

Experience of auditing industrial hazardous waste management in Estonia

Viire Viss

Audit Manager

National Audit Office of Estonia

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Overview

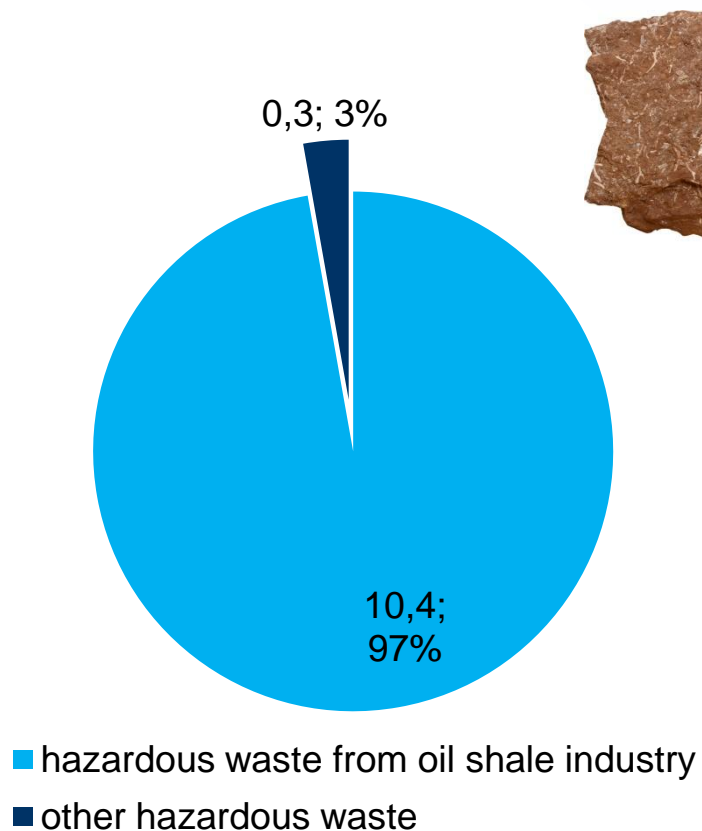
Two audits on hazardous waste management (2014-2015):

- Activities of the state in organizing waste treatment in oil shale mining and processing
- Management of hazardous and radioactive waste*

* *excluding hazardous waste from oil shale industry*

- Focus, main methods, main results, lessons learnt

Generation of hazardous waste in Estonia (2013, million tons)



Focus of the audits

Common issues:

- quality of waste reports/ data; information systems
- quality of environmental permits, licences
- monitoring and supervision
- deposit systems

Differences:

Waste from oil shale industry

- also non-hazardous waste
- elimination/ remediation of “historical” residual waste objects (e.g semi-coke hills)
- recycling of waste



Other hazardous waste

- management of state owned HW management centres

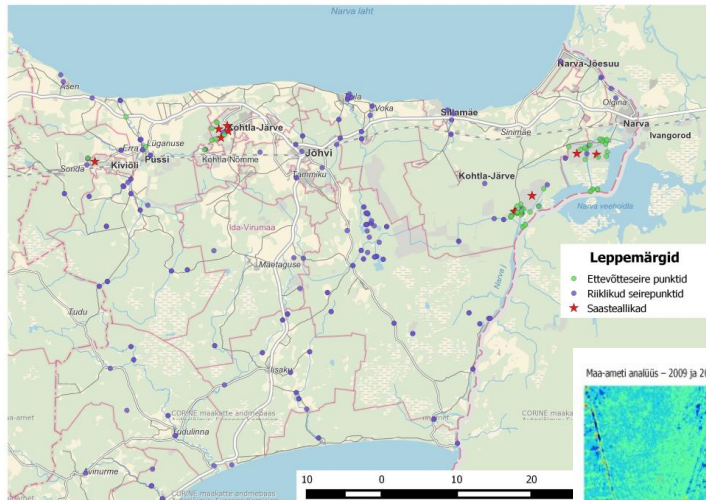


- *radioactive waste*

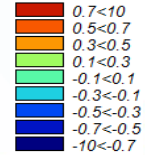
Main methods

- **Document analysis:** development plans, legal acts, permits, reports on monitoring, supervision, etc; project documentation (funded by EU or the state)
- **Analysis of data in the waste register** (data time-lines, data fluctuations); comparison with waste and IPPC permits database
- **Interviews** with auditees, experts, companies, **site visits**
- **Use of ortophotos (aerial images) and GIS analysis** of state environmental monitoring data, identification of objects and changes in the land use/ elevation

Q-GIS (monitoring spots, point pollution spots)

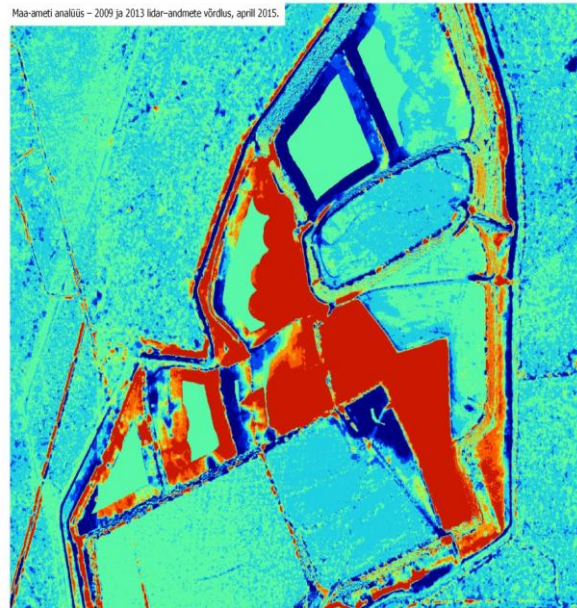


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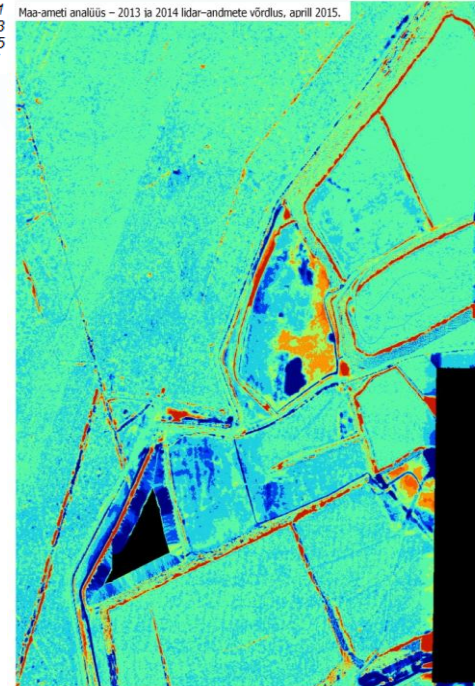


Analysis of elevation data (2009 and 2013, 2013 and 2015)

Maa-ameti analüüs – 2009 ja 2013 lidar-andmete võrdlus, aprill 2015.



Maa-ameti analüüs – 2013 ja 2014 lidar-andmete võrdlus, aprill 2015.



Aerial image (pond of liquid waste)



Main results (waste from oil shale industry)

- **Although oil shale waste is generated in large quantities, the state has not regarded this as a significant problem and has not demanded that companies generate less waste and increase waste recovery.**
- As the majority of waste is deposited at landfills, it will increase the area of land covered by waste and impose the threat of environmental pollution.
- The data submitted by the companies to the state about waste quantities and environmental monitoring are not adequately controlled.
- The state has spent over 50 million euros on elimination of the residual pollution caused by oil shale waste and will have to spend more. There are still residual pollution needs to be fixed up.
- The state has not ensured that the waste management sites will be closed/ remediated only by companies in the future (no deposit)

Rehabilitation of semi coke hill in Estonia



“Blue lagoon” (settling pond of ash field with very high alkalinity)



Main results (hazardous waste)

- **The state has failed to achieve the goals set in the National Waste Management Plan for 2008-2013, i.e. to reduce the generation of hazardous waste, increase their recovery and eliminate residual pollution.**
- The state's waste reports do not recognise hazardous waste generation and treatment data correctly.
- The Ministry of the Environment has not guaranteed the development of information systems concerning hazardous waste
- There are significant omissions in the activities of the Environmental Board and the Environmental Inspectorate in managing hazardous waste handlers.
- The state has failed to guarantee the possibility to hand in hazardous waste and its treatment according to requirements at all of the hazardous waste collection centres it owns. There is no possibility to landfill HZ in Estonia since 2012.

Hazardous waste landfill in Vaivara



New waste water treatment facility which was not suitable for the HZW landfill site



Waste water outlet

Lessons learnt / recommendations for auditors

- Hazardous waste (HZW) management is a complicated topic
- It is difficult to follow the HZW stream from generation to final treatment
- Is the waste hierarchy applicable for HZW?
- The issues related to “by-products” and “end-of-waste” status
- “Grey areas” for auditing (the case of controlling the use of HZW as an fertilizer in agriculture)?
- Who is responsible (the case of state owned HZW centres)
- Difficulties to identify the environmental impact of hazardous waste (quality of monitoring data)
- Communication with stakeholders (private companies)

- You can focus on sector or waste stream or management issues
- Useful to have competence on industrial processes, chemistry

Thank you for your attention!

Audit summaries available in English at:

www.riigikontroll.ee > Publications > Audit reports > Ministry of the Environment > 2015

Contacts:

NAO of Estonia

Viire Viss (audit on hazardous waste), Viire.Viss@riigikontroll.ee

Kaire Kuldpere (audit on waste from oil-shale industry)

Kaire.Kuldpere@riigikontroll.ee