ENVIRONMENTAL REPORT 2019

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Foreword

AS EcoPro is a waste management company with a long history in Estonia. We have provided quality service regardless of economic or political situation.

Today's keywords for us are worker professionalism, efficiency and quality of processes, and comprehensive monitoring of environmental protection requirements in our work.

In the future, we will see the need to find active solutions to increase our competitiveness, as the market is experiencing a concentration of services in the hands of large corporations.

To this end, we have been working intensively lately to improve environmental compliance and cost efficiency.

We currently manage three waste centers, each with its own specifics.

Our environmental objective is to ensure the stable development of the company, while respecting the principles of sustainable development. We will endeavour to reduce the environmental impacts of our activities in an open and credible cooperation with all interested parties. Environmental protection is integrated into the business of a company and is part of an equivalent corporate governance system.

Neeme Reinap

Member of Board

AS EcoPro environmental policy and objectives

AS EcoPro aims to be customer-focused, environmentally friendly and innovative in the area of hazardous waste management.

Our environmental policy is to:

- Protect environment in general
- Comply with the applicable regulatory standards, legislation and other requirements
- Ensure continual improvement of the management system
- Operate in in the field of waste management in accordance with the principles of sustainable development, improve environmental performance
- Ensure customer satisfaction and trust with stakeholders
- Envolve emploees to rise their environmental awareness.

The quality and environmental objectives to perform Policy are as follows:

- Keep management policy operational;
- Maintain an established market share and, where possible, increasing it;
- Complete all customer orders within the due date, ensuring correct communication and proper service delivery;
- Prevention and exclusion of non-compliant waste management services;
- Use all resources sustainably (materials, fuel, energy, water);
- Use the best available technology for waste management;
- Use of qualified and knowledgeable subcontractors and vendors in contractual relationships;
- Ensure the necessary training and continuous qualification improvement and environmental awareness of workers;
- Continuously analyze important environmental aspects and minimize their environmantal impact.

ORGANISATION

Overview

AS EcoPro started operating in 1992. One of the first works was the inventory and the assessment of environmental damages of the military camps of the former Soviet Union .

This has been followed by the management of national hazardous waste centres (Vaivara, Tallinn) in different years.

Chronology of the management of waste centres:

2004 - 2012 - Vaivara Hazardous Waste Management Centre (VOJK) and landfill (leased)

1999 – 2009 – Tallinn Dangerous Waste Management Centre (leased)

2000 – to date – Tallinn Waste Management Centre (TJK) (AS EcoPro property)

2012 – to date – Kiviõli Waste Recycling Centre (KJTK) (AS EcoPro property)

2016 – to date – Vaivara Hazardous Waste Handling Centre (VOJK) (leased)

Other activities include the disposal of past pollution sites and environmental construction, research and cosultancy services.

Company structure

AS EcoPro classifies as small business category. Totally 24 people working in the company.

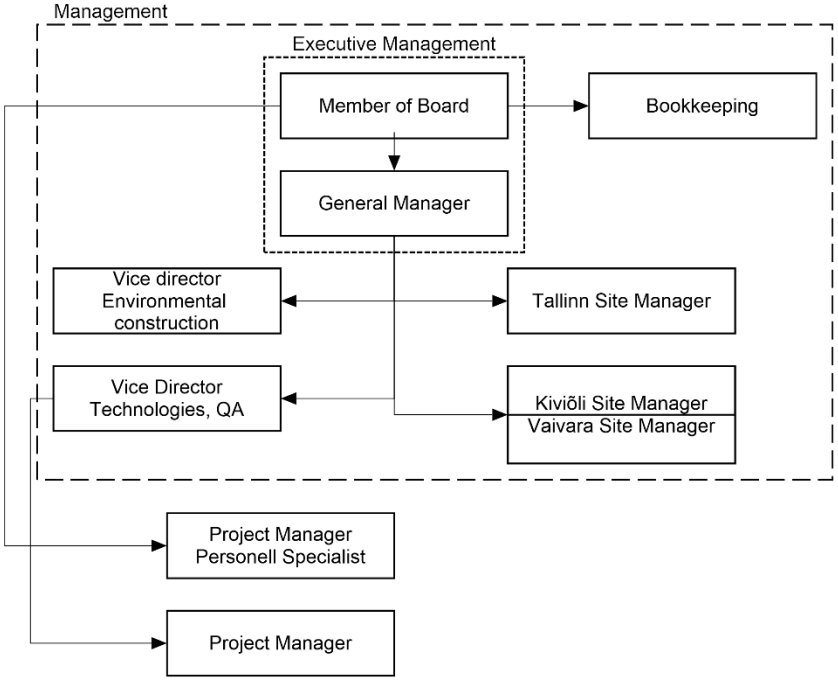

Figure 1 AS EcoPro structure

The management board is responsible for the entire operation of the company, the management system and the quality of the services. The Executive management shall be responsible for managing, investing, setting and meeting objectives and developing the organisation. The member of the management board shall be final responsibility to the owners.

To achieve the goals of the company, management describes the rights and responsibilities of employees. These are reflected in job descriptions/contracts or procedural documents describing the work of the enterprise (procedures, instructions, rules, orders, etc.) and in the objectives set/agreed during the course of daily or development work.

The structure and responsibilities of AS EcoPro is approved by a member of the management board.

Waste treatment sites

Tallinn Waste Treatment Centre (TJK)

TJK is located at Lasnamäe Industrial area, address Betooni 17 (cat nr 78403:313:0050). Landuse is 100% industrial land with total area of 5328 m².

The nearest dwelling is approximately 600 m south-east of the border of the property.

The territory is mostly surrounded by dedicated properties of industrial and mining land. The North remains the territory of Väo quarry, with the edge of a quarry located about 90 m from the territory. In the south there are the asphalt production territory of YIT Infra Eesti AS and the waste management territory of Asen OÜ.

Betooni 17 is designated as an object with significant spatial impact in the general planning of Lasnamäe industrial sites.

A separate drainage water collection system has been established for the collection centre to collect water from the whole territory.

The expected annual reception of the Tallinn JKK and the sorting capacity of the waste is 10 000 tonnes, an average of 40 tonnes per working day. The hangar is capable of storing 1 500 tons of waste at once. Main activities in the centre are sorting and waste fuel production.

Figure 2 Overview of Tallinn site

Kiviõli Waste Recycling Centre (KJTK)

AS EcoPro Kiviõli Waste Recycling Centre is located in Ida-Virumaa, Kiviõli City, Turu 5 (cat nr 30901: 005: 0002) and Turu 5a (cat nr 30901: 005: 0001). The areas are 29 255 m^2 and 9 794 m^2 respectively, a total of 39 049 m^2. Turu 5 and 5a are located in the industrial area of the city of Kiviõli. The land use purpose of Turu 5 and 5a properties is 100% industrial land. The nearest dwelling is 300 m south of the border of the property. Turu 5 and 5a are located in the middle of the Turu 3 property (cat nr 30901: 005: 0005). The land use of Turu 3 property is 70% industrial land and 30% landfill land.

Turu 5 and 5A are covered with a watertight asphalt layer. There are totally 15 buildings in the territory dedicated as office, storages or workshops.

The expected annual reception of the Kiviõli JTK and the sorting capacity of the waste are 30 000 tonnes, an average of 100 tonnes per working day. In the hangar, 2 000 tons of waste can be stored at once. Main activities in the centre are sorting and soil treatment.

Figure 3 Overview of Kiviõli site

Vaivara Hazardous Waste Treatment Centre (VOJK), landfill, soil treatment, temporary warehouse

The hazardous waste collection centre, storage site (landfill), soil handling site and temporary warehouse are located in Ida-Virumaa, Vaivara, Auvere village (cat nr 85101: 012: 0130), located about 25 ca km southwest of Narva and about 2.6 km northwest of the state border between the Republic of Estonia and the Russian Federal Republic along the Narva River. The location chosen is in the northwest of Estonia's EJ and remains approximately 8 km south of the Tallinn-St. Petersburg railway. The larger settlements are quite far from the territory concerned: Auvere 7 km, Sirgala, Sinimäe 11 km and Vaivara 12 km. Cottage cooperatives located approximately 2,5 km southeast of the collection centre, directly along the Narva River.

The territory of the collection centre and the final storage site (landfill, etc.) is restricted to the 2,5 m enclosure. There's a backup exit at the northeast corner of the site.

Property overview:

- Overall area 122 942 m^2
- Landfill ca 31 000 m^2
- Soil treatment area ca 16 000 m^2
- Waste treatment area ca 19 000 m^2
- Reserve ca 25 000 m^2

The expected annual reception of the OJKK of Vaivara and the sorting capacity of the waste are 50 000 tonnes, an average of 200 tonnes per working day.

There are three options for temporary storage of waste with a total capacity of 5 000 tonnes:

- Hangar - Possible to store 1 000 tonnes of waste at once.
- Shelters - Possible for storing 1 000 tonnes of waste at once.
- Temporary warehouses - Possible to store 3 000 tons of waste at once.

Volume liquid waste can be stored in seven 50 m^3 tanks at the same time, a total volume of 350 m^3, based on which a total of ca 3 000 tonnes of waste fuel mixtures are made per year.

The soil treatment area can accommodate approximately 10 000 m^3 of soil at a time, or approximately 15 000 tonnes. The annual handling capacity shall be up to 50 000 tonnes depending on the composition of the incoming waste (rocks), level of pollution, etc.

The annual volume of 10 000 tonnes of the physical-chemical unit set up in the treatment area.

The landfill has an annual landfill volume (D5) of 30 000 tonnes. The total landfill volume is 150 000 tonnes.

Figure 4 Overview of Vaivara site

ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)

The integrated management system based on ISO 9001 and ISO 14001 has been implemented in the organisation since 2009/2010.

AS EcoPro management system (ISO9001 and ISO14001) is considered in all three treatment centres and out-of-centre activities:

- **the management of hazardous and non-hazardous waste,**
- **environmental pollution liquidation (planning, excavation and soil treatment),**
- **environmental construction.**

EMAS scope will be only the hazardous waste management that takes place in three sites described separately.

The integrated approach was taken with immediate effect to ensure that processes and environmental impacts are managed as efficiently as possible.

The main objectives of the AS EcoPro environmental management system are formulated in environmental policy. Environmental policy is determined by the company's top management.

EMS is part of our overall corporate governance system, which means identifying, controlling and reducing the environmental impacts (environmental risks) caused by our activities and increasing competitive capacity as a green enterprise.

EMS is based on the identified important environmental aspects and environmental policies that derive from our environmental objectives.

EMS is documented to help ensure system performance. Management System manual is a document of our organisation of work that provides a place for all the essential procedures, manuals and forms in place to meet the quality and environmental and health and safety objectives that have been set.

ENVIRONMENTAL ASPECTS

AS EcoPro identified the environmental aspects of its activities and processes that it can control and influence. Aspects that have a significant impact on the environment were also identified.

Aspects are re-evaluated annualy. AS Ecopro has identified mayor activities of hazardous waste management and evaluates the aspects by each site separately. Each activity in each site is analysed by defined aspect and it's impacts and rating the regulation, frequency, impact to health or environmentand scale.

Direct environmental aspects are related to hazardous waste management and can be controlled by AS EcoPro. For example: air emission; water emission; management, transport and disposal of hazardous waste.

The indirect environmental aspects of AS EcoPro relate to the environmental performance and performance of the main contractors, sub-contractors and suppliers.

With regard to indirect environmental aspects, we will assess to what extent we can influence these aspects and what measures to take to reduce its impact.

The tables below show the relationship between the environmental aspects of AS EcoPro and the production process and the ancillary activities.

TJK environmental aspects

Since this site is mainly for waste sorting and not for actual treatment, the indirect aspects are most important, mainly by the environmental performance of partners.

Activity	Aspect	Impact	Direct/Indirect
Production of liquid waste fuel	Emission to air	Degradation of air quality	Direct
Maintenance of transport equipment Use of electricity and heat energy Transportation of waste Use of equipment Introducing new treatment technology Use of office Purchasing	The environmental performance of partners	Use of natural resources	Indirect

KJTK environmental aspects

This site is currently operated as soil treatment facility. Therefore, all aspects that are related to this activity are significant. All aspects can be controlled by careful planning and executing of the soil treatment process.

Activity	Aspect	Impact	Direct/Indirect
Mechanical pretreatment of waste	Emission to air Local Issues	Degradation of air quality Noise	Direct
Biological treatment of waste	Emission to air	Degradation of air quality	Direct
Physical-chemical treatment of waste	Emission to air Use of additives - chemicals	Degradation of air quality Use of natural recources, environmental. hazard	Direct
Treatment of acids	Emission to air Use of additives - chemicals	Degradation of air quality Use of natural recources	Direct
Production of liquid waste fuel	Emission to air	Degradation of air quality	Direct
Soil treatment – mechanical	Emission to air	Degradation of air quality	Direct
Soil treatment - chemical	Use of additives - chemicals	Use of natural recources, environmental. hazard	Direct
Maintenance of transport equipment Use of electricity and heat energy Transportation of waste Use of equipment Introducing new treatment technology Use of office Purchasing	The environmental performance of partners	Use of natural resources	Indirect

VOJK environmental aspects

This site has most of the actual waste treatment processes, therefore almost all environmental aspects have some significancy. Most significant aspect is emission to air, because some processes like treatment of acids and crushing can create visual appearance of air pollution. Altough in case of chemical process, the emission is evaporated water and this is just visually disturbing. Another significant aspect is use of energy and use of natural resources and chemicals, because water treatment plant is very energy consuming and the process uses a lot of chemicals and natural recources.

Activity	Aspect	Impact	Direct/ Indirect
Mechanical pretreatment of waste	Emission to air Local Issues	Degradation of air quality Noise	Direct
Biological treatment of waste	Emission to air	Degradation of air quality	Direct
Physical-chemical treatment of waste	Emission to air Use of additives - chemicals	Degradation of air quality Use of natural recources, environmental. hazard	Direct
Treatment of acids	Emission to air Use of additives - chemicals	Degradation of air quality Use of natural recources, environmental. hazard	Direct
Production of liquid waste fuel	Emission to air	Degradation of air quality	Direct
Wastewater treatment	Release to water Use of energy, fuel Use of additives - chemicals	Degradation of water quality Use of natural recources Use of natural recources	Direct
Disposal of waste (landfilling)	Release to water	Degradation of water quality	Direct
Soil treatment – mechanical	Emission to air	Degradation of air quality	Direct
Soil treatment - chemical	Use of additives - chemicals	Use of natural recources	Direct
Maintenance of transport equipment Use of electricity and heat energy Transportation of waste Use of supplementary materials including chemicals Use of equipment Introducing new treatment technology Use of office Purchasing	The environmental performance of partners	Use of natural resources	Indirect

ENVIRONMENTAL OBJECTIVES AND THEIR FULFILMENT

Environmental objectives and environmental tasks have been identified on the basis of our environmental policy and significant environmental aspects related to our activities have also been taken into account.

Environmental objectives shall be analysed once a year by management review, assessing their performance.

Tabel 1 Year 2019 environmental objecives(targets) and their fulfilment.

Objective	Fulfilment
Keep management policy operational	The management policy is operational and valid. This is checked annualy by management during management review
Prevention and exclusion of non-compliant waste management services	The objective is met, as confirmed by the absence of complaints from customers, the non-compliance with waste management and the non-compliance with the costs necessary to eliminate non-compliant waste management in the company's financial accounts.
Use all resources sustainably (materials, energy, fuel, water)	The use of resources is monitored on the basis of statistics (accounting invoices). List of monitored resources together with real data is presented in chapter ENVIRONMENTAL PERFORMANCE
Use the best available technology for waste management	The process of meeting the target is ongoing. In the future, the acquisition of new equipment and the implementation of technologies will analyse the process's compliance with the best available technology. A BAT comparison of the most important processes (in the licence application) has been prepared. BAT comparison was presented and approved by officials in march 2019 in relation to hazardous waste management licence application.
Use of qualified and knowledgeable subcontractors and vendors in contractual relationships.	Preference is given to companies with which AS EcoPro has long-term cooperation experience.
Ensure the necessary training and continuous qualification improvement and environmental awareness of workers;	Environmental issues, such as aspects, are delivered to workers via site-based meetings conducted by local managers. Training needs are fulfilled by request, necessary resources are allocated by management. The principles of training in the field of occupational safety require clarification. The work in this part is ongoing.
Continuously analyze important environmental aspects and minimize their environmantal impact	Annual check over environmental aspects are done during management review. If changes are made, aspects are introduced to staff via site managers. Necessary investments to impact minimization are subjects to management and member of board. 2019 no major investments made.

Internal and external audits of the environmental management system

Internal audits

Internal audits shall take place once a year. The purpose of the internal audit is to determine the compliance of AS EcoPro management system with the requirements of the standard ISO 9001 and ISO 14001 and EMAS decree to verify that the environmental management system has been properly implemented and maintained and to inform management of the audit results.

External audits

The external audit of the integrated management system ISO 9001 and ISO 14001 was carried out by DNV-GL Eesti OÜ in 2019 13.06-14.06 company. The audit verified the results of the internal audit and management review in 2018 and assessed our compliance with the legislation and other requirements. In 2020 EMAS audit will also audited as part of the management system.

LEGAL REQUIREMENTS

The environmental compliance of AS EcoPro is based on environmental protection laws of the Republic of Estonia and their implementing regulations and international environmental protection documents.

The list of basic legislation that AS Ecorpo is required to comply with is the Air Protection Act, the Water Act, the Chemicals Act, the Waste Act, the Industrial Emissions Act, the Environmental Monitoring Act, the EIA and EMS Act and the Environmental Charges Act.

Overview of environmental permits

Tabel 2 Valid environmental permits

Location	Type of permit	No of permit	Due date	Action / Notice
VOJK	IPPC permit	L.KKL.IV-29520	Termless	Treatment of 50 000 tons of waste per year
TJK	Water usage	L.VV/329006,	Termless	Rainwater discharge
KJKT	Waste permit	L.JÄ/330035	28.01.2023	Waste disposal, recovery, collection or transport of hazardous waste, domestic waste economy or as a professional activity
TJK	Waste permit	L.JÄ/333209	24.07.2024	
Estonia	Registry	JÄ/334195	Termless	Collection of hazardous waste
Narva, Rakvere str hazardous waste collection site	Registry	JÄ/334231	31.12.2021	Collection of hazardous waste
Narva, Lääne str 7 hazardous waste collection site	Registry	JÄ/334251	31.12.2020	Collection of hazardous waste

Compliance check

AS EcoPro is required to submit annual reports to KOTKAS information system according to permit obligations.

The company has an obligation to provide assistance in the inspection of the installation at the request of environmental officials or environmental inspectors. Compliance of environmental activities of AS EcoPro with existing legislation and authorisations shall be subject to an annual review by the Environmental Inspectorate and the Environmental Board of compliance with the requirements of the integrated permit. In 2019 all requirements of valid permits were fulfilled. Environmental monitoring results and explanations are shown in the chapter “Environmental Monitoring 2019”.

In 2019, the following inspections/supervision took place:

VOJK – 19.11.2019 Environmental Inspectorate – annual check of the waste turnover by movement documents. No actions required.

VOJK - 17.10.2019 Environmental Inspectorate – single inspection of storage No 27. No actions required.

TJK - 28.11.2019, Rescue Board, layout observation protocol 7.2-5.2/3453-1 – amendments to be made by 30.06.2020.

TJK - 09.09.2019 - Environmental Inspectorate annual supervision – no actions required.

KJTK – no supervision done during 2019

In addition to the above, a report on pollution charges should be submitted quarterly to the national information system and, in the case of a VOJK, an activity report to the Environmental Agency.

During year 2019 there has not been incidents or no environmental concerns and claims from stakeholders.

EMPLOYEE INVOLVEMENT

AS EcoPro's operational objectives are only achievable through employees bearing common core values. The core values of an employee are entrepreneurship, collaboration, feeling of competence and expertise.

Employees are introduced to management system and its subdocuments when hired. As the environmental aspects are related to specific process, the process operators have have been involved on evaluation of process aspects. Employees are welcome to make suggestions to minimize apects impact and therefore improve companys environmental performance.

Site managers will introduce all management system changes to staff in internal meetings. In case of VOJK site operator does it bilingual also in Russian.

ENVIRONMENTAL PERFORMANCE

AS EcoPro monitors the resources used continuously and keeps track of them.

Main business of the company – the management of hazardous waste is accounted for at national level by formulating all movements of waste through the inventory of hazardous waste where hazardous waste notification/movement paper (OJS), a paper that follows each batch of waste, is filled in. This ensures a nationwide balance of waste because registered OJS are systemically linked to waste handlers and receivers, so it is not possible that the waste will "vanish" if OJS are filled correctly.

Detailed waste stream reports are not public according to "Waste act" §117 (5) and "Restriction of Unfair Competition and Protection of Business Secrets Act" §5 (2). Yearly reports are compiled and presented to Environmental Board for crosscheck. Accepted reports mean proper handling of waste streams.

The common reference value representing the activity of the organisation, figure B, will be tonnes of waste processed.

Tabel 3 Value "B". Waste stream, tonnes of waste processed

SITE	2017	2018	2019
TJK, tonnes	20329	23015	14187
VOJK, tonnes	16170	21151	30556
KJTK, tonnes	19807	11862	13093

For indication of waste treatment effectiveness, percentage of recycled waste is presented. This indicates how much material from overall waste stream is recycled. Altough for hazardous waste this can not be as high as municipal waste, it gives indication of the amount of recyclables in incoming waste. The trendline can be fluxuative because it depends of waste batch – if it contains a lot of packages, recycling rate will be higher. In case of KJTK this is recycled soil, in case of VOJK this is recycled soil, packages and waste fuel, in case of TJK this is packages and waste fuel.

Tabel 4 Percentage of recycled waste.

SITE	2017	2018	2019
TJK, %	7	7	14
VOJK, %	59	28	51
KJTK, %	13	14	23

Tabel 5 Core indicators of key environmental areas and descriotion

Energy	This includes overall energy consumption at the sites
Material	This includes supplementary materials and chemicals
Water	This includes water used at the sites, processed water and discharged water
Waste	This includes waste generated at the sites. This does not include waste streams that are part of the waste treatment process. General waste amounts are very small compare to overall treatment capacities and does not have significanr wnvironmental aspects. Indicated generated waste are results of different projects at the site or project site. More detailed description at the remarks.
Land use	This is shown as total sealed area by sites. For hazardous waste management it is important, that all processes will be carried out on sealed area. Therefore, the more sealed area, the better.
Emissions	This includes emissions to air, whitch is only relevant at the VOJK

Year 2019 was exceptional because of increase of certain waste stream that caused increase of electricity, water and diesel in Tallinn and Kiviõli sites.

VOJK recource usage decreased to ordinary workload level. During year 2018 large amount of acids was treated causing larger usage of recources.

Tabel 6 Indicators, TJK

Resource / Product purchased	**2017**	**2018**	**2019**	**2017**	**2018**	**2019**	
	A	**A**	**A**	**R=A/B**	**R=A/B**	**R=A/B**	**Remarks**
Electricity, MWh	66	60	77	0,003	0,003	0,005	General usage
Diesel, l	9 778	9 541	10 753	0,481	0,415	0,758	Used for transportation, second forklift was used
Water, m^3	83	79	106	0,004	0,003	0,007	General usage
Water (discharged), m^3	3 114	2 520	2 973	0,153	0,109	0,210	Stormwater
Generated waste, t	1 548	32	115	0,076	0,001	0,008	Year 2017 specific project site created more than 155 tonnes of waste, that was created by us. Other waste include pallets, metal etc.
Total sealed area, m^2	5 228	5 228	5 228	0,257	0,227	0,369	

Tabel 7 Indicators, KJTK

Resource / Product purchased	2017	2018	2019	2017	2018	2019	
	A	A	A	R=A/B	R=A/B	R=A/B	Remarks
Electricity, MWh	47	46	32	0,002	0,004	0,002	General usage
Diesel, l	1 752	2 021	2 235	0,088	0,170	0,171	Used for transportation
Water, m^3	63	65	93	0,003	0,005	0,007	General usage
Generated waste	9	0	50	0,000	0,000	0,004	Waste generated from treatment process and everyday operation, this includes old tires, batteries etc.
Total sealed area, m^2	55 612	55 612	55 612	2,808	4,688	4,247	

Tabel 8 Indicators, VOJK

Resource / Product purchased	2017	2018	2019	2017	2018	2019	
	A	A	A	R=A/B	R=A/B	R=A/B	Remarks
Electricity (other), MWh	134	138	129	0,0083	0,0065	0,0042	General usage
Electricity (water purification), MWh	996	1 442	638	0,0616	0,0682	0,0209	Water purification
Oil-shale ash, t	410	1 201	424	0,0254	0,0568	0,0139	2018 was almost double, because of large acids of ashes treated
Peat, t	54	26	17	0,0033	0,0012	0,0006	Used on soil treatment
Cement, t	437	842	248	0,0270	0,0398	0,0081	Used on wastewater purification residue stabilisation
Sand, t	771	1 695	577	0,0477	0,0801	0,0189	Used on wastewater purification residue stabilisation
NaOH, 50%, t	12	14	7	0,0008	0,0007	0,0002	Used on wastewater purification
H_2SO_4, 94%, t	16	24	8	0,0010	0,0011	0,0003	Used on wastewater purification
$FeSO_4$, t	0	6	6	0,0000	0,0003	0,0002	Used on wastewater purification
Diesel, l	25 889	30 729	29 530	1,6011	1,4528	0,9664	Used for transportation
Diesel (Technological oven), t	1	2	3	0,0001	0,0001	0,0001	Heating
Water (other), m^3	88	80	38	0,0055	0,0038	0,0012	General usage
Water (water purification wash), m^3	206	188	89	0,0127	0,0089	0,0029	Water purification

Resource / Product purchased	2017	2018	2019	2017	2018	2019	
	A	A	A	R=A/B	R=A/B	R=A/B	Remarks
Water (technological), m^3	441	402	190	0,0273	0,0190	0,0062	Water used in technological processes
Water (cleaned, discharged), m^3	12 745	15 391	8 045	0,7882	0,7277	0,2633	Water discharged to nature
Generated waste	0	340	1 009	0,0000	0,0161	0,0330	2018 landfill side trenches were cleaned and polluted soil generated. Starting at year 2019 waste incineration ash is recycled to waste water residue stabilisation and therefore indicated amount of stabilized concrete was created
Total sealed area, m^2	22 950	22 950	22 950	1,4193	1,0851	0,7511	
CO_2 produced, t	3	6	10	0,0002	0,0003	0,0003	Produced by heating, directly related to used diesel (Technological oven)
NMVOC emitted, t	0	0	11	0,0000	0,0000	0,0004	Obligation from 2019, produced by vaporisation from soil treatment

ENVIRONMENTAL MONITORING 2019

Environmental monitoring shall be carried out in accordance with the conditions laid down in the environmental permits issued.

4 official public monitoring reports have been prepared for 2019:

L.KKL.IV-29520 Air pollution report (use of fuel in boilerhouse) (VOJK)

L.KKL.IV-29520 Water disharge (VOJK)

L.VV/329006 Water disharge (TJK)

L.VV/329150 Groundwater monitoring (VOJK)

The reports are available to public via central system of environmental permits KOTKAS.

Tabel 9 Tabel 4 Wastewater monitoring (L.KKL.IV-29520)

			January			February			March			April			May			June			July			August			September			October			November			December		
Component	**Unit**	**Limit value**	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
BOD_7	mgO_2/l	40		<3			4,2		26	8		7,6	3,6		8	4,2		24	<3		40	6	6,7	<3	4,3	7,7	<3	6,6	4	4,1	<3	30	3,9	5	<3	4,4	<3	<3
SS	mg/l	35		<2			<2		<2	<2		<2	<2		<2	<2		<2	<2		3,5	<2	3,5	<2	<2	<2	<2	<2	<2	<2	5,50	<2	<2	<2	2,9	<2	<2	<2
COD	mgO_2/l	150		40,00			25		116	30		50	40		52	25		200	25,00		130	40	30	60,00	<25	80	52,00	65	30	25	25,00	<30	35	40	<30	40	55,00	<30
pH		6-9		5,60			6		7,5	7,2		6,3	9,6		7,3	7,6		6,3	6,80		6,9	6,3	7	6,90	10	8,3	6,60	10,5	9	6,8	6,90	6,4	6,1	5,1	7,3	6,3	9,60	9,1
P_{tot}	mg/l	2		<0,01			0,025		<0,01	0,075		0,016	0,3		<0,01	<0,01		0,35	<0,01		<0,01	<0,01	1,5	0,09	<0,01	0,083	<0,01	<0,01	0,01	<0,01	0,10	<0,01	<0,01	0,044	<0,01	<0,01	0,06	<0,01
N_{tot}	mg/l	75		0,12			0,21		<1	0,18		0,21	0,12		0,04	0,11		4,7	0,15		1,06	0,04	2,7	0,29	0,17	<1	0,89	1,5	2,8	0,59	1,60	0,59	0,38	11	0,22	6,2	6,40	0,53
Pb	µg/l	14																								<0,1	0,00	0	<0,1	0	0,00	1,2	0	0	<0,1	0	0,00	<0,1
Cu	µg/l	15																								<1	0,00	0	<1	0	0,00	6	0	0	<1	0	0,00	<1
Zn	µg/l	50																								1,3	0,00	0	<1	0	0,00	17	0	0	<1	0	0,00	<1
Ni	µg/l	34																								0,15	0,00	0	<1	0	0,00	4,7	0	0	<0,1	0	0,00	<0,1
Cd	µg/l	5																								0,65	0,00	0	<0,02	0	0,00	0,05	0	0	<0,02	0	0,00	<0,02
Cr	µg/l	50																								<0,05	0,00	0	<0,5	0	0,00	1,9	0	0	<0,5	0	0,00	<0,5
As	µg/l	10		11,00			65		0,07	21		43	23		44	15		12	9,70		0,13	7,4	6,7	240,00	0,81	0,82	52,00	0,15	14	27	9,50	0,45	8,2	3,7	0,13	380	6,60	0,12
Hg	µg/l	1																								0,015	0,00	0	<0,015	0	0,00	<0,015	0	0	<0,015	0	0,00	<0,015
Ba	µg/l	100		16,00			14		1,6	23		<0,5	30		<0,5	3,4		18	5,30		<0,5	<0,5	4,2	3,70	<0,2	590	<0,5	<0,5	<0,5	<0,5	1,10	29	0,29	0,82	<0,5	0,51	1,80	<0,5
Sn	µg/l	3		<0,45			<0,45		<0,45	<0,45		<0,45	<0,45		<0,45	<0,45		<0,45	<0,45		<0,45	<0,45	<0,5	<0,45	<0,5	<0,45	<0,45	<0,45	<0,45	<0,45	<0,45	4,8	<0,5	<0,45	<0,45	<0,45	<0,45	<0,45
Oil products	mg/l	1		0,00			0		0	0		0	0		0	0		0	0,00		0	0	0	0,00	0	<20	0,00	0	<20	0	0,00	<20	0	0	<20	0	0,00	<20
Diphenols	µg/l	15000		0,00			0		1,8	0		1,8	0		0	8,7		0	0,00		0	0	28	0,00	0	0	0,00	8,2	0	0	0,00	0	2,3	0	0	0	14,00	0
Monophenols	µg/l	100		17,40			38,4		47,44	130,5		27,39	0		10,69	7		24,8	19,60		30,34	17,3	65,7	0,00	63,2	33,5	0,37	146	0	14,61	25,20	0	20,8	5	0	16	0,00	0
Toluene	µg/l	50		1,50			0,99		0,24	5,5		0,57	1,9		0,47	3,5		0,92	0,57		0,43	0,24	<0,1	<0,1	0,69	0,92	0,11	0,94	<0,1	34	0,51	<0,1	9,2	0,23	<0,1	1,3	0,26	1,8
Trichlorometane	µg/l	2,5		0,47			0,79		3,9	0,03		1,5	0,14		1,3	0,04		0,21	0,49		0,56	0,15	<0,03	0,44	0,13	<0,03	0,28	0,13	<0,03	0,72	0,38	0,03	0,08	0,4	<0,03	2,8	0,08	<0,03
Fluorantene	µg/l	0,12		<0,01			<0,01		<0,01	<0,01		<0,01	<0,01		<0,01	<0,01		<0,01	<0,01		<0,01	<0,01	<0,01	<0,01	<0,01	<0,01	<0,01	<0,01	<0,01	<0,01	<0,001	<0,01	<0,01	<0,01	<0,01	<0,01	<0,01	<0,01
Naphtalene	µg/l	130		0,02			0,03		<0,02	0,11		<0,01	0,15		<0,01	0,2		<0,01	0,14		0,01	<0,01	0,12	0,02	0,046	0,069	0,01	0,065	0,018	0,037	0,04	<0,01	0,019	0,48	<0,01	0,015	0,05	0,012

Arsenic has been problem for purification plant from the beginning. During years the situation is getting better as most of the water that was formed during years 2014-2016 is now purified.
Barium, COD, BOD7, Phenols – One-time unknown erratic value (too big difference from usual values)

Tabel 10 VOJK surveillance wells monitoring 2019 (L.VV/329150)

Component		Well																													
		1			2			3			4			5			6			7			8			9			10		
	Limit value	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Oil products, µg/l	600	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
pH	-	7,1	6,9	7,3	7,3	7,3	7,2	8	7,8	8,1	7,1	7,1	7,3	7,3	7	7,2	7,4	7,2	7,1	7,3	7,3	7,1	7,2	8,3	8,3	7,6	7,6	8,3	7,4	7,2	7,7
COD_{Mn} , mgO/l	-	16	2,1	8,8	4,5	6,6	2,97	2,6	2,6	<1	3,4	8,3	4,4	49	19	6	17	24	12	3,4	11	3,4	2,6	2	<1	10	2	1,6	6,6	5,3	2,8
Monophenols, µg/l	50	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3	<0,3
Diphenols, µg/l	100	<1	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2,5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cd, µg/l	10	0,16	0,03	0,17	<0,77	0,02	0,02	0,07	<0,02	<0,02	0,05	1,1	0,04	0,03	0,16	0,04	0,17	0,11	0,15	0,05	0,03	0,02	<0,02	1,4	1,3	<0,02	0,6	0,03	0,04	<0,02	0,7
Cu, µg/l	1000	4,7	7,3	10	3,7	1,4	2,1	3,7	<1	<1	3,8	20	2,2	<1,0	1	3,4	3,1	2,4	3	<1,0	1,3	<1	<1,0	<1,0	<1	1,4	2,8	<1	7,3	<1,0	4,3
Pb, µg/l	200	<0,1	0,9	0,26	1,4	2,8	1	1	1,4	0,37	3,2	26	6,5	1,2	56	5	6,1	3,2	4,5	2,3	2,5	3,3	0,17	0,7	0,13	1,9	3,8	1,1	11	3,3	16
Zn, µg/l	5000	3,3	3,6	5,3	9,9	12	10	5,4	4	7,4	23	120	11	1,9	15	11	6,6	5,3	17	4,5	6,1	7,6	<1,0	11	4,3	6	36	6,7	11	8,1	16
Hg, µg/l	2	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015	<0,015
Cr, µg/l	200	<0,5	<0,5	<0,5	<0,5	0,5	<0,5	<0,5	<0,5	<0,5	<0,5	2,6	<0,5	<0,5	<0,5	0,61	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	1,8	2,1	<0,5	0,6	<0,5	1,2	0,63	<0,5
Ni, µg/l	200	500	220	590	2,3	4,8	4,8	0,3	<0,1	0,27	5	13	12	1,9	6,7	3	21	16	23	1,8	1	1,4	2,3	130	160	0,51	2,3	0,52	4,4	1,4	3,1
As, µg/l	100	0,31	0,34	0,36	0,59	1,3	0,51	1,2	1,2	0,75	1,2	6	2,4	6,8	12	8,5	150	81	59	1,7	1,7	3,6	0,12	0,56	0,46	0,84	1,8	1	1,6	2	1,7

Nickel result over the limit value is recorded since year 2000. Polluted water is at the second water layer from 20 m depth. According to historical data and research from 1997, the pollution is originated from former oil shale factory near by. Exceeding of limit value is not caused by site activity.
Arsenic result over limit value is because of no maintenance of the landfill was done during year 2014-2016, when several spills of leachate water were also polluting surveillance wells.

Tabel 11 Air emissions (L.KKL.IV-29520)

Pollutant	calculated 2017	calculated 2018	calculated 2019	By permit
NMVOC	0*	0*	11,385	24,113
CO_2	2,588	6,459	10,328	91,781
CO	0,004	0,009	0,014	0,129
NO_2	0,004	0,004	0,014	0,129
PM	0,004	0,004	0,014	0,129

*Requirement to reprt NMVOC started at 2019

Tabel 12 Discharged water and monitoring in TJK (L.VV/329006)

	Limit	2017				2018				2019			
Quater	value	I	II	III	IV	I	II	III	IV	I	II	III	IV
Amount, m^3/kv		427	573	969	1145	344	441	1114	621	661	449	894	969
SS, mg/l	40	43	43	2	11	62	22	10	92	3	36	7	76
Oil products, mg/l	5	0,9	0,9	0,02	0,02	0,045	0,13	0	0,04	0,035	0,79	0	0,43
Ni, µg/l	50	1,2				0,5				3,5			
Zn, µg/l	34	4				<15				15			
Cu, µg/l	15	1,7				2				4,8			

Suspended solids (SS) Samples over limit values are caused by heavy rain washups from territory. More frequent dry cleaning of territory before rains is required.

CONFIRMNATION OF REQUIREMENTS

DNV GL Business Assurance Finland Oy Ab as an accredited verifier (FI-V-0002) has examined the environmental management system and the information provided in the 2019 Environmental Report of EcoPro AS. It was verified on the 17th and 18th of June and 30th of September 2020 that both the environmental management system and the Environmental Report (original version is in English) complied with the requirements of the Regulation (EC) No 1221/2009 of the European Parliament and of the Council on the Eco Management and Audit Scheme (EMAS), and the European Commission Regulations 2017/1505 and 2018/2026, which amended the Annexes I, II, III and IV of the EC Regulation No 1221/2009, have been taken into account.

The environmental report is available on the website at www.ecopro.ee. Next report will be published before the end of August 2021.