfalt
1-1.5m	täide: savikas liiv, kruus
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 2.5m nafta üle elutsooni piirarvu

no 338 *PA-45 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612570.7m Y lambert 6571410.1m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.7m	täide: liiv, kruus
1.7-2.2m	saviliivmoreen
2.2-2.25m	lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 1.7m

no 339 *PA-46 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612804.7m Y lambert 6571364.7m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.7m	täide: muld, veerised, kruus
0.7-1m	saviliivmoreen
1-1.05m	lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 0.3m

no 340 *PA-47 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612857m Y lambert 6571406.9m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1m	täide: muld, liiv
1-1.4m	saviliivmoreen
1.4-1.45m	lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 0.6m nafta üle elutsooni piirarvu

no 341 *PA-48 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612500.2m Y lambert 6571359.9m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.1m	täide: mullane liiv, veerised
1.1-2.5m	saviliivmoreen
2.5-2.6m	lubjakivi
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 0.8m

no 342 *PA-49 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612577.5m Y lambert 6571325.5m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.5m	täide: muld, kivid
1.5-2.3m	saviliivmoreen
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 0.7m

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no 343 *PA-50 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612663m Y lambert 6571286.3m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-2.8m	täide: muld, kivid
2.8-2.9m	lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 2.7m

no 344 *PA-51 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612663m Y lambert 6571402.6m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.5m	väga kivine täide või lubjakivi
Vett ei ilmunud	10.09.1997

no 345 *PA-52 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612767.6m Y lambert 6571408.4m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.7m	täide: moreen, kivid
0.7-1.4m	jämepurdmoreen, 1.4m tugev lõhn
1.4-1.45m	lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 1.4m, nafta üle elutsooni piirarvu

no 346 *PA-53 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612811.0m Y lambert 6571433.6m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.9m	täide: mullane liiv
1.9-2.3m	saviliivmoreen
2.3-2.35m	lubjakivi
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 0.9m, nafta üle elutsooni piirarvu

no 347 *W-1 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612784.7m Y lambert 6571436.1m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-3.7m	täide: muld, liiv, veerised
3.7-4.3m	saviliivmoreen
4.3-4.35m	lubjakivi
Veetase maapinnast 3.12m	10.09.1997, vesi reostunud, õline
Pinnase(P)- ja veep	p 2.6m

no 348 *W-2 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612634.9m Y lambert 6571516m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-3.8m	täide: savikas liiv, kruus
3.8-3.85m	lubjakivi või lahmakas
Veetase maapinnast 2.5m	10.09.1997, veepeal õli

no 349 *W-3 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612703.6m Y lambert 6571536.9m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-2.9m	täide: muld, liiv, veerised
2.9-4.2m	lubjakivi
Veetase maapinnast 2.6m	10.09.1997, veepeal õli

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no 350 *W-4 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612544.7m Y lambert 6571493.2m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-2.9m	täide: mullane liiv, veerised
2.9-3.7m	lubjakivi või jämepurdmoreen
Veetase maapinnast 1.9m	10.09.1997, vesi haiseb

no 351 *W-5 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612601.6m Y lambert 6571420m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.6m	täide: liiv, kruus
1.6-3.9m	saviliivmoreen
3.9-4.4m	lubjakivi
Veetase maapinnast 3.6m	10.09.1997

no 352 *W-6 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612765.7m Y lambert 6571627.5m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.9m	täide
0.9-4.4m	lubjakivi
Veetase maapinnast 3.3m	10.09.1997 BTX ja fenool üle piirarvu

no 353 *W-7 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612500.0m Y lambert 6571361.0m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-1.1m	täide, mullane liiv
1.1-2.5m	saviliivmoreen
2.5-5.7m	lubjakivi
Vett ei ilmunud	10.09.1997

no 354 *W-8 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612732.1m Y lambert 6571463.4m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-2.8m	täide, mullane liiv, veerised
2.8-3.7m	lubjakivi
Vett ei ilmunud	10.09.1997

no 355 *PA-13 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612568.2m Y lambert 6571490.8m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.2m	täide: kruus, killustik
0.2-1.3m	jämepurdmoreen
1.3m+	Lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997

Pinnase(P)- ja veepiP 1.2m vedurite pesula, rööbaste vahel õli maas

no 356 *PA-14 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612558.3m Y lambert 6571501.1m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.5m	Täide:kivid, mullane liiv, kruus
0.5-1.5m	Jämepurdmoreen
Vett ei ilmunud	10.09.1997

Pinnase(P)- ja veepip 1.4m

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no 357 *PA-15 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612541.2m Y lambert 6571493.8m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-2.8m	Täide:muld liiv, 2.3-2.8 reostunud, õline
2.8m+	Lubjakivi või lahmakas
Veetase maapinnast 1.7m	10.09.1997
Pinnase(P)- ja veep	p 2.6m naftasaadused üle tööstustsooni piirarvu

no 358 *PA-16 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612501.8m Y lambert 6571471.8m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.7m	Täide: muld, liiv
0.7-1.4m	Jämepurdmoreem
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 0.6m

no 359 *PA-17 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612497.7m Y lambert 6571460.7m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.8m	Täide: muld, liiv. 0.6-0.8m õline, proov üle sihtarvu
0.8-1.0m	Jämepurdmoreen või murenenud lubjakivi
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 0.7m

no 360 *PA-18 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612750.4m Y lambert 6571504.2m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.1m	betoon
0.1-0.7m	Täide, muld, kruus
0.7-1.6m	saviliivmoreen
1.6-2.6m	Jämepurdmoreen või murenenud lubjakivi
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 1.9m

no 361 *PA-19 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612742.8m Y lambert 6571520.5m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-1.5m	Täide, savikas kruus, killustik, pinnas reostunud sügavuseni 1.5m
1.5m+	Lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 1.4m naftasaadused üle tööstustsooni piirarvu

no 362 *PA-20 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612755.4m Y lambert 6571543.6m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.1m	betoon
0.1-1.2m	Täide, muld, kruus reostunud
1.2-1.6m	Täide savikas peenliiv
1.6m+	Lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 1.2m naftasaadused vaid veidi üle määramispiiri

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no 363 *PA-21 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612764.3m Y lambert 6571600.4m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0-0.1m	betoon
0.1-1.2m	Täide, savikas liiv, kruus. Pinnas väga reostunud sügavuseni 1.5m
1.2-2.2m	Täide savikas peenliiv
2.2m+	Lubjakivi või lahmakas
Veetase maapinnast 1.2m	10.09.1997
Pinnase(P)- ja veep	p 1.4m PAH ja etüülbenseen üle elutsooni piirarvu

no 364 *PA-22 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612602.8m Y lambert 6571506.7m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-2.0m	Täide, liiv, kruus veeristega. Pinnas reostunud 0.6-1.0m, 2.0m tugev lõhn
2.0-2.6m	Saviliivmoreen
2.6m+	Lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 0.9m ja 1.7m

no 365 *PA-23 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612630.4m Y lambert 6571516.7m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-3.8m	Täide, savikas liiv, kruus veeristega. Pinnas reostunud, veepeal vaba õli
3.8m+	Lubjakivi või lahmakas
Veetase maapinnast 2.6m	10.09.1997
Pinnase(P)- ja veep	p 2.6m PAH üle elutsooni piirarvu

no 366 *PA-24 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612623.6m Y lambert 6571519.8m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-1.6m	Täide, liiv, kruus. Pinnas reostunud 0.9-1.2m
1.6-2.0m	Saviliivmoreen
2.0m+	Lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 2.0m

no 367 *PA-25 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612584.4m Y lambert 6571497.3m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-1.2m	Täide, savikas liiv, kruus. Pinnas reostunud kogu ulatuses
1.2-2.2m	Saviliivmoreen
2.2-2.3m	Lubjakivi
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 1.2m ja 2.0 PAH üle elutsooni piirarvu

no 368 *PA-26 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612635.9m Y lambert 6571535.5m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-0.8m	Täide, mullane liiv. Pinnas reostunud 1.5-2.6m diiselkütusega
0.8-2.6m	Saviliivmoreen
2.6m+	Lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 2.5m

REMEDIATION OF PAST POLLUTION FROM EX-MILITARY BASES AND INDUSTRIAL ZONES
Tapa railway depots, (43 ja 44)
Descriptions of drill logs from previous reports (in Estonian language)

no 369 *PA-27 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612661.2m Y lambert 6571554.7m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-1.1m	Täide, savikas liiv veeristega.
1.1-1.4m	Saviliivmoreen
1.4-1.9m	Lubjakivi
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 0.5m nafta üle elutsooni piirarvu

no 370 *PA-28 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612773.6m Y lambert 6571430.3m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-3.0m	Täide, saviliivmoreen. Pinnas reostunud 1.5-2.6m
3.0m+	Lubjakivi või lahmakas
Veetase maapinnast 2.4m	10.09.1997
Pinnase(P)- ja veep	p 2.2m nafta üle elutsooni piirarvu

no 371 *PA-29 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612784.7 m Y lambert 6571436.1 m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-2.9m	Täide, liiv, kruus, veerised.
2.9m+	Lubjakivi või lahmakas
Veetase maapinnast 2.4m	10.09.1997 veetasemel õli
Pinnase(P)- ja veep	p 2.8m nafta üle elutsooni piirarvu

no 372 *PA-30 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612772.3 m Y lambert 6571456.3m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-1.6m	Täide, saviliivmoreen
1.6-2.4m	Jämepurdmoreen või murenenud lubjakivi
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 2.4m

no 373 *PA-31 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612778.1m Y lambert 6571449.3m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-1.0m	Täide, saviliivmoreen
1.0-3.0m	Jämepurdmoreen või murenenud lubjakivi
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 2.7m

no 374 *PA-32 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612767.6 m Y lambert 6571443.0m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-2.9m	Täide, saviliivmoreen, õline 2.3-2.8m
2.9m+	Lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 2.8m nafta üle elutsooni piirarvu

no 375 *PA-33 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612753.2m Y lambert 6571432.3m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-4.0m	Täide, liiv, kruus, moreen, õline 1.7-3.8m
4.0m+	Lubjakivi või lahmakas
Veetase maapinnast 3.0m	10.09.1997
Pinnase(P)- ja veep	p 3.1m nafta üle elutsooni piirarvu

REMEDIATION OF PAST POLLUTION FROM EX-MILITARY BASES AND INDUSTRIAL ZONES
Tapa railway depots, (43 ja 44)
Descriptions of drill logs from previous reports (in Estonian language)

no 376 *PA-34 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612777.1m Y lambert 6571467.2m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-1.5m	Täide, muld, liiv
1.5m+	Lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 1.2m nafta üle elutsooni piirarvu

no 377 *PA-35 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612610.4 m Y lambert 6571420.7 m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-1.6m	Täide, liiv, kruus veeristega. Pinnas liiprite juures reostunud õliga
1.6-2.4m	Saviliivmoreen
2.4m+	Lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 0.0m nafta üle tööstustsooni piirarvu ja 1.4m

no 378 *PA-36 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612638.0m Y lambert 6571451.5m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-2.4m	Täide, liiv, kruus
2.4-2.7m	Saviliivmoreen
2.7m+	Lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 1.4mnafta üle tööstustsooni piirarvu

no 379 *PA-37 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612576.6m Y lambert 6571387.4m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-0.1m	Asfalt
0.1-3.7m	Täide: savikas muld, kruus, veerised. 0.7m peal must reostunud kihike
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	3.6m nafta üle tööstustsooni piirarvu

no 380 *PA-38 E-Konsult 1997. Tapa veduridepoo keskkonnaseisundi uuring*

X lambert 612580.3m Y lambert 6571376.0m
GEOLOOGILISTE KIHTIDE KIRJELDUSED

0.0-0.1m	Asfalt
0.1-2.4m	Täide, liiv ja kruus. Rööbaste vahel õli maas
2.4m+	Lubjakivi või lahmakas
Vett ei ilmunud	10.09.1997
Pinnase(P)- ja veep	p 1.3m

PUURAUGU VÕI PUURKAEVU ARVESTUSKAART

Arvestuskaardi number:	……..……	Riiklik katastrinumber:	……19881.……
PUURAUGU VÕI PUURKAEVU ANDMED			
Passi number:	……..……	Puurimise aeg:	**28.07.2006**
Asukoht:	**Lääne Virumaa, Tapa linn, Tapa veduridepoo** **(**maaüksus 9101:017:0006) *maaüksuse tunnus/ tänav/ asula/ vald/ linn/ maakond*		
Koordinaadid: **Lambert Euref EST 92** Keskkonnaministri “…..”…… 2006. a	Nurgakoordinaadid: x= 612813.3 m, y= 6571634.3 m ……612813.3……..….. p. l. ……6571634.3……..i. p.		
Lisa: puuraugu või -kaevu asukoha joonis mõõtkavas 1:500 kuni 1:1 000 ja 1:10 000 kuni 1:150 000			
PUURAUGU VÕI PUURKAEVU PROJEKTEERIJA ANDMED			
Hüdrogeoloogiliste tööde litsentsi omaniku nimi:	**AS Maves**		
Hüdrogeoloogiliste tööde litsentsi number:	**136**		
Hüdrogeoloogiliste tööde litsentsi andmise kuupäev:	**01.11.2005**		
Puuraugu või puurkaevu projekti number:	**Puurauk 4316**		
Kontaktandmed:	aadress: **Marja 4d, Tallinn, 10617** ……..…….…...……. telefon: **6565428**……. e-post: …**maves@online.ee**……..		
PUURAUGU VÕI PUURKAEVU PUURIJA ANDMED			
Hüdrogeoloogiliste tööde litsentsi omaniku nimi:	**AS Maves**		
Hüdrogeoloogiliste tööde litsentsi number:	**136**		
Hüdrogeoloogiliste tööde litsentsi andmise kuupäev:	**01.11.2005**		
Kontaktandmed:	aadress: **Marja 4d, Tallinn, 10617** ……..…….…...……. telefon: **6565428**……. e-post: …**maves@online.ee**……..		
PUURAUGU VÕI PUURKAEVU ANDMED			
Sanitaarkaitseala ulatus:	……..**10**…….. meetrit		
Vee kasutamise otstarve:	……**reostuskolde seire**…...…….		
Sügavus: ……..…**6.8**…….. meetrit		Pinna absoluutne kõrgus:	**91.25 m** meetrit
Põhjaveekiht:	……..……S-O…….……...……		

Geoloogline läbilõige:

Nr	Litoloogiline kirjeldus	Geoloogline indeks	Kihi paksus (m)	Kihi lamami sügavus (m)	Veekihi lasuvussügavus intervall (m)
1.	Täide, muld	QIV kult	0.3	0.3	
2.	Täide, keskliiv, veerised, pruun, kuiv kesktihe	QIV kult	0.4	0.7	

3.	Saviliivmoreen, kollakashall, sitkeplastne, jmp 25%	QIII gl	0.3	1.0	
6.	Lubjakivi hall kõva, lõheline, lõhed 3.7, 3.9, 4.2, 4.7m. esi ilmus 5.4, õline. Ülemine 0.5 m murenenud	O3 vr	5.8	6.8	3.4

Tootlikkus:	……10…….. m^3 ööpäevas
Puurimise tehnika:	……URB 2A2……..

Konstruktsioon:

Jrk nr	Puurauk		Manteldus			
	Puurimise diameeter mm	Vahemik (m)	Manteltoru diameeter (mm)	Algus (m)	Lõpp (m)	Pikkus (m)
1.	132	0-1.82	108	+0.98	1.82	2.8
2.	93	1.82-6.8				

Puurkaevu töötav osa:	..… Lubjakivis filtrita 1.82-6.8 m ……..
Filtri konstruktsioon ja paigutus:	..……filtrit pole……..
Tihendid:	..……pole……..
Tamponaaž:	..……savitamponaaz…….. ..……..
Pumpamise tehnika ja kestvus:	..…sukelpump……..

Deebit (l/s)	Alanemine (m)	Erideebit (l/s)	Staatiline veetase (m)
0.2	0.2	1	3.6

PÕHJAVEE ANALÜÜSID

Veeproovide võtmise kuupäev:	..…… **28.07.2006**……..
Labori nimi ja registrikood:	..…… **Lantmännen Analycen AB, Rootsi**……..
Bakterioloogiline analüüs:	..……**EI**……
Termotolerantsed coli-laadsed bakterid:	…… pesa/100 cm^3
Coli-laadsed bakterid:	…… pesa/100 cm^3
Heterotroofsed bakterid:	…… pesa/cm^3

Üldkeemilised veeanalüüsid: **vaid ohtlikud ained, vaata tabel järgmisel lehel**

Labori nimi ja registrikood:	..…… **Lantmännen Analycen AB, Rootsi** …..

Kuiv-jääk	Na^+	K^+	NH_4^+	Ca^{2+}	Mg^{2+}	Mn^{2+}	$Fe^{üld}$	Cl^-	SO_4^{2-}	NO_3^{2-}	NO_2^-	HCO_3^-	Fl^-	Üldka-redus	pH	mgO/l
mg/l														mg-ekv		
…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…

Arvestuskaardi täitja nimi:	..……Indrek Tamm……
Arvestuskaardi täitja allkiri:	 ..……
Arvestuskaardi täitmise kuupäev:	..……12.jaanuar 2007……

Puurkaevu vesi ei vasta Keskkonnaministri 2. aprilli 2004. a määrus nr 12 „Pinnases ja põhjavees ohtlike ainete sisalduse piirnormid" nõuetele polütsükliliste aromaatsete ühendite ja naftasaaduste sisalduse osas.
Seirekaev paikneb põhjaveereostuse vahetus läheduses ja selle vesi on joogiks kõlbmatu.
Seirekaev on suletud veevõtu vältimiseks metallist lukustatava päisega.

Puurkaevu akti tellija: Keskkonnaministeeriumi veeosakond

Kaevu valdaja esindaja: Argo Sakkool, Keskkonnaministeeriumi veeosakond

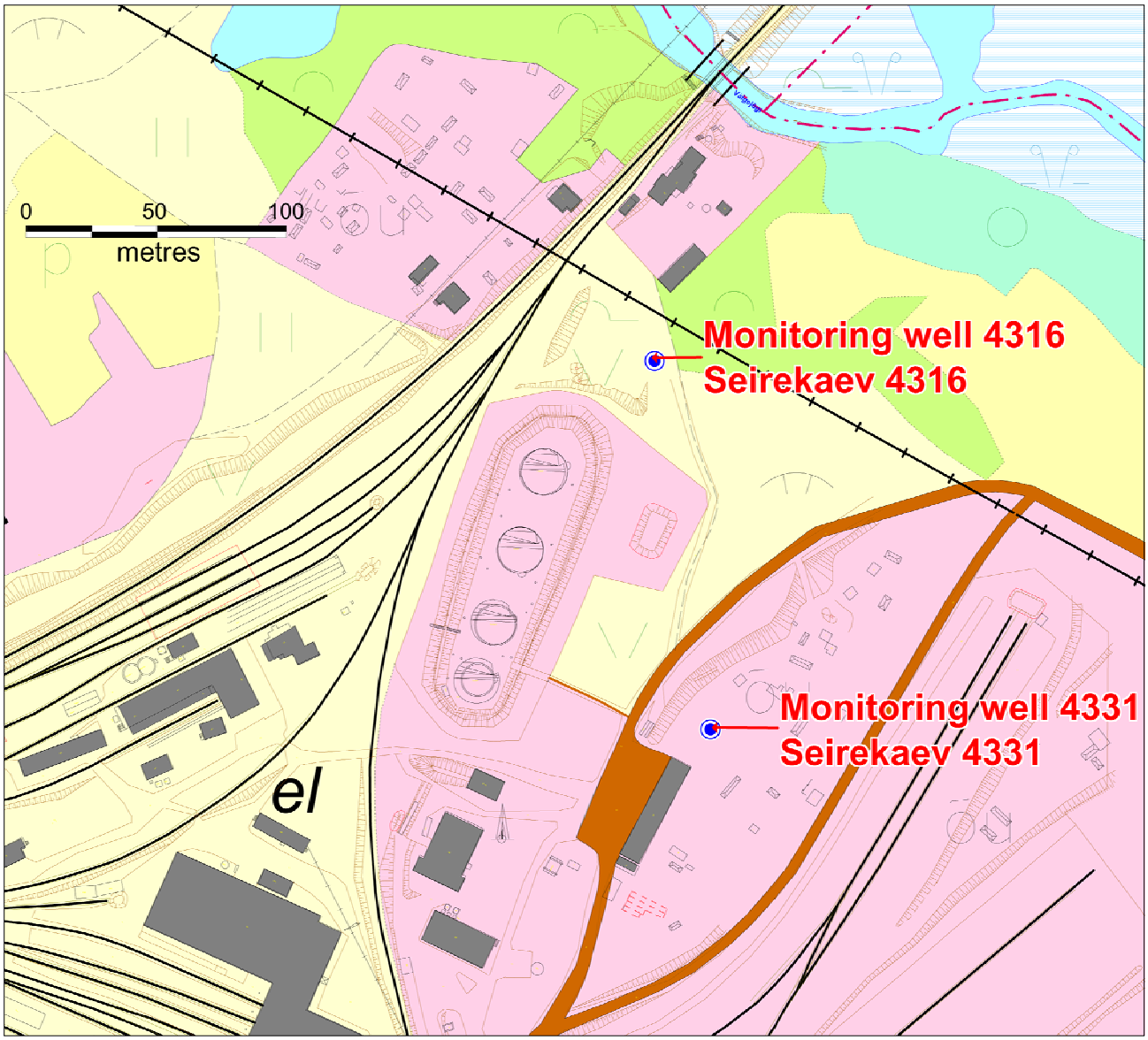
AS Maves juhatuse liige  Indrek Tamm

AnalyCen		JRK 43 Tapa Veduridepoo
Sampling person		Mati Salu
Sample Point		4316
Sample		V020059-06
Sample depth		3.4m
Sampling method		A209:34
Sample Date		2006-07-28
Group 1 Volatile Organic Compounds		
Benzene	µg/l	0.45
Toluene	µg/l	7
Xylene	mg/l	0.029
Ethylbenzene	µg/l	7
Sum TEX	mg/l	0.043
Styrene	µg/l	<1
MTBE	µg/l	<0.01
Chloroorganic aromatics		
Chlorobenzene	µg/l	5
2-Chlorotoluene	µg/l	<1
4-Chlorotoluene	µg/l	<1
1,3-dichlorobenzene	µg/l	<1
1,4-dichlorobenzene	µg/l	<1
1,2-dichlorobenzene	µg/l	<1
1,2,4-trichlorobenzene	µg/l	<1
1,2,3-trichlorobenzene	µg/l	<1
1,2-dichloroethane	µg/l	<1

AnalyCen		JRK 43 Tapa Veduridepoo
Sampling person		Mati Salu
Sample Point		4316
Sample		V020059-06
Sample depth		3.4m
Sampling method		A209:34
Sample Date		2006-07-28
Hexachloroethane	µg/l	<0.10
Chloroform	µg/l	<1
Auxiliary volatile organic compunds		
Isopropylbenzene	µg/l	530
Propylbenzene	µg/l	780
1,3,5-trimetylbenzene	µg/l	18
Tert-butylbenzene	µg/l	19
1,2,4-trimetylbenzene	µg/l	410
Sec-butylbenzene	µg/l	970
p-isopropylbenzene	µg/l	2
Butylbenzene	µg/l	300
Fluortrichloromethane	µg/l	<1
1,1,2-trichloroethane	µg/l	<1
1,1-dichloroethene	µg/l	<1
1,1,1,2-Tetrachloroethane	µg/l	<1
Tetrachloroethene	µg/l	<1
Dichloromethane	µg/l	<1
1,3-dichloropropane	µg/l	<1
Trans-1,2-dichloroethene	µg/l	<1
Dibromchloromethane	µg/l	<1
1,1-dichloroethane	µg/l	<1
1,2-dibromoethane	µg/l	<1
2,2-dichloropropane	µg/l	<1
Cis-1,2-dichloroethene	µg/l	<1
Bromoform	µg/l	<1
Bromobenzene	µg/l	<1
1,1,1-trichlorethane	µg/l	<1
1,2,3-trichloropropane	µg/l	<1
Tetrachloromethane	µg/l	<1
1,1-dichloropropane	µg/l	<1
Trichloroethene	µg/l	<1
1,2-dichloropropane	µg/l	<1
Dibrommethane	µg/l	<1
Bromchloromethane	µg/l	<1
Bromodichloromethane	µg/l	<1
Hexachlorobutadien	µg/l	<1
1,3-Dichloropropene	µg/l	<1
Group 2 Extractive compounds		
Aliphatics >C5-C8	mg/l	0.045

AnalyCen		JRK 43 Tapa Veduridepoo
Sampling person		Mati Salu
Sample Point		4316
Sample		V020059-06
Sample depth		3.4m
Sampling method		A209:34
Sample Date		2006-07-28
Aliphatics >C8-C10	mg/l	1.2
Aliphatics >C10-C12	mg/l	6.2
Aliphatics >C12-C16	mg/l	22
Aliphatics >C16-C35	mg/l	29
Aromatics >C8-C10	mg/l	1.3
Aromatics >C10-C35	mg/l	<0.1
Poly Chlorinated Biphenyls PCBs		
2,4,4'-Trichlorobiphenyl	µg/l	<0.10
2,2',5,5'-Tetrachlorobiphenyl	µg/l	<0.10
2,2',4,5,5'-Pentachlorobiphenyl	µg/l	<0.10
2,3',4,4',5'-Pentachlorobiphenyl	µg/l	<0.10
2,4,5,2',4',5'-Hexachlorobiphenyl	µg/l	<0.10
2,2',3,4,4',5'-Hexachlorobiphenyl	µg/l	<0.10
2,2',3,4,4',5,5'-Heptachlorobiphenyl	µg/l	<0.10
Group 3 Phenols and Cresols		
Phenol	µg/l	<1.00
m-cresol	µg/l	<1.00
o-cresol	µg/l	<1.00
p-cresol	µg/l	<1.00
2,3-dimethylphenol	µg/l	<1.00
3,4-dimethylphenol	µg/l	<1.00
2,6-dimethylphenol	µg/l	<1.00
Sum dichlorophenol	µg/l	<1.0
Sum trichlorophenol	µg/l	<1.0
Sum tetrachlorophenol	µg/l	<1.0
Chlorophenol	µg/l	<1.0
Sum cresols	µg/l	<3.0
Group 5 PAH		
Anthracene	µg/l	16
Phenanthrene	µg/l	108
Pyrene	µg/l	20
Acenaphthene	µg/l	25
Chrysene	µg/l	9.6
Naphtalene	µg/l	67
α-methylnaphtalene	µg/l	284
β-methylnaphtalene	µg/l	11
Acenaphtalene	µg/l	4.4
Benzo(a)pyrene	µg/l	2.8
Benzo(a)anthracene	µg/l	5.8

AnalyCen		JRK 43 Tapa Veduridepoo
Sampling person		Mati Salu
Sample Point		4316
Sample		V020059-06
Sample depth		3.4m
Sampling method		A209:34
Sample Date		2006-07-28
Benzo(b,k)fluorantene	µg/l	3.4
Indeno(1,2,3,c,d)pyrene	µg/l	0.8
Dibenzo(a,h)anthracene	µg/l	0.4
9H-Fluorene	µg/l	57
Fluorantene	µg/l	11
Benzo(g,h,i)perylene	µg/l	1.4
Dibenzofuran	µg/l	27
Carbazole	µg/l	1.8
Sum carcinogenic PAH	µg/l	20
Sum other PAH	µg/l	310
Group 7 Metals		
Cadmium	mg/l	<0.00002
Lead	mg/l	<0.00005
Strontium	mg/l	0.4
Arsenic	mg/l	0.0014
Copper	mg/l	0.00053
Chromium	mg/l	<0.0002
Nickel	mg/l	0.00028
Zinc	mg/l	0.013
Lantmännen Analycen AB		
31.10.2006		
Caroline Karlsson		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Monitoring well 4316
Seirekaev 4316
Monitoring well 4331
Seirekaev 4331
el

M 1:2000

PUURAUGU VÕI PUURKAEVU ARVESTUSKAART

Arvestuskaardi number:	……..……	Riiklik katastrinumber:	……19882…..……
PUURAUGU VÕI PUURKAEVU ANDMED			
Passi number:	……..……	Puurimise aeg:	**28.07.2006**
Asukoht:	**Lääne Virumaa, Tapa linn, Tapa veduridepoo** **(**maaüksus 9101:017:0006) *maaüksuse tunnus/ tänav/ asula/ vald/ linn/ maakond*		
Koordinaadid: **Lambert Euref EST 92** Keskkonnaministri “…..”…… 2006. a	Nurgakoordinaadid: x= 612834.7 m, y= 6571492.8 m ……612834.7……..….. p. l. ……6571492.8……..i. p.		
Lisa: puuraugu või -kaevu asukoha joonis mõõtkavas 1:500 kuni 1:1 000 ja 1:10 000 kuni 1:150 000			
PUURAUGU VÕI PUURKAEVU PROJEKTEERIJA ANDMED			
Hüdrogeoloogiliste tööde litsentsi omaniku nimi:	**AS Maves**		
Hüdrogeoloogiliste tööde litsentsi number:	**136**		
Hüdrogeoloogiliste tööde litsentsi andmise kuupäev:	**01.11.2005**		
Puuraugu või puurkaevu projekti number:	**Puurauk 4331**		
Kontaktandmed:	aadress: **Marja 4d, Tallinn, 10617** telefon: **6565428**……. e-post: …**maves@online.ee**……..		
PUURAUGU VÕI PUURKAEVU PUURIJA ANDMED			
Hüdrogeoloogiliste tööde litsentsi omaniku nimi:	**AS Maves**		
Hüdrogeoloogiliste tööde litsentsi number:	**136**		
Hüdrogeoloogiliste tööde litsentsi andmise kuupäev:	**01.11.2005**		
Kontaktandmed:	aadress: **Marja 4d, Tallinn, 10617** telefon: **6565428**……. e-post: …**maves@online.ee**……..		
PUURAUGU VÕI PUURKAEVU ANDMED			
Sanitaarkaitseala ulatus:	……..**10**…….. meetrit		
Vee kasutamise otstarve:	……**reostuskolde seire**…...…….		
Sügavus:	……..…**8.5**…….. meetrit	Pinna absoluutne kõrgus:	**93.5 m** meetrit
Põhjaveekiht:	……..……S-O……..……...……		

Geoloogline läbilõige:

Nr	Litoloogiline kirjeldus	Geoloogline indeks	Kihi paksus (m)	Kihi lamami sügavus (m)	Veekihi lasuvussügavus intervall (m)
1.	Täide, killustik, muld, rähk, pruun, alates 0.6m must ja õline	QIV kult	1.0	1.0	
2.	Täide, muld, liiv, killustik, must must ja haiseb õli järgi	QIV kult	1.5	2.5	

3.	Lokaalmoreen, kollakashall, sitkeplastne, jmp 50%, ei haise	QIII gl	0.3	1.0	
6.	Lubjakivi hall savikas, lõheline, lõhed 5.1m. ilmus vesi, ei haise	O3 vr	5.8	6.8	4.9

Tootlikkus:	……10…….. m^3 ööpäevas
Puurimise tehnika:	……URB 2A2……..

Konstruktsioon:

Jrk nr	Puurauk		Manteldus			
	Puurimise diameeter mm	Vahemik (m)	Manteltoru diameeter (mm)	Algus (m)	Lõpp (m)	Pikkus (m)
1.	132	0-4.72	108	+0.73	4.72	5.45
2.	93	4.72-8.5				

Puurkaevu töötav osa:	..… Lubjakivis filtrita 4.72-8.5 m ……..
Filtri konstruktsioon ja paigutus:	..……filtrit pole……..
Tihendid:	..……pole……..
Tamponaaž:	..……savitamponaaz……..
Pumpamise tehnika ja kestvus:	..…sukelpump……..

Deebit (l/s)	Alanemine (m)	Erideebit (l/s)	Staatiline veetase (m)
0.2	0.2	1	3.6

PÕHJAVEE ANALÜÜSID

Veeproovide võtmise kuupäev:	..…… **28.07.2006**……..
Labori nimi ja registrikood:	..…… **Lantmännen Analycen AB, Rootsi**……..
Bakterioloogiline analüüs:	..……**EI**……
Termotolerantsed coli-laadsed bakterid:	…… pesa/100 cm^3
Coli-laadsed bakterid:	…… pesa/100 cm^3
Heterotroofsed bakterid:	…… pesa/cm^3

Üldkeemilised veeanalüüsid: **vaid ohtlikud ained, vaata tabel järgmisel lehel**

Labori nimi ja registrikood:	..…… **Lantmännen Analycen AB, Rootsi** …..

Kuiv-jääk	Na^+	K^+	NH_4^+	Ca^{2+}	Mg^{2+}	Mn^{2+}	$Fe^{üld}$	Cl^-	SO_4^{2-}	NO_3^{2-}	NO_2^-	HCO_3^-	Fl^-	Üldka-redus	pH	mgO/l
mg/l														mg-ekv		
…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…

Arvestuskaardi täitja nimi:	..……Indrek Tamm……
Arvestuskaardi täitja allkiri:	..……
Arvestuskaardi täitmise kuupäev:	..……12.jaanuar 2007……

Puurkaevu vesi vastab määratud komponentide osas Keskkonnaministri 2. aprilli 2004. a määrus nr 12 „Pinnases ja põhjavees ohtlike ainete sisalduse piirnormid" nõuetele ja sotsiaalministri 31. juuli 2001. a. määruse nr 82 „Joogivee kvaliteedi- ja kontrollinõuded ning analüüsimeetodid*" ning Sotsiaalministri 2. jaanuari 2003. a määrus nr 1 "Joogivee tootmiseks kasutatava või kasutada kavatsetava pinna- ja põhjavee kvaliteedi- ja kontrollinõuded*" nõuetele määratud ohtlike ainete osas.

Seirekaev paikneb põhjaveereostuse vahetus läheduses ja selle vesi võib olla perioodiliti joogiks kõlbmatu.

Seirekaev on suletud veevõtu vältimiseks metallist lukustatava päisega.

Puurkaevu akti tellija: Keskkonnaministeeriumi veeosakond

Kaevu valdaja esindaja: Argo Sakkool, Keskkonnaministeeriumi veeosakond

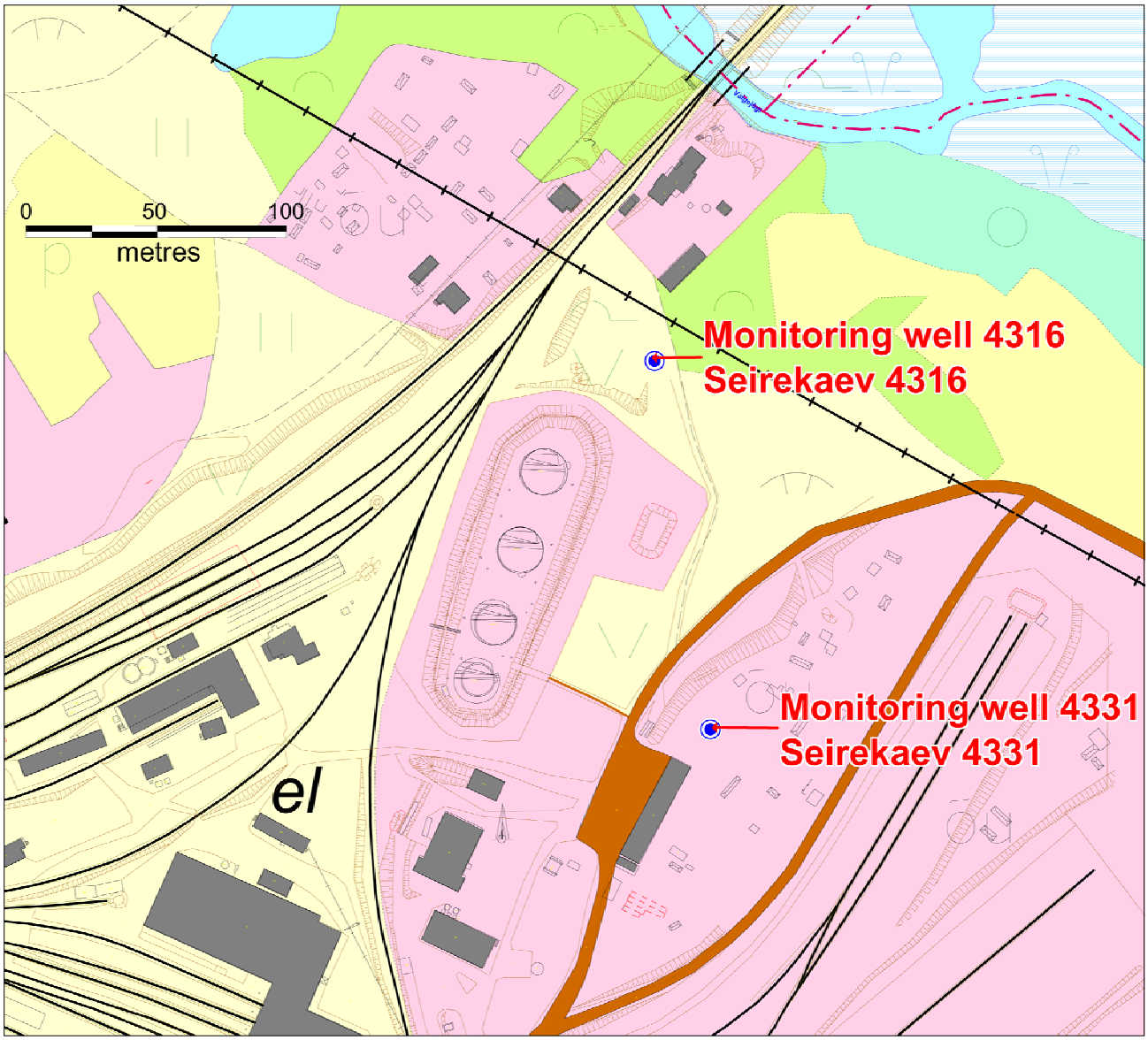
AS Maves juhatuse liige  Indrek Tamm

AnalyCen		JRK 43 Tapa Veduridepoo
Sampling person		Mati Salu
Sample Point		4331
Sample		V020060-06
Sample depth		4.9m
Sampling method		A209:34
Sample Date		2006-07-28
Group 1 Volatile Organic Compounds		
Benzene	µg/l	<0.2
Toluene	µg/l	<1
Xylene	mg/l	<0.001
Ethylbenzene	µg/l	<1
Sum TEX	mg/l	<0.001
Styrene	µg/l	<1
MTBE	µg/l	<0.01
Chloroorganic aromatics		
Chlorobenzene	µg/l	<1
2-Chlorotoluene	µg/l	<1
4-Chlorotoluene	µg/l	<1
1,3-dichlorobenzene	µg/l	<1
1,4-dichlorobenzene	µg/l	<1

AnalyCen		JRK 43 Tapa Veduridepoo
Sampling person		Mati Salu
Sample Point		4331
Sample		V020060-06
Sample depth		4.9m
Sampling method		A209:34
Sample Date		2006-07-28
1,2-dichlorobenzene	µg/l	<1
1,2,4-trichlorobenzene	µg/l	<1
1,2,3-trichlorobenzene	µg/l	<1
1,2-dichloroethane	µg/l	<1
Hexachloroethane	µg/l	<0.10
Chloroform	µg/l	<1
Auxiliary volatile organic compunds		
Isopropylbenzene	µg/l	<1
Propylbenzene	µg/l	<1
1,3,5-trimetylbenzene	µg/l	<1
Tert-butylbenzene	µg/l	<1
1,2,4-trimetylbenzene	µg/l	<1
Sec-butylbenzene	µg/l	<1
p-isopropylbenzene	µg/l	<1
Butylbenzene	µg/l	<1
Fluortrichloromethane	µg/l	<1
1,1,2-trichloroethane	µg/l	<1
1,1-dichloroethene	µg/l	<1
1,1,1,2-Tetrachloroethane	µg/l	<1
Tetrachloroethene	µg/l	<1
Dichloromethane	µg/l	<1
1,3-dichloropropane	µg/l	<1
Trans-1,2-dichloroethene	µg/l	<1
Dibromchloromethane	µg/l	<1
1,1-dichloroethane	µg/l	<1
1,2-dibromoethane	µg/l	<1
2,2-dichloropropane	µg/l	<1
Cis-1,2-dichloroethene	µg/l	<1
Bromoform	µg/l	<1
Bromobenzene	µg/l	<1
1,1,1-trichlorethane	µg/l	<1
1,2,3-trichloropropane	µg/l	<1
Tetrachloromethane	µg/l	<1
1,1-dichloropropane	µg/l	<1
Trichloroethene	µg/l	<1
1,2-dichloropropane	µg/l	<1
Dibrommethane	µg/l	<1
Bromchloromethane	µg/l	<1
Bromodichloromethane	µg/l	<1
Hexachlorobutadien	µg/l	<1

AnalyCen		JRK 43 Tapa Veduridepoo
Sampling person		Mati Salu
Sample Point		4331
Sample		V020060-06
Sample depth		4.9m
Sampling method		A209:34
Sample Date		2006-07-28
1,3-Dichloropropene	µg/l	<1
Group 2 Extractive compounds		
Aliphatics >C5-C8	mg/l	<0.02
Aliphatics >C8-C10	mg/l	<0.02
Aliphatics >C10-C12	mg/l	<0.02
Aliphatics >C12-C16	mg/l	<0.02
Aliphatics >C16-C35	mg/l	<0.05
Aromatics >C8-C10	mg/l	<0.1
Aromatics >C10-C35	mg/l	<0.1
Poly Chlorinated Biphenyls PCBs		
2,4,4'-Trichlorobiphenyl	µg/l	<0.10
2,2',5,5'-Tetrachlorobiphenyl	µg/l	<0.10
2,2',4,5,5'-Pentachlorobiphenyl	µg/l	<0.10
2,3',4,4',5'-Pentachlorobiphenyl	µg/l	<0.10
2,4,5,2',4',5'-Hexachlorobiphenyl	µg/l	<0.10
2,2',3,4,4',5'-Hexachlorobiphenyl	µg/l	<0.10
2,2',3,4,4',5,5'-Heptachlorobiphenyl	µg/l	<0.10
Group 3 Phenols and Cresols		
Phenol	µg/l	<1.00
m-cresol	µg/l	<1.00
o-cresol	µg/l	<1.00
p-cresol	µg/l	<1.00
2,3-dimethylphenol	µg/l	<1.00
3,4-dimethylphenol	µg/l	<1.00
2,6-dimethylphenol	µg/l	<1.00
Sum dichlorophenol	µg/l	<1.0
Sum trichlorophenol	µg/l	<1.0
Sum tetrachlorophenol	µg/l	<1.0
Chlorophenol	µg/l	<1.0
Sum cresols	µg/l	<3.0
Group 5 PAH		
Anthracene	µg/l	<0.10
Phenanthrene	µg/l	<0.10
Pyrene	µg/l	<0.10
Acenaphthene	µg/l	<0.10
Chrysene	µg/l	<0.10
Naphtalene	µg/l	<0.10
α-methylnaphtalene	µg/l	<0.10
β-methylnaphtalene	µg/l	<0.10

AnalyCen		JRK 43 Tapa Veduridepoo
Sampling person		Mati Salu
Sample Point		4331
Sample		V020060-06
Sample depth		4.9m
Sampling method		A209:34
Sample Date		2006-07-28
Acenaphtalene	µg/l	<0.10
Benzo(a)pyrene	µg/l	<0.10
Benzo(a)anthracene	µg/l	<0.10
Benzo(b,k)fluorantene	µg/l	<0.10
Indeno(1,2,3,c,d)pyrene	µg/l	<0.10
Dibenzo(a,h)anthracene	µg/l	<0.10
9H-Fluorene	µg/l	<0.10
Fluorantene	µg/l	<0.10
Benzo(g,h,i)perylene	µg/l	<0.10
Dibenzofuran	µg/l	<0.10
Carbazole	µg/l	<0.10
Sum carcinogenic PAH	µg/l	<0.30
Sum other PAH	µg/l	<0.50
Group 7 Metals		
Cadmium	mg/l	0.000055
Lead	mg/l	<0.00005
Strontium	mg/l	0.24
Arsenic	mg/l	0.0011
Copper	mg/l	0.003
Chromium	mg/l	0.00023
Nickel	mg/l	0.0024
Zinc	mg/l	0.047
Lantmännen Analycen AB		
31.10.2006		
Caroline Karlsson		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AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014432-06	A014433-06	A014434-06
Sample name	43-01	43-02	43-02
Sample depth	3,5-3,6	0,8-0,9	1,2-1,3
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
Group 1 Volatile Organic Compounds			
Benzene	<0.005	<0.005	<0.005
Toluene	0,015	<0.005	<0.005
Xylene	1	< 0.1	< 0.1
Ethylbenzene	<0.005	<0.005	<0.005
Sum TEX	1	< 0.1	< 0.1
Styrene	<0.005	<0.005	<0.005
MTBE	< 0.1	< 0.1	< 0.1
Chloroorganic aromatics			
Chlorobenzene	<0.005	<0.005	<0.005
2-Chlorotoluene	<0.005	<0.005	<0.005
4-Chlorotoluene	<0.005	<0.005	<0.005
1,3-dichlorobenzene	<0.005	<0.005	<0.005
1,4-dichlorobenzene	<0.005	<0.005	<0.005
1,2-dichlorobenzene	<0.005	<0.005	<0.005
1,2,4-trichlorobenzene	<0.005	<0.005	<0.005
1,2,3-trichlorobenzene	<0.005	<0.005	<0.005
1,2-dichloroethane	<0.005	<0.005	<0.005
Hexachloroethane	<0.10	<0.10	<0.10
Choroform	<0.005	<0.005	<0.005
Auxiliary volatile organic compunds			
Isopropylbenzene	<0.005	<0.005	<0.005
Propylbenzene	<0.005	<0.005	<0.005
1,3,5-trimetylbenzene	0,45	<0.005	<0.005
Tert-butylbenzene	0,017	<0.005	<0.005
1,2,4-trimetylbenzene	1,1	0,0055	<0.005
Sec-butylbenzene	0,045	<0.005	<0.005
p-isopropylbenzene	0,024	0,0063	<0.005
Butylbenzene	<0.005	0,0098	<0.005
Fluortrichloromethane	<0.005	<0.005	<0.005
1,1,2-trichloroethane	<0.005	<0.005	<0.005
1,1-dichloroethene	<0.005	<0.005	<0.005
1,1,1,2-Tetrachloroethane	<0.005	<0.005	<0.005
Tetrachloroethene	<0.005	<0.005	<0.005
Dichloromethane	<0.005	<0.005	<0.005
1,3-dichloropropane	<0.005	<0.005	<0.005
Trans-1,2-dichloroethene	<0.005	<0.005	<0.005
Dibromchloromethane	<0.005	<0.005	<0.005
1,1-dichloroethane	<0.005	<0.005	<0.005
1,2-dibromoethane	<0.005	<0.005	<0.005
2,2-dichloropropane	<0.005	<0.005	<0.005
Cis-1,2-dichloroethene	<0.005	<0.005	<0.005
Bromoform	<0.005	<0.005	<0.005
Bromobenzene	0,28	<0.005	<0.005

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014435-06	A014436-06	A014437-06
Sample name	43-02	43-06	43-06
Sample depth	1,8-2,0	1,6-1,7	2,9-3,0
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
Group 1 Volatile Organic Compounds			
Benzene	<0.005	<0.005	<0.005
Toluene	<0.005	<0.005	<0.005
Xylene	< 0.1	< 0.1	< 0.1
Ethylbenzene	<0.005	<0.005	<0.005
Sum TEX	< 0.1	< 0.1	< 0.1
Styrene	<0.005	<0.005	<0.005
MTBE	< 0.1	< 0.1	< 0.1
Chloroorganic aromatics			
Chlorobenzene	<0.005	<0.005	<0.005
2-Chlorotoluene	<0.005	<0.005	<0.005
4-Chlorotoluene	<0.005	<0.005	<0.005
1,3-dichlorobenzene	<0.005	<0.005	<0.005
1,4-dichlorobenzene	<0.005	<0.005	<0.005
1,2-dichlorobenzene	<0.005	<0.005	<0.005
1,2,4-trichlorobenzene	<0.005	<0.005	<0.005
1,2,3-trichlorobenzene	<0.005	<0.005	<0.005
1,2-dichloroethane	<0.005	<0.005	<0.005
Hexachloroethane	<0.10	<0.10	<0.10
Chloroform	<0.005	<0.005	<0.005
Auxiliary volatile organic compunds			
Isopropylbenzene	<0.005	<0.005	0,017
Propylbenzene	<0.005	<0.005	0,041
1,3,5-trimetylbenzene	<0.005	<0.005	0,0075
Tert-butylbenzene	<0.005	<0.005	0,0053
1,2,4-trimetylbenzene	<0.005	<0.005	0,016
Sec-butylbenzene	<0.005	<0.005	0,16
p-isopropylbenzene	<0.005	<0.005	<0.005
Butylbenzene	<0.005	<0.005	0,082
Fluortrichloromethane	<0.005	<0.005	<0.005
1,1,2-trichloroethane	<0.005	<0.005	<0.005
1,1-dichloroethene	<0.005	<0.005	<0.005
1,1,1,2-Tetrachloroethane	<0.005	<0.005	<0.005
Tetrachloroethene	<0.005	<0.005	<0.005
Dichloromethane	<0.005	<0.005	<0.005
1,3-dichloropropane	<0.005	<0.005	<0.005
Trans-1,2-dichloroethene	<0.005	<0.005	<0.005
Dibromchloromethane	<0.005	<0.005	<0.005
1,1-dichloroethane	<0.005	<0.005	<0.005
1,2-dibromoethane	<0.005	<0.005	<0.005
2,2-dichloropropane	<0.005	<0.005	<0.005
Cis-1,2-dichloroethene	<0.005	<0.005	<0.005
Bromoform	<0.005	<0.005	<0.005
Bromobenzene	<0.005	<0.005	0,049

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014438-06	A014439-06	A014440-06
Sample name	43-07	43-07	43-08
Sample depth	0,6-0,7	3,8-3,9	1,3-1,4
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
Group 1 Volatile Organic Compounds			
Benzene	<0.005	<0.005	<0.005
Toluene	<0.005	0,0091	<0.005
Xylene	< 0.1	< 0.1	< 0.1
Ethylbenzene	<0.005	<0.005	<0.005
Sum TEX	< 0.1	< 0.1	< 0.1
Styrene	<0.005	<0.005	<0.005
MTBE	< 0.1	< 0.1	< 0.1
Chloroorganic aromatics			
Chlorobenzene	<0.005	<0.005	<0.005
2-Chlorotoluene	<0.005	<0.005	<0.005
4-Chlorotoluene	<0.005	<0.005	<0.005
1,3-dichlorobenzene	<0.005	<0.005	<0.005
1,4-dichlorobenzene	<0.005	<0.005	<0.005
1,2-dichlorobenzene	<0.005	<0.005	<0.005
1,2,4-trichlorobenzene	<0.005	<0.005	<0.005
1,2,3-trichlorobenzene	<0.005	<0.005	<0.005
1,2-dichloroethane	<0.005	<0.005	<0.005
Hexachloroethane	<0.10	<0.10	<0.10
Chloroform	<0.005	<0.005	<0.005
Auxiliary volatile organic compunds			
Isopropylbenzene	<0.005	0,052	<0.005
Propylbenzene	<0.005	0,11	<0.005
1,3,5-trimetylbenzene	<0.005	0,0096	<0.005
Tert-butylbenzene	<0.005	0,009	<0.005
1,2,4-trimetylbenzene	<0.005	0,07	<0.005
Sec-butylbenzene	0,025	0,33	0,013
p-isopropylbenzene	<0.005	0,0059	<0.005
Butylbenzene	<0.005	0,21	0,018
Fluortrichloromethane	<0.005	<0.005	<0.005
1,1,2-trichloroethane	<0.005	<0.005	<0.005
1,1-dichloroethene	<0.005	<0.005	<0.005
1,1,1,2-Tetrachloroethane	<0.005	<0.005	<0.005
Tetrachloroethene	<0.005	<0.005	<0.005
Dichloromethane	<0.005	<0.005	<0.005
1,3-dichloropropane	<0.005	<0.005	<0.005
Trans-1,2-dichloroethene	<0.005	<0.005	<0.005
Dibromchloromethane	<0.005	<0.005	<0.005
1,1-dichloroethane	<0.005	<0.005	<0.005
1,2-dibromoethane	<0.005	<0.005	<0.005
2,2-dichloropropane	<0.005	<0.005	<0.005
Cis-1,2-dichloroethene	<0.005	<0.005	<0.005
Bromoform	<0.005	<0.005	<0.005
Bromobenzene	0,0056	0,066	<0.005

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014441-06	A014442-06	A014443-06
Sample name	43-08	43-09	43-10
Sample depth	3,0-3,2	3,5-3,7	1,4-1,5
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
Group 1 Volatile Organic Compounds			
Benzene	<0.005	<0.005	<0.005
Toluene	<0.005	<0.005	<0.005
Xylene	< 0.1	< 0.1	< 0.1
Ethylbenzene	<0.005	<0.005	<0.005
Sum TEX	< 0.1	< 0.1	< 0.1
Styrene	<0.005	<0.005	<0.005
MTBE	< 0.1	< 0.1	< 0.1
Chloroorganic aromatics			
Chlorobenzene	<0.005	<0.005	<0.005
2-Chlorotoluene	<0.005	<0.005	<0.005
4-Chlorotoluene	<0.005	<0.005	<0.005
1,3-dichlorobenzene	<0.005	<0.005	<0.005
1,4-dichlorobenzene	<0.005	<0.005	<0.005
1,2-dichlorobenzene	<0.005	<0.005	<0.005
1,2,4-trichlorobenzene	0,1	<0.005	<0.005
1,2,3-trichlorobenzene	<0.005	<0.005	<0.005
1,2-dichloroethane	<0.005	<0.005	<0.005
Hexachloroethane	<0.10	<0.10	<0.10
Chloroform	<0.005	<0.005	<0.005
Auxiliary volatile organic compunds			
Isopropylbenzene	0,26	<0.005	0,015
Propylbenzene	0,64	<0.005	0,027
1,3,5-trimetylbenzene	0,0073	<0.005	0,018
Tert-butylbenzene	0,033	0,019	0,014
1,2,4-trimetylbenzene	0,06	<0.005	0,12
Sec-butylbenzene	1,2	0,055	0,05
p-isopropylbenzene	0,8	<0.005	0,24
Butylbenzene	0,7	<0.005	0,013
Fluortrichloromethane	<0.005	<0.005	<0.005
1,1,2-trichloroethane	<0.005	<0.005	<0.005
1,1-dichloroethene	<0.005	<0.005	<0.005
1,1,1,2-Tetrachloroethane	<0.005	<0.005	<0.005
Tetrachloroethene	<0.005	<0.005	<0.005
Dichloromethane	<0.005	<0.005	<0.005
1,3-dichloropropane	<0.005	<0.005	<0.005
Trans-1,2-dichloroethene	<0.005	<0.005	<0.005
Dibromchloromethane	<0.005	<0.005	<0.005
1,1-dichloroethane	<0.005	<0.005	<0.005
1,2-dibromoethane	<0.005	<0.005	<0.005
2,2-dichloropropane	<0.005	<0.005	<0.005
Cis-1,2-dichloroethene	<0.005	<0.005	<0.005
Bromoform	<0.005	<0.005	<0.005
Bromobenzene	0,19	0,15	0,038

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014444-06	A014445-06	A014446-06
Sample name	43-10	43-10	43-11
Sample depth	1,9-2,0	3,5-3,6	0,4-0,5
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
Group 1 Volatile Organic Compounds			
Benzene	<0.005	<0.005	0,026
Toluene	<0.005	<0.005	0,028
Xylene	< 0.1	< 0.1	0,13
Ethylbenzene	<0.005	<0.005	0,0068
Sum TEX	< 0.1	< 0.1	0,16
Styrene	<0.005	<0.005	<0.005
MTBE	< 0.1	< 0.1	< 0.1
Chloroorganic aromatics			
Chlorobenzene	<0.005	<0.005	<0.005
2-Chlorotoluene	<0.005	<0.005	<0.005
4-Chlorotoluene	<0.005	<0.005	<0.005
1,3-dichlorobenzene	<0.005	<0.005	<0.005
1,4-dichlorobenzene	<0.005	<0.005	<0.005
1,2-dichlorobenzene	<0.005	<0.005	<0.005
1,2,4-trichlorobenzene	<0.005	<0.005	<0.005
1,2,3-trichlorobenzene	<0.005	<0.005	<0.005
1,2-dichloroethane	<0.005	<0.005	0,063
Hexachloroethane	<0.10	<0.10	<0.10
Chloroform	<0.005	<0.005	<0.005
Auxiliary volatile organic compunds			
Isopropylbenzene	<0.005	<0.005	<0.005
Propylbenzene	<0.005	<0.005	<0.005
1,3,5-trimetylbenzene	<0.005	<0.005	0,14
Tert-butylbenzene	<0.005	0,0051	<0.005
1,2,4-trimetylbenzene	<0.005	<0.005	0,19
Sec-butylbenzene	<0.005	0,008	<0.005
p-isopropylbenzene	0,26	<0.005	0,028
Butylbenzene	<0.005	<0.005	0,016
Fluortrichloromethane	<0.005	<0.005	<0.005
1,1,2-trichloroethane	<0.005	<0.005	<0.005
1,1-dichloroethene	<0.005	<0.005	<0.005
1,1,1,2-Tetrachloroethane	<0.005	<0.005	<0.005
Tetrachloroethene	<0.005	<0.005	0,0052
Dichloromethane	<0.005	<0.005	<0.005
1,3-dichloropropane	<0.005	<0.005	<0.005
Trans-1,2-dichloroethene	<0.005	<0.005	<0.005
Dibromchloromethane	<0.005	<0.005	<0.005
1,1-dichloroethane	<0.005	<0.005	<0.005
1,2-dibromoethane	<0.005	<0.005	<0.005
2,2-dichloropropane	<0.005	<0.005	<0.005
Cis-1,2-dichloroethene	<0.005	<0.005	<0.005
Bromoform	<0.005	<0.005	<0.005
Bromobenzene	<0.005	<0.005	<0.005

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014447-06	A014448-06	A014449-06
Sample name	43-11	43-12	43-12
Sample depth	0,9-1,0	1,0-1,1	2,4-2,5
Sampling method	SS028150-2	SS028150-2	
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
Group 1 Volatile Organic Compounds			
Benzene	< 0.01	< 0.01	0,057
Toluene	< 0.1	< 0.1	0,0072
Xylene	< 0.1	< 0.1	0,1
Ethylbenzene	< 0.1	< 0.1	0,041
Sum TEX	< 0.1	< 0.1	0,1
Styrene	<0.005	<0.005	<0.005
MTBE	< 0.1	< 0.1	< 0.1
Chloroorganic aromatics			
Chlorobenzene	<0.005	<0.005	<0.005
2-Chlorotoluene	<0.005	<0.005	<0.005
4-Chlorotoluene	<0.005	<0.005	<0.005
1,3-dichlorobenzene	<0.005	<0.005	<0.005
1,4-dichlorobenzene	<0.005	<0.005	<0.005
1,2-dichlorobenzene	<0.005	<0.005	<0.005
1,2,4-trichlorobenzene	<0.005	<0.005	<0.005
1,2,3-trichlorobenzene	<0.005	<0.005	<0.005
1,2-dichloroethane	<0.005	<0.005	<0.005
Hexachloroethane	<0.10	<0.10	<0.10
Chloroform	<0.005	<0.005	<0.005
Auxiliary volatile organic compunds			
Isopropylbenzene	<0.005	<0.005	0,027
Propylbenzene	<0.005	<0.005	0,068
1,3,5-trimetylbenzene	<0.005	<0.005	0,037
Tert-butylbenzene	<0.005	<0.005	0,0079
1,2,4-trimetylbenzene	<0.005	0,0098	0,39
Sec-butylbenzene	<0.005	<0.005	0,053
p-isopropylbenzene	<0.005	<0.005	0,11
Butylbenzene	<0.005	<0.005	0,051
Fluortrichloromethane	<0.005	<0.005	<0.005
1,1,2-trichloroethane	<0.005	<0.005	<0.005
1,1-dichloroethene	<0.005	<0.005	<0.005
1,1,1,2-Tetrachloroethane	<0.005	<0.005	<0.005
Tetrachloroethene	<0.005	<0.005	<0.005
Dichloromethane	<0.005	<0.005	<0.005
1,3-dichloropropane	<0.005	<0.005	<0.005
Trans-1,2-dichloroethene	<0.005	<0.005	<0.005
Dibromchloromethane	<0.005	<0.005	<0.005
1,1-dichloroethane	<0.005	<0.005	<0.005
1,2-dibromoethane	<0.005	<0.005	<0.005
2,2-dichloropropane	<0.005	<0.005	<0.005
Cis-1,2-dichloroethene	<0.005	<0.005	<0.005
Bromoform	<0.005	<0.005	<0.005
Bromobenzene	<0.005	<0.005	<0.005

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014450-06	A014451-06	A014452-06
Sample name	43-17	43-17	43-18
Sample depth	1,3-1,5	2,2-2,3	2,5-2,65
Sampling method		SS028150-2	
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
Group 1 Volatile Organic Compounds			
Benzene	<0.005	< 0.01	<0.005
Toluene	0,01	< 0.1	<0.005
Xylene	< 0.1	< 0.1	< 0.1
Ethylbenzene	<0.005	< 0.1	<0.005
Sum TEX	< 0.1	< 0.1	< 0.1
Styrene	<0.005	<0.005	<0.005
MTBE	< 0.1	< 0.1	< 0.1
Chloroorganic aromatics			
Chlorobenzene	<0.005	<0.005	<0.005
2-Chlorotoluene	<0.005	<0.005	<0.005
4-Chlorotoluene	<0.005	<0.005	<0.005
1,3-dichlorobenzene	<0.005	<0.005	<0.005
1,4-dichlorobenzene	<0.005	<0.005	<0.005
1,2-dichlorobenzene	<0.005	<0.005	<0.005
1,2,4-trichlorobenzene	<0.005	<0.005	<0.005
1,2,3-trichlorobenzene	<0.005	<0.005	<0.005
1,2-dichloroethane	<0.005	<0.005	<0.005
Hexachloroethane	<0.10	<0.10	<0.10
Chloroform	<0.005	<0.005	<0.005
Auxiliary volatile organic compunds			
Isopropylbenzene	<0.005	<0.005	0,093
Propylbenzene	<0.005	<0.005	0,21
1,3,5-trimetylbenzene	<0.005	<0.005	0,024
Tert-butylbenzene	<0.005	<0.005	0,015
1,2,4-trimetylbenzene	<0.005	<0.005	0,04
Sec-butylbenzene	<0.005	<0.005	0,57
p-isopropylbenzene	<0.005	<0.005	<0.005
Butylbenzene	<0.005	<0.005	0,13
Fluortrichloromethane	<0.005	<0.005	<0.005
1,1,2-trichloroethane	<0.005	<0.005	<0.005
1,1-dichloroethene	<0.005	<0.005	<0.005
1,1,1,2-Tetrachloroethane	<0.005	<0.005	<0.005
Tetrachloroethene	<0.005	<0.005	<0.005
Dichloromethane	<0.005	<0.005	<0.005
1,3-dichloropropane	<0.005	<0.005	<0.005
Trans-1,2-dichloroethene	<0.005	<0.005	<0.005
Dibromchloromethane	<0.005	<0.005	<0.005
1,1-dichloroethane	<0.005	<0.005	<0.005
1,2-dibromoethane	<0.005	<0.005	<0.005
2,2-dichloropropane	<0.005	<0.005	<0.005
Cis-1,2-dichloroethene	<0.005	<0.005	<0.005
Bromoform	<0.005	<0.005	<0.005
Bromobenzene	<0.005	<0.005	0,15

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014453-06	A014454-06	A014455-06
Sample name	43-22	43-23	43-27
Sample depth	3,5-3,6	1,9-2,0	1,9-2,0
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
Group 1 Volatile Organic Compounds			
Benzene	<0.005	<0.005	<0.005
Toluene	0,011	<0.005	0,0072
Xylene	0,17	< 0.1	< 0.1
Ethylbenzene	0,0054	<0.005	<0.005
Sum TEX	0,17	< 0.1	< 0.1
Styrene	<0.005	<0.005	<0.005
MTBE	< 0.1	< 0.1	< 0.1
Chloroorganic aromatics			
Chlorobenzene	<0.005	<0.005	<0.005
2-Chlorotoluene	<0.005	<0.005	<0.005
4-Chlorotoluene	<0.005	<0.005	<0.005
1,3-dichlorobenzene	<0.005	<0.005	<0.005
1,4-dichlorobenzene	<0.005	<0.005	<0.005
1,2-dichlorobenzene	<0.005	<0.005	<0.005
1,2,4-trichlorobenzene	<0.005	<0.005	<0.005
1,2,3-trichlorobenzene	<0.005	<0.005	<0.005
1,2-dichloroethane	<0.005	<0.005	<0.005
Hexachloroethane	<0.10	<0.10	<0.10
Chloroform	<0.005	<0.005	<0.005
Auxiliary volatile organic compunds			
Isopropylbenzene	0,029	<0.005	<0.005
Propylbenzene	0,067	<0.005	<0.005
1,3,5-trimetylbenzene	0,015	<0.005	<0.005
Tert-butylbenzene	0,0082	<0.005	<0.005
1,2,4-trimetylbenzene	0,13	<0.005	<0.005
Sec-butylbenzene	0,18	<0.005	<0.005
p-isopropylbenzene	<0.005	<0.005	<0.005
Butylbenzene	0,28	<0.005	<0.005
Fluortrichloromethane	<0.005	<0.005	<0.005
1,1,2-trichloroethane	<0.005	<0.005	<0.005
1,1-dichloroethene	<0.005	<0.005	<0.005
1,1,1,2-Tetrachloroethane	<0.005	<0.005	<0.005
Tetrachloroethene	<0.005	<0.005	<0.005
Dichloromethane	<0.005	<0.005	<0.005
1,3-dichloropropane	<0.005	<0.005	<0.005
Trans-1,2-dichloroethene	<0.005	<0.005	<0.005
Dibromchloromethane	<0.005	<0.005	<0.005
1,1-dichloroethane	<0.005	<0.005	<0.005
1,2-dibromoethane	<0.005	<0.005	<0.005
2,2-dichloropropane	<0.005	<0.005	<0.005
Cis-1,2-dichloroethene	<0.005	<0.005	<0.005
Bromoform	<0.005	<0.005	<0.005
Bromobenzene	0,04	<0.005	<0.005

AnalyCen

Sampling person	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014456-06	A014457-06
Sample name	43-28	43-29
Sample depth	1,8-2,0	0,9-1,0
Sampling method		SS028150-2
Sample Date	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight		
Group 1 Volatile Organic Compounds		
Benzene	0,012	< 0.01
Toluene	<0.005	< 0.1
Xylene	< 0.1	< 0.1
Ethylbenzene	0,0059	< 0.1
Sum TEX	< 0.1	< 0.1
Styrene	<0.005	<0.005
MTBE	< 0.1	< 0.1
Chloroorganic aromatics		
Chlorobenzene	<0.005	<0.005
2-Chlorotoluene	<0.005	<0.005
4-Chlorotoluene	<0.005	<0.005
1,3-dichlorobenzene	<0.005	<0.005
1,4-dichlorobenzene	<0.005	<0.005
1,2-dichlorobenzene	<0.005	<0.005
1,2,4-trichlorobenzene	<0.005	<0.005
1,2,3-trichlorobenzene	<0.005	<0.005
1,2-dichloroethane	<0.005	<0.005
Hexachloroethane	<0.10	<0.10
Chloroform	<0.005	<0.005
Auxiliary volatile organic compunds		
Isopropylbenzene	<0.005	<0.005
Propylbenzene	<0.005	<0.005
1,3,5-trimetylbenzene	0,0075	<0.005
Tert-butylbenzene	<0.005	<0.005
1,2,4-trimetylbenzene	0,018	<0.005
Sec-butylbenzene	0,0057	<0.005
p-isopropylbenzene	0,021	<0.005
Butylbenzene	<0.005	<0.005
Fluortrichloromethane	<0.005	<0.005
1,1,2-trichloroethane	<0.005	<0.005
1,1-dichloroethene	<0.005	<0.005
1,1,1,2-Tetrachloroethane	<0.005	<0.005
Tetrachloroethene	<0.005	<0.005
Dichloromethane	<0.005	<0.005
1,3-dichloropropane	<0.005	<0.005
Trans-1,2-dichloroethene	<0.005	<0.005
Dibromchloromethane	<0.005	<0.005
1,1-dichloroethane	<0.005	<0.005
1,2-dibromoethane	<0.005	<0.005
2,2-dichloropropane	<0.005	<0.005
Cis-1,2-dichloroethene	<0.005	<0.005
Bromoform	<0.005	<0.005
Bromobenzene	0,031	<0.005

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014432-06	A014433-06	A014434-06
Sample name	43-01	43-02	43-02
Sample depth	3,5-3,6	0,8-0,9	1,2-1,3
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
1,1,1-trichlorethane	<0.005	<0.005	<0.005
1,2,3-trichloropropane	<0.005	<0.005	<0.005
Tetrachloromethane	<0.005	<0.005	<0.005
1,1-dichloropropane	<0.005	<0.005	<0.005
Trichloroethene	<0.005	<0.005	<0.005
1,2-dichloropropane	<0.005	<0.005	<0.005
Dibrommethane	<0.005	<0.005	<0.005
Bromchloromethane	<0.005	<0.005	<0.005
Bromodichloromethane	<0.005	<0.005	<0.005
Hexachlorobutadien	<0.005	<0.005	<0.005
1,3-Dichloropropene	<0.005	<0.005	<0.005
Group 2 Extractive compounds			
Aliphatics >C5-C8	< 5	< 5	< 5
Aliphatics >C8-C10	16	< 5	< 5
Aliphatics >C10-C12	310	<5	<5
Aliphatics >C12-C16	1100	<5	5,7
Aliphatics >C16-C35	1300	57	70
Aromatics >C8-C10	21	<5	<5
Aromatics >C10-C35	160	<10	<10
Poly Chlorinated Biphenyls PCBs			
2,4,4'-Trichlorobiphenyl	<0.10	<0.10	<0.10
2,2',5,5'-Tetrachlorobiphenyl	<0.10	<0.10	<0.10
2,2',4,5,5'-Pentachlorobiphenyl	<0.10	<0.10	<0.10
2,3',4,4',5'-Pentachlorobiphenyl	<0.10	<0.10	<0.10
2,4,5,2',4',5'-Hexachlorobiphenyl	<0.10	<0.10	<0.10
2,2',3,4,4',5'-Hexachlorobiphenyl	<0.10	<0.10	<0.10
2,2',3,4,4',5,5'-Heptachlorobiphenyl	<0.10	<0.10	<0.10
Group 3 Phenols and Cresols			
Phenol	<1.00	<1.00	<1.00
m-cresol	<1.00	<1.00	<1.00
o-cresol	<1.00	<1.00	<1.00
p-cresol	<1.00	<1.00	<1.00
2,3-dimethylphenol	<1.00	<1.00	<1.00
3,4-dimethylphenol	<1.00	<1.00	<1.00
2,6-dimethylphenol	<1.00	<1.00	<1.00
Sum dichlorophenol	<1.0	<1.0	<1.0
Sum trichlorophenol	<1.0	<1.0	<1.0
Sum tetrachlorophenol	<1.0	<1.0	<1.0
Chlorophenol	<1.0	<1.0	<1.0
Sum cresols	<3.0	<3.0	<3.0

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014435-06	A014436-06	A014437-06
Sample name	43-02	43-06	43-06
Sample depth	1,8-2,0	1,6-1,7	2,9-3,0
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
1,1,1-trichlorethane	<0.005	<0.005	<0.005
1,2,3-trichloropropane	<0.005	<0.005	<0.005
Tetrachloromethane	<0.005	<0.005	<0.005
1,1-dichloropropane	<0.005	<0.005	<0.005
Trichloroethene	<0.005	<0.005	<0.005
1,2-dichloropropane	<0.005	<0.005	<0.005
Dibrommethane	<0.005	<0.005	<0.005
Bromchloromethane	<0.005	<0.005	<0.005
Bromodichloromethane	<0.005	<0.005	<0.005
Hexachlorobutadien	<0.005	<0.005	<0.005
1,3-Dichloropropene	<0.005	<0.005	<0.005
Group 2 Extractive compounds			
Aliphatics >C5-C8	< 5	< 5	< 5
Aliphatics >C8-C10	< 5	< 5	< 5
Aliphatics >C10-C12	<5	<5	79
Aliphatics >C12-C16	<5	<5	320
Aliphatics >C16-C35	<10	<10	380
Aromatics >C8-C10	<5	<5	<5
Aromatics >C10-C35	<10	<10	37
Poly Chlorinated Biphenyls PCBs			
2,4,4'-Trichlorobiphenyl	<0.10	<0.10	<0.10
2,2',5,5'-Tetrachlorobiphenyl	<0.10	<0.10	<0.10
2,2',4,5,5'-Pentachlorobiphenyl	<0.10	<0.10	<0.10
2,3',4,4',5'-Pentachlorobiphenyl	<0.10	<0.10	<0.10
2,4,5,2',4',5'-Hexachlorobiphenyl	<0.10	<0.10	<0.10
2,2',3,4,4',5'-Hexachlorobiphenyl	<0.10	<0.10	<0.10
2,2',3,4,4',5,5'-Heptachlorobiphenyl	<0.10	<0.10	<0.10
Group 3 Phenols and Cresols			
Phenol	<1.00	<1.00	<1.00
m-cresol	<1.00	<1.00	<1.00
o-cresol	<1.00	<1.00	<1.00
p-cresol	<1.00	<1.00	<1.00
2,3-dimethylphenol	<1.00	<1.00	<1.00
3,4-dimethylphenol	<1.00	<1.00	<1.00
2,6-dimethylphenol	<1.00	<1.00	<1.00
Sum dichlorophenol	<1.0	<1.0	<1.0
Sum trichlorophenol	<1.0	<1.0	<1.0
Sum tetrachlorophenol	<1.0	<1.0	<1.0
Chlorophenol	<1.0	<1.0	<1.0
Sum cresols	<3.0	<3.0	<3.0

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014438-06	A014439-06	A014440-06
Sample name	43-07	43-07	43-08
Sample depth	0,6-0,7	3,8-3,9	1,3-1,4
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
1,1,1-trichlorethane	<0.005	<0.005	<0.005
1,2,3-trichloropropane	<0.005	<0.005	<0.005
Tetrachloromethane	<0.005	<0.005	<0.005
1,1-dichloropropane	<0.005	<0.005	<0.005
Trichloroethene	<0.005	<0.005	<0.005
1,2-dichloropropane	<0.005	<0.005	<0.005
Dibrommethane	<0.005	<0.005	<0.005
Bromchloromethane	<0.005	<0.005	<0.005
Bromodichloromethane	<0.005	<0.005	<0.005
Hexachlorobutadien	<0.005	<0.005	<0.005
1,3-Dichloropropene	<0.005	<0.005	<0.005
Group 2 Extractive compounds			
Aliphatics >C5-C8	< 5	< 5	< 5
Aliphatics >C8-C10	< 5	< 5	< 5
Aliphatics >C10-C12	35	100	<5
Aliphatics >C12-C16	200	420	5,5
Aliphatics >C16-C35	710	660	18
Aromatics >C8-C10	<5	<5	<5
Aromatics >C10-C35	<10	37	<10
Poly Chlorinated Biphenyls PCBs			
2,4,4'-Trichlorobiphenyl	<0.10	<0.10	<0.10
2,2',5,5'-Tetrachlorobiphenyl	<0.10	<0.10	<0.10
2,2',4,5,5'-Pentachlorobiphenyl	<0.10	<0.10	<0.10
2,3',4,4',5'-Pentachlorobiphenyl	<0.10	<0.10	<0.10
2,4,5,2',4',5'-Hexachlorobiphenyl	<0.10	<0.10	<0.10
2,2',3,4,4',5'-Hexachlorobiphenyl	<0.10	<0.10	<0.10
2,2',3,4,4',5,5'-Heptachlorobiphenyl	<0.10	<0.10	<0.10
Group 3 Phenols and Cresols			
Phenol	<1.00	<1.00	<1.00
m-cresol	<1.00	<1.00	<1.00
o-cresol	<1.00	<1.00	<1.00
p-cresol	<1.00	<1.00	<1.00
2,3-dimethylphenol	<1.00	<1.00	<1.00
3,4-dimethylphenol	<1.00	<1.00	<1.00
2,6-dimethylphenol	<1.00	<1.00	<1.00
Sum dichlorophenol	<1.0	<1.0	<1.0
Sum trichlorophenol	<1.0	<1.0	<1.0
Sum tetrachlorophenol	<1.0	<1.0	<1.0
Chlorophenol	<1.0	<1.0	<1.0
Sum cresols	<3.0	<3.0	<3.0

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014441-06	A014442-06	A014443-06
Sample name	43-08	43-09	43-10
Sample depth	3,0-3,2	3,5-3,7	1,4-1,5
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
1,1,1-trichlorethane	<0.005	<0.005	<0.005
1,2,3-trichloropropane	<0.005	<0.005	<0.005
Tetrachloromethane	<0.005	<0.005	<0.005
1,1-dichloropropane	<0.005	<0.005	<0.005
Trichloroethene	<0.005	<0.005	<0.005
1,2-dichloropropane	<0.005	<0.005	<0.005
Dibrommethane	<0.005	<0.005	<0.005
Bromchloromethane	<0.005	<0.005	<0.005
Bromodichloromethane	<0.005	<0.005	<0.005
Hexachlorobutadien	<0.005	<0.005	<0.005
1,3-Dichloropropene	<0.005	<0.005	<0.005
Group 2 Extractive compounds			
Aliphatics >C5-C8	< 5	< 5	< 5
Aliphatics >C8-C10	18	8,7	< 5
Aliphatics >C10-C12	380	410	63
Aliphatics >C12-C16	1600	1400	57
Aliphatics >C16-C35	2200	1400	320
Aromatics >C8-C10	36	8,5	<5
Aromatics >C10-C35	110	96	<10
Poly Chlorinated Biphenyls PCBs			
2,4,4'-Trichlorobiphenyl	<0.10	<0.10	<0.10
2,2',5,5'-Tetrachlorobiphenyl	<0.10	<0.10	<0.10
2,2',4,5,5'-Pentachlorobiphenyl	<0.10	<0.10	<0.10
2,3',4,4',5'-Pentachlorobiphenyl	<0.10	<0.10	<0.10
2,4,5,2',4',5'-Hexachlorobiphenyl	<0.10	<0.10	<0.10
2,2',3,4,4',5'-Hexachlorobiphenyl	<0.10	<0.10	<0.10
2,2',3,4,4',5,5'-Heptachlorobiphenyl	<0.10	<0.10	<0.10
Group 3 Phenols and Cresols			
Phenol	<1.00	<1.00	<1.00
m-cresol	<1.00	<1.00	<1.00
o-cresol	<1.00	<1.00	<1.00
p-cresol	<1.00	<1.00	<1.00
2,3-dimethylphenol	<1.00	<1.00	<1.00
3,4-dimethylphenol	<1.00	<1.00	<1.00
2,6-dimethylphenol	<1.00	<1.00	<1.00
Sum dichlorophenol	<1.0	<1.0	<1.0
Sum trichlorophenol	<1.0	<1.0	<1.0
Sum tetrachlorophenol	<1.0	<1.0	<1.0
Chlorophenol	<1.0	<1.0	<1.0
Sum cresols	<3.0	<3.0	<3.0

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014444-06	A014445-06	A014446-06
Sample name	43-10	43-10	43-11
Sample depth	1,9-2,0	3,5-3,6	0,4-0,5
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
1,1,1-trichlorethane	<0.005	<0.005	<0.005
1,2,3-trichloropropane	<0.005	<0.005	<0.005
Tetrachloromethane	<0.005	<0.005	<0.005
1,1-dichloropropane	<0.005	<0.005	<0.005
Trichloroethene	<0.005	<0.005	<0.005
1,2-dichloropropane	<0.005	<0.005	<0.005
Dibrommethane	<0.005	<0.005	<0.005
Bromchloromethane	<0.005	<0.005	<0.005
Bromodichloromethane	<0.005	<0.005	<0.005
Hexachlorobutadien	<0.005	<0.005	<0.005
1,3-Dichloropropene	<0.005	<0.005	<0.005
Group 2 Extractive compounds			
Aliphatics >C5-C8	< 5	< 5	< 5
Aliphatics >C8-C10	< 5	< 5	< 5
Aliphatics >C10-C12	<5	13	31
Aliphatics >C12-C16	<5	47	540
Aliphatics >C16-C35	13	330	5800
Aromatics >C8-C10	<5	<5	<5
Aromatics >C10-C35	<10	<10	240
Poly Chlorinated Biphenyls PCBs			
2,4,4'-Trichlorobiphenyl	<0.10	<0.10	<0.10
2,2',5,5'-Tetrachlorobiphenyl	<0.10	<0.10	<0.10
2,2',4,5,5'-Pentachlorobiphenyl	<0.10	<0.10	<0.10
2,3',4,4',5'-Pentachlorobiphenyl	<0.10	<0.10	<0.10
2,4,5,2',4',5'-Hexachlorobiphenyl	<0.10	<0.10	<0.10
2,2',3,4,4',5'-Hexachlorobiphenyl	<0.10	<0.10	<0.10
2,2',3,4,4',5,5'-Heptachlorobiphenyl	<0.10	<0.10	<0.10
Group 3 Phenols and Cresols			
Phenol	<1.00	<1.00	<1.00
m-cresol	<1.00	<1.00	<1.00
o-cresol	<1.00	<1.00	<1.00
p-cresol	<1.00	<1.00	<1.00
2,3-dimethylphenol	<1.00	<1.00	<1.00
3,4-dimethylphenol	<1.00	<1.00	<1.00
2,6-dimethylphenol	<1.00	<1.00	<1.00
Sum dichlorophenol	<1.0	<1.00	<1.0
Sum trichlorophenol	<1.0	<1.00	<1.0
Sum tetrachlorophenol	<1.0	<1.00	<1.0
Chlorophenol	<1.0	<1.00	<1.0
Sum cresols	<3.0	<3.0	<3.0

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014447-06	A014448-06	A014449-06
Sample name	43-11	43-12	43-12
Sample depth	0,9-1,0	1,0-1,1	2,4-2,5
Sampling method	SS028150-2	SS028150-2	
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
1,1,1-trichlorethane	<0.005	<0.005	<0.005
1,2,3-trichloropropane	<0.005	<0.005	<0.005
Tetrachloromethane	<0.005	<0.005	<0.005
1,1-dichloropropane	<0.005	<0.005	<0.005
Trichloroethene	<0.005	<0.005	<0.005
1,2-dichloropropane	<0.005	<0.005	<0.005
Dibrommethane	<0.005	<0.005	<0.005
Bromchloromethane	<0.005	<0.005	<0.005
Bromodichloromethane	<0.005	<0.005	<0.005
Hexachlorobutadien	<0.005	<0.005	<0.005
1,3-Dichloropropene	<0.005	<0.005	<0.005
Group 2 Extractive compounds			
Aliphatics >C5-C8	< 5	< 5	< 5
Aliphatics >C8-C10	< 5	< 5	< 5
Aliphatics >C10-C12	22	<5	220
Aliphatics >C12-C16	83	8,1	1600
Aliphatics >C16-C35	2700	130	15000
Aromatics >C8-C10	<5	<5	<5
Aromatics >C10-C35	<10	<10	400
Poly Chlorinated Biphenyls PCBs			
2,4,4'-Trichlorobiphenyl	<0.10	<0.10	<0.10
2,2',5,5'-Tetrachlorobiphenyl	<0.10	<0.10	<0.10
2,2',4,5,5'-Pentachlorobiphenyl	<0.10	<0.10	<0.10
2,3',4,4',5'-Pentachlorobiphenyl	<0.10	<0.10	<0.10
2,4,5,2',4',5'-Hexachlorobiphenyl	<0.10	<0.10	<0.10
2,2',3,4,4',5'-Hexachlorobiphenyl	<0.10	<0.10	<0.10
2,2',3,4,4',5,5'-Heptachlorobiphenyl	<0.10	<0.10	<0.10
Group 3 Phenols and Cresols			
Phenol	<1.00	<1.00	<1.00
m-cresol	<1.00	<1.00	<1.00
o-cresol	<1.00	<1.00	<1.00
p-cresol	<1.00	<1.00	<1.00
2,3-dimethylphenol	<1.00	<1.00	<1.00
3,4-dimethylphenol	<1.00	<1.00	<1.00
2,6-dimethylphenol	<1.00	<1.00	<1.00
Sum dichlorophenol	<1.0	<1.0	<1.0
Sum trichlorophenol	<1.0	<1.0	<1.0
Sum tetrachlorophenol	<1.0	<1.0	<1.0
Chlorophenol	<1.0	<1.0	<1.0
Sum cresols	<3.0	<3.0	<3.0

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014450-06	A014451-06	A014452-06
Sample name	43-17	43-17	43-18
Sample depth	1,3-1,5	2,2-2,3	2,5-2,65
Sampling method		SS028150-2	
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
1,1,1-trichlorethane	<0.005	<0.005	<0.005
1,2,3-trichloropropane	<0.005	<0.005	<0.005
Tetrachloromethane	<0.005	<0.005	<0.005
1,1-dichloropropane	<0.005	<0.005	<0.005
Trichloroethene	<0.005	<0.005	<0.005
1,2-dichloropropane	<0.005	<0.005	<0.005
Dibrommethane	<0.005	<0.005	<0.005
Bromchloromethane	<0.005	<0.005	<0.005
Bromodichloromethane	<0.005	<0.005	<0.005
Hexachlorobutadien	<0.005	<0.005	<0.005
1,3-Dichloropropene	<0.005	<0.005	<0.005
Group 2 Extractive compounds			
Aliphatics >C5-C8	< 5	< 5	< 5
Aliphatics >C8-C10	< 5	< 5	14
Aliphatics >C10-C12	<5	72	400
Aliphatics >C12-C16	<5	340	1300
Aliphatics >C16-C35	100	410	1400
Aromatics >C8-C10	<5	<5	20
Aromatics >C10-C35	<10	<10	92
Poly Chlorinated Biphenyls PCBs			
2,4,4'-Trichlorobiphenyl	<0.10	<0.10	<0.10
2,2',5,5'-Tetrachlorobiphenyl	<0.10	<0.10	<0.10
2,2',4,5,5'-Pentachlorobiphenyl	<0.10	<0.10	<0.10
2,3',4,4',5'-Pentachlorobiphenyl	<0.10	<0.10	<0.10
2,4,5,2',4',5'-Hexachlorobiphenyl	<0.10	<0.10	<0.10
2,2',3,4,4',5'-Hexachlorobiphenyl	<0.10	<0.10	<0.10
2,2',3,4,4',5,5'-Heptachlorobiphenyl	<0.10	<0.10	<0.10
Group 3 Phenols and Cresols			
Phenol	<1.00	<1.00	<1.00
m-cresol	<1.00	<1.00	<1.00
o-cresol	<1.00	<1.00	<1.00
p-cresol	<1.00	<1.00	<1.00
2,3-dimethylphenol	<1.00	<1.00	<1.00
3,4-dimethylphenol	<1.00	<1.00	<1.00
2,6-dimethylphenol	<1.00	<1.00	<1.00
Sum dichlorophenol	<1.00	<1.0	<1.0
Sum trichlorophenol	<1.00	<1.0	<1.0
Sum tetrachlorophenol	<1.00	<1.0	<1.0
Chlorophenol	<1.00	<1.0	<1.0
Sum cresols	<3.0	<3.0	<3.0

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014453-06	A014454-06	A014455-06
Sample name	43-22	43-23	43-27
Sample depth	3,5-3,6	1,9-2,0	1,9-2,0
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
1,1,1-trichlorethane	<0.005	<0.005	<0.005
1,2,3-trichloropropane	<0.005	<0.005	<0.005
Tetrachloromethane	<0.005	<0.005	<0.005
1,1-dichloropropane	<0.005	<0.005	<0.005
Trichloroethene	<0.005	<0.005	<0.005
1,2-dichloropropane	<0.005	<0.005	<0.005
Dibrommethane	<0.005	<0.005	<0.005
Bromchloromethane	<0.005	<0.005	<0.005
Bromodichloromethane	<0.005	<0.005	<0.005
Hexachlorobutadien	<0.005	<0.005	<0.005
1,3-Dichloropropene	<0.005	<0.005	<0.005
Group 2 Extractive compounds			
Aliphatics >C5-C8	< 5	< 5	< 5
Aliphatics >C8-C10	6,9	< 5	< 5
Aliphatics >C10-C12	150	<5	<5
Aliphatics >C12-C16	560	<5	<5
Aliphatics >C16-C35	930	14	11
Aromatics >C8-C10	20	<5	<5
Aromatics >C10-C35	51	<10	<10
Poly Chlorinated Biphenyls PCBs			
2,4,4'-Trichlorobiphenyl	<0.10	<0.10	<0.10
2,2',5,5'-Tetrachlorobiphenyl	<0.10	<0.10	<0.10
2,2',4,5,5'-Pentachlorobiphenyl	<0.10	<0.10	<0.10
2,3',4,4',5'-Pentachlorobiphenyl	<0.10	<0.10	<0.10
2,4,5,2',4',5'-Hexachlorobiphenyl	<0.10	<0.10	<0.10
2,2',3,4,4',5'-Hexachlorobiphenyl	<0.10	<0.10	<0.10
2,2',3,4,4',5,5'-Heptachlorobiphenyl	<0.10	<0.10	<0.10
Group 3 Phenols and Cresols			
Phenol	<1.00	<1.00	<1.00
m-cresol	<1.00	<1.00	<1.00
o-cresol	<1.00	<1.00	<1.00
p-cresol	<1.00	<1.00	<1.00
2,3-dimethylphenol	<1.00	<1.00	<1.00
3,4-dimethylphenol	<1.00	<1.00	<1.00
2,6-dimethylphenol	<1.00	<1.00	<1.00
Sum dichlorophenol	<1.00	<1.00	<1.0
Sum trichlorophenol	<1.00	<1.00	<1.0
Sum tetrachlorophenol	<1.00	<1.00	<1.0
Chlorophenol	<1.00	<1.00	<1.0
Sum cresols	<3.0	<3.0	<3.0

AnalyCen

Sampling person	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014456-06	A014457-06
Sample name	43-28	43-29
Sample depth	1,8-2,0	0,9-1,0
Sampling method		SS028150-2
Sample Date	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight		
1,1,1-trichlorethane	<0.005	<0.005
1,2,3-trichloropropane	<0.005	<0.005
Tetrachloromethane	<0.005	<0.005
1,1-dichloropropane	<0.005	<0.005
Trichloroethene	<0.005	<0.005
1,2-dichloropropane	<0.005	<0.005
Dibrommethane	<0.005	<0.005
Bromchloromethane	<0.005	<0.005
Bromodichloromethane	0,063	<0.005
Hexachlorobutadien	<0.005	<0.005
1,3-Dichloropropene	<0.005	<0.005
Group 2 Extractive compounds		
Aliphatics >C5-C8	< 5	< 5
Aliphatics >C8-C10	< 5	< 5
Aliphatics >C10-C12	110	<5
Aliphatics >C12-C16	640	<5
Aliphatics >C16-C35	1700	63
Aromatics >C8-C10	<5	<5
Aromatics >C10-C35	100	<10
Poly Chlorinated Biphenyls PCBs		
2,4,4'-Trichlorobiphenyl	<0.10	<0.10
2,2',5,5'-Tetrachlorobiphenyl	<0.10	<0.10
2,2',4,5,5'-Pentachlorobiphenyl	<0.10	<0.10
2,3',4,4',5'-Pentachlorobiphenyl	<0.10	<0.10
2,4,5,2',4',5'-Hexachlorobiphenyl	<0.10	<0.10
2,2',3,4,4',5'-Hexachlorobiphenyl	<0.10	<0.10
2,2',3,4,4',5,5'-Heptachlorobiphenyl	<0.10	<0.10
Group 3 Phenols and Cresols		
Phenol	<1.00	<1.00
m-cresol	<1.00	<1.00
o-cresol	<1.00	<1.00
p-cresol	<1.00	<1.00
2,3-dimethylphenol	<1.00	<1.00
3,4-dimethylphenol	<1.00	<1.00
2,6-dimethylphenol	<1.00	<1.00
Sum dichlorophenol	<1.0	<1.0
Sum trichlorophenol	<1.0	<1.0
Sum tetrachlorophenol	<1.0	<1.0
Chlorophenol	<1.0	<1.0
Sum cresols	<3.0	<3.0

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014432-06	A014433-06	A014434-06
Sample name	43-01	43-02	43-02
Sample depth	3,5-3,6	0,8-0,9	1,2-1,3
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
Group 5 PAH			
Anthracene	1,5	<0.10	0,14
Phenanthrene	7,5	<0.10	0,14
Pyrene	2,4	0,1	0,38
Acenaphthene	2,5	<0.10	<0.10
Chrysene	0,86	<0.10	0,19
Naphtalene	3,8	<0.10	<0.10
α-methylnaphtalene	16	<0.10	<0.10
β-methylnaphtalene	3,6	<0.10	<0.10
Acenaphtalene	0,57	0,15	0,38
Benzo(a)pyrene	0,28	<0.10	0,24
Benzo(a)anthracene	0,46	<0.10	0,14
Benzo(b,k)fluorantene	0,3	0,11	0,38
Indeno(1,2,3,c,d)pyrene	0,11	<0.10	0,19
Dibenzo(a,h)anthracene	<0.10	<0.10	<0.10
9H-Fluorene	3,6	<0.10	<0.10
Fluorantene	1,1	<0.10	0,24
Benzo(g,h,i)perylene	0,14	0,19	0,33
Dibenzofuran	1,4	<0.10	<0.10
Carbazole	0,16	<0.10	<0.10
Sum carcinogenic PAH	2	0,43	1,2
Sum other PAH	23	0,64	1,7
Group 7 Metals			
Cadmium	<0.20	<0.19	<0.20
Lead	2,6	15	40
Strontium	180	48	89
Arsenic	3,5	<1.9	3,3
Copper	4,3	25	110
Chromium	6,2	3,8	5,6
Nickel	3,4	3,2	6,2
Zinc	25	26	38

Lantmännen Analycen AB
2006-09-07

Caroline Karlsson

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014435-06	A014436-06	A014437-06
Sample name	43-02	43-06	43-06
Sample depth	1,8-2,0	1,6-1,7	2,9-3,0
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
Group 5 PAH			
Anthracene	<0.10	<0.10	0,15
Phenanthrene	<0.10	<0.10	0,91
Pyrene	0,25	<0.10	0,16
Acenaphthene	<0.10	<0.10	0,25
Chrysene	0,12	<0.10	<0.10
Naphtalene	<0.10	<0.10	0,21
α-methylnaphtalene	<0.10	<0.10	2,7
β-methylnaphtalene	<0.10	<0.10	1,3
Acenaphtalene	<0.10	<0.10	0,11
Benzo(a)pyrene	0,11	<0.10	<0.10
Benzo(a)anthracene	<0.10	<0.10	<0.10
Benzo(b,k)fluorantene	0,21	<0.10	<0.10
Indeno(1,2,3,c,d)pyrene	<0.10	<0.10	<0.10
Dibenzo(a,h)anthracene	<0.10	<0.10	<0.10
9H-Fluorene	<0.10	<0.10	0,55
Fluorantene	0,24	<0.10	<0.10
Benzo(g,h,i)perylene	<0.10	<0.10	<0.10
Dibenzofuran	<0.10	<0.10	0,32
Carbazole	<0.10	<0.10	<0.10
Sum carcinogenic PAH	0,65	<0.30	<0.30
Sum other PAH	0,77	<0.50	2,4
Group 7 Metals			
Cadmium	<0.22	<0.20	<0.20
Lead	20	2,2	3,8
Strontium	66	170	230
Arsenic	3,5	2,9	4,3
Copper	30	4,2	5,1
Chromium	11	2,9	9,1
Nickel	9,3	2,1	5,5
Zinc	72	23	30

Lantmännen Analycen AB
2006-09-07

Caroline Karlsson

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014438-06	A014439-06	A014440-06
Sample name	43-07	43-07	43-08
Sample depth	0,6-0,7	3,8-3,9	1,3-1,4
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
Group 5 PAH			
Anthracene	<0.10	0,29	<0.10
Phenanthrene	0,19	1,2	<0.10
Pyrene	0,47	0,46	0,11
Acenaphthene	<0.10	0,39	<0.10
Chrysene	0,27	0,23	<0.10
Naphtalene	<0.10	0,25	<0.10
α-methylnaphtalene	<0.10	1,7	<0.10
β-methylnaphtalene	<0.10	0,1	<0.10
Acenaphtalene	<0.10	0,13	<0.10
Benzo(a)pyrene	<0.10	<0.10	<0.10
Benzo(a)anthracene	0,1	0,12	<0.10
Benzo(b,k)fluorantene	0,19	<0.10	0,15
Indeno(1,2,3,c,d)pyrene	<0.10	<0.10	<0.10
Dibenzo(a,h)anthracene	<0.10	<0.10	<0.10
9H-Fluorene	0,12	0,69	<0.10
Fluorantene	<0.10	0,17	<0.10
Benzo(g,h,i)perylene	<0.10	<0.10	<0.10
Dibenzofuran	<0.10	0,39	<0.10
Carbazole	<0.10	<0.10	<0.10
Sum carcinogenic PAH	0,76	0,55	<0.30
Sum other PAH	1,2	3,6	<0.50
Group 7 Metals			
Cadmium	0,25	0,29	<0.29
Lead	15	4,4	16
Strontium	14	190	340
Arsenic	5,6	3,7	5,2
Copper	12	3,8	7
Chromium	27	17	14
Nickel	11	5,1	14
Zinc	110	180	15

Lantmännen Analycen AB
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Caroline Karlsson

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014441-06	A014442-06	A014443-06
Sample name	43-08	43-09	43-10
Sample depth	3,0-3,2	3,5-3,7	1,4-1,5
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
Group 5 PAH			
Anthracene	0,75	0,14	<0.10
Phenanthrene	5,3	0,58	<0.10
Pyrene	0,61	<0.10	0,17
Acenaphthene	1,3	0,13	<0.10
Chrysene	0,27	<0.10	<0.10
Naphtalene	1	0,25	0,13
α-methylnaphtalene	10	0,36	0,46
β-methylnaphtalene	0,27	<0.10	0,29
Acenaphtalene	0,61	0,11	<0.10
Benzo(a)pyrene	<0.10	<0.10	<0.10
Benzo(a)anthracene	<0.10	<0.10	<0.10
Benzo(b,k)fluorantene	<0.10	<0.10	0,1
Indeno(1,2,3,c,d)pyrene	<0.10	<0.10	<0.10
Dibenzo(a,h)anthracene	<0.10	<0.10	<0.10
9H-Fluorene	3	0,47	<0.10
Fluorantene	0,27	<0.10	0,13
Benzo(g,h,i)perylene	<0.10	<0.10	<0.10
Dibenzofuran	1,9	0,29	<0.10
Carbazole	0,2	<0.10	<0.10
Sum carcinogenic PAH	0,61	<0.30	0,3
Sum other PAH	13	1,8	0,69
Group 7 Metals			
Cadmium	0,29	0,34	<0.23
Lead	2,2	3	8,4
Strontium	140	230	39
Arsenic	2,6	3,1	5,8
Copper	2,8	2,1	9
Chromium	3,2	3,9	12
Nickel	3,2	2,3	7,9
Zinc	150	120	47

Lantmännen Analycen AB
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Caroline Karlsson

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014444-06	A014445-06	A014446-06
Sample name	43-10	43-10	43-11
Sample depth	1,9-2,0	3,5-3,6	0,4-0,5
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
Group 5 PAH			
Anthracene	<0.10	<0.10	3
Phenanthrene	<0.10	<0.10	17
Pyrene	<0.10	<0.10	9,3
Acenaphthene	<0.10	<0.10	2,3
Chrysene	<0.10	0,11	6
Naphtalene	<0.10	<0.10	2,8
α-methylnaphtalene	<0.10	<0.10	5,8
β-methylnaphtalene	<0.10	<0.10	4,7
Acenaphtalene	<0.10	<0.10	2,3
Benzo(a)pyrene	<0.10	<0.10	1,6
Benzo(a)anthracene	<0.10	<0.10	2,6
Benzo(b,k)fluorantene	<0.10	<0.10	2,3
Indeno(1,2,3,c,d)pyrene	<0.10	<0.10	0,7
Dibenzo(a,h)anthracene	<0.10	<0.10	0,35
9H-Fluorene	<0.10	0,11	6,1
Fluorantene	<0.10	<0.10	3,2
Benzo(g,h,i)perylene	<0.10	<0.10	1,2
Dibenzofuran	<0.10	<0.10	0,88
Carbazole	<0.10	<0.10	0,53
Sum carcinogenic PAH	<0.30	<0.30	13
Sum other PAH	<0.50	<0.50	47
Group 7 Metals			
Cadmium	<0.21	<0.20	0,25
Lead	3,2	3,1	120
Strontium	130	220	160
Arsenic	2,7	3,1	6
Copper	5,5	4,3	170
Chromium	5	9,8	5,1
Nickel	3,7	4,6	9,3
Zinc	23	29	59

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Caroline Karlsson

AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014447-06	A014448-06	A014449-06
Sample name	43-11	43-12	43-12
Sample depth	0,9-1,0	1,0-1,1	2,4-2,5
Sampling method	SS028150-2	SS028150-2	
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
Group 5 PAH			
Anthracene	0,7	<0.10	7,5
Phenanthrene	1,2	<0.10	32
Pyrene	10	<0.10	19
Acenaphthene	0,18	<0.10	5,4
Chrysene	3,7	<0.10	11
Naphtalene	0,35	0,018	4,5
α-methylnaphtalene	0,53	<0.10	14
β-methylnaphtalene	0,53	<0.10	4
Acenaphtalene	1,8	<0.10	3,5
Benzo(a)pyrene	2,6	<0.10	3,3
Benzo(a)anthracene	1,1	<0.10	6,1
Benzo(b,k)fluorantene	2,8	<0.10	3,5
Indeno(1,2,3,c,d)pyrene	1,1	<0.10	0,94
Dibenzo(a,h)anthracene	0,7	<0.10	0,94
9H-Fluorene	0,35	<0.10	9,4
Fluorantene	0,7	<0.10	6,8
Benzo(g,h,i)perylene	2,6	<0.10	1,9
Dibenzofuran	0,18	<0.10	2,1
Carbazole	0,18	<0.10	0,94
Sum carcinogenic PAH	12	<0.30	26
Sum other PAH	18	<0.50	90
Group 7 Metals			
Cadmium	0,4	0,29	<0.25
Lead	220	12	190
Strontium	71	250	260
Arsenic	7,3	5,4	12
Copper	1100	23	350
Chromium	11	13	23
Nickel	19	13	52
Zinc	190	43	160

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AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014450-06	A014451-06	A014452-06
Sample name	43-17	43-17	43-18
Sample depth	1,3-1,5	2,2-2,3	2,5-2,65
Sampling method		SS028150-2	
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
Group 5 PAH			
Anthracene	<0.10	<0.10	2
Phenanthrene	0,3	<0.10	2,5
Pyrene	0,36	<0.10	0,42
Acenaphthene	<0.10	<0.10	0,5
Chrysene	0,22	<0.10	0,14
Naphtalene	<0.10	0,33	0,75
α-methylnaphtalene	<0.10	<0.10	5,1
β-methylnaphtalene	<0.10	<0.10	0,19
Acenaphtalene	<0.10	<0.10	0,71
Benzo(a)pyrene	<0.10	<0.10	<0.10
Benzo(a)anthracene	<0.10	<0.10	<0.10
Benzo(b,k)fluorantene	0,2	<0.10	<0.10
Indeno(1,2,3,c,d)pyrene	0,14	<0.10	<0.10
Dibenzo(a,h)anthracene	<0.10	<0.10	<0.10
9H-Fluorene	<0.10	<0.10	1,3
Fluorantene	0,14	<0.10	0,19
Benzo(g,h,i)perylene	0,21	<0.10	<0.10
Dibenzofuran	<0.10	<0.10	0,81
Carbazole	<0.10	<0.10	0,12
Sum carcinogenic PAH	0,79	<0.30	<0.30
Sum other PAH	1,2	<0.50	8,1
Group 7 Metals			
Cadmium	0,45	<0.21	<0.21
Lead	210	3,9	6,8
Strontium	240	190	120
Arsenic	13	2,3	7,1
Copper	120	5,4	8
Chromium	13	3	7
Nickel	15	1,7	5,6
Zinc	69	41	76

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AnalyCen

Sampling person	MS	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014453-06	A014454-06	A014455-06
Sample name	43-22	43-23	43-27
Sample depth	3,5-3,6	1,9-2,0	1,9-2,0
Sampling method			
Sample Date	2006-07-26	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight			
Group 5 PAH			
Anthracene	0,28	<0.10	<0.10
Phenanthrene	2	<0.10	0,19
Pyrene	0,65	<0.10	0,37
Acenaphthene	0,65	<0.10	<0.10
Chrysene	0,27	<0.10	0,21
Naphtalene	0,31	<0.10	<0.10
α-methylnaphtalene	0,17	<0.10	<0.10
β-methylnaphtalene	<0.10	<0.10	<0.10
Acenaphtalene	0,26	<0.10	<0.10
Benzo(a)pyrene	0,11	<0.10	0,19
Benzo(a)anthracene	0,21	<0.10	0,15
Benzo(b,k)fluorantene	0,13	<0.10	0,39
Indeno(1,2,3,c,d)pyrene	<0.10	<0.10	0,21
Dibenzo(a,h)anthracene	<0.10	<0.10	<0.10
9H-Fluorene	1,2	<0.10	<0.10
Fluorantene	0,24	<0.10	0,41
Benzo(g,h,i)perylene	<0.10	<0.10	0,23
Dibenzofuran	0,12	<0.10	<0.10
Carbazole	<0.10	<0.10	<0.10
Sum carcinogenic PAH	0,78	<0.30	1,2
Sum other PAH	5,5	<0.50	1,3
Group 7 Metals			
Cadmium	0,27	<0.20	0,23
Lead	6,4	6,5	71
Strontium	180	160	140
Arsenic	6,8	6,4	9
Copper	12	11	19
Chromium	81	8,7	10
Nickel	7,3	4,7	8,5
Zinc	47	38	69

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AnalyCen

Sampling person	MS	MS
Sample Point	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample	A014456-06	A014457-06
Sample name	43-28	43-29
Sample depth	1,8-2,0	0,9-1,0
Sampling method		SS028150-2
Sample Date	2006-07-26	2006-07-26
Units	mg/kg DW	mg/kg DW
Concentrations are reported per Dry Weight		
Group 5 PAH		
Anthracene	1,1	0,65
Phenanthrene	5,9	2
Pyrene	3,8	3
Acenaphthene	2	0,61
Chrysene	0,9	1,7
Naphtalene	5,2	2,6
α-methylnaphtalene	10	0,65
β-methylnaphtalene	5,2	1,5
Acenaphtalene	0,23	0,2
Benzo(a)pyrene	0,23	1,7
Benzo(a)anthracene	0,45	1,5
Benzo(b,k)fluorantene	0,28	3
Indeno(1,2,3,c,d)pyrene	0,11	1,4
Dibenzo(a,h)anthracene	<0.10	0,47
9H-Fluorene	2,1	0,45
Fluorantene	1	3,2
Benzo(g,h,i)perylene	0,23	1,5
Dibenzofuran	0,51	0,27
Carbazole	<0.10	0,38
Sum carcinogenic PAH	2	10
Sum other PAH	21	14
Group 7 Metals		
Cadmium	<0.21	0,26
Lead	7,2	88
Strontium	140	86
Arsenic	4,2	5,4
Copper	7,4	53
Chromium	10	9,8
Nickel	5,4	8,1
Zinc	38	87

Lantmännen Analycen AB
2006-09-07

Caroline Karlsson

AnalyCen

Sampling person		Mati Salu	Mati Salu	Mati Salu	Mati Salu
Sample Point		JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample		V020058-06	V020059-06	V020060-06	V020061-06
Sample name		43-BO101	43-16	43-31	43-3M
Sample depth					
Sampling method		A209:34	A209:34	A209:34	A209:34
Sample Date		2006-07-28	2006-07-28	2006-07-28	2006-07-28
Concentrations are reported per Dry Weight					
Group 1 Volatile Organic Compounds					
	Units				
Benzene	µg/l	<0.2	0,45	<0.2	<0.2
Toluene	µg/l	<1	7	<1	<1
Xylene	mg/l	<0.001	0,029	<0.001	<0.001
Ethylbenzene	µg/l	<1	7	<1	<1
Sum TEX	mg/l	<0.001	0,043	<0.001	<0.001
Styrene	µg/l	<1	<1	<1	<1
MTBE	µg/l	<0.01	<0.01	<0.01	<0.01
Chloroorganic aromatics					
Chlorobenzene	µg/l	<1	5	<1	<1
2-Chlorotoluene	µg/l	<1	<1	<1	<1
4-Chlorotoluene	µg/l	<1	<1	<1	<1
1,3-dichlorobenzene	µg/l	<1	<1	<1	<1
1,4-dichlorobenzene	µg/l	<1	<1	<1	<1
1,2-dichlorobenzene	µg/l	<1	<1	<1	<1
1,2,4-trichlorobenzene	µg/l	<1	<1	<1	<1
1,2,3-trichlorobenzene	µg/l	<1	<1	<1	<1
1,2-dichloroethane	µg/l	<1	<1	<1	<1
Hexachloroethane	µg/l	<0.10	<0.10	<0.10	<0.10
Chloroform	µg/l	<1	<1	<1	<1
Auxiliary volatile organic compunds					
Isopropylbenzene	µg/l	<1	530	<1	<1
Propylbenzene	µg/l	<1	780	<1	<1
1,3,5-trimetylbenzene	µg/l	<1	18	<1	<1
Tert-butylbenzene	µg/l	<1	19	<1	<1
1,2,4-trimetylbenzene	µg/l	<1	410	<1	<1
Sec-butylbenzene	µg/l	<1	970	<1	<1
p-isopropylbenzene	µg/l	<1	2	<1	<1
Butylbenzene	µg/l	<1	300	<1	<1
Fluortrichloromethane	µg/l	<1	<1	<1	<1
1,1,2-trichloroethane	µg/l	<1	<1	<1	<1
1,1-dichloroethene	µg/l	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	µg/l	<1	<1	<1	<1
Tetrachloroethene	µg/l	<1	<1	<1	<1
Dichloromethane	µg/l	<1	<1	<1	<1
1,3-dichloropropane	µg/l	<1	<1	<1	<1
Trans-1,2-dichloroethene	µg/l	<1	<1	<1	<1
Dibromchloromethane	µg/l	<1	<1	<1	<1
1,1-dichloroethane	µg/l	<1	<1	<1	<1
1,2-dibromoethane	µg/l	<1	<1	<1	<1
2,2-dichloropropane	µg/l	<1	<1	<1	<1
Cis-1,2-dichloroethene	µg/l	<1	<1	<1	<1
Bromoform	µg/l	<1	<1	<1	<1
Bromobenzene	µg/l	<1	<1	<1	<1

AnalyCen

Sampling person		Mati Salu
Sample Point		JRK 43 Tapa Veduridepoo
Sample		V020062-06
Sample name		43-Drill well of Koidu 23
Sample depth		
Sampling method		A 209:9
Sample Date		2006-07-28
Concentrations are reported per Dry Weight		
Group 1 Volatile Organic Compounds		
	Units	
Benzene	µg/l	<0.2
Toluene	µg/l	<1
Xylene	mg/l	<0.001
Ethylbenzene	µg/l	<1
Sum TEX	mg/l	<0.001
Styrene	µg/l	<1
MTBE	µg/l	<0.01
Chloroorganic aromatics		
Chlorobenzene	µg/l	<1
2-Chlorotoluene	µg/l	<1
4-Chlorotoluene	µg/l	<1
1,3-dichlorobenzene	µg/l	<1
1,4-dichlorobenzene	µg/l	<1
1,2-dichlorobenzene	µg/l	<1
1,2,4-trichlorobenzene	µg/l	<1
1,2,3-trichlorobenzene	µg/l	<1
1,2-dichloroethane	µg/l	<1
Hexachloroethane	µg/l	<0.10
Chloroform	µg/l	<1
Auxiliary volatile organic compunds		
Isopropylbenzene	µg/l	<1
Propylbenzene	µg/l	<1
1,3,5-trimetylbenzene	µg/l	<1
Tert-butylbenzene	µg/l	<1
1,2,4-trimetylbenzene	µg/l	<1
Sec-butylbenzene	µg/l	<1
p-isopropylbenzene	µg/l	<1
Butylbenzene	µg/l	<1
Fluortrichloromethane	µg/l	<1
1,1,2-trichloroethane	µg/l	<1
1,1-dichloroethene	µg/l	<1
1,1,1,2-Tetrachloroethane	µg/l	<1
Tetrachloroethene	µg/l	<1
Dichloromethane	µg/l	<1
1,3-dichloropropane	µg/l	<1
Trans-1,2-dichloroethene	µg/l	<1
Dibromchloromethane	µg/l	<1
1,1-dichloroethane	µg/l	<1
1,2-dibromoethane	µg/l	<1
2,2-dichloropropane	µg/l	<1
Cis-1,2-dichloroethene	µg/l	<1
Bromoform	µg/l	<1
Bromobenzene	µg/l	<1

AnalyCen

Sampling person		Mati Salu	Mati Salu	Mati Salu	Mati Salu
Sample Point		JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample		V020058-06	V020059-06	V020060-06	V020061-06
Sample name		43-BO101	43-16	43-31	43-3M
Sample depth					
Sampling method		A209:34	A209:34	A209:34	A209:34
Sample Date		2006-07-28	2006-07-28	2006-07-28	2006-07-28
Concentrations are reported per Dry Weight					
	Units				
1,1,1-trichlorethane	µg/l	<1	<1	<1	<1
1,2,3-trichloropropane	µg/l	<1	<1	<1	<1
Tetrachloromethane	µg/l	<1	<1	<1	<1
1,1-dichloropropane	µg/l	<1	<1	<1	<1
Trichloroethene	µg/l	<1	<1	<1	<1
1,2-dichloropropane	µg/l	<1	<1	<1	<1
Dibrommethane	µg/l	<1	<1	<1	<1
Bromchloromethane	µg/l	<1	<1	<1	<1
Bromodichloromethane	µg/l	<1	<1	<1	<1
Hexachlorobutadien	µg/l	<1	<1	<1	<1
1,3-Dichloropropene	µg/l	<1	<1	<1	<1
Group 2 Extractive compounds					
Aliphatics >C5-C8	mg/l	<0.02	0,045	<0.02	<0.02
Aliphatics >C8-C10	mg/l	<0.02	1,2	<0.02	<0.02
Aliphatics >C10-C12	mg/l	<0.02	6,2	<0.02	<0.02
Aliphatics >C12-C16	mg/l	0,2	22	<0.02	<0.02
Aliphatics >C16-C35	mg/l	0,9	29	<0.05	<0.05
Aromatics >C8-C10	mg/l	<0.1	1,3	<0.1	<0.1
Aromatics >C10-C35	mg/l	<0.1	<0.1	<0.1	<0.1
Poly Chlorinated Biphenyls PCBs					
2,4,4'-Trichlorobiphenyl	µg/l	<0.10	<0.10	<0.10	<0.10
2,2',5,5'-Tetrachlorobiphenyl	µg/l	<0.10	<0.10	<0.10	<0.10
2,2',4,5,5'-Pentachlorobiphenyl	µg/l	<0.10	<0.10	<0.10	<0.10
2,3',4,4',5'-Pentachlorobiphenyl	µg/l	<0.10	<0.10	<0.10	<0.10
2,4,5,2',4',5'-Hexachlorobiphenyl	µg/l	<0.10	<0.10	<0.10	<0.10
2,2',3,4,4',5'-Hexachlorobiphenyl	µg/l	<0.10	<0.10	<0.10	<0.10
2,2',3,4,4',5,5'-Heptachlorobiphenyl	µg/l	<0.10	<0.10	<0.10	<0.10
Group 3 Phenols and Cresols					
Phenol	µg/l	<1.00	<1.00	<1.00	<1.00
m-cresol	µg/l	<1.00	<1.00	<1.00	<1.00
o-cresol	µg/l	<1.00	<1.00	<1.00	<1.00
p-cresol	µg/l	<1.00	<1.00	<1.00	<1.00
2,3-dimethylphenol	µg/l	<1.00	<1.00	<1.00	<1.00
3,4-dimethylphenol	µg/l	<1.00	<1.00	<1.00	<1.00
2,6-dimethylphenol	µg/l	<1.00	<1.00	<1.00	<1.00
Sum dichlorophenol	µg/l	<1.0	<1.0	<1.0	<1.0
Sum trichlorophenol	µg/l	<1.0	<1.0	<1.0	<1.0
Sum tetrachlorophenol	µg/l	<1.0	<1.0	<1.0	<1.0
Chlorophenol	µg/l	<1.0	<1.0	<1.0	<1.0
Sum cresols	µg/l	<3.0	<3.0	<3.0	<3.0

AnalyCen

Sampling person		Mati Salu
Sample Point		JRK 43 Tapa Veduridepoo
Sample		V020062-06
Sample name		43-Drill well of Koidu 23
Sample depth		
Sampling method		A 209:9
Sample Date		2006-07-28
Concentrations are reported per Dry Weight		
	Units	
1,1,1-trichlorethane	µg/l	<1
1,2,3-trichloropropane	µg/l	<1
Tetrachloromethane	µg/l	<1
1,1-dichloropropane	µg/l	<1
Trichloroethene	µg/l	<1
1,2-dichloropropane	µg/l	<1
Dibrommethane	µg/l	<1
Bromchloromethane	µg/l	<1
Bromodichloromethane	µg/l	<1
Hexachlorobutadien	µg/l	<1
1,3-Dichloropropene	µg/l	<1
Group 2 Extractive compounds		
Aliphatics >C5-C8	mg/l	<0.02
Aliphatics >C8-C10	mg/l	<0.02
Aliphatics >C10-C12	mg/l	<0.02
Aliphatics >C12-C16	mg/l	<0.02
Aliphatics >C16-C35	mg/l	<0.05
Aromatics >C8-C10	mg/l	<0.1
Aromatics >C10-C35	mg/l	<0.1
Poly Chlorinated Biphenyls PCBs		
2,4,4'-Trichlorobiphenyl	µg/l	<0.10
2,2',5,5'-Tetrachlorobiphenyl	µg/l	<0.10
2,2',4,5,5'-Pentachlorobiphenyl	µg/l	<0.10
2,3',4,4',5'-Pentachlorobiphenyl	µg/l	<0.10
2,4,5,2',4',5'-Hexachlorobiphenyl	µg/l	<0.10
2,2',3,4,4',5'-Hexachlorobiphenyl	µg/l	<0.10
2,2',3,4,4',5,5'-Heptachlorobiphenyl	µg/l	<0.10
Group 3 Phenols and Cresols		
Phenol	µg/l	<1.00
m-cresol	µg/l	<1.00
o-cresol	µg/l	<1.00
p-cresol	µg/l	<1.00
2,3-dimethylphenol	µg/l	<1.00
3,4-dimethylphenol	µg/l	<1.00
2,6-dimethylphenol	µg/l	<1.00
Sum dichlorophenol	µg/l	<1.0
Sum trichlorophenol	µg/l	<1.0
Sum tetrachlorophenol	µg/l	<1.0
Chlorophenol	µg/l	<1.0
Sum cresols	µg/l	<3.0

AnalyCen

Sampling person		Mati Salu	Mati Salu	Mati Salu	Mati Salu
Sample Point		JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo	JRK 43 Tapa Veduridepoo
Sample		V020058-06	V020059-06	V020060-06	V020061-06
Sample name		43-BO101	43-16	43-31	43-3M
Sample depth					
Sampling method		A209:34	A209:34	A209:34	A209:34
Sample Date		2006-07-28	2006-07-28	2006-07-28	2006-07-28
Concentrations are reported per Dry Weight					
	Units				
Group 5 PAH					
	Units				
Anthracene	µg/l	<0.10	16	<0.10	<0.10
Phenanthrene	µg/l	<0.10	108	<0.10	0,14
Pyrene	µg/l	<0.10	20	<0.10	<0.10
Acenaphthene	µg/l	<0.10	25	<0.10	<0.10
Chrysene	µg/l	<0.10	9,6	<0.10	<0.10
Naphtalene	µg/l	<0.10	67	<0.10	<0.10
α-methylnaphtalene	µg/l	<0.10	284	<0.10	0,1
β-methylnaphtalene	µg/l	<0.10	11	<0.10	<0.10
Acenaphtalene	µg/l	<0.10	4,4	<0.10	<0.10
Benzo(a)pyrene	µg/l	<0.10	2,8	<0.10	<0.10
Benzo(a)anthracene	µg/l	<0.10	5,8	<0.10	<0.10
Benzo(b,k)fluorantene	µg/l	<0.10	3,4	<0.10	<0.10
Indeno(1,2,3,c,d)pyrene	µg/l	<0.10	0,8	<0.10	<0.10
Dibenzo(a,h)anthracene	µg/l	<0.10	0,4	<0.10	<0.10
9H-Fluorene	µg/l	<0.10	57	<0.10	<0.10
Fluorantene	µg/l	<0.10	11	<0.10	<0.10
Benzo(g,h,i)perylene	µg/l	<0.10	1,4	<0.10	<0.10
Dibenzofuran	µg/l	<0.10	27	<0.10	<0.10
Carbazole	µg/l	<0.10	1,8	<0.10	<0.10
Sum carcinogenic PAH	µg/l	<0.30	20	<0.30	<0.30
Sum other PAH	µg/l	<0.50	310	<0.50	<0.50
Group 7 Metals					
Cadmium	mg/l	0,00036	<0.00002	0,000055	<0.00002
Lead	mg/l	0,029	<0.00005	<0.00005	<0.00005
Strontium	mg/l	0,63	0,4	0,24	0,29
Arsenic	mg/l	0,017	0,0014	0,0011	0,00023
Copper	mg/l	0,023	0,00053	0,003	0,00041
Chromium	mg/l	0,012	<0.0002	0,00023	<0.0002
Nickel	mg/l	<0.0002	0,00028	0,0024	<0.0002
Zinc	mg/l	0,12	0,013	0,047	0,0033

Lantmännen Analycen AB
2006-10-31

Caroline Karlsson

AnalyCen

Sampling person		Mati Salu
Sample Point		JRK 43 Tapa Veduridepoo
Sample		V020062-06
Sample name		43-Drill well of Koidu 23
Sample depth		
Sampling method		A 209:9
Sample Date		2006-07-28
Concentrations are reported per Dry Weight		
	Units	
Group 5 PAH		
	Units	
Anthracene	µg/l	<0.10
Phenanthrene	µg/l	<0.10
Pyrene	µg/l	<0.10
Acenaphthene	µg/l	<0.10
Chrysene	µg/l	<0.10
Naphtalene	µg/l	<0.10
α-methylnaphtalene	µg/l	<0.10
β-methylnaphtalene	µg/l	0,1
Acenaphtalene	µg/l	<0.10
Benzo(a)pyrene	µg/l	<0.10
Benzo(a)anthracene	µg/l	<0.10
Benzo(b,k)fluorantene	µg/l	<0.10
Indeno(1,2,3,c,d)pyrene	µg/l	<0.10
Dibenzo(a,h)anthracene	µg/l	<0.10
9H-Fluorene	µg/l	<0.10
Fluorantene	µg/l	<0.10
Benzo(g,h,i)perylene	µg/l	<0.10
Dibenzofuran	µg/l	<0.10
Carbazole	µg/l	<0.10
Sum carcinogenic PAH	µg/l	<0.30
Sum other PAH	µg/l	<0.50
Group 7 Metals		
Cadmium	mg/l	0,000022
Lead	mg/l	<0.00005
Strontium	mg/l	0,12
Arsenic	mg/l	0,00046
Copper	mg/l	0,00082
Chromium	mg/l	<0.0002
Nickel	mg/l	<0.0002
Zinc	mg/l	0,0097

Lantmännen Analycen AB
2006-10-31

Caroline Karlsson

Maximum Limits for Dangerous Substances in Soil and Groundwater

Regulation of the Minister of the Environment No. 12 of 2 April 2004
(RTL 2004, 40, 662),
entered into force 19 April 2004.

This Regulation is established pursuant to § 12 of the "Chemicals Act" (RT I 1998, 47, 697; 1999, 45, 512; 2002, 53, 336; 61, 375; 63, 387; 2003, 23, 144; 51, 352; 75, 499; 88, 591).

I. General Provisions

§ 1. Maximum limits for dangerous substances

(1) The maximum limits for dangerous substances serve as the basis for assessing the condition of soil and groundwater and for planning measures necessary to improve the condition of soil and groundwater.

(2) For the purposes of this Regulation, the maximum limits for dangerous substances are expressed as reference values and target values for these substances. The reference values for dangerous substances in soil are expressed in micrograms per dry mass of soil.

§ 2. Reference value

(1) A reference value is the concentration of a dangerous substance in soil or groundwater above which the soil or groundwater is polluted and dangerous to human health and the environment.

(2) The reference value for a group of dangerous substances is the total of the reference values for the individual substances in the group, unless determined otherwise.

(3) The concentration of dangerous substances for which reference values are not established by this Regulation shall be assessed on the basis of expert assessments of the condition of soil and groundwater. An expert assessment shall be conducted if previous use of the area under assessment has created a risk of contamination from such dangerous substances.

(4) Depending on the purpose of land use, this Regulation shall implement different reference values for industrial and residential zones. The purpose of land use shall be determined based on Government of the Republic Regulation No. 36 of 24 January 1995 "Approval of the Intended Purposes of Cadastral Units and of the Bases of their Designation" (RT I 1995, 13, 150; 1996, 32, 636).

(5) For the purposes of this Regulation, the following are industrial zones:

1) land used for production facilities, except cold storages, grain storages, vegetable storages and warehouse complexes;
2) land used for repair shops for agricultural machinery and forging shops that belong to agricultural production facilities;
3) land used for mining;
4) land used for landfills;
5) land used for transportation;
6) national defence land, except land under and needed to service buildings used for accommodation and rendering services to people;
7) polluted technogenic soil and other wasteland resulting from human activity, which is not designated for a specific purpose;
8) commercial land used for petrol stations;
9) land used for mass communication networks and utility works;

(6) The categories of land use not listed in subsection (5) belong to residential zones.

(7) The suitability of groundwater as a source of potable water cannot be determined on the basis of the reference values set out in this Regulation.

§ 3. Target value

A target value is a concentration of a dangerous substance in soil or groundwater at or below which the condition of the soil or groundwater is good, that is, safe for humans and the environment.

§ 4. Satisfactory condition of soil or groundwater

The condition of soil or groundwater is satisfactory if the concentration of dangerous substances is between the reference values and target values for soil or groundwater.

II. Maximum limits of dangerous substances in soil and groundwater

No	Dangerous substance	CAS No.	Maximum limits				
			In soil, (mg/kg)			In groundwater, µg/l	
			Target value	Reference value in residential zone	Reference value in industrial zone	Target value	Reference value
I. Heavy metals							
1.	Mercury (Hg)	–	0,5	2	10	0,4	2
2.	Cadmium (Cd)	–	1	5	20	1	10
3.	Lead (Pb)	–	50	300	600	10	200
4.	Zinc (Zn)	–	200	500	1500	50	5000
5.	Nickel (Ni)	–	50	150	500	10	200
6.	Chromium (Cr)	–	100	300	800	10	200
7.	Copper (Cu)	–	100	150	500	15	1000
8.	Cobalt (Co)	–	20	50	300	5	300
9.	Molybdenum (Mo)	–	10	20	200	5	70
10.	Tin (Sn)	–	10	50	300	3	150
11.	Barium (Ba)	–	500	750	2000	50	7000
12.	Selenium (Se)	–	1	5	20	5	50
13.	Vanadium (V)	–	50	300	1000	–	–
14.	Antimony (Sb)	–	10	20	100	–	–
15.	Thallium (Tl)	–	1	5	20	–	–
16.	Beryllium (Be)	–	2	10	50	–	–
17.	Uranium (U)	–	20	50	500	–	–
II. Other inorganic compounds							
18.	Fluoride (as F-ion, total)	–	450	1200	2000	1500	4000
19.	Arsenic (As)	–	20	30	50	5	100
20.	Boron (B)	–	30	100	500	500	2000
21.	Cyanides (as CN-ion, free)	–	1	10	100	5	100
22.	Cyanides (CN-total)	–	5	50	500	100	200
III. Aromatic hydrocarbons							
23.	Benzene	71-43-2	0,05	0,5	5	0,2	5
24.	Ethylbenzene	100-41-4	0,1	5	50	0,5	50
25.	Toluene	108-88-3	0,1	3	100	0,5	50
26.	Styrene	100-42-5	1	5	50	0,5	50
27.	Xylenols	–	0,1	5	30	0,5	30
28.	Aromatic hydrocarbons (total)	–	1	10	100	1	100
29.	Monophenols (total concentration of cresols and dimethyl phenols)	–	1	10	100	1	100
30.	Biphenols (total concentration of pyrocatechol, resorcinol and hydroquinone)	–	1	10	100	1	100

No	Dangerous substance	CAS No.	Maximum limits				
			In soil, (mg/kg)			In groundwater, µg/l	
			Target value	Reference value in residential zone	Reference value in industrial zone	Target value	Reference value
31.	Phenols (each following compound)		0,1	1	10	0,5	50
	o-cresol	95-48-7					
	m-cresol	108-39-4					
	p-cresol	106-44-5					
	2.3-dimethyl phenol	526-75-0					
	2.4-dimethyl phenol	105-67-9					
	2.5-dimethyl phenol	95-87-4					
	2.6-dimethyl phenol	576-26-1					
	3.4-dimethyl phenol	95-65-8					
	3.5-dimethyl phenol	108-68-9					
	pyrocatechol	120-80-9					
	resorcinol	108-46-3					
	beta naphthol	135-19-3					
	hydroquinome	123-31-9					
32.	Chlorophenols (each compound)	–	0,05	0,5	5	0,3	30
33.	MTBE	1634-04-4	1	5	100	0,5	10
34.	Oil products total	–	100	500	5000	20	600
IV. Polycyclic aromatic hydrocarbons (PAH)							
35.	Anthracene	120-12-7	1	5	50	0,1	5
36.	Chrysene	218-01-9	0,5	2	20	0,01	1
37.	Phenanthrene	85-01-8	1	5	50	0,05	2
38.	Naphthalene	91-20-3	1	5	100	1	50
39.	Pyrene	129-00-0	1	5	50	1	5
40.	α-methylnaphthalene	90-12-0	1	4	40	1	30
	β-methylnaphthalene	91-57-6					
41.	Dimethylnaphthalene (each following compound)		1	4	40	1	30
	1.2-dimethylnaphthalene	573-98-8					
	1.2-dimethylnaphthalene	575-41-7					
	1.4-dimethylnaphthalene	571-58-4					
	1.5-dimethylnaphthalene	571-61-9					
	1.6-dimethylnaphthalene	575-43-9					
	1.7-dimethylnaphthalene	575-37-1					
	1.8-dimethylnaphthalene	569-41-5					
	2.3-dimethylnaphthalene	581-40-8					
	2.6-dimethylnaphthalene	581-42-0					
	2.7-dimethylnaphthalene	582-16-1					

No	Dangerous substance	CAS No.	Maximum limits				
			In soil, (mg/kg)			In groundwater, µg/l	
			Target value	Reference value in residential zone	Reference value in industrial zone	Target value	Reference value
42.	Acenaphtene	83-32-9	1	4	40	1	30
43.	Benzo(a)pyrene	50-32-8	0,1	1	10	0,01	1
44.	PAH (total)	–	5	20	200	0,2	10
V. Chlorinated aliphatic hydrocarbons							
45.	1.2-dichloroethane	107-06-2	0,1	2	50	0,1	5
46.	Chloroform	67-66-3	0,1	1	25	0,1	2
47.	Hexachloroethane	67-72-1	1	10	100	1	10
48.	Chlorinated aliphatic hydrocarbons, each compound, except the compounds in this list		0,1	5	50	1	70
VI. Chlorinated aromatic hydrocarbons							
49.	PCB	1336-36-3	0,1	5	10	0,5	1
50.	Chlororganic aromatic compounds (each compound, except the compounds in this list)	–	0,1	0,5	30	0,1	5
51.	Chlororganic aromatic compounds (total)	–	0,2	5	100	0,5	5
VII. Amines							
52.	Aliphatic amines (total)	–	50	300	700	1	20
VIII. Pesticides							
53.	2.4-D	94-75-7	0,05	0,5	2	0,05	1
54.	Aldrin	309-00-2	0,1	1	5	0,01	1
55.	Dieldrin	60-57-1	0,05	0,5	2	0,01	1
56.	Endrin	72-20-8	0,1	1	5	0,005	0,5
57.	Isodrin	465-73-6	0,1	1	5	0,005	0,5
58.	DDT	50-29-3	0,1	0,5	5	0,1	1
59.	Hexachlorocyclohexane (each isomer)	–	0,05	0,2	2	0,01	1
60.	Trichlorobenzene	–	2	5	50	0,01	5
61.	Hexachlorobenzene	118-74-1	2	5	25	0,5	5
62.	Pesticides (total)	–	0,5	5	20	0,5	5

Photo 1 Former locomotive fuelling area

Photo 2 Old channel on former locomotive fuelling area

Photo 3 Remained cellar storage (used for diesel oil, black oil, used oils and hydraulic oils)

Photo 4 Two black oil tanks in cellar

Photo 5 Locomotive wash area and old collecting channels.