



Committee for Natural Use, Environmental protection and Ecological Safety,
the Government of St. Petersburg



«Krasny Bor Landfill»: Current activities and rehabilitation plan



St. Petersburg State Unitary Environmental Enterprise «Krasny Bor» Landfill»

"Krasny Bor Landfill": About.....



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Landfill of toxic waste «Krasny Bor»



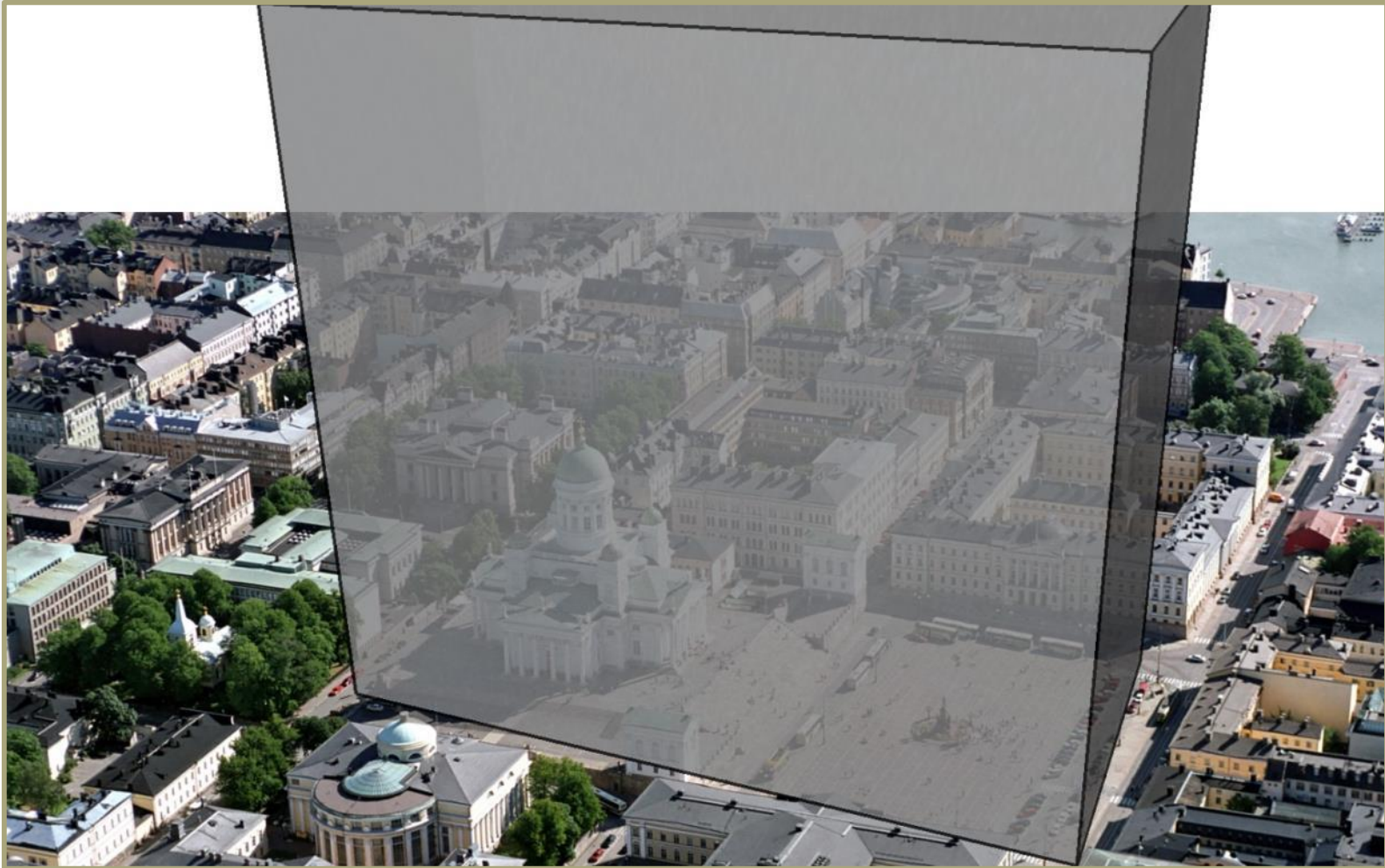
- The area of a polygon - 67 ha.
- During 48 years of operation at the waste disposal area (46 ha) in 70 reservoirs were placed over 2 million tons of liquid, solid and pasty hazardous waste.
- Currently, 65 reservoirs reclaimed and 5 reservoirs continue to be operated, containing about 700 thousand cubic meters of toxic liquid waste

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State Unitary Environmental Enterprise "Krasny Bor" Landfill"





Volume of waste and contaminated soil in “Krasny Bor Landfill” is equal to the cube with a height of 2.5 St. Nicholas cathedrals on the area of the Senate square (~ 5 millions of cubic meters).

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"Krasny Bor Landfill": Current Activity



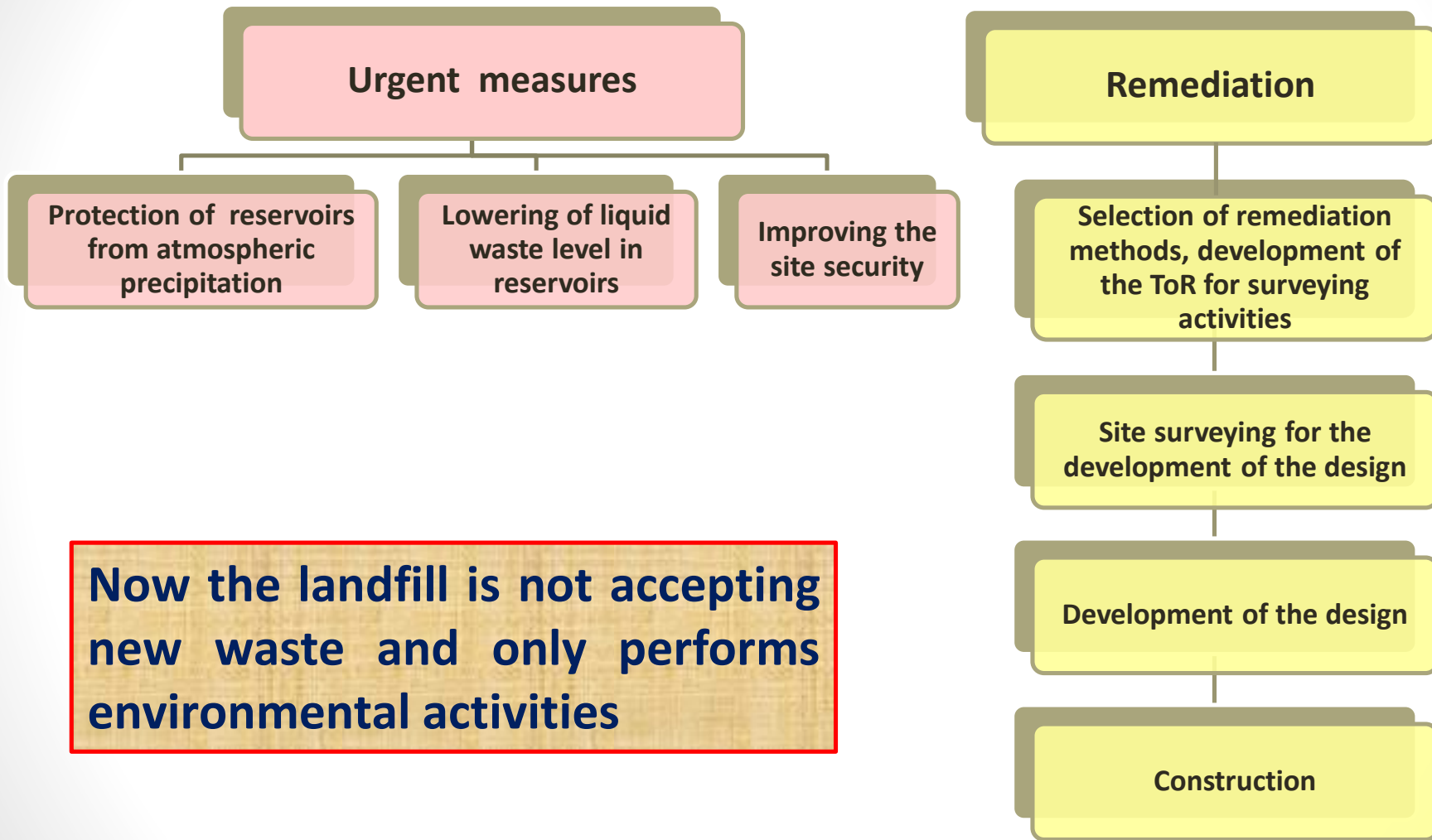
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Remediation of the site

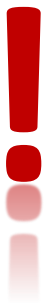


Now the landfill is not accepting new waste and only performs environmental activities





Urgent measures : 2016-2017 years

- 
- ✓ **Covering the reservoirs**
Target: protection from atmospheric precipitation, prevention of evaporation and fire risk
 - ✓ **Construction of wastewater treatment facilities**
Target: lowering the level of liquid in reservoirs; treatment of the surface water discharge
 - ✓ **Dredging of the bypass channel and interior drainage**
Target: increase of the flow capacity; mitigation of the secondary water pollution
 - ✓ **Reconstruction of security systems.**
Target: reduce risk of unauthorized access



Covering the reservoirs



Before (2014)



➤ All the mirror area of reservoir No. 68 & 64 covered with pontoons.

Now (2017)



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Covering of the reservoir 68



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Dredging of the bypass channel and interior drainage

Before



Now



10



Reconstruction of security systems

Before (2014)



Now (2016)



(11)



Construction of wastewater treatment facility



THE PILOT PLANT TESTS

Испытания пилотной установки очистки
НПП «Полихим» (0,7 м³/ч)



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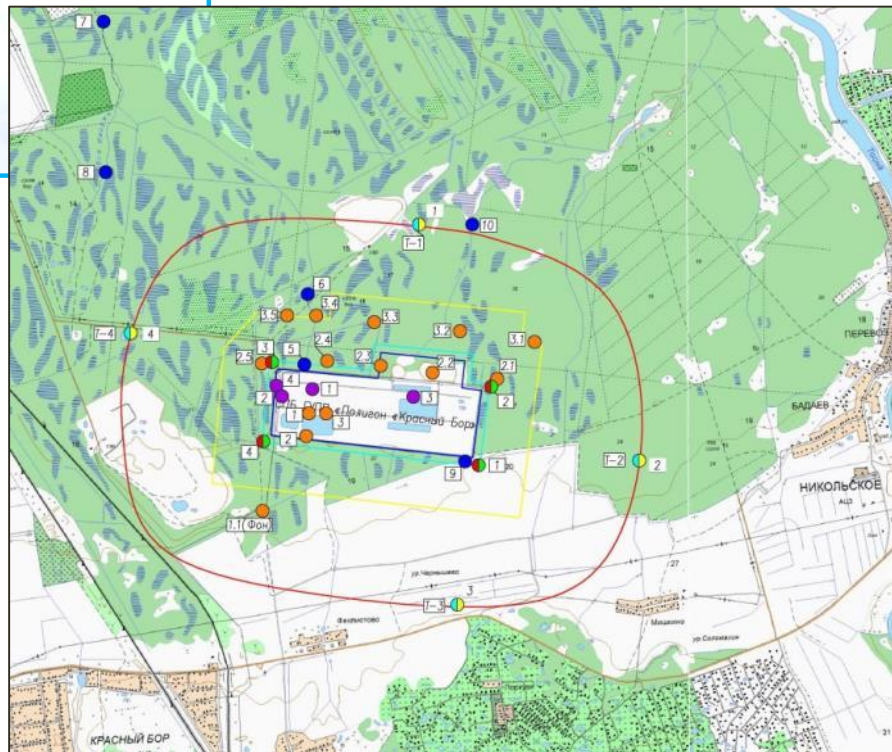


Environmental measures



For neutralization of the acidic inorganic waste used 800 tons of chalk

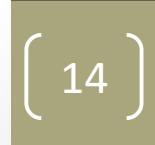
Environmental control and monitoring is carried out by third-party independent laboratory



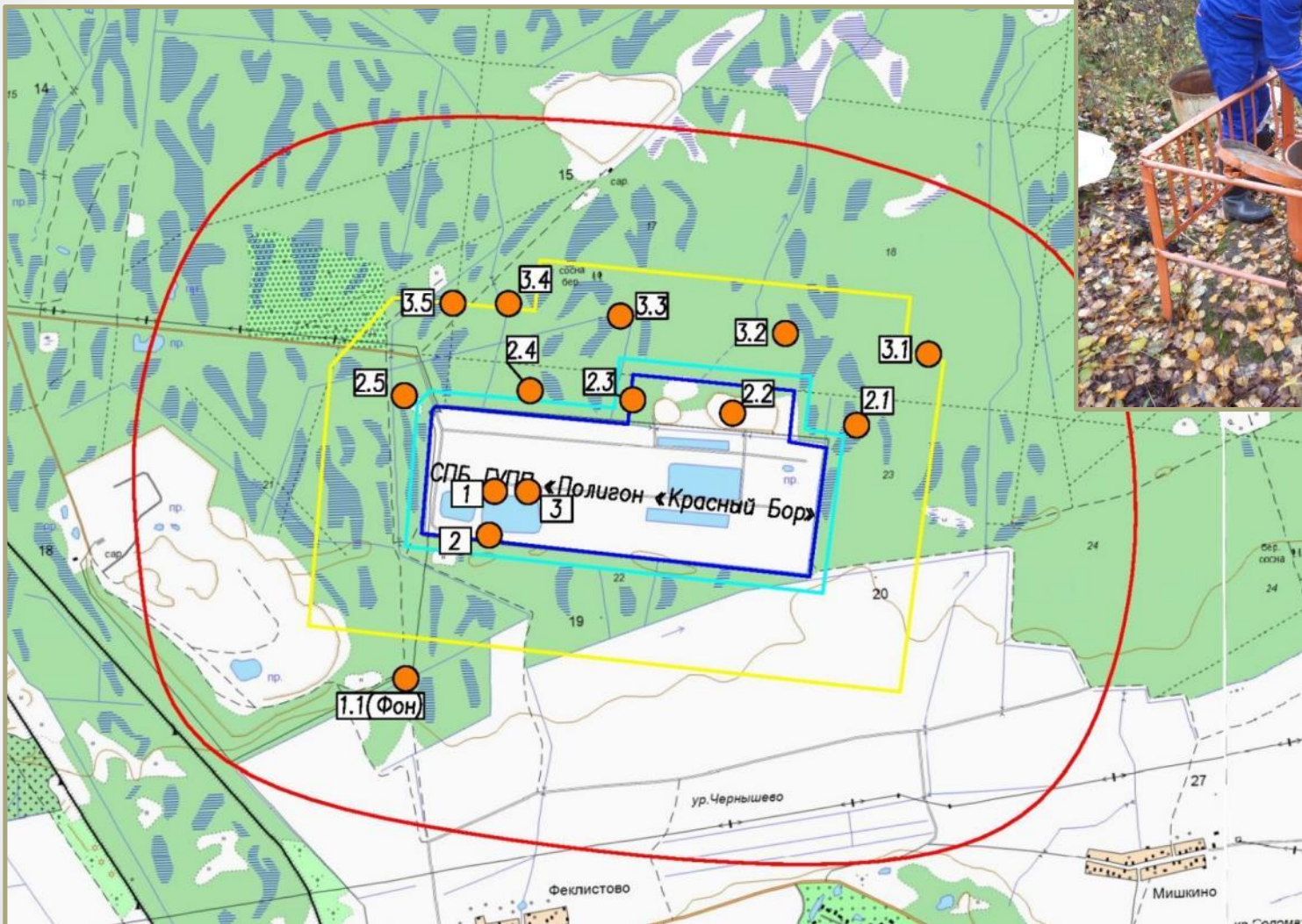
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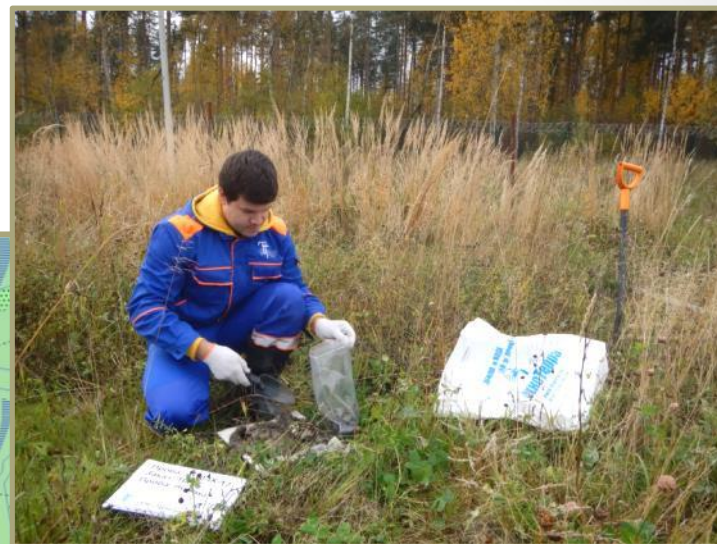
2017: Surface water monitoring



2017: Groundwater monitoring



2017: Soil's monitoring



2017: Air monitoring





Works on decrease of environment impact

- ✓ The completion of the water treatment facilities project (carrying out the state expertise of project)
- ✓ Implementation of environmental monitoring

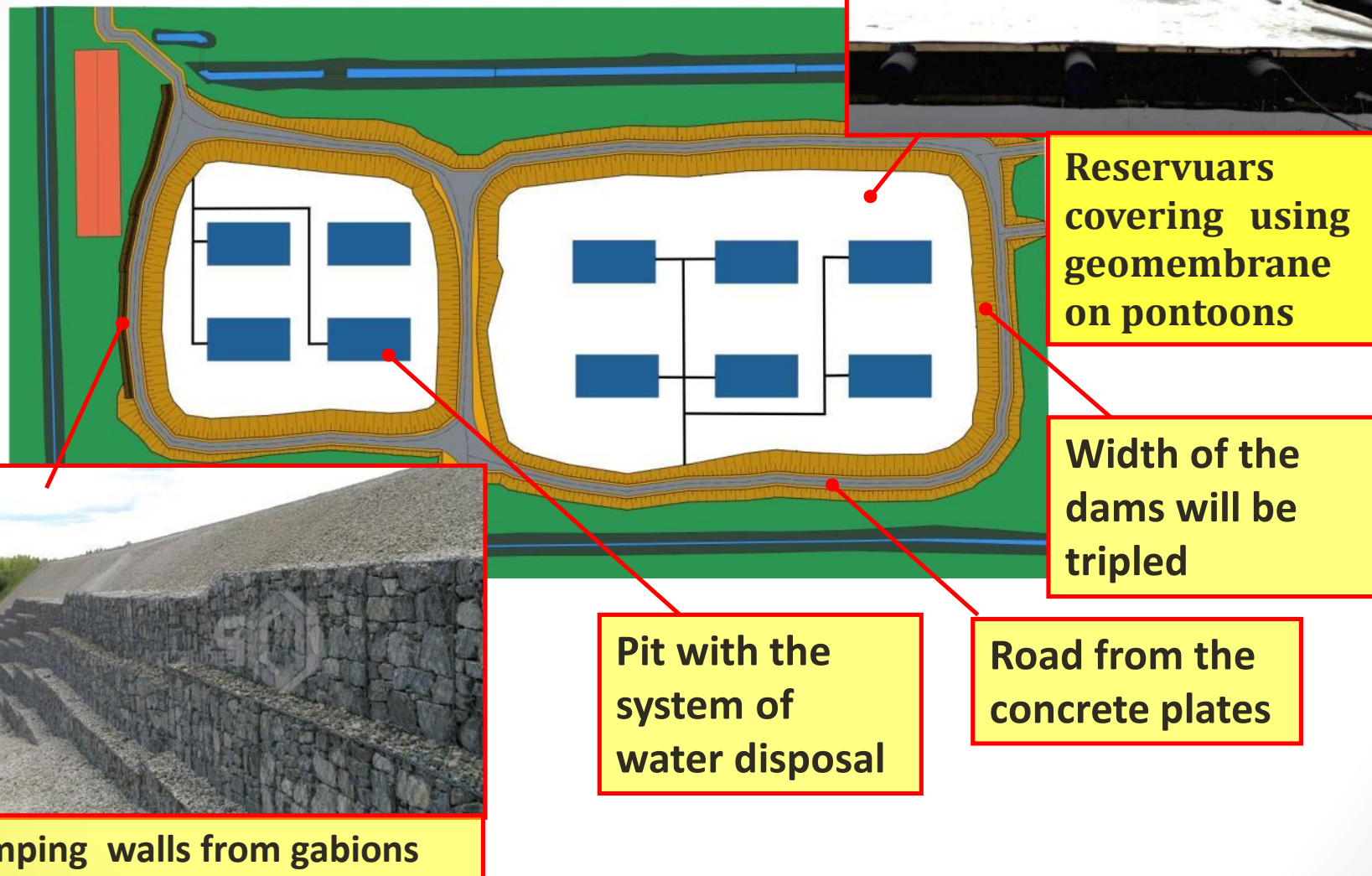
Decrease of hydrotechnical engineering constructions risks

- ✓ Renovation of the dams

Start of site surveying for the development of the design of rehabilitation



Reservuars covering and dams renovation



"Krasny Bor Landfill":

Elimination of the accumulated damage



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Комитет по природопользованию, охране окружающей среды и обеспечению экологической безопасности

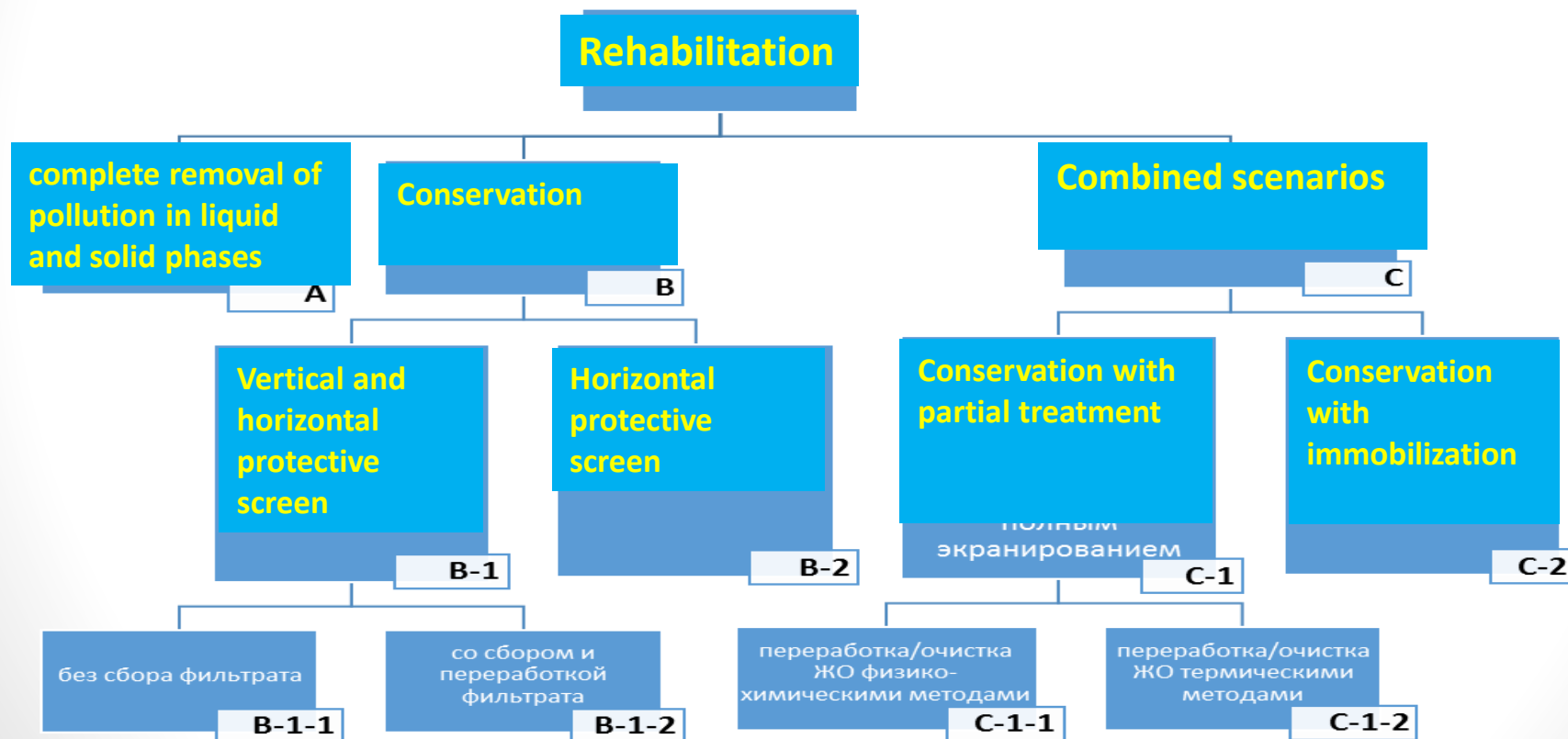
СПб ГУПП «Полигон «Красный Бор»



Scenarios of the Landfill rehabilitation

Elimination of the accumulated damage (rehabilitation of polluted areas) can be implemented by various methods, which belong to 2 types: decontamination and elimination of environmental risks.

For Krasny Bor Landfill both decontamination of all waste (option A) and elimination of environmental risks without waste treatment (option B) are possible. However, **most efficient result can be reached if the two approaches are combined (option C).**



European experience in tackling similar problems

Conservation methods are widely used in the world for elimination of long-term pollution, using shields or lithification approach.

СИЛЛАМЯЭ. СЕВЕРО-ВОСТОЧНАЯ ЭСТОНИЯ

Sillamae, North-East of Estonia



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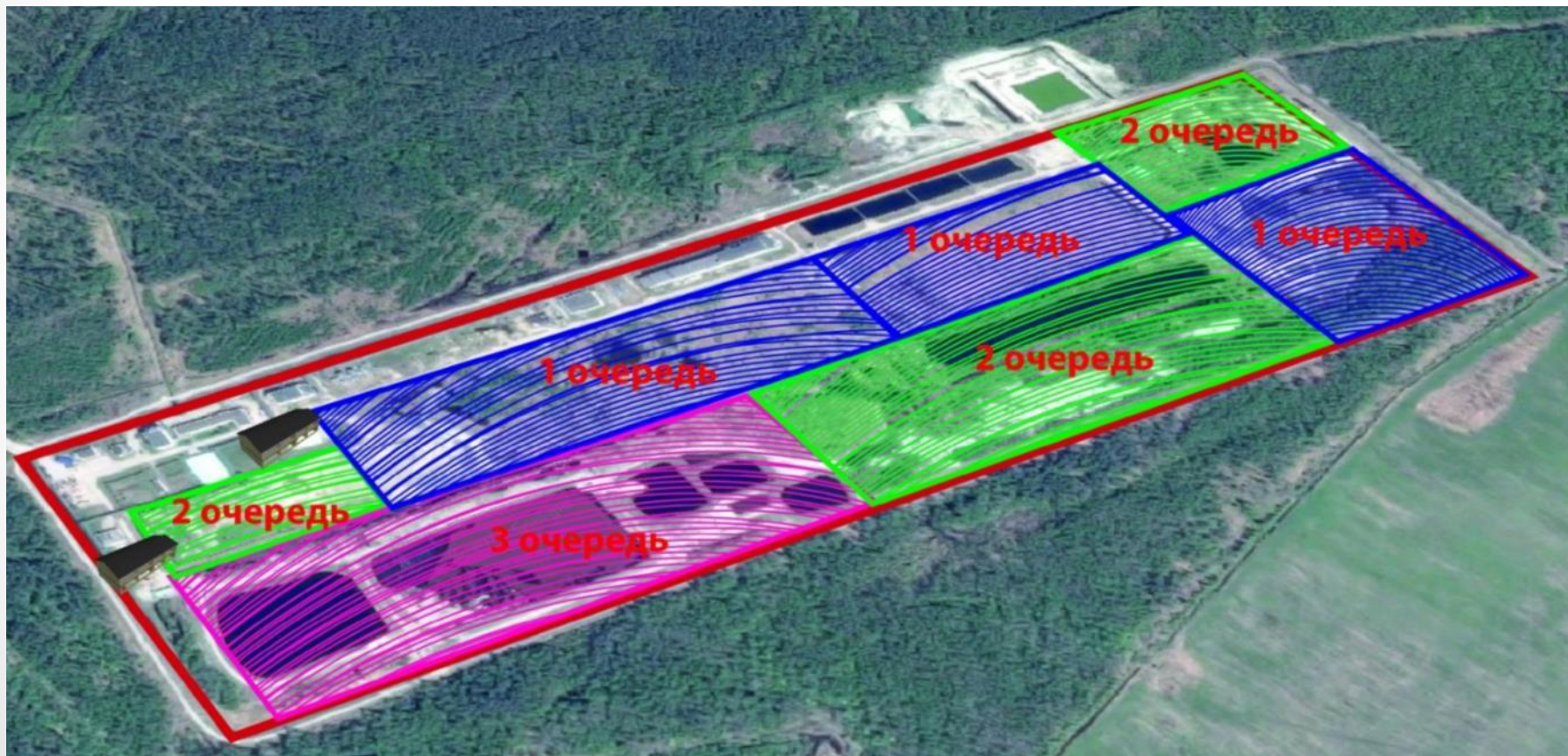


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Based on natural and technical conditions of the territory, the following concept of conservation is proposed:

- disposal of liquid waste at 5 open reservoirs using physicochemical treatment methods (without incineration) and lithification/stabilization;
- conservation of solid waste and secondarily contaminated soils in place by construction of vertical and horizontal shields.





Stages of conservation

Stage 1. Urgent measures for the water environment protection

- Construction of wastewater treatment facility
- Construction of a shield in the ground





International Cooperation



✓ In recent years the Problem of the Landfill is constantly discussed by the governments of Russia and Finland, and even Presidents.

✓ At the 5th meeting of the working group «Pressure» of the BALTIC MARINE ENVIRONMENT PROTECTION COMMISSION (HELCOM) -2016 - was noted a positive trend in ensuring the environmental safety of the landfill, and at the 6th meeting (2017) was approved the concept of its Conservation.

✓ In 2017 many working meetings with Finnish experts were conducted:

- Geological survey of Finland
- Fortum company
- Ramboll Group
- The Nordic Environment Finance Corporation (NEFCO)

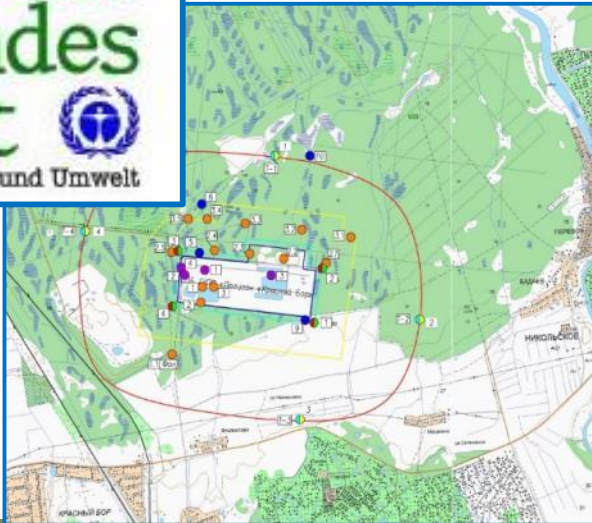




International Cooperation



- ✓ Until the end of the year it is planned to conduct technological research of waste from “Krasny Bor” in the division of the company “Fortum” (formerly “Ekokem Group”) in Riihimäki for the selection of the best technologies of disposal/recovery of accumulated waste.



- ✓ German Environment Agency will verify the current Landfill monitoring systems

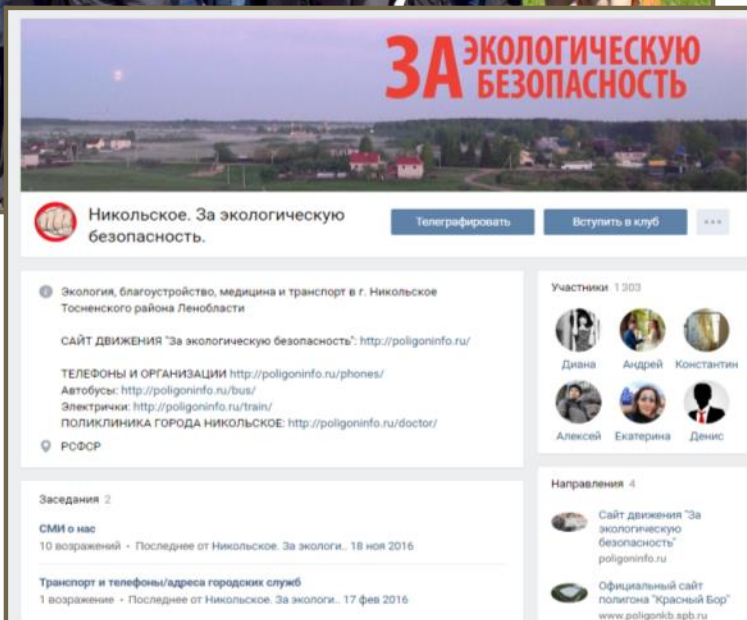




Public involvement



- The public Supervisory Board is organized
- Scientific and technical council was established
- Environmental NGOs and mass media are represented in scientific and technical council



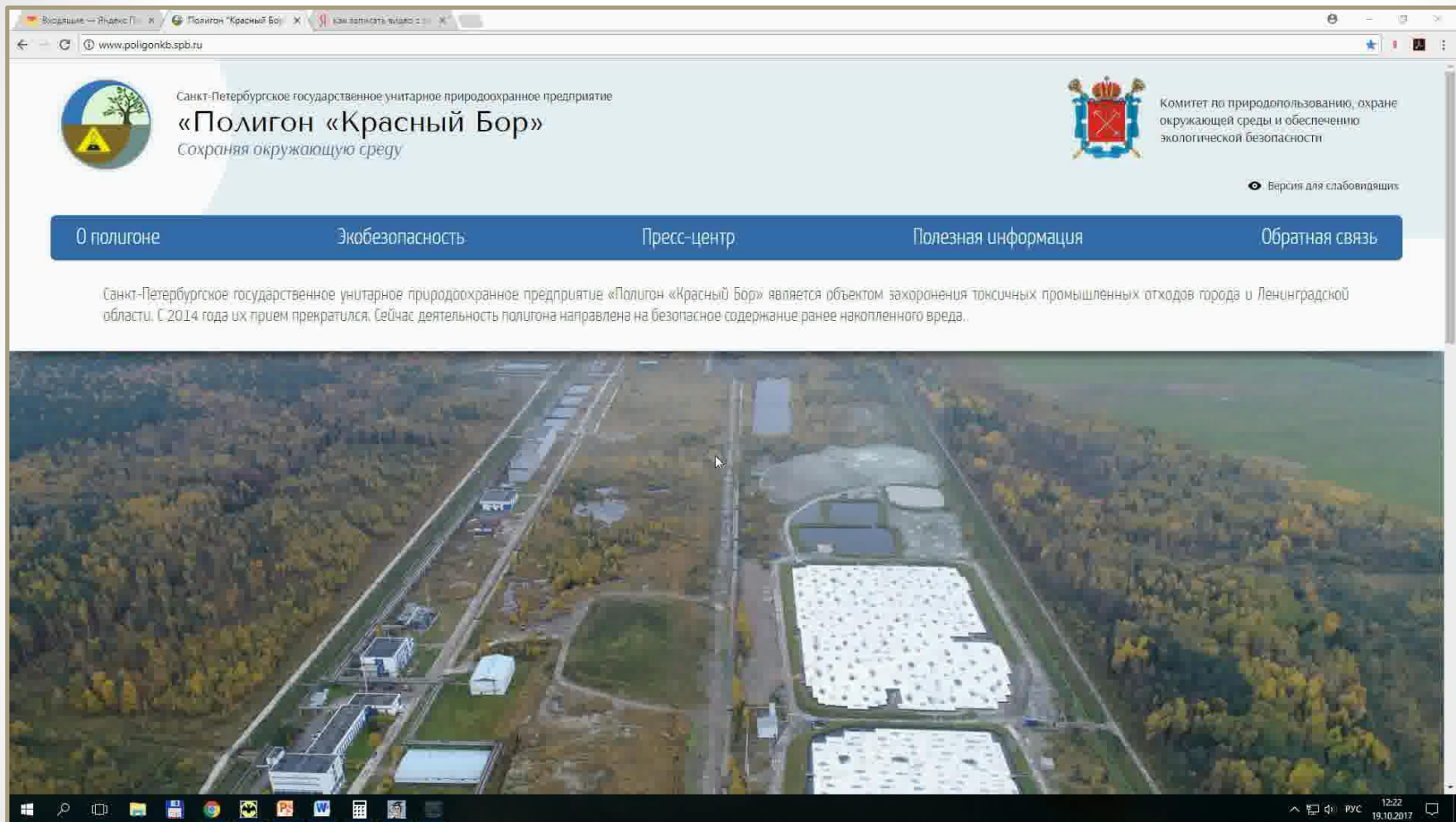
**1300 community members
"Nikolskoye. For environmental
safety"**



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Website of polygon: <http://www.poligonkb.spb.ru/>



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Conclusion



- At present Landfill “Krasny Bor” does not accept waste and is carrying out activities to decrease the environmental risks
- The process of conservation/remediation of the landfill has been started and will be completed by the end of 2025.
- The proposed Concept will allow for elimination of all environmental risks from hazardous wastes accumulated at “Krasny Bor” without incineration (following a joint decision of the governors of St. Petersburg and Leningrad Region), and delete the site from the list of Baltic Sea hazards.





KIITOS
THANK YOU
СПАСИБО

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