

CONTAMINATED SITES IN SLOVAKIA – CURRENT RESEARCH AND REMEDIATION PROJECTS

RNDr. Vlasta Jánová, PhD.

Ministry of Environment of the Slovak Republic

Slovakia

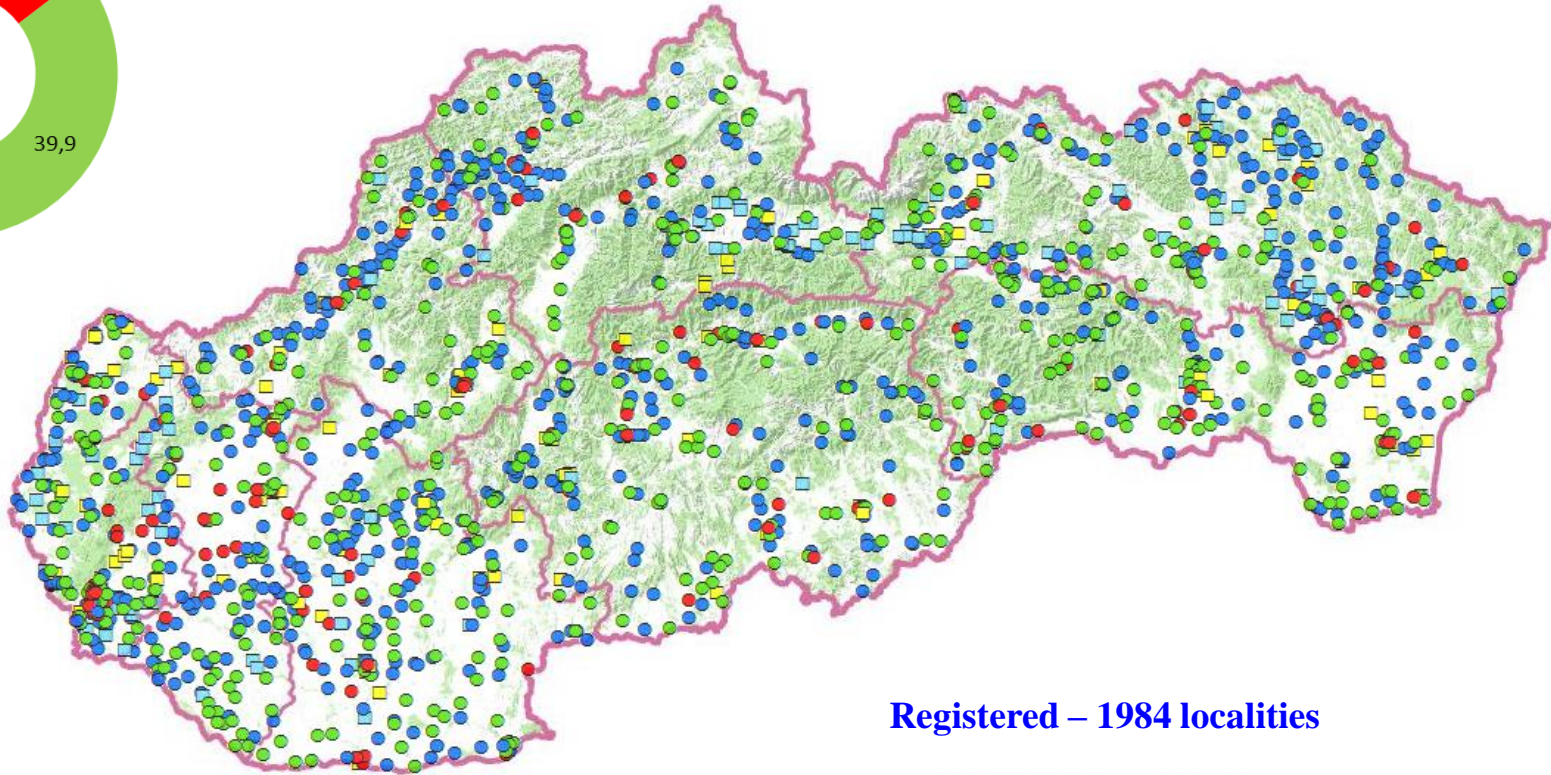
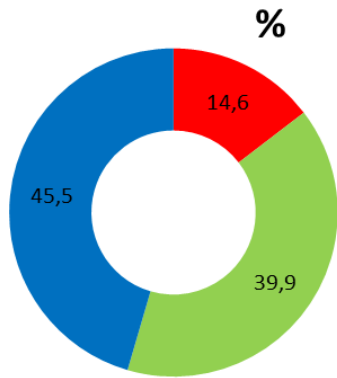
vlasta.janova@enviro.gov.sk

*The activity has been implemented within the framework of national project
Information and providing advice on improving the quality of environment in Slovakia.*

The project is cofinanced by Cohesion Fund of the EU under Operational programme Quality of Environment.



Contaminated Sites in Slovakia



Registered – 1984 localities

■ Contaminated sites 289

● Remediated sites 791

● Potentially contaminated sites 901

State Programme of Contaminated Sites Remediation

- **Represents the basic strategic document for contaminated sites issue**
- **The 1st State Programme of Contaminated Sites Remediation (2010 – 2015) was approved by the Slovak government in March 2010**
- **Report on implementation of the 1st State program of CSR was submitted in May 2016**
- **The Supreme Audit Office has checked its implementation since July 2016**
- **The 2nd State Programme of CSR (2016 – 2021) was approved in January 2016**
 - **It contains a list of priority sites**

Financing



- **State budget**
- **Environmental fund**
 - **Mainly sites that require urgent solutions**
- **European funds**
 - **Operational Programme Environment (2007 – 2013)**
Allocation was 118 mil. EUR
 - **Operational Programme Quality of the Environment (2014 – 2020)**
Allocation - 187 mil. EUR (+ 15 % cofinancing)
- **Private sector**
 - **Under the privatization contracts, voluntary activities, or based on the „polluter pay principle“**

Žiar nad Hronom - 2008



Sludge heap from aluminum production

Žiar nad Hronom - 2014



Žiar nad Hronom - 2016



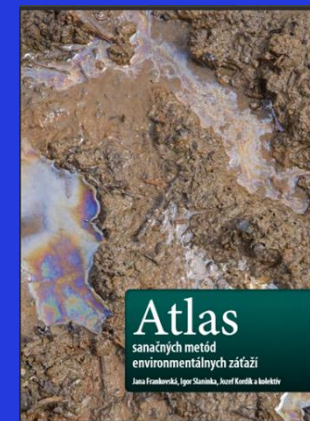
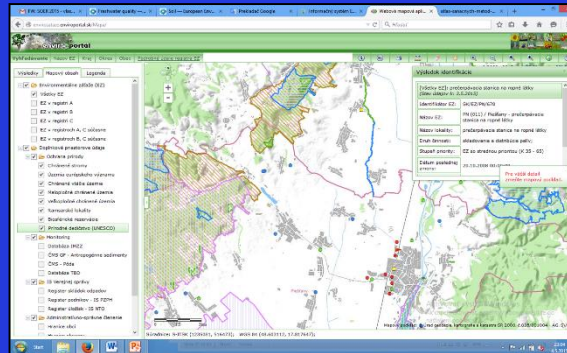
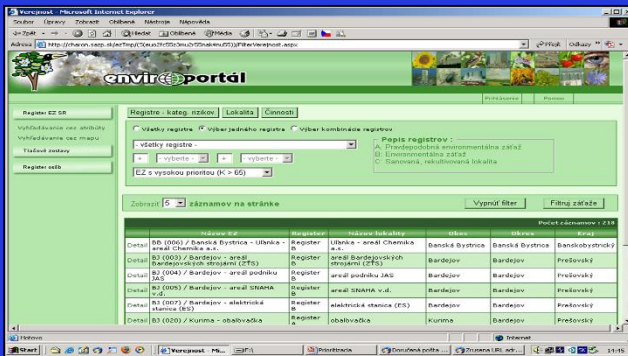
Activities of the Ministry of the Environment



- **Systematic inventory of contaminated sites in Slovakia (2006 - 2008)**
- **Information System of Contaminated Sites (2008 – 2010)**
- **The Operational Programme Environment 2007-2013 has been implemented**
- **New legislation on contaminated sites was approved and implemented (2009, 2011)**
- **New methodical manuals were adopted (2012, 2015)**
- **Public information campaign was carried out (paper publications, leaflets, movies, articles, trainings, workshops, conferences, school competitions)**
- **Priorities for the new Operational Programme Quality of Environment (2014 – 2020) were proposed**

Projects focused on contaminated sites

- Regional studies of the environmental impacts of contaminated sites in selected regions (2008 – 2010)
- Atlas of remediation technologies for contaminated sites (2010 – 2011)
- Upgrade of the Information system of contaminated sites (2010 – 2014)
- Education and public awareness as a support in contaminated sites remediation in SR (2012 – 2015)

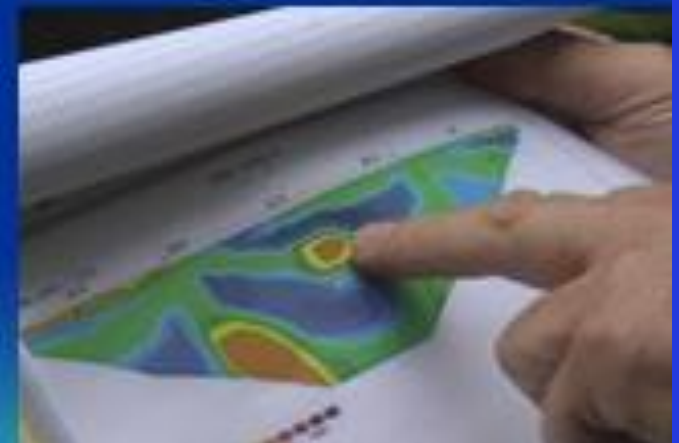


Success stories

- **Investigation of contaminated sites (54 localities)**
- **Potentially contaminated sites – investigation in selected localities (87 localities)**
- **Monitoring of contaminated sites (161 localities)**
- **Remediation of contaminated sites (19 localities)**



Investigation of contaminated sites



Bošany - koželužne (Tanneries)



Predajná - gudrons



Storage of chemicals – Partizánske



Žilina – industrial site



Žilina – industrial site



Bratislava – river port



Boldog – old pesticides



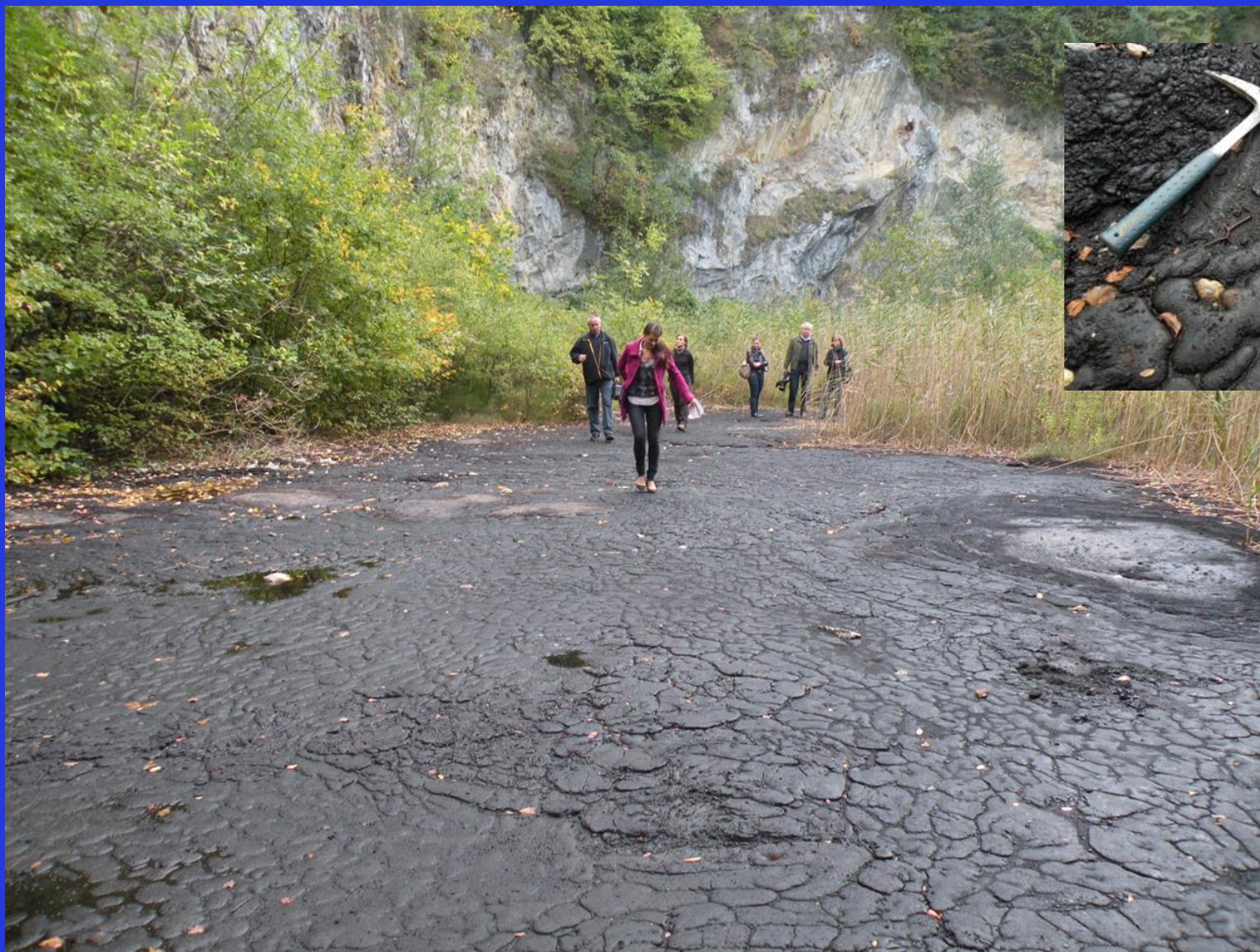
Piešťany – military site



Bratislava - gudrons



Devínska Nová Ves – September 2011



Devínska Nová Ves – January 2015



Devínska Nová Ves – December 2015



Devinska Nová Ves – spring 2016



OPERATIONAL PROGRAMME QUALITY OF THE ENVIRONMENT (2014 - 2020)

The main objective of the Operational Programme Quality of the Environment is to promote the sustainable and efficient use of natural resources, ensuring environmental protection, active adaptation to climate change and promote energy efficiency and low carbon economy. In order to achieve this overall objective the investment strategy of the operational program including three basic thematic objectives has been proposed to:

- 1. Support the transition to a low-carbon economy in all sectors,**
- 2. Support for climate change adaptation, risk prevention and risk management,**
- 3. Protect environment and promote resource efficiency.**

Specific objectives and activities

The specific objectives will be met through the following activities:

- A. Investigation, remediation and monitoring of contaminated sites in urban environment and in brownfield sites (including areas undergoing change),
- B. Improving the awareness of issues of contaminated sites.

Activities:

- a) Permanent updating of the Information system of contaminated sites,
- b) Investigation of priority contaminated sites, including elaboration of risk analysis of polluted areas,
- c) In the case of extensive contamination to ensure elaboration of feasibility studies of remediation of contaminated sites,
- d) Remediation of contaminated sites in accordance with the "polluter pays principle" and in accordance with the rules on state aid,
- e) Monitoring of contaminated sites.

Allocation

Contaminated sites:

a) Investigation and monitoring – 28 426 689 EUR

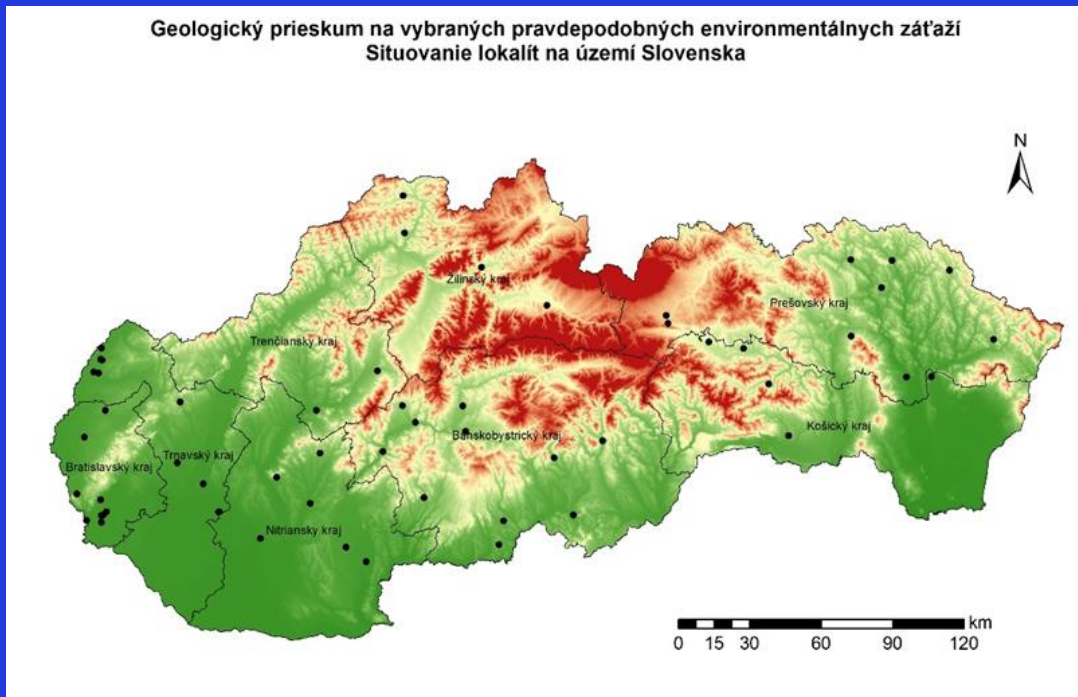
b) Remediation - 149 240 120 EUR

+ 15 % cofinancing from state budget



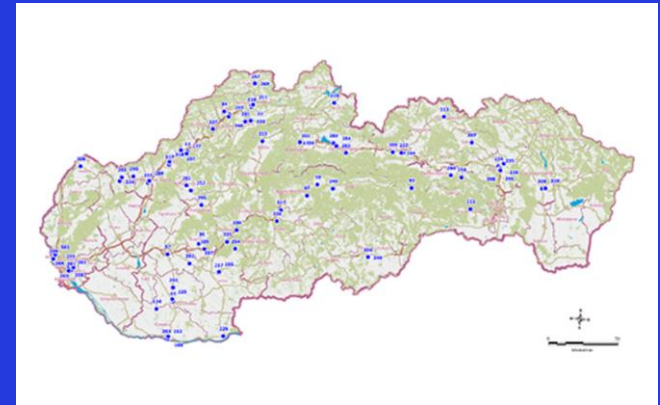
Investigation projects

- Two investigation projects are implemented
- Focused on 98 potentially contaminated sites
- Budget: 7 758 200 €
6 581 852 €



Monitoring projects

- **Monitoring of Environmental Burdens of Slovakia - Part 1 (OP QE)**
 - 83 sites
 - Beneficiary: State Geological Institute of D. Stur
 - Budget: 3 971 026 Eur
 - non-controlled landfills, industrial sites, sites of old environmental accidents, heaps and dumps, etc.
- **Sustainability of projects of the Department of Geology and Natural Resources of the Ministry of the Environment of the Slovak Republic concerning the exploration and rehabilitation of environmental burdens solved in the period 2012-2015 (State budget – 380 000 Eur)**
- **Monitoring of environmental burdens at selected locations in the Slovak Republic (State budget – 540 000 Eur)**



Remediation projects

1. Remediation of Selected Contaminated Sites of the Slovak Republic (1)

- Budget: 36 mil. Eur
- 18 priority localities: Prievidza, Púchov, Leopoldov, Košice, Poproč, Humenné, Vrútky, Čadca, Kraľovany, Nové Zámky, Komárno, Štúrovo, Sliač, Brezno, Zlaté Moravce, Spišská Nová Ves, Prešov, Dolný Kubín

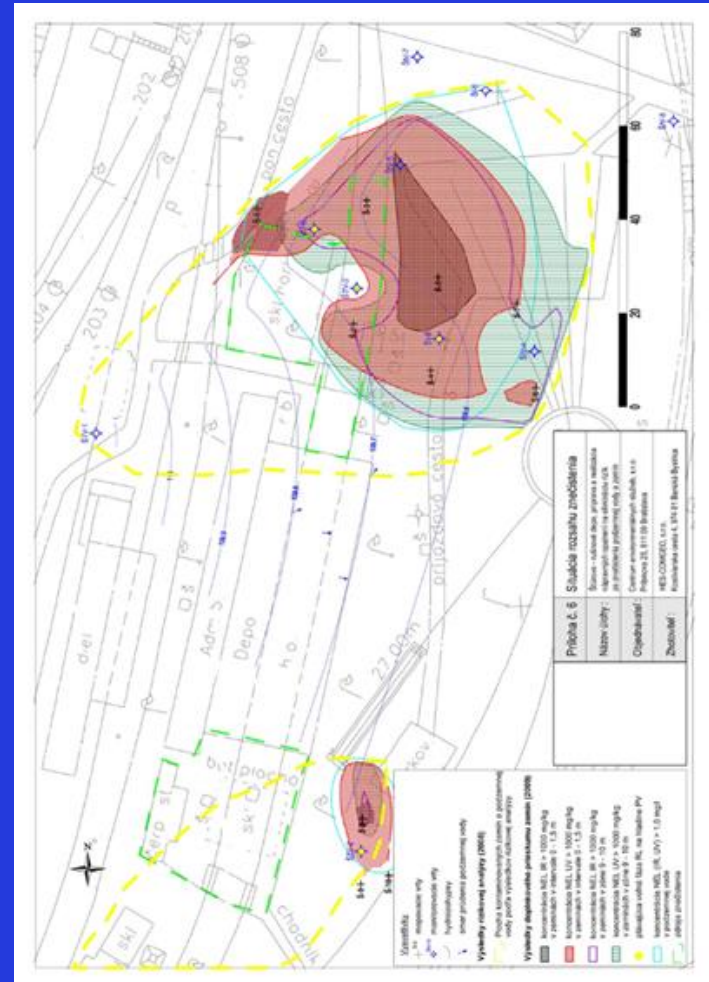
2. Remediation of Selected Contaminated Sites of the Slovak Republic (2)

- Budget: 15 mil. Eur
- 5 priority localities: Michalovce, Piešťany, Martin, Myjava, Komárno





Locomotive depot Šturovo



Locomotive depot Vrútky

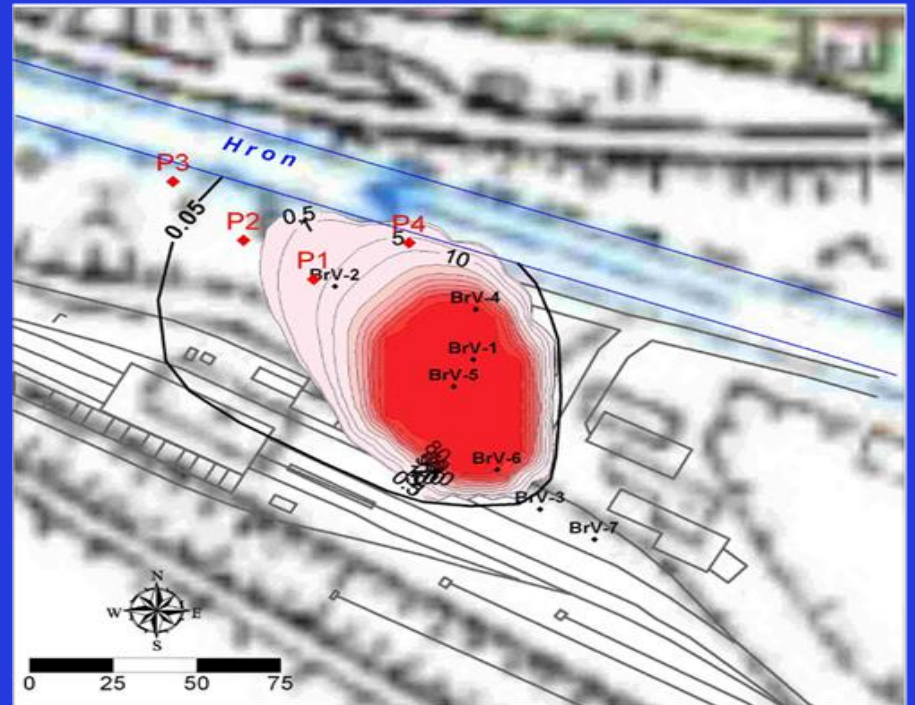


Locomotive depot Prešov

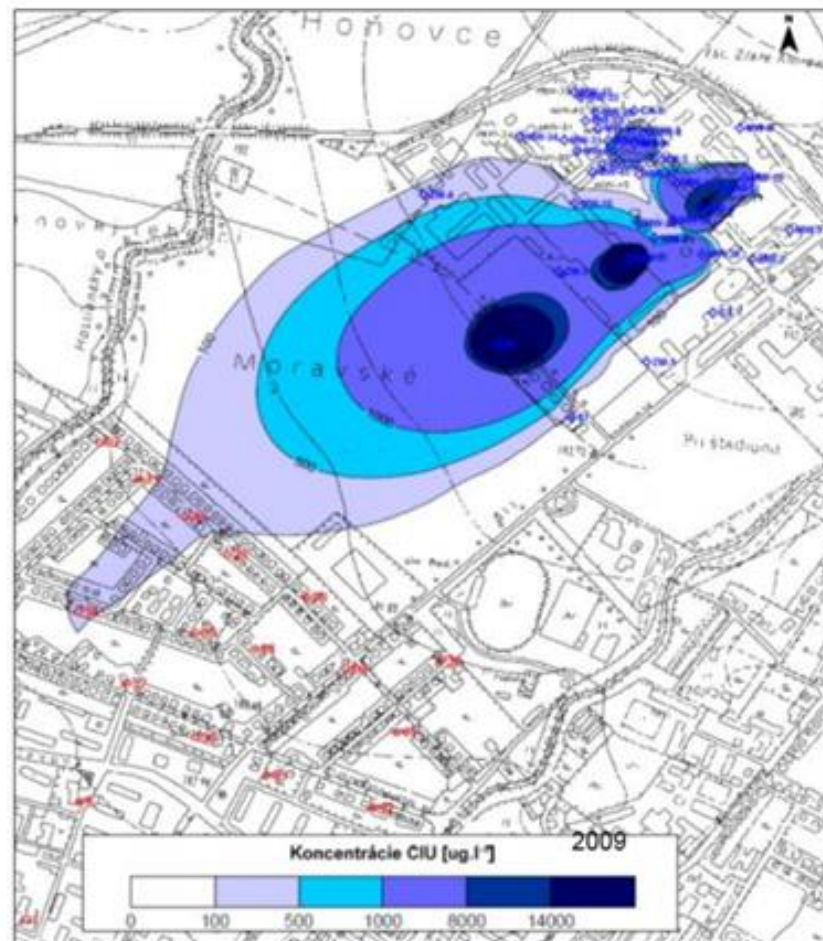
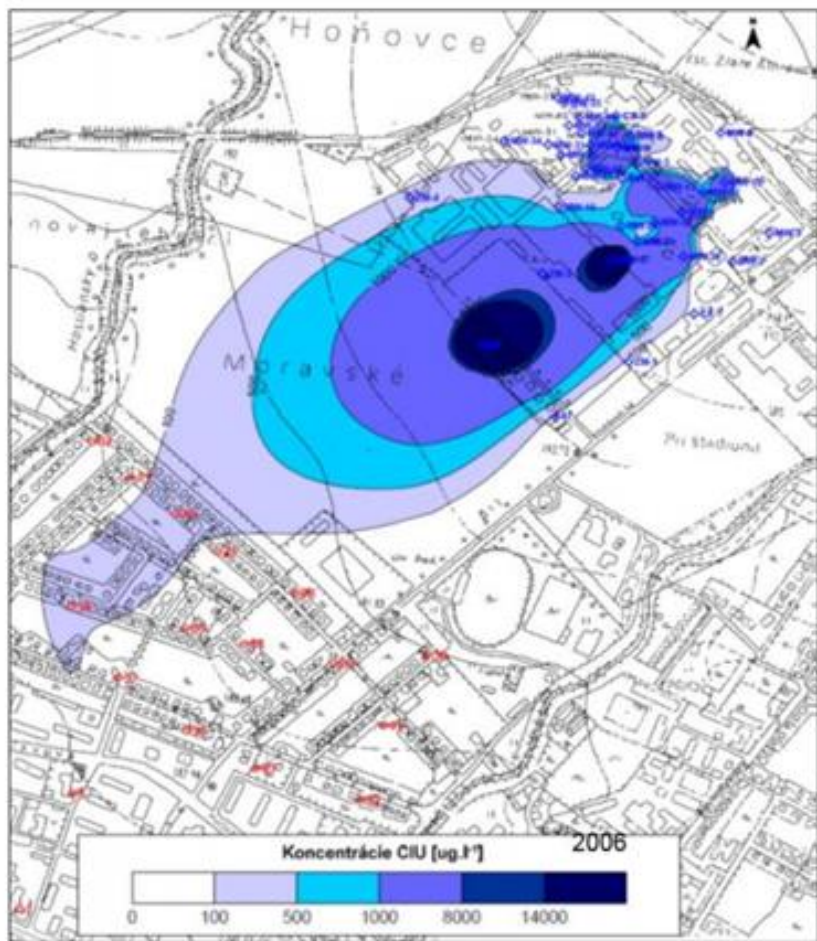


LD Čadca

LD Brezno



Zlaté Moravce – plum of chlorinated hydrocarbons



Myjava - landfill of galvanic sludge



Remediation projects – cont.

3. Remediation of Selected Contaminated Sites of the Slovak Republic (4)

- Budget: 17 mil. Eur
- 7 priority localities: Kežmarok, Zlaté Klasy, Čierne Kľačany, Bratislava – Petržalka, Horné Naštice, Sliač, Jamník

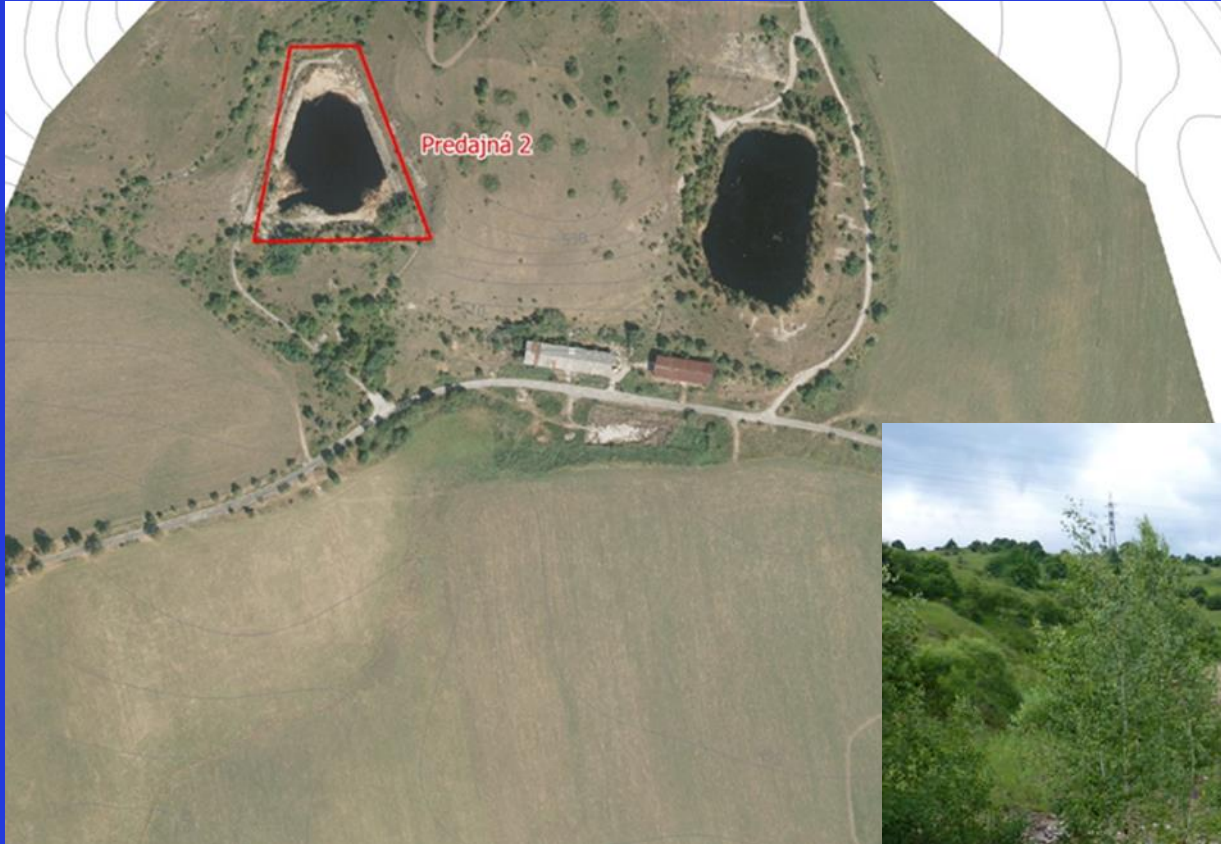
4. Remediation of Selected Contaminated Sites of the Slovak Republic (5)

- Budget: 27 mil. Eur
- 12 priority localities: Veľké Úľany, Bošany I, Bošany II, Stará Turá, Levice, Giraltovce, Stará Ľubovňa, Nová Dedinka, Čelovce, Utekáč, Zubrohlava, Kysucké Nové Mesto

5. Remediation of gudron lagoons in Predajna

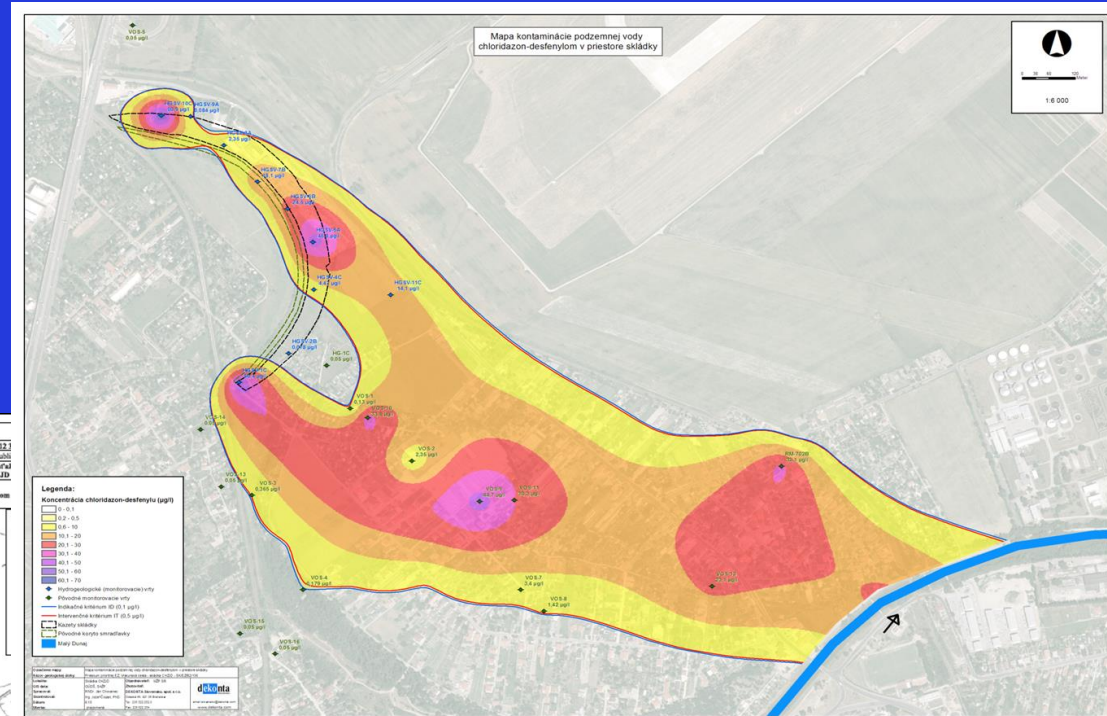
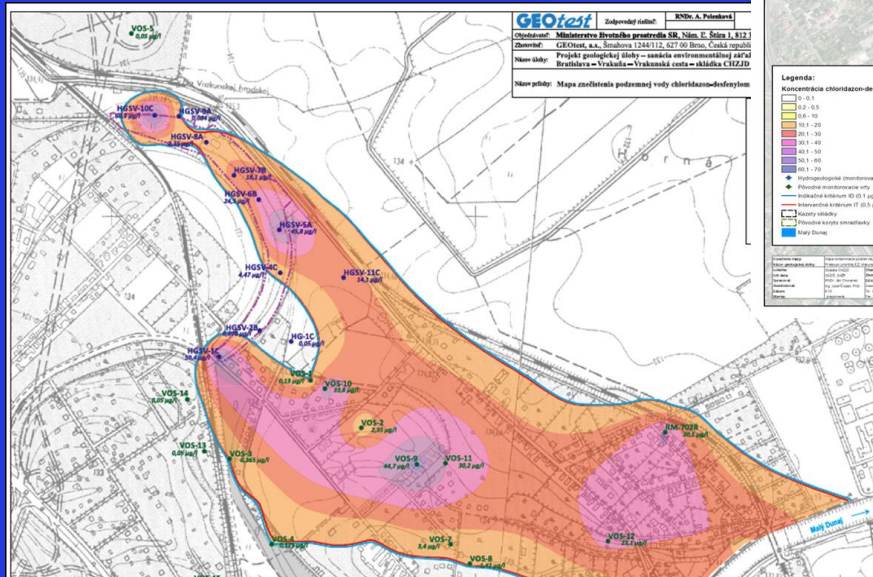
- Budget: 45 mil. Eur
- 2 priority localities: Predajna I, Predajna II.

Gudron lagoons in Predajna



6. Remediation of Vrakuna toxic waste disposal

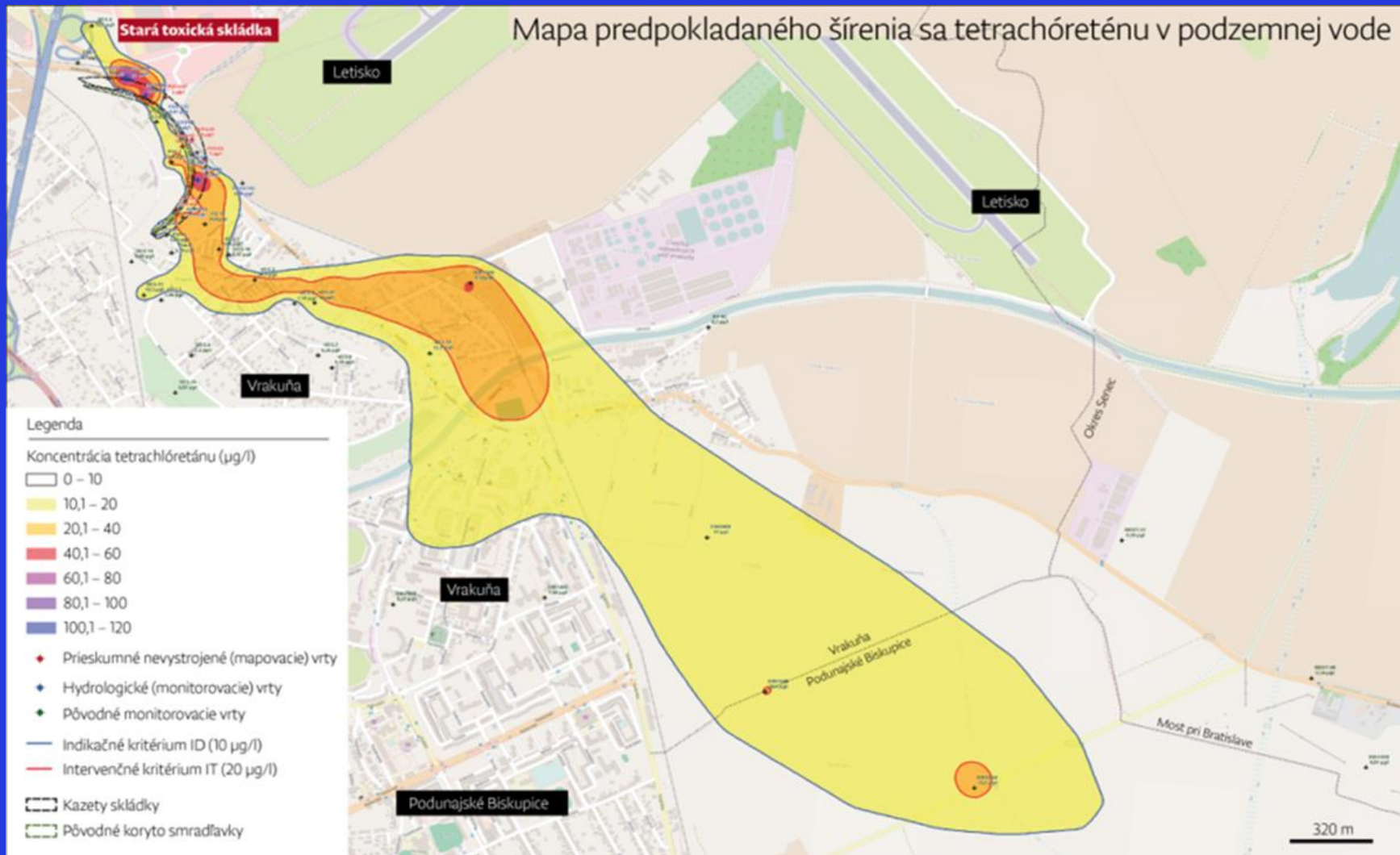
- Highest priority of MoE
- Budget: 36 mil. Eur



History of contaminated site

- The site Mlynské rameno in Vrakuňa has served historically for wastewater from chemical production in the former Dynamitka since 1873.
- Later, in 1966 the locality was selected for the building of a chemical waste dump.
- It was not necessary to build impermeable sealing elements in accordance with the previous legislation.
- Waste disposal was completed at the end of 1979.
- The thickness of the waste was approximately 1.5 to 2.5 m.
- On the area of 4.65 hectares, there were about 90 000 m³ of hazardous waste deposited.
- After filling the VD Gabčíkovo, groundwater level has been raised and since 1996 it has been in contact with the hazardous waste
- The contamination plum was spread within 5.5 km of the landfill and permanently threatens the largest reservoir of drinking water in Slovakia - the Žitný ostrov.

Current extent of contamination



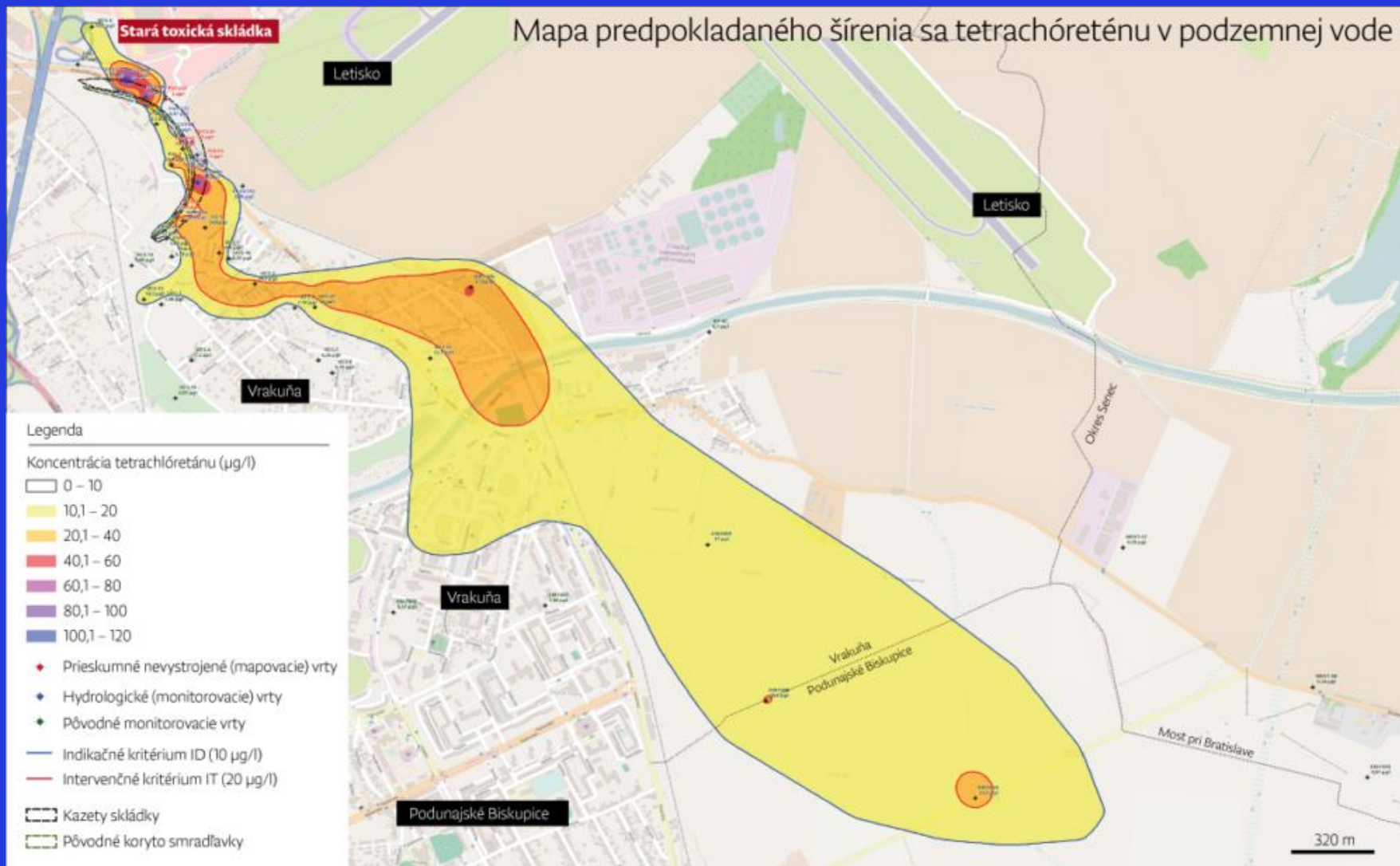
Progress in management of contaminated sites

The Ministry of Environment is currently providing the following activities:

- Encapsulation method was selected for remediation,
- Public procurement for contractors was finished,
- Contract was signed,
- Collection of documents for the commencement of territorial proceedings was finished,
- Negotiations with property owners (20 subjects) is still going on,
- Expropriation process must begin with some owners,
- EIA screening procedure was finished,
- Preparation of the request for non-refundable financial contribution from the Operational Program Quality of the Environment is going on,
- Survey for construction purposes started in November 2018
- Construction project was submitted in May 2019

Contaminated area

Mapa predpokladaného šírenia sa tetrachlóreténu v podzemnej vode



Problems solved in connection with remediation

- Suggestions for determining the obligatory person for CS
- Information to the Slovak Government
- Preparation of CS remediation projects
- State aid for the recovery of CS
- Expert opinions
- Amendment to the Geological Act (expropriation)
- Issues of the EIA
- Construction Procedures (Tens of Opinions)
- Contracts with property owners
- Public Procurements





Ministerstvo životného prostredia
Slovenskej republiky



Thank you for your attention

vlasta.janova@enviro.gov.sk

