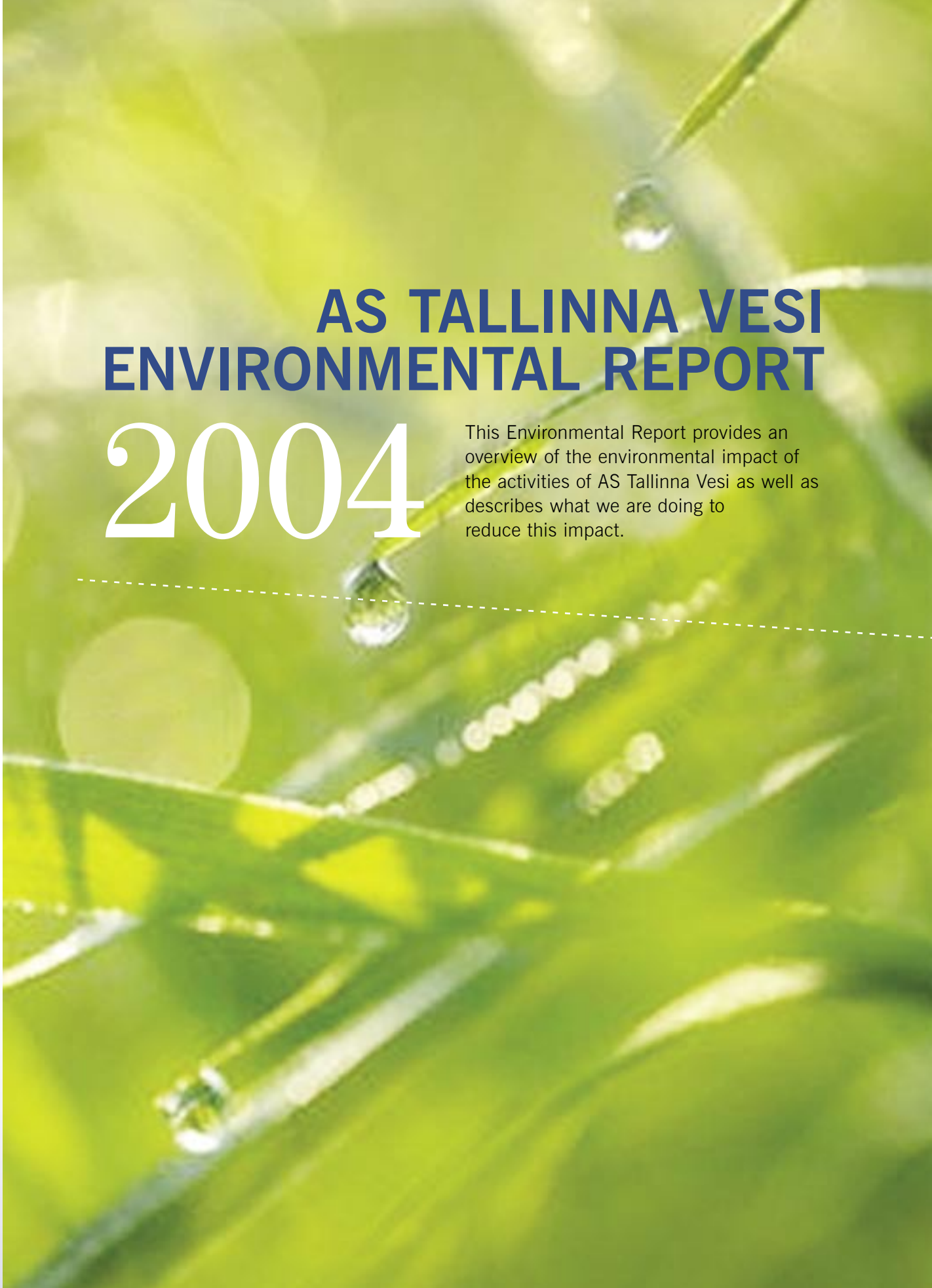

AS TALLINNA VESI ENVIRONMENTAL REPORT

2004

This Environmental Report provides an overview of the environmental impact of the activities of AS Tallinna Vesi as well as describes what we are doing to reduce this impact.

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Address by the Chairman of Board

During 2004 the Company has moved forward on a wide range of fronts. The independent customer satisfaction survey carried out in November 2004 showed that the overall number of customers who are satisfied with our service has risen to 77%. The proportion of customers who are satisfied with the quality of our drinking water has risen by 22%, clearly demonstrating the positive impact of the operational improvements we have made in the water treatment process and operation of the network.

Tallinna Vesi has complied with or exceeded all the 97 Levels of Service set for us by the City of Tallinn. There are a number of areas in which Tallinna Vesi has performed very well. The Company was required to reduce the leakage level in the water network to 26% by the end of September 2005. This target has already been exceeded and leakage as at the end of 2004 stands at 21,4%. We are well on target to achieve the 2007 EC Directive for Drinking Water Quality. Our level of compliance in 2004 was 92%, an improvement over the last two years of over 100%. On the wastewater side the level of performance at Paljassaare WWTP was within the legal compliance levels required despite the major reconstruction work being carried out to upgrade the nitrogen treatment process. All the sludge generated at Paljassaare WWTP was disposed of by means of composting with zero disposal to the waste disposal tip.

During 2004 AS Tallinna Vesi finalised its detailed business continuity and emergency management plans. The benefit of this advanced planning and preparation was fully brought home when we had to deal with the effects of the extreme weather conditions in July and August 2004 and again in January 2005. In each situation the Company Crisis Management team, working in partnership with the City of Tallinn effectively managed the situation.

A major objective of the Company is the expansion of our service area and maximising the use of the excess capacity we have at the Ülemiste WTP and Paljassaare WWTP. Thus, the company has actively pursued a number of opportunities and also physically enhanced the water and wastewater network in order to be able to expand our service area within and around Tallinn.

2005 will present us with probably a greater number of challenges and opportunities than ever before. The new nitrogen process at Paljassaare WWTP will be commissioned and tested throughout 2005 and as a result there will be a major reduction in the nitrogen discharged to the Baltic Sea. There will be significant improvements in Customer Service through the provision of a wider range of services as a result of the implementation of the new Customer Information and Billing System, and also through the opening of our new service centre at Ädala 10.

In 2005 the company will be delivering the largest capital programme since privatisation totalling some 220 million kroons with a major focus on raising water quality levels still higher towards our 2007 target.

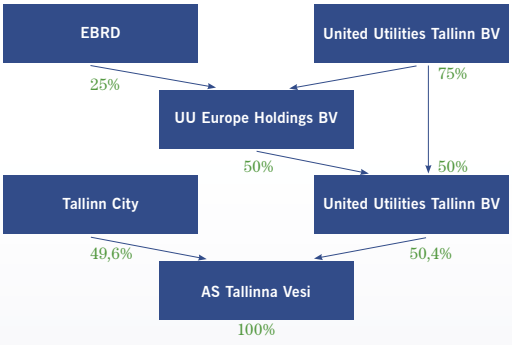
Robert John Gallienne
Chairman of the Management Board

The Company Overview

AS TALLINNA VESI – TALLINN WATER LTD

- Provides water and sewage services for over 400 000 people in Tallinn and its neighbouring areas.
- 2004 revenue: EEK 548.5m (EUR 35m)
- 2004 net profit: EEK 173m (EUR 11m)
- 351 employees
- Operates Ülemiste Water Treatment Plant and catchment area
- Operates Paljassaare Wastewater Treatment Plant
- Operates water, sewerage and storm water network
- 97 levels of service requirements according to the Service Agreement concluded between the City of Tallinn and the Company.
- Has obtained ISO certificates on quality management (ISO 9001), environmental management (ISO 14001) and for laboratories (ISO 17025)

SHAREHOLDER STRUCTURE IN 2004



The majority shareholder United Utilities Tallinn BV holds 50,4% of the shares of AS Tallinna Vesi. The City of Tallinn holds 49,6% of the shares of the company.

THE COMPANY'S VISION

We will be a Role Model for Every Service Providing Company and Employer, Exceeding the Expectations of our Customers, Employees and Owners and setting a Benchmark for Environmental Behaviour in order to Improve the Quality of Life;

THE COMPANY'S MISSION

WE CREATE A BETTER LIFE WITH PURE WATER

THE BUSINESS STRUCTURE

Business activities cover the entire water value chain – surface and groundwater abstraction and purification, distribution of drinking water to customers, wastewater and stormwater collection and treatment, treated wastewater is taken to the Baltic Sea.

The main process is supported by the activities of the Customer Service and technical support services like Laboratory, Asset Management and Development and Construction Services as well as Corporate and Commercial Services.

The organisation chart is shown in Annex (Figure 1)

COMPANY OBJECTIVES FOR 2004

The Management of the company assessed the level of fulfillment of objectives in year 2004 as good and new general objectives for year 2005 have been set.

- To meet all our contractual levels of service ie no failures. Achieved. Full levels of service (97 levels) compliance in 2001-2004
- To achieve measurable improvements in customer satisfaction. Achieved. Customers satisfied with our services has increased to 77%
- To deliver continuous improvement through the application of our Quality Management Systems. Achieved. Improvement of several procedures like e.g. crisis preparedness system, successful renewal of ISO 9001 and 14001 certificates, EMAS pilot project.
- To meet all our Health and Safety targets. Achieved. 2 work accidents per year, no cases of occupational diseases, improvements in chemical risk management
- To meet our Environmental Goals. Achieved, see page 16.
- To have excellent relationships with the City of Tallinn, Supervisory Foundation and State Bodies. Achieved. All outstanding issues have been resolved by mutual agreements
- To live our Values and through them improve employee satisfaction. Achieved. Employee satisfaction index has increased to 4,23 (on the scale 1-6). Employees recognition system based on our values implemented.
- To create an environment where our people can develop themselves and achieve their goals. Achieved. Career possibilities inside of the company increased. Management and customer service training programs started.
- To decrease budgeted costs by 3%. Achieved. The budgeted costs were decreased by 3,7%
- To increase budgeted revenues by 1%. Partly achieved. The budgeted revenue was increase by 0,8%

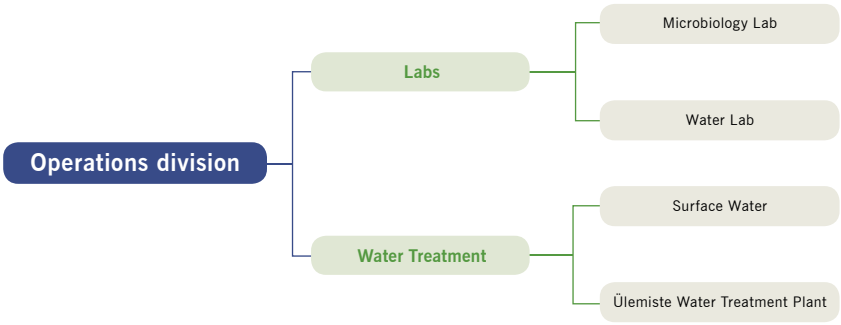
COMPANY OBJECTIVES FOR 2005

- To live our values, be motivated and enjoy the experience
- To provide development opportunities and new challenges for our staff
- To improve Customer Service by the successful implementation of Customer Information System and a Guaranteed Standards Scheme
- To meet all our contractual levels of service
- To continue to improve our quality and environmental management systems by renewing ISO 9001 and ISO 14001 quality certificates and obtaining EMAS recognition
- To meet all our Health and Safety targets
- To successfully complete the nitrogen project at Paljassaare and meet all our environmental goals
- To have excellent working relationships with the City Administration, Supervisory Foundation and Government Departments
- To save 3% on our budgeted operating costs
- To increase our budgeted revenues from main services by 1%

Core Activities

WATER TREATMENT

Location of Ülemiste Water Treatment Plant - Järvevana road 3, Tallinn.
Location of catchment area – ca 2000 square kilometers in Harju and Järvamaa counties (please see Figure 2 in annex)



The treatment of surface water into drinking water is carried out in Ülemiste Water Treatment Plant.

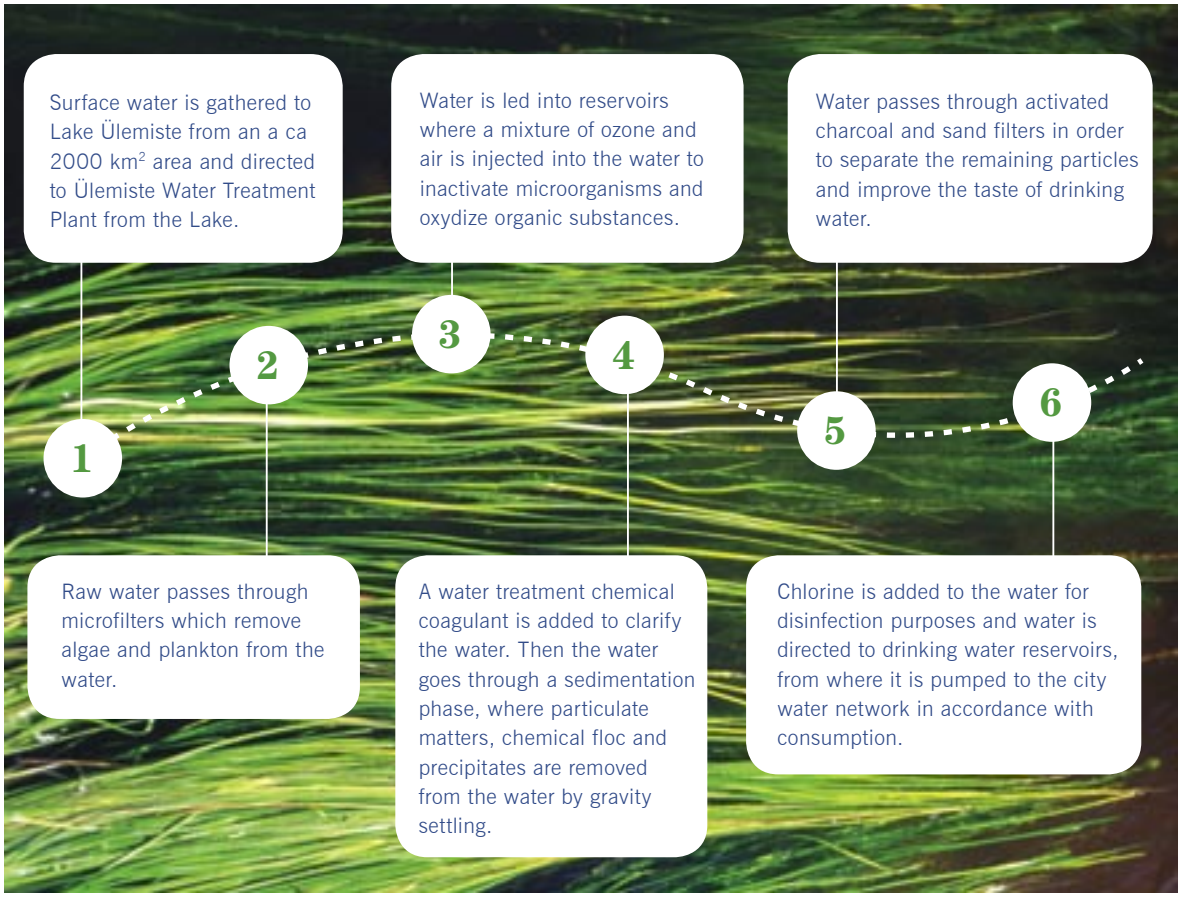
SURFACE WATER CATCHMENT

- 90 % of Tallinn's drinking water comes from Lake Ülemiste, the largest and most important surface water source in the capital city.
- The net volume of Lake Ülemiste is 17 million m^3
- Ülemiste gets its water from a catchment system built for that purpose. The system brings together the catchment areas of Soodla, Jägala and Pirita rivers. The total area of catchment is ca 2000 km^2
- Reservoirs and rivers have been connected into one system by canals. The water volumes are adjusted at hydropoints built on the rivers. If the water from catchment area just surrounding the lake is not sufficient to maintain the necessary level of the lake, additional volumes are taken from Vaskjala hydropoint through Pirita-Ülemiste canal. All water from the catchment system can be conducted to Vaskjala hydropoint.

ÜLEMISTE WATER TREATMENT PLANT (WTP)

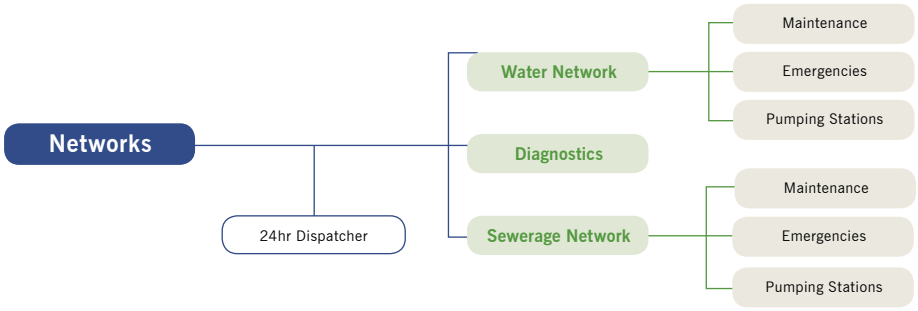
- Ülemiste Water Treatment Plant has been operating since 1927
- Plant capacity is 123,000 m^3/day.
- In 2004 an average of 64270 m^3 of water per day were produced
- Tallinners consume an average of 101 litres of water per person per day
- 90% of Tallinners' drinking water is produced at Ülemiste, 10% comes from bored wells, that are under the control of Networks department
- In 1927 the water laboratory in Ülemiste also started working. This laboratory has become one of the most modern water company's laboratories and has obtained international accreditation and complies with ISO 17025 requirements.
- Water laboratory carries out more than 80 000 water tests per year to check water quality

WATER TREATMENT PROCESS AT ÜLEMISTE WATER TREATMENT PLANT



NETWORKS

The location of Networks office is Ädala 10, Tallinn. Operational sites are as required all over the service area.



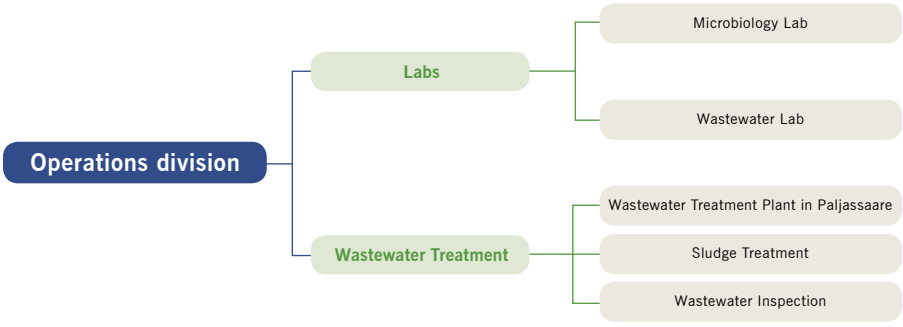
The Networks Department is responsible for the maintenance and emergency works on the water, sewerage and storm water networks. The Diagnostics Group, which is responsible for locating the water network leakages as quickly as possible and identifying the causes of leakages, belongs to Networks Department. Leakages liquidation, in turn, is under the responsibility of the Networks emergency teams. In total, a quarter of all employees of the Company work in Networks Department.

NETWORKS

- Manage and maintain 884 km of water network, 728 km of sewerage network and 317 km of storm water as of the end of 2004;
- Operate 13 water and 64 sewerage pumping stations and 56 ground water pumping stations with 81 bore wells (34 working);
- Liquidate 500 water leakages and 1500 sewerage blockages a year;
- For preventive maintenance purposes flush almost 200 km of water and 70 km of sewerage network a year.

WASTE WATER TREATMENT

Location of Paljassaare Waste Water Treatment Plant and composting fields - Paljassaare road 14, Tallinn.
Location of Main Pumping Station - Paljassaare road, Tallinn.
Location of Sludge composting site and Sludge experimental site in Liikva permitted by Waste Act - Liikva village, Harku parish, Harju County.

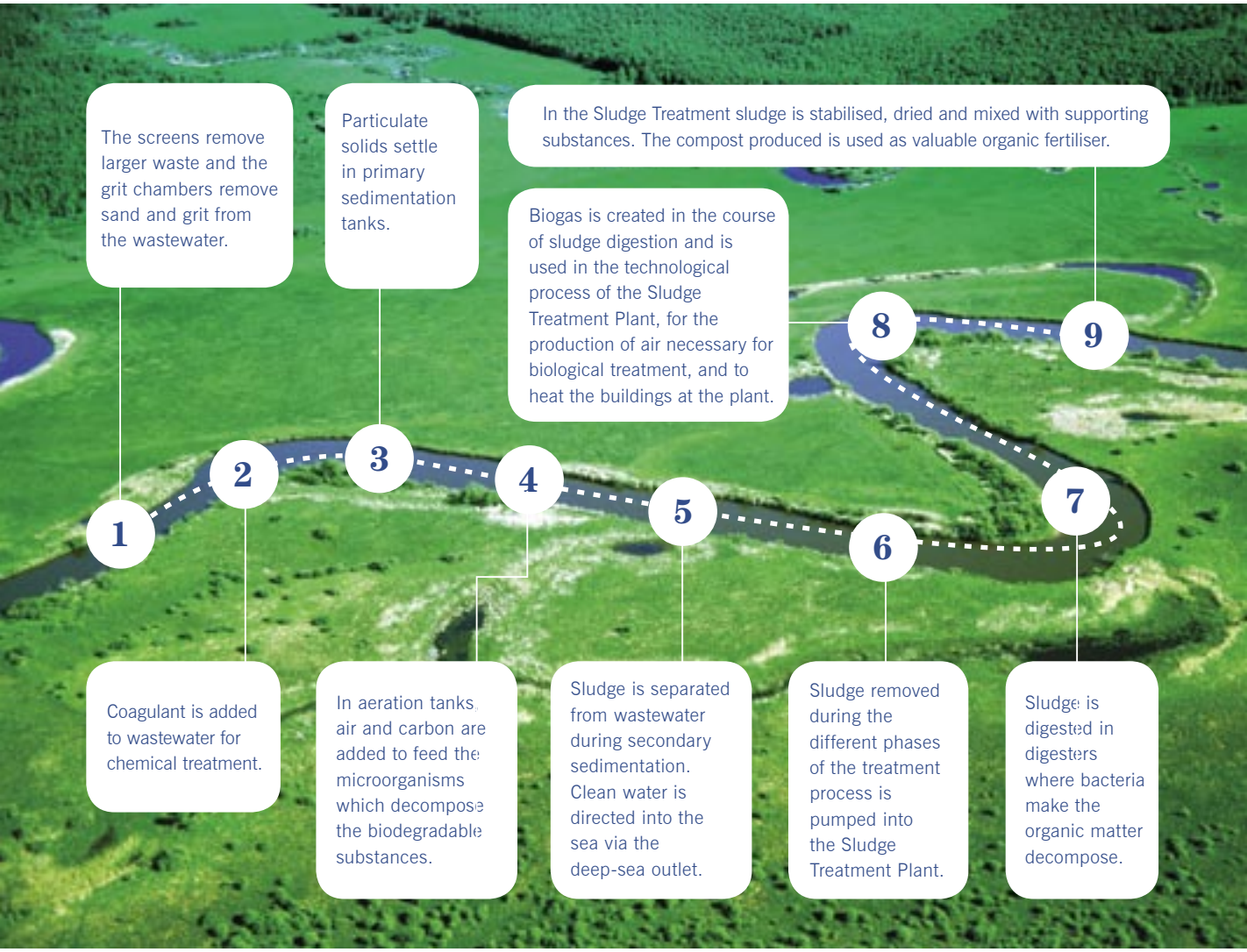


Wastewater collected from Tallinn and in its close vicinity as well as storm water gathered from the streets of the city is treated at Paljassaare Wastewater Treatment Plant. Treated wastewater is discharged to the Baltic Sea. The large amount of sludge that is separated in the wastewater treatment is recycled and turned into compost and used as a organic fertiliser.

PALJASSAARE WASTE WATER TREATMENT PLANT (WWTP)

- Paljassaare Wastewater Treatment Plant has been operating since 1980
- The treatment capacity is 350 000 m^3/day.
- In total over 51 million m^3 of wastewater were treated in 2004. The average amount of wastewater treated in 2004 was 140000 m^3/day.
- Investments into Paljassaare Wastewater Treatment Plant amounted ca 35 million kroons in 2004
- The waste water laboratory has obtained international accreditation and complies with ISO 17025 requirements

WASTEWATER TREATMENT PROCESS AT PALJASSAARE WASTEWATER TREATMENT PLANT



CUSTOMER SERVICE

Location of Customer Service Ädala 10, Tallinn

AS Tallinna Vesi's public water supply and sewerage service is provided to more than 400 000 people living in Tallinn and its neighbouring areas.

The Company has more than 19,000 contractual customers in total. Customers are divided into 2 groups – domestic and commercial – and based on these criteria different water supply and sewerage tariffs are applied to customer groups. The Company concludes service contracts with its domestic and commercial customers, and issues regular bills.

AS TALLINNA VESI CUSTOMERS

CUSTOMER SERVICE

- Customer connections - water connections ca 19 000, wastewater connections ca 14 500
- Handling 55 494 calls and written customer contacts per year 2004, including 294 complaints
- Responded within working 10 days to each complaint or enquiry
- 19.4 and 21.2 millions cubic meter of respectively water and wastewater invoiced in 2004
- Independent customer survey carried out annually
- Customers satisfied with our services has increased to 77%
- In 2004 started the process of replacing the customer information and billing system
- Water meter calibration and tests service is provided
- Customer information paper "Veeleht" ("Water Paper") in Estonian and Russian has been sent to every home twice a year.

Environmental Management System

HISTORY OF THE ENVIRONMENTAL MANAGEMENT SYSTEM

An environmental management system based on the ISO 14001 requirements has been actively implemented and developed in the Company since 2002. A quality management system based on the ISO 9001:2000 requirements has also been put in place in the Company and development has been focused on a single quality and environmental management system.

In 2003 we submitted an application for the certification of the environmental management system and on December 16th, 2003, Det Norske Veritas issued an ISO 14001:1996 environmental management system certificate to the Company.

The Service Agreement concluded between the City of Tallinn and the Company gave the external impetus to developing the environmental management system as the levels of Service in Annex D to the Agreement provided that the Company was required to achieve the ISO 14001 certification of its environmental management system the latest by December 31st, 2003.

In autumn 2004 we decided to take part in the EMAS pilot project managed by Republic of Estonia Ministry of the Environment and the Dutch Ministry of Economics, which aims at implementing a national EMAS system with the help of pilot companies. We, for our part, primarily see the benefit in the drafting an environmental report that will be of help in environment related communication.

In 2005 we intend to successfully renew our ISO 14001 certificate on the basis of the new standard version ISO 14001:2004 and achieve EMAS recognition.

ENVIRONMENTAL POLICY

The environmental policy follows the vision and the mission of the Company, the principles for the sustainability of the environment and the need to reduce pollution of the environment, the specifics of the Company's operation, the obligation to act in accordance with relevant legislation and other requirements recognised by the Company and the objective to continuously improve the operation of the Company.

OUR CONTRIBUTION TO CUSTOMERS AND THE COMMUNITY

- Our customers always have pure drinking water and the possibility to discharge and treat wastewater and storm water environmentally wisely.
- We understand and take responsibility for our impact on the health and quality of life of our clients and residents.
- Our customers can communicate with us conveniently.
- By open communication we will shape the environmentally conscious way of thinking of our customers and consumers.
- We use natural resources sparingly.
- We ensure our compliance with all applicable legal acts and other requirements acknowledged by the Company.
- To increase customer satisfaction and avoid environmental pollution we are actively seeking for better solutions and continuously improve our work.

The environmental policy has been documented, reviewed by Executive Team and approved by the CEO.

At the end of 2004 we presented a new, shorter and clearer, wording of the environmental policy to employees via the internal newsletter.

The policy is available to all employee in Estonian, Russian or English in the internal computer network or, if necessary, in printed format from their direct manager. Employees as well as the wider public have access to the environmental policy also on the Company's homepage www.tallinnavesi.ee.

ENVIRONMENTAL MANAGEMENT SYSTEM STANDARDS

The objective of the environmental management system is to at best avoid or at very least minimise environmental pollution via effective environmental activities, whilst the elements of the environmental management system are integrated into the everyday activities of the Company.

AS Tallinna Vesi has based its environmental management system on the requirements of the international ISO 14001 standard and the EMAS EU Regulation 761/2001. All core activities of the Company from customer service, water treatment, drinking water distribution, collection of storm and wastewater and wastewater treatment, as well as the related support activities, are covered by the environmental management system.

The implementation of a standard based environmental management system has brought benefits to the Company, and thereby also to the general public, first and foremost because environmental problems are approached in a systematic manner and the system is continuously improved.

Both the international ISO 14001 standard as well as the European environmental management and auditing system EMAS establish similar requirements which a company has to meet in order to systematically organise its environmental management and improve effectiveness, thus contributing to avoiding environmental pollution.

The environmental management system of the Company functions on the basis of the following principle:

- We identify the significant environmental aspects and environmental impacts on the basis of a predetermined system, an activity that enables us to prioritise environmental activities (please see page 15);
- We establish environmental objectives/tasks/action plans for influencing the significant environmental aspects in the desired direction (please see page 16);
- We carry out the actions;
- We check progress against the objectives/tasks/ action plans;
- We agree on next steps and system improvement plans;

In addition to the above the environmental management system covers several other activities which the Company has to organise and improve in a specific manner:

- Establishment of daily work procedures, whereby an environmental criterias of operation is ensured (including for example waste management, chemicals handling) ;
- The order of treating, correcting and preventing nonconformities and problems;
- The system of following the validity on environment related legislation;
- The organisation of emergency prevention and preparedness;
- Organising environment related internal and external communication;
- Ensuring employee awareness and training;
- Organising environmental monitoring and measuring;
- Organising procurements and purchases;
- Organising internal audits in order to evaluate the compliance of the environmental management system with standards and the compliance of Company activities with environment related legislation;
- Administration of system documents;
- Presenting environmental report (EMAS requirement) which serves the purpose of providing different interest groups with a clear and straightforward overview of the activities the Company has undertaken to reduce the environmental impact accompanying its activities.

To a large extent the Company's environmental activities are regulated by requirements arising from EU and national legislation, also City regulations. 14 different national environmental legal acts and related legislation apply to everyday operations:

- Water Act and related implementing provisions;
- Public Water Supply and Sewerage Act and related implementing provisions;
- Waste Act and related implementing provisions;
- Ambient Air Protection Act and related implementing provisions;
- Chemicals Act and related implementing provisions;
- Emergency Preparedness Act, Rescue Act, and related fire safety implementing provisions;
- Environmental Monitoring Act;
- Pollution Charge Act and related implementing provisions;
- Nature Conservation Act and related implementing provisions;
- Environmental Impact Assessment and Environmental Auditing Act and related implementing provisions;
- Integrated Pollution Prevention and Control Act and related implemented provisions;
- Pressure Equipment Safety Act and related implementing provisions.

The main environmental licensing authority for the Company is the Environmental Service of Harju County (Harjumaa Keskkonnateenistus), (the "Environmental Service"). The following permits have been issued to the Company:

- 3 special use of water permits, incl. one temporary permit;
- 2 air pollution permits and 1 special permit for air pollution;
- 2 waste permits.

Management of the quality and environmental system has been put in place in accordance with the organisational chart of the Company (please see

Figure 1 in annex), on the basis of which the principle responsibility for implementing the system rests with the Management Team and the managers of structural units.

Managers of structural units ensure the preparation and carrying out of the actions plans necessary for meeting the environmental objectives and tasks. The managers of structural units shall ensure the awareness of his/her subordinates of the environmental objectives and tasks and of their responsibility in achieving these objectives.

The Quality Manager, who is appointed as a Management Team representative, co-ordinates environmental work and ensures the compliance of the environmental management system with the requirements of the standards. The Chief Operating Officer (COO), with the Chief Executive Officer (CEO) as his substitute, has been appointed as the Executive Team member to make ultimate environment related decisions.

The suitability of the environmental management system and the compliance of the actions with the objectives are periodically evaluated by the Executive and Management Teams.

Significant Environmental Aspects

The basis for the environmental management system is the identification of the environmental aspects and impacts important for the Company on the basis of a predetermined system. Top managements shall define the environmental aspects important for the company as a whole as well as further actions for monitoring these aspects. The significant environmental aspects are different facets of the activities, services or products of AS Tallinna Vesi, which in contact with the surrounding environment (for example with ground, air, flora, fauna, people) significantly influence the environment. In 2004 the significance of an aspect is defined with the help of the following criteria:

- Identification of the aspect´s impact on the environment (insignificant, considerable, intensive);
- Frequency of occurrence of an aspects (rare, medium, frequent).
- Impact and frequency are multiplied by each other (Number in the the table = Impact X frequency plus the weight of the „box“ based on the importance of the impact on the environment)

ASSESSMENT OF SIGNIFICANCE OF ENVIRONMENTAL ASPECTS

Intensive	10	14	18
Considerable	6	9	12
Insignificant	2	4	6
Impact on environment / Frequency of occurence	Rare	Medium	Frequent

Significant aspects were those aspects which have a final score of 9 on higher. If a legislative requirement or Services Agreement is applicable to an environmental aspect, the Company has the responsibility to control the said aspect notwithstanding the total score of the aspect. Significant environmental aspects of 2004 (score 9 and higher) have been described in the following chapter along with environmental goals and tasks.

In summer 2004, in coordination with year 2005 budget process, a reassessment of environmental aspects was started, in the course of which the system of assessing environmental aspects changed completely. The aim of the change was compilation of a more precise and varied evaluation scale, in order to bring out the significance of aspects more clearly.

It was decided to define the significance of an aspect with the help of the following criteria on the scale minor, average, great or extreme:

- The probability of the aspect occurring;
- The scope of the impact;
- The duration of the impact;
- The seriousness of the consequences for different parts of the environment and of the business - as to customers, to the capability of providing a service; to public health; damage to the environment; to the relationship with the City, the local governments, and the authorities; media impact; direct costs, damages, penalties;
- Link to legislation or Service Agreement requirements.

Environmental Objectives And Tasks For 2004

To influence the significant environmental aspects in the desired direction, environmental objectives and tasks are set by the Executive Team according to the general objectives of the company.

A detailed overview of the fulfilling objectives and tasks in 2004 is provided in the chapters below. The overview of environmental goals and tasks for 2005 is given in Annex

SIGNIFICANT ENVIRONMENTAL ASPECT, GOALS AND TASKS 2004

\+ fulfilled — not fulfilled or ongoing

Significant aspect	Impact	Goal	Tasks	Results as of December 2004
Surface water	Usage of the water resource	**Use the water resource sparingly**	• Comply with requirements in Permit for the special use of water • Reduce the annual level of leakages at least to 27,65% • Preparing the water network model III quarter • Replacing water meters 5700 pcs in 2004 • Rehabilitation or replacement of mains - minimum 5km per year of existing water mains	+ **see p. 18** + **see p. 20** + **see p. 21** + **see p. 21** + **see p. 21**
Ground water	Usage of the water resource			
Water leakages	Wasting of water resources			
Usage of the compliant water resource. Quality of surface and ground water	Failure to comply with the standards causes hazard to human health	**Improve the quality of surface water. Ensure quality of ground water**	• Improve the quality of water of the Lake Ülemiste • 100 % compliance with requirements in the permit for the special use of water	+ **see p. 22** + **see p. 22-23**
Quality of the treated water	Failure to comply with the standards causes hazard to human health	**Ensure and improve the quality of treated water**	• 100 % compliance with the Water Quality Standards set out in Decree 82	+ **see p. 24-25**
Quality of the waste water	Risk of environmental pollution	**To minimise the loss of untreated sewage to environment. To decrease pollution fee through that**	• 100% compliance with the Permit for the special use of water • Rehabilitation or replacement of sewers - min 5 km per year of existing sewers • New sewer extensions - 6,5 Km per year • Provide all facilities to respond to sewer flooding incident in 4 hours • Sewer model ready by autumn 2004 • To minimise overflows of untreated sewage and polluted stormwater	+ **see p. 26-27** + **see p. 27** + **see p. 27** + **see p. 28** + **see p. 21** — **see p. 29**
Wastewater blockages, floods, stormwater oods	Risk for environmental pollution			

Chlorine gas and ozone (leakages) Methane in biogas Hazardous chemicals leakages	Pollution of the environment, hazard to human health, environmental pollution	**Ensure safe handling of chemicals**	• Zero chlorine and ozone leakages to the atmosphere • No gas emergencies • There are no major chemical related accidents • To ensure the existence of chemicals' safety data sheets	+ **see p. 32** + **see p. 32** + **see p. 32** + **see p. 32**
Sludge Ordinary and dangerous waste	Modification of soils haracteristics. Re-use of sludge environmental pollution.	**Reduce the amount of waste. Increase the amount of waste separated and recycled. To recycle all sludge**	• Specifying the calculation of domestic waste • To decrease paper consumption compared to 2003 • Arranging the separation of metal waste • Find ways of replacing the hazardous substances (waste) with less hazardous • No sludge to landfill	+ **see p. 33** + **see p. 33** – **see p. 34** – **see p. 34** + **see p. 35-36**
Gas emissions because of combustion, refrigeration, usage of electricity and transport	Greenhouse Effect	**Reduce the emission of greenhouse gases. To use mostly biogas in the technological process**	• To ensure compliance with air pollution permits • To decrease consumption of fuel compared to the previous year • To decrease consumption of electricity compared to the previous year • To ensure a good order of equipment and maximum use of biogas	+ **see p. 37** + **see p. 39** + **see p. 40** – **see p. 40**
Connection with public sewerage	Decreasing the risk of environmental pollution	**To ensure connection of new registered immovables to the public sewerage**	• Connecting 90% of clients (compensated) to public sewerage • To connect the most of customers using separate sewers to the public sewerage	– **see p. 41** + **see p. 41**
Overpollution bills	Decreasing the risk of environmental pollution	**To specify and charge for the overpollution caused by customers**	• To submit invoices to all overpolluters identified	+ **see p. 42**
Noise	Effect to human health	**Reduce the impact of noise on the environment and Company's employees**	• Ensuring the suitability of environmental activity of subcontractors	+ **see p. 41**
Envrionment related information		**Increase the environmental awareness of the public. Improve the regular environmental cooperation with main interest groups**	• Publication of environmental articles in media (at least 4 times a year) • Organising environmental events (Open Door Days once a year, field trips) • Organising environmental educational play in the schools of Tallinn • Regular information exchange with local government representatives and environmental organisations • Improving cooperation and readiness for crisis situations	+ **see p. 42** + **see p. 42** + **see p. 42** + **see p. 43** + **see p. 44**

USAGE OF WATER RESOURCES

The Company's objective is to use the water resource sparingly, the main condition is to meet the requirements of the permit for special use of water.

PERMITS FOR SPECIAL USE OF WATER

The activities of a water undertaking in using water resources are regulated with Water Act and implementing provisions. Pursuant to Water Act, to operate as a water undertaking, AS Tallinna Vesi must have a permit for special use of water and the Company must pay a charge for the water resource used. The permit for special use of water defines different activities, for instance the amounts of water that the Company may extract, water quality monitoring requirements, requirements set for accounting for water extracted, the permitted limits of pollutants contained in effluent, pollutants monitoring requirements, and measures reducing the impact of special use of water.

The following table contains descriptions of the Company's valid permits for special use of water. In 2004 all requirements of the permits for special use of water were met.

PERMITS FOR SPECIAL USE OF WATER

Permit	Valid until	Description of special use of water
Water Permit no. HR0679 (L.VV.HA-19537)	31.10.2008	Harju County, Saue town Extraction of ground water from boreholes opening Cambrian-Vendi and Ordovician-Cambrian aquifers. Supplying Saue town with domestic and industrial water across the entire licensed operating area. Collection of wastewater and directing wastewater to Paljassaare Wastewater Treatment Plant.
Water Permit no. HR0549 (L.VV.HA-13579)	31.03.2008	Tallinn public water supply and sewerage system main licenced operating area, Tallinn surface water catchment system facilities area in Harju and Järva County. The usage of ground water from the Ordivician-Cambrian and Cambrian-Vendi aquifers, discharging storm and drainage water into Tallinn bay and Kopli Bay, Mustjõe stream and Männiku wetland, discharging biologically treated wastewater into Tallinn Bay.
Temporary Water Permit no. HR0653 (L:VA:HA-17798)	31.03.2006	Paljassaare Wastewater Treatment Plant and deep-sea outlet area. Issued for the period of reconstructing the Wastewater Treatment Plant to change the total nitrogen discharge to meet the new permitted limit of total nitrogen in effluent. Issued as a supplement to the main permit no. HR0549.

FEE FOR SPECIAL USE OF WATER

Pursuant to the conditions of the permit for special use of water the Company must pay a fee for special use of water for using Lake Ülemiste surface water and the ground water from boreholes. The fee for special use of water is paid for the water taken into Ülemiste Water Treatment Plant and the water pumped out of the aquifers at the ground water pumping stations.

Of operating costs the fee for special use of water made up:

In 2003 3,8% of operating costs;
In 2004 4,7% of operating costs.

SURFACE WATER USAGE

Compliance with water permit
Throughout the year 2004 ASTV has continued to manage the catchment in an efficient way, optimising water resources to ensure that compliant raw water is available for Tallinn water treatment plant and to comply with the requirements of the permit for special use of water HR0549. The permit for special use of water has been complied with in 2004.

The size of the water resource in Tallinn's surface water catchment system primarily depends on the amount of rainfall and its distribution over the year. The basis for calculating (assessing) the system's water resource is a year of poor rainfall with 95% probability, i.e. a water balance based on a long series of monitoring results and compiled on the basis of a distribution of calculated flow amounts of a water economy year. On that basis we can say that at the present level of water consumption the surface water catchment water resource is sufficient in a year of poor rainfall (95%). In a year of average rainfall approximately 50% of the possible water resource in the system is used *(please see table 1* ***Raw water resource in Tallinn's surface water system 2003 – 2004*** *in Annex)*

Water resources-water quality model
The water resources-water quality model used to calculate water flow amount dynamics in reservoirs, possible sanitary water flow in rivers and the possibilities of taking water from channels makes the monitoring of the compliance with the permit for special use of water much easier. The calculations are based on the water inflow and outflow balances of all reservoirs. The input data for the model are water levels in reservoirs, water discharges into rivers, reservoirs, and channels.

The model enables the analysis of permanent water amounts changes and estimation of whether it is possible to guarantee a sufficient water supply to the channels and the sanitary flow amounts to rivers.

The model also enables the evaluation (forecast) of changes in water regimes over a longer predetermined period (without rainfall or with minimum rainfall) on the basis of hydrological measurement results which characterise the existing situation: changes in the rivers' natural flow amounts, flow amounts directed into the channel and water reservoirs volumes in a selected period.

Construction of raw water measuring stations
In order to carry out the neccessary measurements and ensure the compliance with the permit for special use of water the water measuring points have been built and reconstructed. By 2004 water measuring systems had been constructed/reconstructed in Vaskjala hydropoint, Kaunissaare hydropoint, Pärnu-Jägala channel water catchment and Paunküla hydropoint. In 2004 hydropoints reconstruction and water measuring points construction was continued at Aavoja hydropoint and Jägala hydropoint pumping station was fully reconstructed.

COMPLIANCE WITH WATER PERMIT HR 0549

Special use of water	Unit	2003	2004
Use of surface water from Lake Ülemiste	m^3	27 276 080	23 522 647
Max amount allowed by water permit	m^3	47 500 000	47 500 000

USAGE OF GROUND WATER

Ca 10 % of the drinking water of Tallinn citizens is received from groundwater, which is consumed in Tallinn private house areas in Nõmme, Pirita, Merivälja, Kose. Ground water is used also in Saue. All in all AS Tallinna Vesi's bore well pumping stations produce ca 2,9 million m^3 drinking water per year. Consumers get groundwater from groundwater bore well pumping stations, which pump from the Cambrian-Vendi and Ordovician-Cambrian water layers. If necessary, before reaching the consumer groundwater is filtrated to remove iron and manganese.

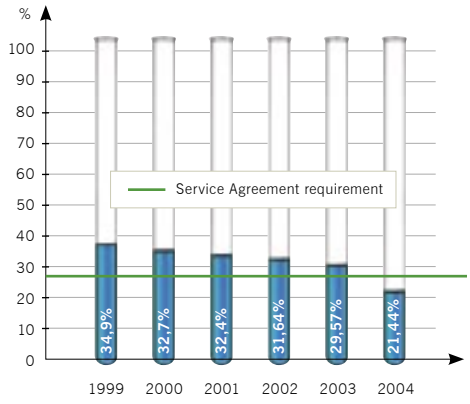
AS Tallinna Vesi regularly measures ground water levels in order to continuously control the state of Tallinn's ground water resources. Measurement of the static water level in boreholes shows a continuous increase of the resource in all areas of the city during last 10 years.

Conditions of groundwater usage have been determined by the terms and conditions of the permit for special use of water HR0549 and HR0679, which establishes requirements for permitted water extraction, in order to reduce the impact of special use of water to the groundwater layer (sanitary protection areas, measurement systems etc). Although the usage of ground water is limited by the water permits, it is possible to cover the ground water demand and still keep a sufficient reserve to substitute the surface water supply in case of a problem at Ülemiste Water Treatment Plant. All terms and conditions of the permit for special use of water have been complied with in 2004.

LEAKAGES

Water losses and unaccounted water, caused by leakages, have decreased over the year, falling to 21,4 % by the end of 2004. Thanks to the good cooperation between the Networks Department and the Diagnostics Group this indicator has been decreasing continuously since 1999 (34,9%). The achieved level of leakages also exceeded significantly the requirements of Services Agreement to reduce the annual level of leakages at least by 27,65% by the end of 2004.

LEAKAGES BETWEEN 1999 TO 2004



The Diagnostics Group has 3 leakage teams with specific equipment for leakages location, enabling them to locate possible water leakages on the network more quickly via a distance reading system.

A network zoning programme has been developed, enabling the location of areas of possible water leakages via a system of remote reading of network meters.

A water metering wells project was launched in January 2004, enabling the division of the network into sections of more optimum length and a consequent improved monitoring of the network. The employment of water metering wells has made possible to

SPECIAL USE OF GROUNDWATER IN 2003-2004

Special use of water	Unit	2003	2004
Usage of ground water in Tallinn	m^3	3 026 800	2 736 157
Cambrian-Vendi aquifer	m^3	2 693 109	2 395 645
Ordovician-Cambrian aquifer	m^3	333 691	340 512
Max amount allowed by water permit	m^3	6 880 250	6 880 250
Usage of ground water in Saue	m^3	244 889	213 124
Cambrian-Vendi aquifer	m^3	225 938	196 790
Ordovician-Cambrian aquifer	m^3	18 951	16 334
Max amount allowed by water permit	m^3	460 250	460 250

significantly reduce the leakages discovery period within a pressure zone.

Our achieved level of leakage at the end of 2004 is slightly higher than that reported by some other Estonian water companies and the company will continue action on reducing leakages, in order to reach the economically optimal network leakage.

When we compare our results on part of water loss percentage with the companies Sofia Water and Manila Water belonging to United Utilities International group (also AS Tallinna Vesi belongs there), the results are good in all terms. Manila Water had leakages level of ca 43 % and Sofia Water ca 40 % in year 2004.

THE HYDRAULIC NETWORKS MODEL

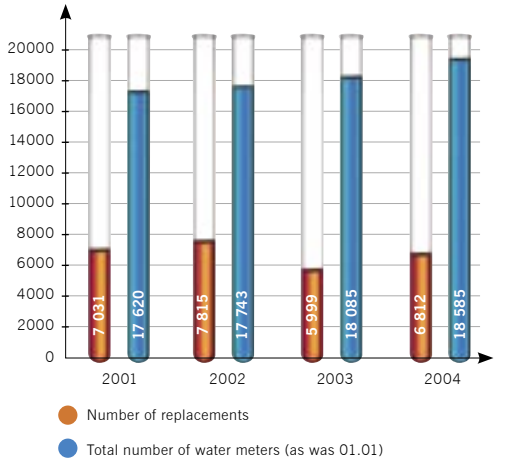
The integrated hydraulic water and sewerage network model, fully completed in 2004, is of great help in planning the works of the Networks Department. The model is actually a software program, where the information on the entire water and sewerage network of the city, including the number of leakages, the number of emergency bursts, the number of blockages, the age of pipes, the type of material, etc., has been entered.

REPLACEMENT OF WATER METERS

Replacement of water meters contributes to a more accurate accounting of water resource.

In 2003-2004 AS Tallinna Vesi carried out a water meters testing programme, which compared B and C accuracy class, single and multi jet water meters. Programme results demonstrated that accuracy class C single jet water meters are more suitable to Tallinn's conditions: they have a longer useful life and measure more accurately. It was decided, on the basis of the testing programme, to invest into replacing class B water meters with class C water meters. In 2004 the objective was to replace 5700 water meters, that was also fulfilled.

REMOVAL, INSTALLING, REPLACEMENT OF WATER METERS



WATER NETWORKS REHABILITATION, REPLACEMENT AND EXTENSIONS

9025m of city water network were replaced in 2004. Also the plan for the rehabilitation of the streets of Tallinn was taken into account in drafting the networks rehabilitation programme.

REHABILITATIONS 2001-2004 (METRES)

	2001	2002	2003	2004
Water network	14 373	11 994	6 232	9 025

In total AS Tallinna Vesi constructed 2384m of new drinking water networks in 2004.

EXTENSIONS 2001-2004 (METRES)

	2001	2002	2003	2004
Water network	7 351	2 927	1 526	2 384

QUALITY OF RAW WATER

SURFACE WATER QUALITY

Raw water quality in year 2004 at the intake to the treatment system complied with the class A2 requirements of European Council directive 75/440/EC. Since we are dealing with surface water, its quality is dependent on weather conditions - for example rainfall, water from melting snow, but also on the geological conditions of the catchment area – high moors, marshlands, areas of karst and forest, etc. The raw water quality is particularly influenced by the humic substance (a natural organic substance) content which has large effect on the colour, permanganate and chemical oxygen demand of water. Due to the rainy summer of 2004 the colour and chemical oxygen demand (CODMn and COD) values in all catchment area waters and Lake Ülemiste water were higher than in 2003. The fluctuation of the said indicators complies with the case provided in EC Directive 75/440/EC

Raw water quality control analyses are conducted by the accredited water laboratory. Raw water quality is checked at the intake to treatment system once per day in the part of technologically necessary indicators. Raw water pollution indicators (total phosphorus and nitrogen) are checked once per week. Additionally a detailed raw water analysis is carried out once per month according the indicators that have been accepted by the Harju County and Tallinn Health Authority.

Please see more detailed data in table 2 ***Raw water daily control at the intake to the plant 2004*** *and table 3* ***Intake to Water Treatment Plant (weekly analysis) 2004*** *in Annex.*

Two main projects have been helpful in improving raw water quality.

Kurna bio marsh

Kurna bio marsh was commissionned in 2002. Kurna bio marsh is an artifical wetland that helps to improve raw water quality through a self-purification process.

The aim of creating the artifical wetland was to reduce the load of nutrients coming from Kurna creek to Lake Ülemiste.

The creek's water is directed to the shallow flood meadow of the former Katku creek, covered with vegetation. Water flows through it very slowly before reaching Lake Ülemiste. Wetland is efficient for removing nitrogen, phosphorus, heavy metals and solid particles from water. The working principle of wetland is based on the processes of sedimentation, absorption and microbiological decomposition.

Biomanipulation

Since 2001 the biomanipulation project has been ongoing. The aim of biomanipulation project is to improve the water ecosystem and increase raw water quality with biomanipulation ie establishing a classical food chain. A classical food chain in a body of water is as follows: predatory fish – carnivorous fish – zooplankton – phytoplankton. Currently the food chain is out of balance as predatory fish only make up to 5 % ot total fish resources. During biomanipulation excessive carnivorous fish like bream, roach and ruff are caught and the reproduction of predatory fish (pike perch, pickerel) is fostered. The named method ensures that the food chain in the lake remains balanced and that the micro algae that could cause deterioration in water quality would not reproduce excessively. In parallel to the catches we determined the length and age structure of fish in Ülemiste. The reduction of the number of non-predatory fish in the lake will continue in year 2005.

QUALITY OF GROUND WATER

Conditions of groundwater quality ensuring have been determined by the terms and conditions of the permit for special use of water HR0549 and HR0679.

In addition to the requirements of the permit for special use of water, the ground water used as a drinking water source is inspected also according to the "Drinking water source inspection plan", coordinated with Harju County and Tallinn Health Protection Board. All analysis results are stored in Water Lab's database.

In order to observe ground water quality the laboratory takes water samples from all the bore wells in usage. From the bore wells, which are hydrogeologically

situated in complicated environment, water samples are taken twice a year and from the spare bore wells once during the validity of water usage permit. Ground water monitoring data are used in public ground water monitoring upon assessing the quality of ground water in the region of Tallinn.

According to the Water Policy Framework Directive (European Council Directive 2000/60/EÜ), quantitative and qualitative condition of ground water is differentiated. The qualitative or chemical condition of ground water is considered good, if the concentration of pollutants does not indicate inflow of salty water or other water and does not exceed the respective quality standards. The content of chlorides as one of the most significant quality indicators, which cannot show increasing trends, has remained stable within recent years thanks to the reduction in intensive water extraction.

In addition to the full chemical analysis required in the Water Permit the Company also studies the content of 12 microcomponents and makes analyses both in the Cambrian-Vendi as well as the Ordovician-Cambrian aquifer.

During the year 2004 there have been no ground water pollution incidents or any potential risks of pollution that required reporting to the City and the Health Authority of Harju County and the City of Tallinn.

The attached table 4 ***Cambrian Vendi Water Level Boreholes Water Quality in 2004 and 2003*** *and table 5* ***Ordovician Cambrian Water Level Boreholes Water Quality in 2004 and 2003*** *in Annex* provide an overview about the quality indicators of raw ground water.

The qualitative condition of ground water is closely connected with quantitative condition. For the better measurement of quantitative condition, during 2005 automatic water level and temperature measurement devices will be installed into all bore wells.

A high level TV system Fontanus, which is unique in the Baltic countries, has been purchased for inspection of the technical condition of ground wells and for planning of repairs.

All boreholes have a sanitary protection zone. It means that according to the Water Permit catchment maintenance works only are allowed in the sanitary protection zone.

QUALITY OF DRINKING WATER

To measure the quality of Tallinn's drinking water, the accredited Water Laboratory of AS Tallinna Vesi takes quality samples from raw water and both from the water in the treatment process as well as from the treated water that has already been through the process.

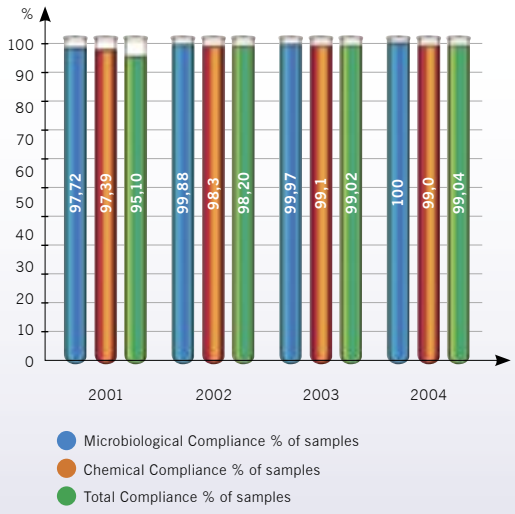
DISTRIBUTION OF WATER SAMPLES IN 2004	
Raw water (catchment area and Lake Ülemiste)	815
Treatment process	22 700
City water network	3 500
Bored wells and reservoirs	120
TOTAL	**27 135**

Drinking water quality must comply with Minister of Social Affairs Decree no. 82 of 31 July 2001 "Potable Water Quality and Control Requirements and Analysis Methods" that originates from the Estonian Water Act and European Union Potable Water Directive 98/83/EC.

As per the existing regulation the Company will have to comply with a very strict definition of quality requirements, control requirements of drinking water quality and analysis methods requirements. There is an exception for some parameters known as indicators or " soft parameters" (iron, manganese) that are not harmful for health and for which compliance is required from January 1st, 2007.

Lab results show that drinking water quality compliance has increased each year both in the part of microbiological as well as chemical indicators. The quality of water issued from Ülemiste water treatment plant complies 100% with all requirements. However, the quality of water in the water network and the groundwater quality may be influenced by excessive iron content, due to which 100% chemical compliance is not achieved.

WATER QUALITY COMPLIANCE 2001 – 2004



TREATED WATER QUALITY IN ÜLEMISTE WATER TREATMENT PLANT

The attached table 7 ***Treated water quality in WTP in 2004*** *in Annex shows* that the 2004 treated water quality at the Ülemiste treatment plant has shown a compliance with the requirements of the Decree no. 82 of 100% for microbiological, and chemical indicator parameters.

Drinking water quality is ensured by the treatment process at Ülemiste Water Treatment Plant, which is even more efficient than the established requirements. The treatment process is based on the requirements that have been established due to the quality of raw water. As mentioned on page 22, in the chapter Surface Water Quality, our surface water complies with the EU directive 75/440 A2 class quality, in case of which it is prescribed to use physical and chemical processing of surface water to ensure drinking water quality – pre-chlorination, coagulation, settling, filtration, and disinfecting. At Ülemiste WTP water processing with ozone is used instead of pre-chlorination and pre-filtration, which guarantees the high quality of drinking water more efficiently and the process complies with higher demands of our raw water qualities.

QUALITY OF DRINKING WATER PRODUCED FROM GROUND WATER

The attached table 6 ***Water quality of bore well pumping stations 2004*** *in Annex shows* that the 2004 water quality in ground water boreholes has shown a compliance with the Water Permit, requirements of the Decree no. 82 of 100% and 100% with the microbiological parameters.

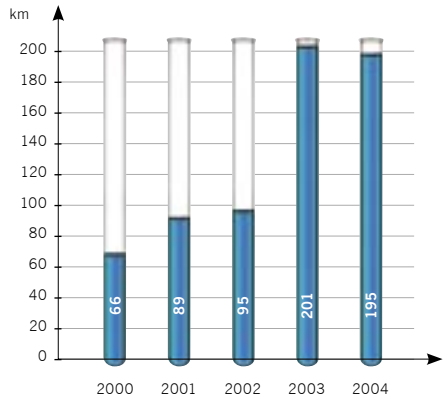
The ground water of 26 bore wells in usage belongs as a drinking water source in the II and III quality category, and requires according to "The quality and inspection requirements of surface and ground water used or to be used for drinking water production" the respective processing methods. Water in I quality category does not require processing, such bore wells are all the Ordovician-Cambrian water complex bore wells in Nõmme district. II and III water quality category is usually caused by excessive iron-, manganese-, and ammonium ion content and the non-compliance of colour with the raw water requirements.

At ground water boreholes-pumping stations, the pressure filters to improve iron and manganese removal have guaranteed a more stable quality throughout the year. In ground water processing aeration and filtration are used in raw water pressure filters, no chemicals are used. In order to improve water quality, also mixing the ground water of two aqueous layers is used. Treated ground water is conducted into drinking water reservoirs and from there into water network.

WATER QUALITY IN NETWORKS AND AT THE CONSUMERS PREMISES

Water quality in the City's water network is being continuously evaluated. During the year ASTV's accredited water lab took samples twice a month from 120 water quality monitoring sampling points with end-consumers in Tallinn and Saue which have been approved by Tallinn Health Protection Service. In addition the impact of intra-building networks on the water quality is also monitored in ten sampling locations.

FLUSHED WATER NETWORKS 2000-2004 (KM)

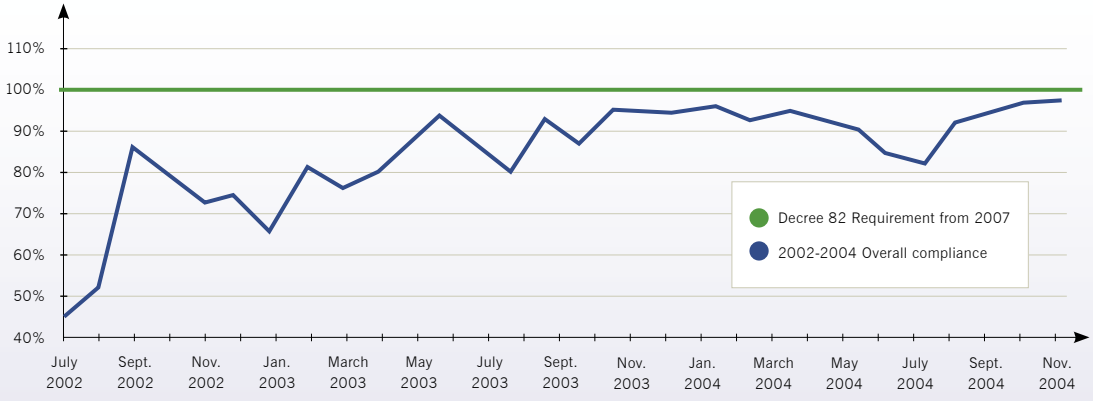


To improve the quality of drinking water arriving at the homes of Tallinners the Networks Department carries out airscouring and flushing works of networks every year. The flushing helps to flush out the sediment that has formed on the walls of water pipes and improves the quality of the water at customers tap.

The volume of water used in flushing in 2004 (ca 115 000 m^3 per year) is not significant, compared with the benefit gained from the improvement in quality.

Taking into account the 0,2 mg/l iron limit content coming into force from January 1st, 2007, the Tallinn city drinking water quality has increased significantly over the past year as at the end of 2004 or two years before the deadline more than 90% compliance with new requirements has been achieved.

2002-2004 WATER QUALITY COMPLIANCE WITH THE REQUIREMENTS COMING INTO FORCE IN 2007

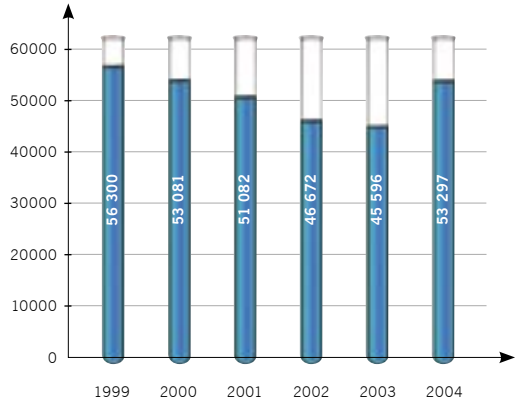


WASTE WATER TREATMENT

WASTE WATER TREATMENT EFFICIENCY

The amount of wastewater treated at Paljassaare Wastewater Treatment Plant in 2004 was 53.3 thousand m^3, an increase of approximately 17% compared to the year before. The main reason behind this indicator was a particularly rainy summer. During the heavy rainfalls of the summer a record amount of water passed through the Treatment Plant, exceeding any water amount seen during the over 20-year history. If under normal conditions approximately 5.000 m^3 of wastewater is treated in one hour, then during the heavy downpours this amount was five times higher, i.e. 28.000 m^3.

TREATED WASTEWATER AMOUNTS 1999 – 2004 (THOUSANDS OF M^3)



The quality of the water discharged to the sea is set with legal acts and a permit for the special use of water HR0549 and HR0679. Requirements of the permit for the special use of water were fulfilled in 2004.

To assess wastewater quality, the concentration of pollutants in the sewage received by the treatment plant and in the wastewater coming from treatment and the efficiency of treatment process are mainly observed. The following are the more significant indicators, whereas the smaller the indicator in the outgoing wastewater is, the less sea pollution is generated:

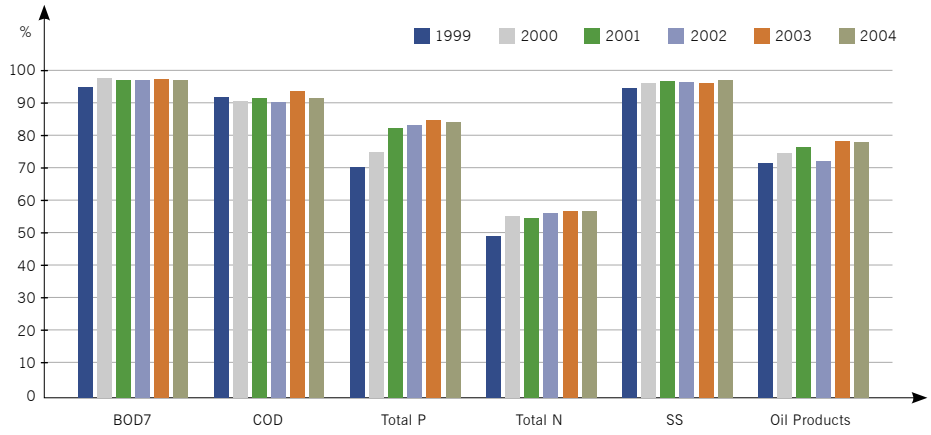
- Biological oxygen demand (BOD7) shows the amount of oxygen required for the defined biological decomposition of organic material in water in the course of 7 days;
- COD is a measure of the decomposition of organic material, measured as the consumption of oxygen in chemical oxidation of all organic material in water;
- Total Phosphorus (P) and total Nitrogen (N) are elements included in nutrient salts that increase the growth of plankton in water. If the content of nutrient salts is too high, such growth can be so strong that the oxygen is used up and a shortage of oxygen arises;
- Suspended solids (SS) shows the volume of solid matter in water than remains in a filter with a mesh of a defined size.
- Oil products - shows the amount of light (like petroleum) and heavy (like mazut) oils

AVERAGE POLLUTION INDICATORS OF OUTGOING WASTEWATER 2002-2004 MG/L COMPARED TO LEGISLATION REQUIREMENTS

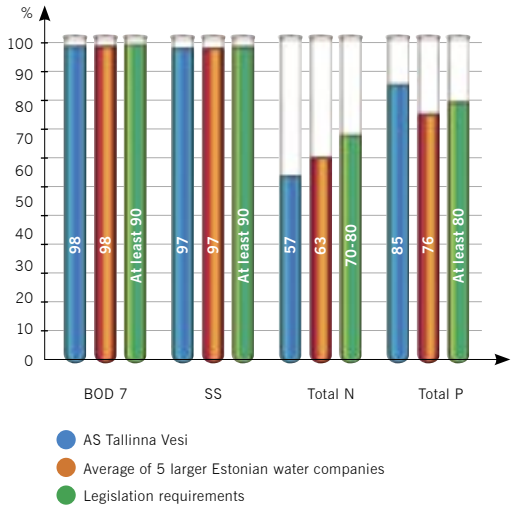
Indicator	2002	2003	2004	Requirements
BOD 7	3,9	3,7	3,9	15
SS	8	7,7	8	15
Total N	15,5	17,2	13,8	10*
Total P	0,97	0,98	0,87	1
Oil Products	0,6	0,6	0,7	1

* according to the pollution charge replacement contract concluded with the Ministry of Environment and the water permit HR0653 20 mg/l total N was allowed in 2004

WASTE WATER TREATMENT PLANT TREATMENT EFFECTS 1999-2004 (IN PERCENTAGES)



TREATMENT EFFICIENCY IN 2003 COMPARED TO ESTONIAN AVERAGE RESULTS IN PERCENTAGES



Treatment results, except for nitrogen, are good compared also with the respective indicators of larger Estonian water companies, when comparing e.g. year 2003 (later data are not available).

Treatment results are also comparable with the results of our close neighbour water company Helsinki Water.

Treatment efficiency has slightly decreased compared to 2003.

This was caused by the reconstruction works that limited biological treatment capacity, and also by the exceptional weather conditions in summer when heavy rains caused shock loads in the process.

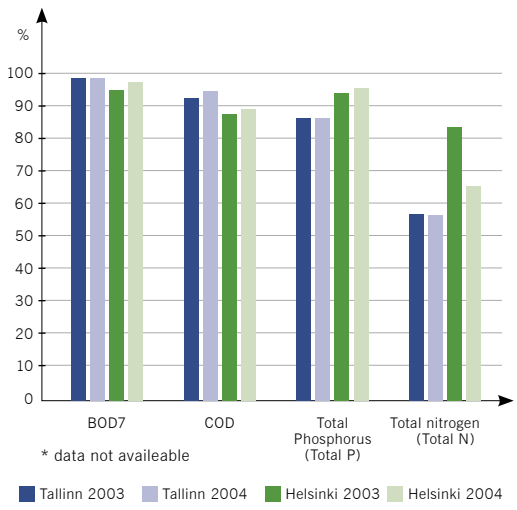
As the level of pollution in water directed into treatment plant has increased year by year and also the requirements for the permitted effluent nitrogen content have changed, reaching a good quality of effluent discharged into the environment was more difficult than earlier and thus the modernisation of Paljassaare treatment process was undertaken.

AVERAGE POLLUTION INDICATORS OF OUTGOING WASTEWATER 2003-2004 MG/L COMPARED TO HELSINKI WATER

Indicator	Tallinn 2004	Helsinki 2004	Tallinn 2003	Helsinki 2003
BOD 7	3,9	9	3,7	7
SS	8	5	7,7	8
Total N	13,8	6	17,2	16
Total P	0,87	0,33	0,98	0,38
Oil Products	0,7	-*	0,6	-*

* data not available; not measured

TREATMENT EFFICIENCY IN 2003-2004 COMPARED TO HELSINKI WATER RESULTS IN PERCENTAGES



In 2003, an agreement was concluded with the Ministry of Environment to withold the pollution charge, whilst the Company was undertaking extensive works to decrease the amount of nitrogen discharged to the Finnish Bay at least by 25% compared to the characteristic of 2002 by 31.03.2006.

THE NITROGEN PROJECT

The project was started in 2003 summer. Main reconstruction works were completed in 2004 and the process will be fully started in 2005. The project, which is the first of its kind in all three Baltic States, included modification of aeration tanks, an increase in air production capacity and the construction of a methanol plant which increases the efficiency of the treatment process. The purpose of methanol injection is to provide additional nutrition when needed in order to improve the life of microorganisms. The tuning of the process parameters followed the commissioning, in order to achieve the required decrease in the amount of nitrogen discharged into the Bay of Tallinn. The cost of the entire project is almost 30 million kroons.

HELCOM

If the nitrogen project succeeds and nitrogen concentration in the issued wastewater decreases to the desired level, the City of Tallinn could achieve positive feedback by HELCOM.

The Helsinki Commission, or HELCOM, organises intergovernmental cooperation between Denmark, Estonia, the European Community, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden in order to protect the marine environment of the Baltic Sea from all sources of pollution. Organising of cooperation is based on the Baltic Sea environmental protection convention.

Based on the convention, HELCOM recommendations have been adopted, where among other also the marginal values of quality indicators of wastewater for wastewater treatment plants have been provided. For example, at least 90% reduction of BOD, at most a concentration of BOD in the effluent of the treatment plant of 15 mg/l; yearly average values of total phosphorus below 1.5 mg P/l; 12 mg total nitrogen/l in the effluent water or 50% reduction of total incoming nitrogen.

The treatment results of Tallinna Vesi's wastewater comply with all requirements, except for the nitrogen concentration in issued wastewater.

SEWER NETWORKS REHABILITATION, REPLACEMENT AND EXTENSIONS

5151m of sewerage networks were rehabilitated in 2004 in order to improve the condition of the public sewerage network of the city. Also the plan for the rehabilitation of the streets of Tallinn was taken into account in drafting the networks rehabilitation programme.

In total AS Tallinna Vesi constructed 7485m of new sewerage networks and 1852m of new storm water networks in 2004. Sewerage networks were mostly constructed in Nõmme, Lilleküla and Merivälja. A main storm water collector, which is the preflow for the storm water from practically the entire dwelling area of Lilleküla and for Tondi area, was constructed under Mustamäe Road. Construction of the collector improved the living conditions of the district's inhabitants by significantly reducing the risk of floodings.

Close cooperation with the neighbouring municipalities of Tallinn continued with for example:

REHABILITATIONS 2001-2004 (METERS)				
	2001	2002	2003	2004
Sewerage network	5 011,4	5 306,42	5 143,41	5 152,21

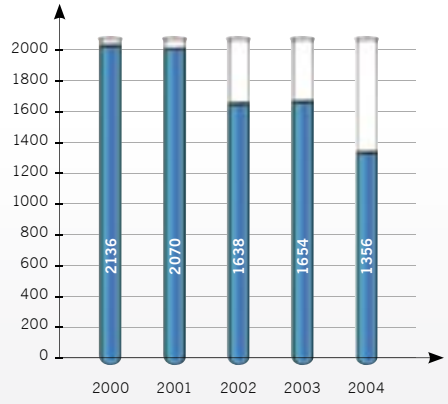
EXTENSIONS 2001-2004 (METERS)				
	2001	2002	2003	2004
Sewerage network	26 774	15 876	13 721	7 485
Storm water	6 252	4 330	5 586	1 852

- Rae rural municipality - both the drinking water as well as sewerage network connection points were constructed,
- Kiili Rural Municipality - drinking water and sewerage preflow networks were constructed;
- Saue and Harku Rural Municipalities - sewerage over-pumping systems and a drinking water main was developed;

REDUCING SEWER BLOCKAGES

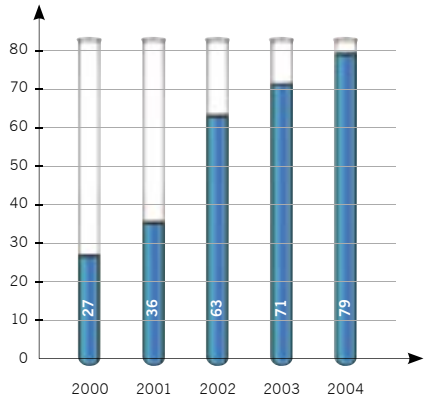
The sewerage network serviced by the Company has increased by more than 11% during last six years, mostly on account of constructing sewerage networks to Nõmme, Merivälja and new dwelling areas. Despite the increase in the service area the Company has been able to maintain the level of service and the number of blockages continues to be lower than the -20% requirement foreseen for 2005. During the past 5 years this indicator has been reduced by more than 36%

BLOCKAGES BETWEEN 2000 AND 2004



The main reason behind the sewer blockages is the reduction of flow amounts and flow speeds caused by

FLUSHED SEWERAGE NETWORKS 2000 – 2004 (TOTAL KM)



the reduction in water consumption and the consequent full sedimentation of pipes.

Both preventive pressure washing as well as pressure washing following blockages is carried out in order to reduce sewerage blockages. Since networks flushing has produced good results, the volume of networks to be flushed has been increased each year. In order to further increase the volume of network flushed, the Company invested into a third jetting and suction tank in 2004.

RESPONDING TO COMPLAINTS ON SEWER BLOCKAGES OR FLOODS

According to the requirements of the Services Agreement concluded with the City, 4 hours have been established as the time to respond to sewer blockages. In 2004 this requirement was complied with. The company has responded to Client complaints on sewer blockages or floods and taken immediate action after receiving the notice – the emergency team has without any delay started to liquidate the case.

SEWER AND STORMWATER OVERFLOWS

Sewer overflows

In connection with the heavy rains in July and beginning of August as well as the level of water in Lake Ülemiste reaching a critical level the Main Pumping Station (main PS) emergency outlet worked and 429 880 m^3 of wastewater significantly diluted with storm water and raw water from the Lake was pumped into the sea without passing through the wastewater treatment plant.

Action in such emergency situations has been established also with Estonian legislation, which allows the release of wastewater, diluted with stormwater in the proportion 1:4, directly into water body (the sea).

Due to heavy loads exceeding the biological treatment capacity 1 563 955 m^3 of wastewater was directed into the sea over the year through the deep-sea outlet after the mechanical-chemical treatment stage. The main volume of partially treated wastewater was directed into the sea due to the period of heavy rains, and approximately 20% of the total amount was directed into the sea due to the biological treatment working at lower volumes as some of the treatment capacity was stage by stage switched out because of the construction works under way for launching the denitrification process.

In the best practice a wastewater treatment plant is designed on the basis of actual average indicators of water intake and processing and a possibility to conduct water directly into nature is foreseen for extraordinary situations. Plants not loaded to nominal capacity do not enable the best of treatment, treatment process work is also paralysed by shock loads and too fast flowing of water in the treatment process.

By using pumping directly into the sea the treatment capacity of the plant was preserved, as restoring the plant's work takes a long time and the interim deficient treatment capacity would have increased the sea pollution risk. Also more serious damage to the environment (like pollution getting into the city streets due to overflow of collectors) was avoided as

WWTP FLOW AMUNTS AND OVERFLOWS 2004 (THOUSANDS OF M^3/YEAR)

Month	Flow amount from main PS	Overflow from main PS emergency outlet before mechanical-chemical treatment	Overflow after mechanical-chemical treatment
January	3 576 947	0	0
February	3 185 929	0	15
March	4 607 790	0	0
April	4 012 562	0	0
May	3 407 978	2	0
June	3 381 269	0	28 185
July	6 235 034	382 204	958 151
August	5 708 205	47 676	280 348
September	4 540 669	0	81 822
October	5 178 426	0	126 298
November	4 554 577	0	60 439
December	4 907 979	0	28 697
TOTAL	**53 297 365**	**429 880**	**1 563 955**

the appearance of polluted water on the streets in the lower parts of the city was avoided, and the level of the lake Ülemiste kept below a critical point.

As the period of heavy rain was acknowledged to be a force majeure situation by the Ministry of the Environment, AS Tallinna Vesi was exempted from paying the extra pollution charge with reference to extraordinary weather conditions.

Stormwater overflows

In 2004 the Company monitored, pursuant to requirements set forth in the water permit, 16 stormwater outlets. The largest storm water outlets are Lasnamäe, Harku and Mustoja outlets.Samples from storm water outlets are taken regularly, 1-2 samples each month. The sampling procedure for outlets has been determined for the Company with the special use of water permit no. HR0549.

In 2004 464,8 l/m^2 of rain fell on the area serviced by the sewerage system what is remarkable more than the average 351 l/m^2 of the past 10 years. In reality the storm water amounts are not measured and the amounts outlined in the attached table are calculated in accordance with a formula – methodology approved by the Ministry of the Environment.

In total, 6,344,793 m^3 of stormwater was discharged through the said outlets, which carried 90,7 tons of suspended solids and 7,2 tons of oil products into the environment. Considering the volume it can be said that the dilution was important. Pursuant to the Pollution Charge Act, a pollution fee was paid into the Environment Fund.

For avoiding possible environmental pollution, local treatment facilities are being designed for some outlets.

POLLUTION CHARGE FOR WASTEWATER AND STORMWATER DISCHARGED INTO GROUND AND BODIES OF WATER

The Company is obliged to pay a pollution charge for the pollutants discharged to the water bodies. Pollutants contained in treated effluent and storm water are included in the pollution charge calculations.

Depending on the specific outlet the permit for special use of water establishes both the pollutants, the discharge of which is not limited by the permit for special use of water, but for which a pollution charge is charged for (COD, SS, total phosphorus, oil products, total nitrogen, depending on the specific outlet) as well as the permitted limits of pollutants (in the part of oil products, depending on the specific outlet).

Of operating costs the water pollution charge made up:

- In 2003 2,9% of operating costs;
- In 2004 4,3% of operating costs.

HANDLING OF CHEMICALS

TYPES, HAZARDOUSNESS AND AMOUNTS OF CHEMICALS

The Company uses ca 138 hazardous and less hazardous chemicals in its operating activities. Chemicals become hazardous first and foremost due to their characteristics which pose a danger to the population and the environment, on the other hand the level of hazardousness depends on the amount of chemical used.

The largest volumes of chemicals are used by the Treatment Plants, the biggest number of different chemicals is used by Asset Management Department.

Pursuant to the Chemicals Act and implementing provisions AS Tallinna Vesi has been classified as a category B company with a risk of a major accident, as a high amount of chlorine, which is hazardous for the population as a chemical, is used in the water treatment process.

In the water treatment process water is disinfected, so that the water would be safe to human health. The widest spread disinfectant in use is chlorine, which is effective and has a longer-term effect in the water distribution network. As a chemical chlorine is a heavier than air poisonous gas causing irritation and having a corrosive effect, affecting mucous membranes both internally and externally, thus in the case of a chlorine emergency the people in the affected area may suffer serious damage to health or die.

The usage of chlorine has dropped considerably over the past decade. If in 1996, for example, the Company used 251 tons of chlorine annually, then by 2004 the usage had decreased to 56 tons annually. The probability of accidents involving chlorine has been minimised by applying the required safety measures.

The technology of chlorine storage complies with the German design norms and construction with the Finnish norms, as in Estonia there were no requirements for the chlorine storage construction. The construction of the new chlorine storage facility, which is one of the most modern of its kind in Europe, was

USAGE OF CHEMICALS IN THE WATER TREATMENT TECHNOLOGICAL PROCESS 2002-2004

Type of chemical	Unit	2002	2003	2004
Liquid chlorine				
Total usage	ton	73	69,0	56,0
Usage per unit produced	g/m³	2,6	2,5	2,4
Coagulant PAX-18				
Total usage	ton	218,4	1018,6*	1476,3
Usage per unit produced	g/m³	67,0	61,6	62,8
Coagulant aluminium sulphate				
Total usage	ton	5 044,7	1997,4**	0,0
Usage per unit produced	g/m³	200,4	186,1	0,0
Polymer				
Total usage	ton	3,9	2,7	1,7
Usage per unit produced	g/m³	0,1	0,1	0,07
Ozone				
Total usage	ton	196,3	158,4	173,0
Usage per unit produced	g/m³	8,0	6,3	7,4

USAGE OF CHEMICALS IN THE WASTEWATER TREATMENT TECHNOLOGICAL PROCESS 2002-2004

Type of chemical	Unit	2002	2003	2004
Coagulant ferric sulphate				
Total usage	ton	1 185,6	1 453,0	1 991,0
Usage per unit produced	g/m³	25,4	31,9	37,4
Polymers				
Total usage	ton	49,1	36,5	39,3
Usage per unit produced	g/m³	1,1	0,8	0,7

* June - Sept **Jan - May

completed by the end of 2003.

In addition to chlorine, large amounts of other chemicals are used in the water and wastewater treatment processes such as coagulants and polymers.

In water treatment process the polymers and coagulants help to remove the particulate matter in the water (e.g. suspended solids, organic substances and others).

In wastewater treatment coagulant is used for chemical processing of wastewater with the aim to remove phosphorus. Polymers are used to change the qualities of sediment, as a result of adding these water is more easily detached from the sediment.

Both coagulants and polymers are used in liquid form, do not have as strong poisonous characteristics as chlorine and are not hazardous to the environment or the population provided that safety requirements are followed.

The amounts of chemicals used at the Treatment Plants mostly depends on the characteristics of the water coming into the plants, which in turn is influenced by weather conditions in the case of raw water and the pollution level in the case of wastewater. Looking at the chemicals usage per unit produced, it becomes clear that despite very different characteristics of water and very different weather conditions the efficiency of chemicals usage has remained relatively stable.

Only in wastewater treatment considerably more coagulant was used in 2004 than in 2003 as a result of several factors. On one hand, people are using more chemicals in the household and at the same time are consuming less water, which consequently reduces the volume of wastewater but increases the concentration of phosphorus in wastewater. On the other hand, there were reconstruction works being carried out at the wastewater treatment plant, due to which the process was partly operating at overload. In connection with the changing of technological process, biological removal of phosphorus does not function any more and it can be only removed chemically, which also increases the amount of chemical used.

CHEMICALS SAFETY DATA SHEETS

One of the tasks were to ensure the existence of chemicals' safety data sheets which can be used as the basis for organising safe handling of chemicals. To get chemical data sheets from suppliers for all chemicals used was quite difficult during 2003 and 2004.

In 2004 we were able to obtain chemicals safety data sheets from the suppliers for practically all chemicals (with the exception of 4 out of 138). The chemicals safety data sheets are available in the Company both electronically from a single folder as well as in the form of hard copy at usage sites.

ACCIDENTS INVOLVING CHEMICALS

The probability of accidents connected with chemicals has been minimized, as the handling systems of chemicals comply with security and safety requirements.

In order to prevent accidents, in addition to the previously mentioned new chlorine storage, necessary conditions for chemicals storing and usage have been established also for other chemicals in usage, proceeding from information on the safety cards of chemicals, legal acts and safety instructions. The handling sites of important chemicals are supplied with automatic warning and degassing systems for the early detection of the possible leakage and its neutralization. Absorbents and personal protective appliances are available at the usage locations of chemicals.

Although the probability of the occurrence of large chemical accidents is small, the consequences of accidents connected with hazardous chemicals used in large amounts – like chlorine, methanol, methane gas – may be severe, if the chemical exits the operating premises. In this case there is a high risk that people's health will be damaged and there will be an environmental pollution.

Chlorine accident, which is defined in the company as a crisis situation, has most serious potential consequences. In order to be prepared for fast liquidation of the unlikely but still possible chlorine accident, an emergency action plan has been compiled and there are annual chlorine emergency trainings in cooperation with Harju County Rescue Service.

Possible accidents related with other chemicals are not assessed on the basis of significance of consequences as a crisis. As a rule these are smaller leakages that do not exit the operating premises customized for that and do not damage the environment and people. Smaller emergencies were liquidated pursuant to the procedures for handling non-conformities, which have been put in place in the Company.

There were no chemicals accidents with serious consequences in 2004, which would have caused damage to people or the environment. In 2004 there were some minor incidents connected with chemicals, like the leakage of chlorine gas in the interior of water treatment plant's chlorine storage due to the lack of tightness of the valve on the pipeline. As the consequence of the leakage, chlorine analyser and degassing system started and the problem was liquidated.

WASTE MANAGEMENT

PRODUCED WASTE

Data collection on waste, organised in accordance with the Waste Act waste report form, was made more accurate in 2004. The new way of accounting for waste also gave a clearer overview of waste that makes up the more significant volume.

The largest amount of waste in the Company is created by the Wastewater Treatment Plant, followed by Networks, Water Treatment and Asset Management.

In 2004 the total amount of waste increased by 5932 tons, mostly since the amount of sludge increased ca 16 % due to increased volume (approximately 17% compared to the year before) of wastewater treated because of extraordinary weather conditions.

WASTE PRODUCED 2003-2004 IN TONS

Waste produced	2003	2004
Total waste, included	37169,0	43100, 8
Ordinary waste	37154,5	43096,5
Hazardous waste	14,5	4,3

ORDINARY WASTE PRODUCED 2003-2004 IN TONS

Ordinary waste produced	2003	2004
Ordinary waste total	37154,5	43096,5
Ordinary waste without sludge	9202,5	7326,5

If we leave sludge out of the calculation and look at the change in the amount of waste generated in 2004 then in the part of other waste categories the 2004 amounts have decreased compared to 2003 by 1876 tons.

When viewing waste by types (see tables below), it can be seen that in addition to wastewater sludge also more rakings and sand sediments were generated, which was also connected with the increasing of wastewater treatment volume. Paper consumption decreased compared with year 2003, but the amount is bigger due to the fact that at the end of 2003 paper started to be collected separately from mixed domestic waste.

Big differences in the amount of waste in 2003 and 2004 and the creation of large one-time waste amounts in 2003 (for example construction and demolition waste, timber waste, waste containing oil, etc.) was mostly connected to residual waste liquidation in the course of the environmental management system implementation project.

MORE IMPORTANT ORDINARY WASTE BY DIVIDED TYPE AND QUANTITY 2003-2004 IN TONS

Type of waste	Produced in tons 2003	Produced in tons 2004	Difference in tons compared to 2003
Mixed municipal waste	221,4	151,2	-70,2
Paper and cardboard	2,6	12,3	9,7
Excavated stones and soil	7861,0	6125,5	-1735,6
Waste from screens	107,4	173,9	66,5
WwTP wastewater sludge	27952,0	35770,0	7818,0
Sandtrap's sludge	413,2	715,2	302,0
Asphalt waste	155,5	83,1	-72,4
Concrete	31,6	17,1	-14,5
Mineral waste	303,2	43,7	-259,5
Other waste	106,5	4,5	-102,0
TOTAL	**37154,5**	**43096,5**	**5942,0**

MORE IMPORTANT HAZARDOUS WASTE BY TYPE AND QUANTITY 2004 IN TONS

Type of waste	Produced in tons 2003	Produced in tons 2004	Difference in tons compared to 2003
Fluerescent lamps and articles containing mercury	0,2	0,3	0
Paints- varnishes	2,7	0,5	-2,2
Lead-plate batteries	1,4	0,5	-0,9
Filtering material and protective clothes contaminated with hazardous substances	0	0,1	0,1
Ni- , Cd- batteries	0,6	0,1	-0,4
Laboratory chemicals containing hazardous substances	0,2	0,6	0,4
Old oil	1,4	1,2	-0,2
Disposal of electronical devices	0,1	0,8	-0,7
Organic mixed solvents	0	0,1	0,1
Others	8,0	0,1	-7,9
TOTAL	**14,5**	**4,3**	**-10,3**

SEPARATELY COLLECTED DOMESTIC WASTE AND RECYCLED WASTE

In 2003-2004 the Company started to separate paper and cardboard, as well as packages (plastic soft drink bottles) from mixed municipal waste. Also the separate collection of scrap metal was planned, but was not fully implemented in 2004 because of metal waste accounting problems.

The total percentage of sorted and recycled waste was 83 % of the total amount of waste, which for the most part comprises sludge.

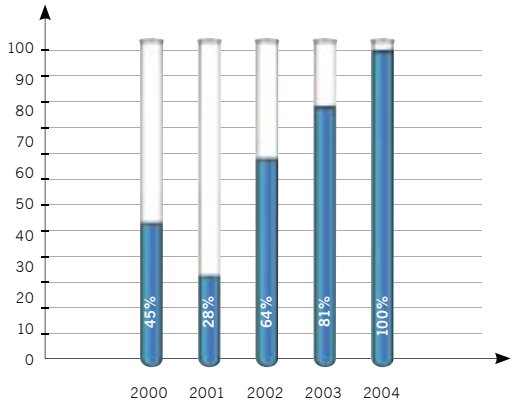
QUANTITY OF SORTED AND REUSED WASTE 2004

Type of waste	Produced in tons 2003	Produced in tons 2004
Paper and cardboard	2,6	12,3
Packages	0,2	1,7
WwTP wastewater sludge	27952,0	35770,0
Others	9199,8	7312,4
TOTAL	**37154,6**	**43096,4**

SLUDGE REUSE

The biggest part of recyclable waste was made up of sludge (35,770 tons in 2004), which the Company stopped depositing to landfill from 2003. 100% of sludge was reused in 2004 with 15 166 tons used for compost production (57 %), 5526 tons transported to Liikva, the rest stored on reserve fields in order to process it into compost the following year.

PERCENTAGE OF REUSED SLUDGE 2000-2004 (REUSED FOR COMPOST OR REFORESTATION EXPERIMENTS)



LIIKVA FOREST PLANTING EXPERIMENTATION AREA

In 2002, a study of different possibilities of usage of wastewater sludge was initiated. The main purpose of this study, which is planned to run until 2006 is to evaluate the different possibilities of treated wastewater sludge usage and the environmental impacts accompanying the usage. In 2004, the study of sludge usage in afforestation and in recultivation of exhausted and closed quarries was conducted.

In the frames of the research, Company's employees have been taking part in tree planting actions for two years.

SLUDGE USAGE IN 2004

SLUDGE USAGE IN 2004

As the Company stopped disposing sludge to landfill in 2003 and wishes to use it for compost production, the need for addition composting fields arose. Thus the construction of new composting fields with a total area of 10 hectares and a total cost of 34 million kroons to Paljassaare was started in 2004. The construction of composting fields will be completed in 2006.

WASTE PERMITS

Since sludge reuse qualifies as waste recycling, the Company has obtained waste permits in accordance with the requirements of the Waste Act.

WASTE PERMITS

Permit	Valid until	Description of waste permit
Waste permit no. L.JÄ.HA-34941	30.12.2009	Issued for recycling of stabilised waste and for transporting waste to Liikva as well as for recycling of biodegradable waste.
Waste permit no. L.JÄ.HA-31326	30.12.2009	Issued for recycling of stabilised waste and for transporting waste to Liikva as well as for recycling of biodegradable waste
Waste permit no. L.JÄ.HA-31326	08.09.2009	Issued for recycling of stabilised waste in Paljassaare in the part of stabilised waste, domestic wastewater sludge and biodegradable waste. The first type of waste created is domestic wastewater sludge, which processed, i.e. stabilised in the digesters. After stabilisation we have stabilised waste which is in turn reused – composted by mixing it with peat on the composting fields. Thus the processing of wastewater sludge into compost takes place via two recycling processes.

The conditions of waste permits related to sludge recycling were met in 2004.

COMPLIANCE WITH WASTE PERMIT NO L.JÄ.HA-34941 LIIKVA

Type of waste	Unit	2004
Stabilised waste		
Permitted for reuse	ton	15 000
actual	ton	5 526
Biodegradable waste		
Permitted for reuse	ton	3 000
actual	ton	0

COMPLIANCE WITH WASTE PERMIT L-JÄ.HA-31326 PALJASSAARE

Type of waste	Unit	2004
Stabilised waste		
Permitted for reuse	ton	40 000
actual	ton	35770*
Domestic wastewater treatment sludge		
Permitted for reuse	ton	300 000
actual	ton	35770
Biodegradable waste		
Permitted for reuse	ton	10 000
actual	ton	0

* including 15166 tons to compost production, 5526 tons taken to Liikva, the rest deposited on reserve fields and waiting for compost production

AIR EMISSIONS

AMBIENT AIR POLLUTANTS AND POLLUTION PERMITS

Pursuant to the Ambient Air Protection Act a company is in some cases granted the right to emit pollutants into ambient air from an immovable pollution source. In such cases an ambient air pollution permit is issued, which establishes the conditions for using the said right in the part of emissions of pollutants of primary importance, like sulphur dioxide, nitrogen dioxide, carbon monoxide, volatile organic compounds, ozone.

The ambient air pollution permits issued to AS Tallinna Vesi regulate the permitted pollutants amount emitted from the boiler houses of Ülemiste and Paljassaare as well as the emitted amount of ozone that is produced for drinking water treatment.

AMBIENT AIR POLLUTION PERMITS

Permit	Valid until	Description of pollution permit
Pollution Permit no. L.ÕV.HA-21334	31.12.2010	Valid for Ülemiste Water Treatment Plant pollution sources – the chimney of the boiler house and the exhaust pipe of the diesel generator. Establishes the list of pollutants emitted into ambient air and the annual permitted emission amounts thereof.
Pollution Permit no. 696	31.12.2005	Valid for Paljassaare Wastewater Treatment Plant pollution sources – the chimney of the boiler house, exhaust pipes, The chimney of the combined heat plant. Establishes the list of pollutants emitted into ambient air and the annual permitted emission amounts thereof.
Pollution Permit no. L.ÕV.HA-21490	31.12.2010	Valid for a pollution source at Ülemiste Water Treatment Plant - the ventilation system of the ozone production plant. Establishes the list of pollutants emitted into ambient air and the annual permitted emission amounts thereof.

The conditions established with Ambient Air Pollution Permits have been met in 2004 as presented in the following tables.

AMBIENT AIR POLLUTION FROM WASTEWATER TREATMENT PLANT BOILER HOUSE

Substance	Unit	2002	2003	2004
Nitrogen dioxide				
Permitted with the Waste Permit	ton		31,6	31,6
actual	ton		29	11,3
Carbon monoxide				
Permitted with the Waste Permit	ton		216,4	216,4
actual	ton		193,8	73,7
Volatile organic compounds				
Permitted with the Waste Permit	ton		14,4	14,4
actual	ton		12,9	4,9

AMBIENT AIR POLLUTION FROM WATER TREATMENT PLANT BOILER HOUSE

Substance	Unit	2002	2003	2004
Nitrogen dioxide				
Permitted with the Waste Permit	ton		2,4	2,4
actual	ton		1,6	1,6
Carbon monoxide				
Permitted with the Waste Permit	ton		2,4	1,9
actual	ton		1,6	1,6
Volatile organic compounds				
Permitted with the Waste Permit	ton		0,2	0,2
actual	ton		0,1	0,1

In the part of ozone a thermic destructor of residual ozone has been integrated into the process, in which the residual ozone emitted from the process is burned and the air emitted from the destructor is diluted. 100% of residual ozone was destroyed in 2004.

AMBIENT AIR POLLUTION CHARGE

The Company pays the minimum pollution charge for pollutants emitted into ambient air. In 2004 it made up less than 0,5% of the total pollution charge paid.

CONSUMPTION OF FUEL

Altogether the Company has 134 vehicles and special purpose vehicles for the purpose of carrying out different operating tasks. The biggest group of vehicles is operating vehicles, which include the cars used by foremen, minivans, team vans (including leakage labs and asset management vans), team cars with a box and lifter. Special purpose vehicles include jetting and suction trucks, tank cars, sludge transportation trucks.

Consumption of fuel has decreased compared to 2003, as can be seen in the following table

FUEL CONSUMPTION IN LITRES 2003-2004

Vehicles	2003	2004
Petrol	93 000	105 000
Diesel	279 000	262 000
TOTAL	**372 000**	**367 000**

TYPES OF VEHICLES

Vehicles	Number
Passenger cars	42
Operating vehicles	66
Special purpose vehicles	9
Tractors, trailers	13
Water tanks	4
TOTAL	**134**

For 2005 we have set the task of reducing consumption of fuel compared to the previous year and to use, for efficiency purposes, fuel of higher quality as in that case we will need to spend less fuel and the substances contained in higher quality fuel pollute the environment less.

CONSUMPTION OF ELECTRICITY

The bulk of total electricity consumed is used for running the core processes of the Company - in Water Treatment, in Wastewater Treatment and in Networks to operate pumping stations and other equipment. Although in Wastewater Treatment and in administrative units electricity consumption increased, total consumption of electricity in 2004 compared has been decreased.

Despite very different operating conditions in year 2004 the consumption of electricity per unit produced in different department, showing the efficiency of equipment operation, has remained on the same level or decreased.

CONSUMPTION OF TOTAL ELECTRICITY AND PER UNIT 2002 AND 2004

Department	Unit	2002	2003	2004
Water Treatment				
Total usage	kWh	13 495 858	12 182 867	11 206 594
Consumption per unit produced	kWh/m³	0,48	0,45	0,48
Wastewater Treatment				
Total usage	kWh	14 889 755	15 575 937	16 478 684*
Consumption per unit produced	kWh/m³	0,32	0,35	0,31
Networks pumping stations				
Total usage	kWh	6 691 148	6 126 094	6 000 153
Other consumers				
Total usage	kWh	443 075	717 319	870 376
TOTAL	kWh	**35 519 836**	**34 602 217**	**34 555 807**

* including electricity from biogas 889 560 kWh

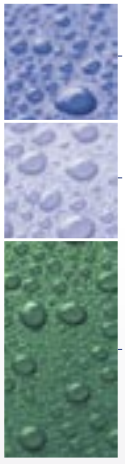
In 2005 the Company will focus on replacing excess capacity equipment with more energy efficient equipment, compensating reactive energy, using green energy.

BIOGAS USAGE

One good opportunity to reduce the damage caused to the environment by electricity consumption is to use as much of the biogas produced at Wastewater Treatment as possible. As a result of the wastewater treatment process, a biogas which contains ca 60% methane is produced in the methane tanks where sludge is fermented.

1.883 thousand m³ of biogas were produced in the digesters at Paljassaare Wastewater Treatment Plant in 2004. Almost half of it was used to produce heat at the Wastewater Treatment Plant, a quarter to operate the gas engines in the treatment process and the rest of the gas was burned. Biogas was burned because of lower need during the works of the nitrogen removal project, but also during summer when there is no need for heating

BIOGAS USAGE AT PALJASSAARE WASTEWATER TREATMENT PLANT IN 2004



26% For operating the gas engine

26% Burned in gas burners

48% For heat production

Methane contained in the biogas is explosive and decreases the ozone layer. In 2004, there were no biogas accidents that would have caused methane to be released into the air.

NOISE

The noise aspect did not receive a high score among significant aspects in 2004, but it was noted nevertheless. The objective was to reduce the impact of noise on the environment. Since the noise aspect in AS Tallinna Vesi is first and foremost related to construction sites and subcontractors, then the task of ensuring the environmental compliance of subcontractors was set.

Environmental criteria for qualifying the suppliers have been established in the procurement procedures of the Company. The environmental compliance of bidders is evaluated in the course of each procurement with the help of respective questionnaires. A bidder who is unable to prove the compliance of its environment related activities with Company requirements, will not make it to the next stage of the procurement.

The construction works bidders must also confirm that they have employed environmental protection measures on the site, including the compliance of noise levels with norms and possibilities for reducing noise. The environmental activities of subcontractors on the sites are monitored by the construction supervision staff of the Company.

CONNECTING TO PUBLIC WATER SUPPLY AND SEWERAGE SYSTEM

In 2004 the possibility to connect to the public water supply and sewerage system of Tallinn was created for more than 400 immovables.

As the public sewerage system makes it possible for the city inhabitants to improve their living environment, Tallinners made active use of the possibility to connect.

In total AS Tallinna Vesi concluded 751 connection contracts in 2004 and almost half of the connectees were compensated of their the connection charges by the City of Tallinn. Additionally the Company concluded 2762 new service agreements.

CONNECTION CONTRACTS IN 2004

2004	Total	With compensation	Without compensation
Water	210	31	179
Sewerage	528	365	163
TOTAL	**751**	**365**	**386**

In 2004 73% of customers had reimbursed the cost of connecting to the public sewerage system that was 7% below the target. Reasons for smaller number of connectings than planned were primarily the following - resolving the ownership issue of immovables takes in some cases much time, the potential connectee does not have necessary resources for constructing pipeline within the property, and regardless of the favourable possibility, customers may not be interested in connecting with the public sewerage.

Within the Customer Census Project the properties who were not supplied with the public sewerage service were offered connection opportunities.

SPECIFYING AND CHARGING THE OVERPOLLUTION CAUSED BY CUSTOMERS

The Company's Wastewater Inspectorate (in WWTP) regularly monitors the sites discharging wastewater into Tallinn's public sewerage system, verifying the compliance to requirements provided in legislation.

The dominant industrial wastewater in Tallinn's sewer system is the wastewater of the food-processing industry and the average quality indicators of the wastewater of larger industries are presented in the Statement which the Company regularly submits to Harju County Environmental Service.

In 2004, the Client Service presented 792 invoices for over pollution according to the legal requirements and contract concluded with the clients.

ENVIRONMENTAL COMMUNICATION

Since the environmental activities of the Company are within the scope of interest of stakeholders and the general public, environment related information has been evaluated to be a significant aspect and tasks were agreed.

ENVIRONMENT-RELATED TOPICS IN MEDIA

In 2004 Tallinna Vesi continued cooperation with the newspaper Eesti Päevaleht with a special edition named Garden. During spring and summer regular articles were published about company's environmental projects and related activities. In addition, news about company's work and overviews about water treatment, construction works, waste water treatment and community projects were published by different media channels.
Company does regular monitoring of published articles.

ENVIRONMENTAL EVENTS

There is constant interest in company's activity by pupils and students. In water- and wastewater treatment plant, experienced specialists of the company carry out regular excursions. In 2004 Ülemiste water treatment plant organized 54 school excursions. In addition, excursions to introduce our company and treatment plants are carried out for many interest groups and co-partners. To name only few, we can bring out visits of Vienna and Helsinki water companies and environmental specialists in 2004.

Also wider events were carried out. Examples are the Run around Lake Ülemiste in August and Nordea bank Run from spring till autumn during which the beautiful territory around the lake, that usually is closed for the public, was open. In these sport events the company also introduces the environmental friendly tap water drinking habit and offers pure drinking water to the participants for free.

EDUCATIONAL CHILDREN'S PLAY ON ENVIRONMENTAL PROTECTION

In 2004, the company started collaboration with the children's theatre Trumm to prepare an educational play on environmental protection called "Järvevanake" and present it in the schools of Tallinn. Children have received the play very well and during the year, over 20 plays were done in schools all over the city. Trumm will continue doing the plays also in 2005.

REGULAR INFORMATION EXCHANGE WITH STAKEHOLDERS

One of the company's key stakeholder is the City of Tallinn. Information exchange with the City of Tallinn and its different offices (Utility Board, Sustainable Development and Planning Office, Environmental Office) is carried out by regular reporting, letter exchange and meetings during which different aspects of the company's development are discussed. An important point of cooperation is action planning in crisis situations and an co-operative problem solving during that period.

The company has improved its communication with the neighbouring municipalities. One of the important points is collaboration in a crisis situation, since the raw water catchment area is partially situated in the neighbouring municipalities and their protection and management is a key responsibility for all parties. The company has also taken action to extend its service area to the neighbouring municipalities by building connection points to Tallinn's public water and sewerage network, which enable them to direct wastewater to Paljassaare WTP for treatment.

The company has a good working relationship with Harjumaa Environmental Service and Environmental Ministry. All regular environmental reporting has been submitted on time and in 2004, the company improved the corresponding procedure to have a clear overview of the reports submitted, their deadlines and responsible parties.

AS Tallinna Vesi is a member of the Estonian Water Companies Association (EVEL) and a representative of the company sits on the board of the organisation. Together with EVEL, the company organises various water and wastewater related seminars and trainings for the members. In addition, cooperation with EVEL enables the company to be involved in the changing process of the law applying to the water business.

Being a (founding) member of the Estonian Environmental Management Association (EKJA) improves collaboration with other businesses. For example, as a result of the EKJA collaboration, a change in Procurement law was introduced to consider environmental requirements.

In order to exchange crisis situation related information, the company met with the representatives of Tallinn Airport in June. In addition, the company has signed several agreements with other companies to collaborate in a crisis situation.

Other Environmental Data

PREPAREDNESS FOR CRISIS SITUATIONS

The crisis preparedness procedures were significantly improved in 2004. The Company has put in place the basic principles for crisis situation prevention and preparedness (general procedure) and developed emergency action plans for ten defined crisis situations.

Crisis is an extraordinary situation with significant negative impact that can effect a large proportion of service area and that can cause the company to not function properly:

- the life and health of humanity is under danger;
- the quality of life can quickly worsen;
- providing services to clients and customers can be disturbed long term or has been cancelled;
- remarkable threath of environmental pollution can happen;
- the financial situation of the company substancially worsens;
- relevant assets have been damaged;
- the reputation of the organization has been damaged seriously.

In ASTV we have identified the following potential situations as crisis situations because of different reasons:

• Terrorist act, bomb threat in ASTV territory

Because of extraordinary external situations

• Extensive fire

If fire safety instructions are not followed

• Work accidents resulting in death or several serious injuries

If work safety instructions are not followed

• Chlorine emergency

Due to technological failures, chlorination points breakdown or damage to chlorine containers during transport

In 2004 the important trainings related with preparedness in the crisis situations were:

- Chlorine Emergency Training
- Chemicals Risk Management in the Company
- Fire Safety Training for responsible persons
- Basic Fire Safety Training for employees
- HAZOP training at WWTP - analysing the risks of methanol plant
- Practical seminar about implementing ISO 14001 4.4.7
- the crisis plan testing organised at the initiative of Networks, all the involved employees operated efficiently.

• Too high level of Lake Ülemiste

Due to extraordinary weather conditions

• Inability to treat water

Main reasons for that can be long-term extensive breakdowns of the automatic control system, equipment or pumping stations and other inadvisable situations, such as raw water pollution in Lake Ülemiste (plain crash, accidents with chemicals etc), fire at the main facilities, long-term electricity cut, the impossibility to use the diesel generator, chlorine emergencies, terrorist act, bomb threat.

• Inability to supply drinking water to customers

If there is a failure concerning the main pipeline of water supply network, as a result of which the water supply is discontinued or there is a high degree of danger that supply of water may be discontinued for more than 4 hours for the critical spots as the whole city district, main hospitals etc.

• Inability to transport wastewater and discharge it

Because of the collapse of the tunnel sewer or stoppage of sewerage pumping houses, as a result of which extensive floodings and pollution of environment could happen.

• Inability to receive stormwater

Due to extensive floods that are in the service area of ASTV caused by major rainstorms.

• Inability to treat wastewater

Main reasons for that can be long-term extensive breakdowns of the automatic control system, main pumping station or other equipment as the blowers, the air mains. Also other inadvisable situations such as extensive fire at main facilities, hazardous chemicals (methanol, coagulant) emergencies, long-term electricity cut; large breaking of sea outlet pressure mains, unfavourable weather conditions (heavy or extreme rainfall), terrorist act, bomb threat.

A crisis action plan for every crisis situation has been made according to the instruction of general procedure and the nature of the incident. Crisis action plans are tested in practical trainings where possible or in crisis team discussions and meetings.

2004 was extraordinary for the company in the sense that twice, in July and August, a crisis situation was announced in the company due to extraordinary weather conditions, which actually tested the company's preparedness for an emergency situation.

Due to highest level of rain ever recorded July there were extensive floodings and pipes could not accept all the rain water, also WWTP could not treat all of the oncoming wastewater. In August due to the heavy rain the level of Ülemiste rose rapidly over critical level. In the same time were heavy rains and floods in the city.

Crisis situations were solved, after the crisis a crisis situation analysis was made according to the valid procedure and preparedness was further improved.

INTERNAL AUDIT RESULTS

Regular internal audits for evaluating the functioning of the quality and environmental management system and compliance with legislation were carried out in the Company during May, August and September. Over 20 appropriately trained internal auditors participated in carrying out the internal audits and described 91 findings in total.

A regular external audit was carried out in the Company in 2004 by accredited certifier Det Norske Veritas in order to evaluate the continued compliance of the quality and environmental management system with ISO 9001 and ISO 14001 standard requirements. As a result of the external audit an audit report was prepared with which Det Norske Veritas confirmed the validity of both certificates. Three nonconformities were discovered, all related to either the environment related legislation administration system or document administration, and all three have been corrected.

Area	Nonconformities	Observations
INTERNAL AUDIT RESULTS	**33**	**58**
Including integrated Q& E System	26	39
INCLUDING ENVRIRONMENTAL FINDINGS	**7**	**19**
Environmental aspects	1	6
External communication	2	2
Legal requirements	1	6
Preparedness for crisis situations	3	5

COMPLIANCE WITH ENVIRONMENTAL LEGISLATION

Following Estonia's accession to membership of the European Union in May 2004, Estonian environmental legislation has been substantially revised to harmonise Estonian requirements with those of the European Union.

On the year 2004, a Legal Due Diligence report was compiled by legal office Raidla & Partners, which has confirmed the company's compliance based on the records that the company presented on the environment related legal acts. Raidla & Partners also outlined the improvement areas.

INVOLVEMENT OF EMPLOYEES

Environment related activity is a natural part of the company's daily work, in cooperation different issues related with the company's activity are solved, among that the environmental issues.

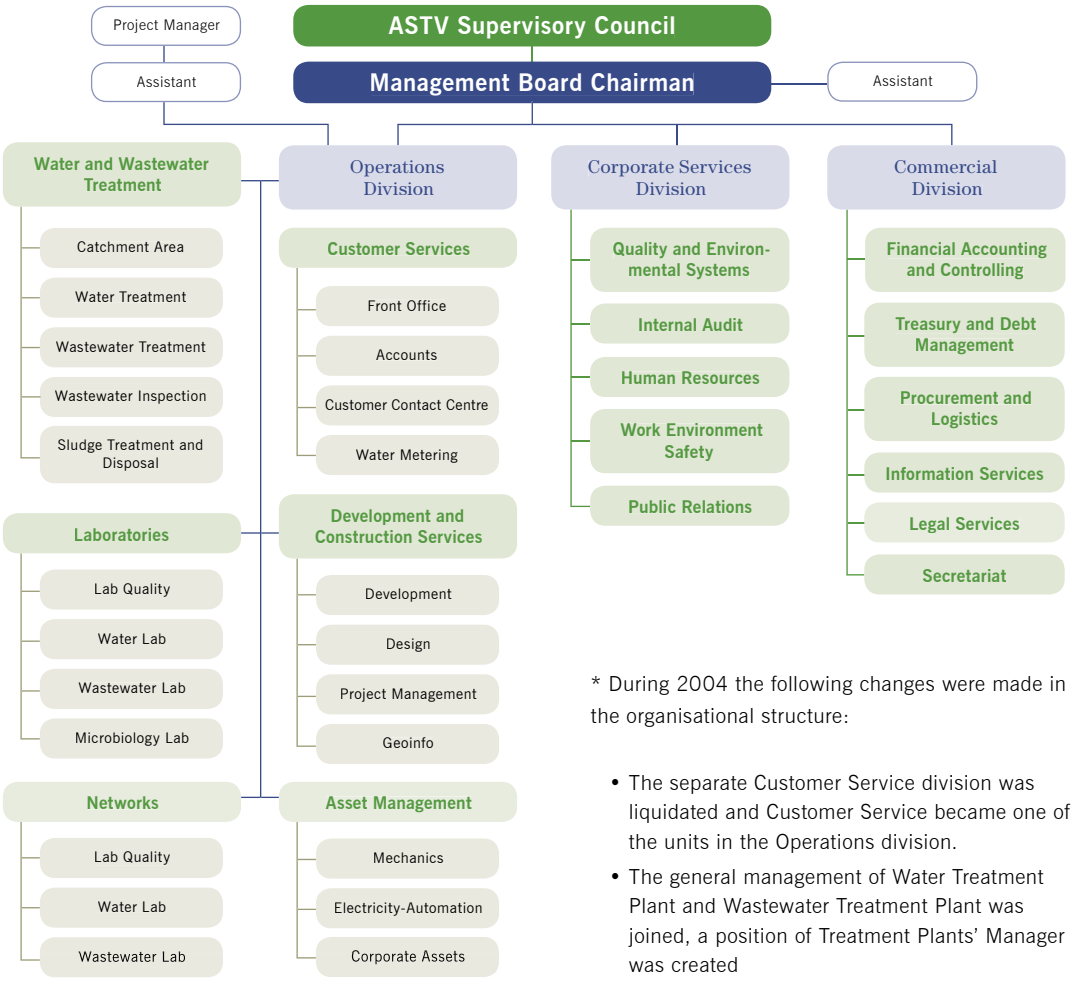
Unit managers are responsible for implementing the environment related activities, who are respectively involving their employees in performing the tasks. Evaluation of the productivity of the environmental activity of key employees is connected with the company's performance related pay system.

Main work formats are:

- Meetings on different management levels;
- Work groups, project groups, where specialists are involved;
- Informing employees about important environment related events via internal computer network, e-mail, internal newsletter;
- Training of employees. In 2004 there were on an average 4 training days per one employee,

Annex

FIGURE 1. ORGANISATION CHART AT THE END OF 2004*



* During 2004 the following changes were made in the organisational structure:

- The separate Customer Service division was liquidated and Customer Service became one of the units in the Operations division.
- The general management of Water Treatment Plant and Wastewater Treatment Plant was joined, a position of Treatment Plants' Manager was created
- Asset Management unit was moved into direct subordination of the Chief Operating Officer
- The areas of responsibility of members of Management Board were balanced, due to which general functions were divided between Corporate Services and Commercial division
- Technical Support Services was renamed as Development and Construction Services

FIGURE 2. CATCHMENT AREA

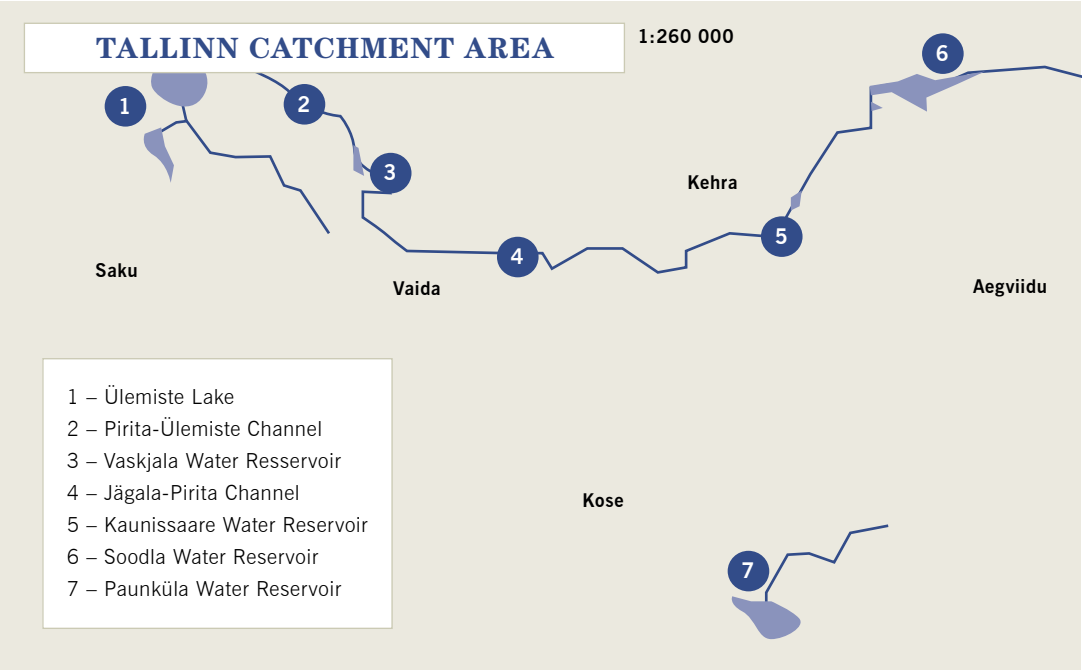


TABLE 1. RAW WATER RESOURCE IN TALLINN'S SURFACE WATER SYSTEM 2003 – 2004

Month	Lake Ülemiste				Paunküla Water Reservoir				Soodla Water Reservoir				Pirita-Ülemiste Channel	
	2003		2004		2003		2004		2003		2004		2003	2004
	Level m.abs.*	Filled %	Level m.abs.*	Filled %	Level m.abs.*	Filled %	Level m.abs.*	Filled %	Level m.abs.*	Filled %	Level m.abs.*	Filled %	Level m.abs.*	Level m.abs.*
January	36,53	95	36,81	111	70,93	51	72,41	97	63,48	53	65,17	107	0,26	0,00
February	36,34	83	36,69	104	70,93	51	72,39	96	63,58	55	65,12	104	0,24	0,00
March	36,29	80	36,61	99	70,91	50	72,37	96	63,67	58	65,13	104	1,44	0,00
April	36,58	98	36,75	108	71,29	61	72,41	97	64,55	82	65,21	108	0,54	0,00
May	36,67	103	36,64	101	72,10	87	72,35	95	65,16	105	65,11	103	0,19	0,38
June	36,57	97	36,64	101	72,46	99	72,44	98	65,09	103	65,10	103	0,68	0,99
July	36,56	96	36,81	111	72,39	96	72,64	105	65,05	101	65,19	107	1,36	0,00
August	36,52	94	36,95	121	72,22	91	72,63	105	65,01	100	65,16	105	1,00	0,00
September	36,52	94	36,83	113	72,09	87	72,60	103	64,99	100	65,15	105	1,00	0,00
October	36,62	100	36,86	115	72,02	84	72,65	106	65,03	101	65,21	108	1,14	0,00
November	36,66	102	36,92	119	72,10	87	72,69	107	65,18	107	65,20	107	0,45	0,00
December	36,72	106	36,92	119	72,33	94	72,73	109	65,21	108	65,19	107	0,16	0,00

* Absolute metres

TABLE 2. RAW WATER DAILY CONTROL AT THE INTAKE TO THE PLANT 2004

No	Parameter	Unit	2004			2003			EU directive 75/440/EC	
			Max	Min	Aver.	Max	Min	Aver.	A2 G	A2 I
1	Temperature	C	23,2	0,7	8,8	24,2	0,7	9,6	22	25 (O)
2	Dissolved oxygen	mg/l	13,7	7,6	10,6	14	5,7	9,8		
3	Dissovled oxygen degr. of saturation	%	119	61	91	116	46	85		
4	Odour	units	2	2	2	2	2	2		
5	Turbidity	NTU	30,2	0,8	8,8	25	0,47	7,31		
6	Colour	Pt mg/l	99	42	60	85	32	47	50	100 (O)
7	pH		8,89	7,58	8,25	8,96	7,52	8,21	5,5 - 9	
8	Alkalinity	mg-ekv/l	6,73	2,91	3,56	4,32	2,56	3,40		
9	COD Mn	mg O2/l	12,5	7,4	10,1	10,2	6,4	8,4		
10	Total organic carbon TOC	mg C/l	13,6	9,4	11,6	12,4	8,6	10,3		
11	Uvabs. 254 nm	AU/5cm	2,290	1,400	1,701	1,78	1,16	1,363		
12	Coliform bacteria	PMÜ/100ml	285	0	24	105	0	14		
13	Escherichia coli	PMÜ/100ml	85	0	13	34	0	6		
14	Clostridium perfringens	PMÜ/100ml	45	0	4	75	0	7		
15	Phytoplankton number	cells/ml	598796	3486	98253	522724	4363	133150		
16	Phytoplankton biomass	mg/l	26,76	0,483	7,402	31,37	0,358	6,522		
17	Zooplankton number	no/m^3	632800	3400	165859	894400	32000	202167		

TABLE 3. INTAKE TO WATER TREATMENT PLANT (WEEKLY ANALYSIS) 2003 - 2004

No	Parameter	Unit	2004			2003		
			Max	Min	Aver.	Max	Min	Aver.
1	Temperature	°C	23,2	0,7	8,9	24,2	0,7	9,8
2	Odour	units	2	2	2	2	2	2
3	Color	Pt mg/l	99	42	60	85	32	47
4	Turbidity	NTU	30,0	0,8	8,8	25,0	0,5	7,3
5	pH		8,89	7,58	8,25	8,96	7,52	8,21
6	Alkalinity	mg-ekv/l	3,81	2,91	3,31	4,32	2,68	3,40
7	Permanganate index	mg O2/l	12,5	7,4	10,1	10,2	6,4	8,4
8	Total organic carbon	mg C/l	13,6	9,4	11,6	12,4	8,6	10,3
9	Orthophosphate	mg/l	0,080	0,000	0,003	0,077	0,000	0,010
10	Total phosphorus	mg/l	0,126	0,019	0,037	0,128	0,028	0,054
11	Nitrate	mg/l	8,5	0,0	2,9	5,7	0,0	1,7
12	Nitrite	mg/l	0,094	0,000	0,027	0,041	0,004	0,015
13	Ammonium	mg/l	0,484	0,004	0,063	0,385	0,004	0,080
14	Total nitrogen	mg/l	3,40	1,08	1,83	2,38	0,80	1,42
15	Coliform bacteria	PMÜ/100ml	285	0	24	105	0	14
16	Escherichia coli	PMÜ/100ml	85	0	10	34	0	6
17	No of nests at 37 C	PMÜ/ml	280	3	45	203	0	37

TABLE 4. CAMBRIAN VENDI WATER LEVEL BOREHOLES WATER QUALITY 2004 COMPARED TO 2003 AVERAGE RESULTS

	Parameter	Unit	2004			2003
			Min	Max	Average	Average
1.	Odour	points	1	2	1,9	1,8
2.	Taste	points	1	1	1	1
3.	Temperature	°C	7,3	10,1	9,0	8,7
4.	Colour	mg Pt/l	3	18	7,7	6,5
5.	Turbidity	NTU	0,31	6,50	1,63	1,16
6.	Dissolved O_2	mg/l	0	2,6	0,9	0,5
7.	pH	pH unit	7,91	8,34	8,15	8,12
8.	Conductivity	μS/cm	314	1085	626	633
9.	Permanganate index	O_2mg/l	0,5	2,64	0,96	0,95
10.	Alkalinity	mg-ekv/l	2,2	2,6	2,7	2,6
11.	Total hardness	mg-ekv/l	2,06	6,29	3,54	3,61
12.	Temporary hardness	mg-ekv/l	0	3,47	0,94	1,05
13.	Permanent hardness	mg-ekv/l	2,0	3,81	2,59	2,56
14.	Free CO_2	mg/l	1	5	2,9	2,6
15.	Total iron Fe	mg/l	0,08	0,73	0,26	0,28
16.	Fluoride	mg/l	0,43	0,94	0,67	0,68
17.	Manganese Mn	mg/l	0,012	0,2	0,07	0,07
18.	Ammonium NH4	mg/l	0,14	1,15	0,42	0,45
19.	Nitrites NO2	mg/l	<0,003	<0,003	0,003	<0,003
20.	Nitrates NO3	mg/l	<0,3	<0,5	0,3	0,3
21.	Stability index		0,003	0,603	0,33	0,29
22.	Total organic carbon	mg/l	1	4	1,4	1,4
23.	Sulfides, S2-	mg/l	0,001	0,022	0,008	0,006
24.	Dry residue	mg/l	166	728	354	379
25.	Calcium, Ca2+	mg/l	25,1	96	50	52
26.	Magnesium,Mg2+	mg/l	8	22	13	13
27.	Sodium, Na+	mg/l	12,6	106	51	51,1
28.	Potassium, K+	mg/l	4,6	9,4	6,9	7
29.	Sulfates SO42-	mg/l	0,6	28	11	11
30.	Bicarbonates,HCO3-	mg/l	122	240,3	158,9	158,4
31.	Chlorides, Cl-	mg/l	17	256	110,6	111,4
32.	Cyanide, CN-	mg/l				
33.	Boron	mg/l	0,09	0,46	0,15	0,12
34.	Aluminium	mg/l	0,0002	0,0088	0,0014	0,0013
35.	Arsenic	mg/l	0,0001	0,0004	0,00021	0,0002
36.	Cadmium	mg/l	<0,00001	<0,00009	0,00009	0,00009
37.	Chromium	mg/l	0,0004	0,0012	0,0008	0,0009
38.	Copper	mg/l	0,0001	0,0274	0,004	0,003
39.	Mercury	mg/l	<0,00002	<0,00002	0,00002	0,00003
40.	Nickel	mg/l	0,00011	0,014	0,0026	0,0022
41.	Lead	mg/l	0,00001	0,0049	0,0004	0,0002
42.	Antimony	mg/l	0,00001	0,00009	0,00002	0,00002
43.	Selenium	mg/l	0,004	0,0038	0,001	0,001

TABLE 5. ORDOVICIAN-CAMBRIAN WATER LEVEL BOREHOLES WATER QUALITY 2004 COMPARED TO 2003 AVERAGE RESULTS

	Parameter	Unit	2004			2003
			Min	Max	Average	Average
1.	Odour	points	2	2	2	1,6
2.	Taste	points	1	1	1	1
3.	Temperature	°C	7	8,6	7,9	7,8
4.	Colour	mg Pt/l	2	7	4	5,2
5.	Turbidity	NTU	0,13	1	0,41	0,34
6.	Dissolved O2	mg/l	0,5	3,4	1,1	0,7
7.	pH	pH unit	7,73	8,24	8,08	8,07
8.	Conductivity	μS/cm	249	802	348	350
9.	Permanganate index	O2mg/l	<0,5	<0,5	0,5	0,64
10.	Alkalinity	mg-ekv/l	1,65	2,75	2,14	2,36
11.	Total hardness	mg-ekv/l	1,8	6,09	2,85	2,78
12.	Temporary hardness	mg-ekv/l	0	3,6	0,73	0,75
13.	Permanent hardness	mg-ekv/l	1,65	2,49	2,12	2,12
14.	Free CO2	mg/l	1	6	2,4	2,8
15.	Total iron Fe	mg/l	0,05	0,45	0,1	0,1
16.	Fluoride	mg/l	0,26	0,92	0,62	0,57
17.	Manganese Mn	mg/l	0,008	0,04	0,02	0,02
18.	Ammonium NH4	mg/l	0,10	0,30	0,19	0,19
19.	Nitrites NO2	mg/l	<0,003	<0,003	0,003	<0,003
20.	Nitrates NO3	mg/l	<0,3	<0,5	0,3	<0,3
21.	Stability index		-0,03	0,18	0,07	0,05
22.	Total organic carbon	mg/l	1	1,8	1,1	1,2
23.	Sulfides, S2-	mg/l	0,003	0,014	0,01	0,007
24.	Dry residue	mg/l	132	528	205	204
25.	Calcium, Ca2+	mg/l	21	81	35	35
26.	Magnesium,Mg2+	mg/l	9	25	13	13
27.	Sodium, Na+	mg/l	5,2	32,8	13,2	13,9
28.	Potassium, K+	mg/l	4,96	7,76	6,11	6,05
29.	Sulfates SO42-	mg/l	0,6	12	30	25,9
30.	Bicarbonates,HCO3-	mg/l	100,7	167,8	144,7	141,6
31.	Chlorides, Cl-	mg/l	5,1	100	21,1	19,5
32.	Cyanide, CN-	mg/l	-	-	-	-
33.	Boron	mg/l	0,12	0,45	0,3	0,28
34.	Aluminium	mg/l	0,0002	0,0096	0,0026	0,0009
35.	Arsenic	mg/l	0,0002	0,00024	0,0002	0,0002
36.	Cadmium	mg/l	0,00009	0,00009	0,00009	0,0001
37.	Chromium	mg/l	0,00043	0,00087	0,0006	0,0006
38.	Copper	mg/l	0,00007	0,002	0,00051	0,0014
39.	Mercury	mg/l	0,00002	0,00002	0,00002	0,00003
40.	Nickel	mg/l	0,00023	0,0023	0,00086	0,0019
41.	Lead	mg/l	0,00005	0,0001	0,00007	0,0001
42.	Antimony	mg/l	0,00001	0,00004	0,00002	0,00002
43.	Selenium	mg/l	0,0008	0,002	0,001	0,0008

TABLE 6. WATER QUALITY OF BORE WELL PUMPING STATIONS 2004 COMPARED TO 2003 AVERAGE RESULTS

No	Parameter	Unit	2004			2003	Decree no 82 (including requirements from 01.07.02) and EU Directive 98/83/EC
			Min	Max	Aver.	Aver.	
1.	Odour	points	1	2	1	1	Acceptable to consumer
2.	Taste	points	1	1	1	1	Acceptable to consumer
3.	Temperature	^{o}C	7,6	10	9,1	9	
4.	Colour	mg Pt/l	2,0	19,0	7,6	8,2	Acceptable to consumer
5.	Turbidity	NTU	0,05	6,4	1,88	2,04	Acceptable to consumer
6.	Dissolved O_2	mg/l	0,4	10,7	4,6	4,5	
7.	pH	pH unit	7,56	8,25	8,09	8,06	>6,5 and <9,5
8.	Conductivity	μS/cm	263	1067	590	626	2500
9.	Permanganate index	O2mg/l					5
10.	Alkalinity	mg-ekv/l	2,04	3,93	2,58	2,47	
11.	Total hardness	mg-ekv/l	2,22	6,25	3,38	3,56	
12.	Temporary hardness	mg-ekv/l	0	3,62	0,84	0,97	
13.	Permanent hardness	mg-ekv/l	1,65	3,83	2,54	2,58	
14.	Free CO_2	mg/l	1	7	2,7	2,7	
15.	Total iron Fe	mg/l	<0,02	0,56	0,18	0,21	0,2
16.	Fluoride	mg/l	0,39	0,94	0,66	0,68	1,5
17.	Manganese Mn	mg/l	0,004	0,112	0,043	0,053	0,05
18.	Ammonium NH4	mg/l	0,011	0,827	0,288	0,359	0,5
19.	Nitrites NO2	mg/l	<0,003	0,078	0,009	0,008	0,5
20.	Nitrates NO3	mg/l	<0,3	1,19	0,5	0,39	50
21.	Stability index		-0,13	0,57	0,24	0,25	
22.	Total organic carbon	mg/l	<1	4,2	1,3	1,3	Without unusual changes
23.	Sulfides, S^{2-}	mg/l	0	0,018	0,006	0,004	
24.	Dry residue	mg/l					
25.	Calcium, Ca^{2+}	mg/l	27	97	48	51	
26.	Magnesium,Mg^{2+}	mg/l					
27.	Sodium, Na^{+}	mg/l					200
28.	Potassium, K^{+}	mg/l					
29.	Sulfates SO_4^{2-}	mg/l					250
30.	Bicarbonates,HCO_{3-}	mg/l	100,7	239,7	155,1	157,7	
31.	Chlorides, Cl-	mg/l	9,9	251	100	108	250
32.	Cyanide, CN-	mg/l					0,05
33.	Boron	mg/l					1
34.	Aluminium	mg/l					0,2
35.	Arsenic	mg/l					0,01
36.	Cadmium	mg/l					0,005
37.	Chromium	mg/l					0,05
38.	Copper	mg/l					2
39.	Mercury	mg/l					0,001
40.	Nickel	mg/l					0,02
41.	Lead	mg/l					0,01
42.	Antimony	mg/l					0,005
43.	Selenium	mg/l					0,01

TABLE 7. TREATED WATER QUALITY IN WTP IN 2004 COMPARED TO 2003 AVERAGE RESULTS

Characteristic	Unit	Max	Min	Average	Average 2003	Decree no 82 and EU directive 98/83/EC
Temperature	° C	23,1	1,2	9,3	9,9	
Odour	point	1	1	1	1	
Taste	point	1	1	1	1	Acceptable to consumers
Colour	Pt mg/l	6	2	3	3	Acceptable to consumers
Turbidity	NTU	0,29	0,06	0,15	0,24	1
pH		7,56	7,04	7,27	6.97	6,5 - 9,5
Total hardness	mg-ekv/l	4,9	3,85	4,29	4,0	
Temporary hardness	mg-ekv/l	3,34	2,54	2,9	2,4	
Aluminium, Al3+	μg/l	180	50	108	118	200
Calcium, Ca2+	mg/l	81	64	72	66,5	
Magnesium, Mg2+	mg/l	10	7	8,2	8,6	
Sodium, Na+	mg/l	7,17	6,16	6,65	6,3	200
Carbonate CO32-	mg/l	0	0	0	0	
Chloride, Cl-	mg/l	31	25	27	13,5	250
Sulphate, SO42-	mg/l	51	33	42	70,4	250
Ammonium, NH4+	mg/l	0,006	<0,003	0,002	0,007	0,5
Nitrate, NO3-	mg/l	8,3	0,6	3,6	4,3	50
Nitrite, NO2-	mg/l	0	0	0	0,003	0,5
Fluoride, F-	mg/l	0,17	0,09	0,14	0,09	1,5
Oxidisability (CODMn)	mg O2/l	4,5	2	3,3	2,9	5
Total organic carbon (TOC)	mg C/l	7,5	5,1	6,66	6,2	No abnormal change
UV abs. 254 nm	cm –1	0,48	0,3	0,383		
Iron, Fe	μg/l	0	0	0	0	200
Manganese, Mn	μg/l	17,7	1,3	4,8	8,3	50
Zinc, Zn	μg/l	0,81	0,28	0,45	2,0	
Copper, Cu	mg/l	0,7	0,42	0,57	4,0	2
Barium, Ba	μg/l	44,6	34	40,4	38,4	
Arsenic, As	μg/l	0,7	0,38	0,51	0,45	10
Mercury, Hg	μg/l	0,07	0	0,02	0,05	1
Cadmium, Cd	μg/l	0	0	0	0,10	5
Chromium(VI), Cr6+	μg/l	0,92	0,13	0,6	0,79	50
Lead, Pb	μg/l	0,17	0,06	0,03	0,27	10
Nickel, Ni	μg/l	0,47	0,24	0,4	0,8	20
Cyanide, CN-	μg/l	4	1	2	2	50
Chloroform	μg/l	40	13	23,2	16,4	
Pesticides (sum)	μg/l	<0,01	<0,01	<0,01	0	0,5
Coliform bacteria	number/100ml	0	0	0	0	0
Escherichia coli	number/100ml	0	0	0	0	0

Overview of the environmental goals and tasks for 2005

Decrease environmental pollution, encouraging clients to connect to public sewerage

- To develop sewer network, connect new areas to the network according to the Service Agreement
- To ensure reimbursed connecting for customers - to sign at least 80% connection contracts within 1 year from receiving the usage permit of street pipes
- To shorten the time of concluding connection (max 5 weeks) and service contracts (max 4 weeks)
- To conduct Customer Census programme
- To issue penalty invoices to all identified over polluters

Use sparingly surface raw and ground water resources for maintaining environmental balance

- Directing excess water, free flow amounts of Jägala river to Kaunissaare Hydropoint
- Complying with the permit for special usage of water requirements upon regulating water regimes
- Developing company policy for potential developers of recreational facilities
- In regulating Pirita-Ülemiste channel flow amount, to proceed from the normal damming level of Ülemiste
- To complete actions to increasing crisis preparedness in catchment area
- To ensure sufficient raw water supply, so that satisfying the presumable maximum demand would be ensured
- Take surface water connections into ground water areas according to the agreed investment plan
- Not to exceed the groundwater extraction standards established in the permit for special use of water

Improve the security of catchment area facilities

- To launch the remote surveillance project of hydropoints, in order to get timely information about possible sudden changes in natural water regimes

Improve the quality of raw water

- To continue the biomanipulation project

Ensure and improve further the quality of drinking water

- To ensure raw water quality control according to the Service Agreement requirements
- To ensure water quality in the treatment process, ground water network and at the customer 100% in compliance with the Min of IA regulation 82 and the Service Agreement
- To ensure annually continuous process 24h and to improve preparedness for a possible crisis
- To ensure that there will be no chlorine leakages into atmosphere
- To prevent drinking water polluting, to ensure immediate informing about the pollution according to the legislation and the Service Agreement requirements
- To ensure quick liquidation of emergencies, controlling of cuts according to the Service Agreement requirements

Minimise the loss of drinking water supplied to the network

- To reduce the annual water loss to the Economic Level of Leakages
- To liquidate leakages in optimal period of time
- To rehabilitate or replace minimum 5 km of existing water mains

To enhance the storm water network system to minimise the risk of storm water floods

- Construct and plan new storm water systems
- To ensure control over storm water outlets according to the Water Permit
- Extend storm water network according to the Service Agreement requirements
- Improve preparedness for crisis situations in storm water network
- To renovate storm water network according to the agreed investment plan

To minimise the loss of noncompliant sewage to environment

- To ensure order of collector and pumping stations, to improve preparedness for a possible crisis
- To ensure wastewater quality and 100%

compliance with the permit for special use of water and the Service Agreement requirements
- To complete successfully the Paljassaare nitrogen removal project
- To improve crisis preparedness and avoid emergency overflows

Produce less waste, make more effective waste sorting and recycling. To recycle all sludge

- To complete the construction of compliant composting field
- To reconstruct sludge processing plant
- To continue the reforestation experiments project
- To use furbishing soil more efficiently
- To decrease the amount of excavated soil and old asphalt, avoid sending mineral waste (recycled waste) to landfill
- To look for possibilities to wash desanding system sediments and screenings before transporting to landfill, to decrease the amount of waste going to landfill
- To make oil removal in Wastewater Treatment Plant more efficient in order to ensure further compliance with Water Permit

To use energy sparingly in order to decrease the environmental damage caused by energy production

- To use biogas in Wastewater Treatment Plant for producing air and for heating
- To install condensators in technically suitable places to compensate reactive energy
- Replacement of Lasnamäe pumps with too high productivity with energy saving ones
- To acquire Green Energy certificate offered by Eesti Energia
- To reduce fuel consumption compared with previous period

To minimise air pollution

- To ensure compliance to the Air Pollution Permits
- To prefer more environmental friendly fuel

Prefer environmental friendly suppliers

- To improve the procedure of environmental qualification of bidders
- To establish environmental criteria for bigger purchases (among that energy saving)
- To introduce company's environmental requirements to potential suppliers

Improve the environmental awareness of the public

- To compile informative booklets of treatment plants
- Compiling EMAS environmental report
- Organising Open Door Days in treatment plants
- Continuing the playing of environment related play in schools
- Publication of environment related articles in the media
- Continuing cooperation with environmental TV programmes
- Participation in the preparation process of relevant environmental acts
- Better availability of environment related info on company web page

Improve the environmental cooperation with main interested parties

- Organising press events upon writing about important environmental projects
- Organising media training (including crisis communication training) in autumn
- Introduction of significant environmental projects to specialists
- Cooperation with water saving programmes (Ökokratt)

Improve the effectiveness of the environmental management system

- Improve chemical risk management
- To implement EMAS system requirements and achieve recognition in the frame of national EMAS project
- To improve crises prevention and preparedness system, proceeding from management resolutions and legal acts requirements

EMAS Verification

DNV Certification Oy/Ab has as an accredited verifier (FIN-V-002) examined the environmental management system and the information given in the environmental report of Tallinna Vesi.

It has been verified on June 11, 2005 that both the environmental management system and the environmental report fulfill the demands of EU Council Regulation 761/2001 of Eco Management and Audit Scheme EMAS.

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The environmental report is also available on our website at www.tallinnavesi.ee