Training on identification of hazardous activities
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The Serbian approach to the identification of hazardous activities under the Convention

Suzana Milutinović
Ministry of Environment and Spatial Planning
Republic of Serbia

SERBIAN LEGISLATION

- Law on Ratification of the Convention on transboundary effects of industrial accidents (Official Gazette RS No. 42/09)
- Law on Environmental Protection (Official Gazette RS No. 135/04)
- Law on amending the Law on Environmental Protection (Official Gazette RS No. 36/09)
- Law on Chemicals (Official Gazette RS No. 36/09)

By-laws on chemical accident prevention and chemicals management

- Regulation on the list of dangerous substances and their quantities → harmonized with Annex I
- Regulation on the content of Notification
- Regulation on the content and methodology of Major-accident prevention policy, Safety report and Internal emergency plan
- Regulation on the classification, packing, labeling and advertising of chemical and certain product
- Regulation on classification, packing, labeling and advertising of chemical and certain product in accordance with GHS of classification and labeling of the UN

Mechanism for identification of hazardous activities

RESPONSIBILITIES

METHODOLOGY

IDENTIFICATION PROCESS

Responsibilities

- **LEP defines responsibilities**
- Operator of the hazardous activity in which are performed activities where one or more dangerous substances are present or may be present in quantities equal to or greater than prescribed shall be obliged to submit Notification (data format) to the Ministry
- The Minister shall prescribe content of the Notification (data format) - Regulation on the content of Notification

Responsibilities

- Inspection control – whether the obligation from the Law has been proceeded and whether the data corresponds to the real situation.
- Based on the collected data, the Ministry shall determine hazardous activities which may cause chemical accidents with transboundary effects and keep register of these hazardous activities.
- Ministry shall notify on hazardous activity the competent authority of the country that may be affected with consequences of such accident.

Responsibilities

Ministry of Environment and Spatial Planning

Group for Risk Management

Environmental Inspection,
Department for chemical and Seveso installation management

National level, authority which is responsible for collecting and processing data on hazardous activities is the Ministry of Environment and Spatial Planning (MESP)

Methodology for the identification process

- Data collection
- Data analysis
- Validation of data
- Review/revision of data

Data collection

- Obligation of the operators of hazardous activities to submit to the Ministry Notification with data about establishment and data on hazardous substances they use/storage/ handle and their quantities
- Data are collected for all installations where hazardous substances are present in quantities equal to or greater than thresholds listed in the List of dangerous substances (Regulation on the list of dangerous substances and their quantities)
- Data are collected by fulfilling forms (Regulation on the content of Notification)

Data collection

- Operator shall submit data:

- On new or existing establishment,
- On existing establishment which activities were such that the dangerous substances were present in quantities lower than prescribed, in case of increase of quantities of dangerous substances up to the quantities prescribed in the List of dangerous substances,
- in the case of modification of establishment, in the event of modification of process, change of nature or quantity of dangerous substance or other changes that may affect the danger of occurrence of chemical accident.

Data collection

- The timing for data collection is defined (LEP)

Linkage with the review/revision of data

- Inspection control whether the obligations from the Law has been proceeded

Data analysis

- Using of a system for classification of chemicals according the physical – chemical, toxicological and ecotoxigological properties:
  - List of dangerous substances (Regulation)
  - Law on Chemicals/Regulation on the classification, packing, labeling and advertising of chemical and certain product
  - UN/ADR Classification of the chemicals
  - SDS (Safety Data Sheet)

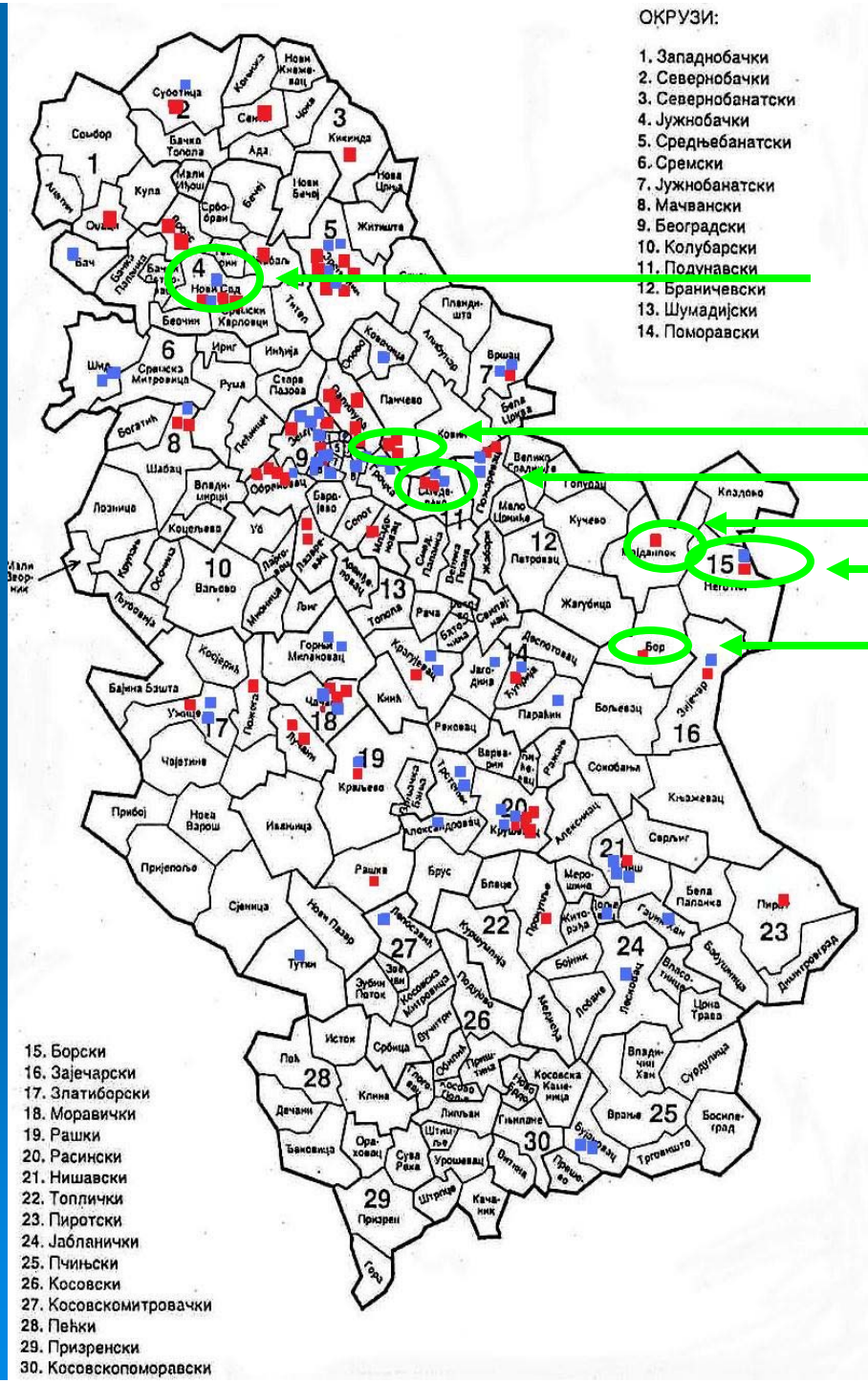
Data analysis

- Checking whether the data collected corresponds to the real situation
- Making a list of present hazardous substances and their quantities
- Checking the compliance with Annex I - Substance and quantity criteria

Data analysis

- Look at the scope of the Convention - Exclusion criteria (Art.2.2)
- Applying the location criteria
- Risk assessment, if needed

Hazardous activities in Republic of Serbia



- Upper tier
- Lower tier
- Under the Convention

Preliminary list of hazardous activities under the Convention

	Hazardous activity	Geographical location	Type of activity
1	Chemical industry Prahovo	Prahovo	Production of mineral fertilizers
2	Copper Mines Bor	Bor	Tailing
3	Copper Mines Majdenpek	Majdanpek	Tailing
4	Oil Refinery Pancevo	Pancevo	Oil refinery
5	Fertilizer company	Pancevo	Production of mineral fertilizers, nitric compounds and ammonia
6	Petrochemical company	Pancevo	Polymers production
7	Oil refinery Novi Sad	Novi Sad	Oil refinery
8	NIS Petrol Jugopetrol – Installation Prahovo	Prahovo	Storage of petroleum products
9	NIS Petrol Jugopetrol – Installation Smederevo	Smederevo	Storage of petroleum products

Validation of data, review/revision

- Provisional list of hazardous activities → validation is needed
- It is necessary to prescribe validation procedure
- Forming the Joint Expert Group for elaboration, validation and review/revision of data (members from MESP, MoI, MAFW, MLSP, other institutions, experts)

Applying the mechanism for data assessment

- Within the Project for Bulgaria, Romania and Serbia on joint management of transboundary emergencies from spills of hazardous substance into the Danube river, in-field exercise in Prahovo region was held
- Petroleum storage located at the bank of the Danube River in Prahovo, Serbia, was identified as a possible source for causing transboundary effects in the event of an accident
- In the scope of this Project, it was confirmed that hazardous activity identified within the Preliminary list of hazardous activities, may cause transboundary effects

Substance and quantity criteria

- Storage of petroleum products
- Tanks for gasoline and diesel fuel - meeting the criteria of Annex I
- **Part II – Named substances**

  Petroleum products: gasolines and naphthas kerosens (including jet fuels); gas oils (including diesel fuels, home heating oils and gas oil blending streams) – threshold 25 000 tones

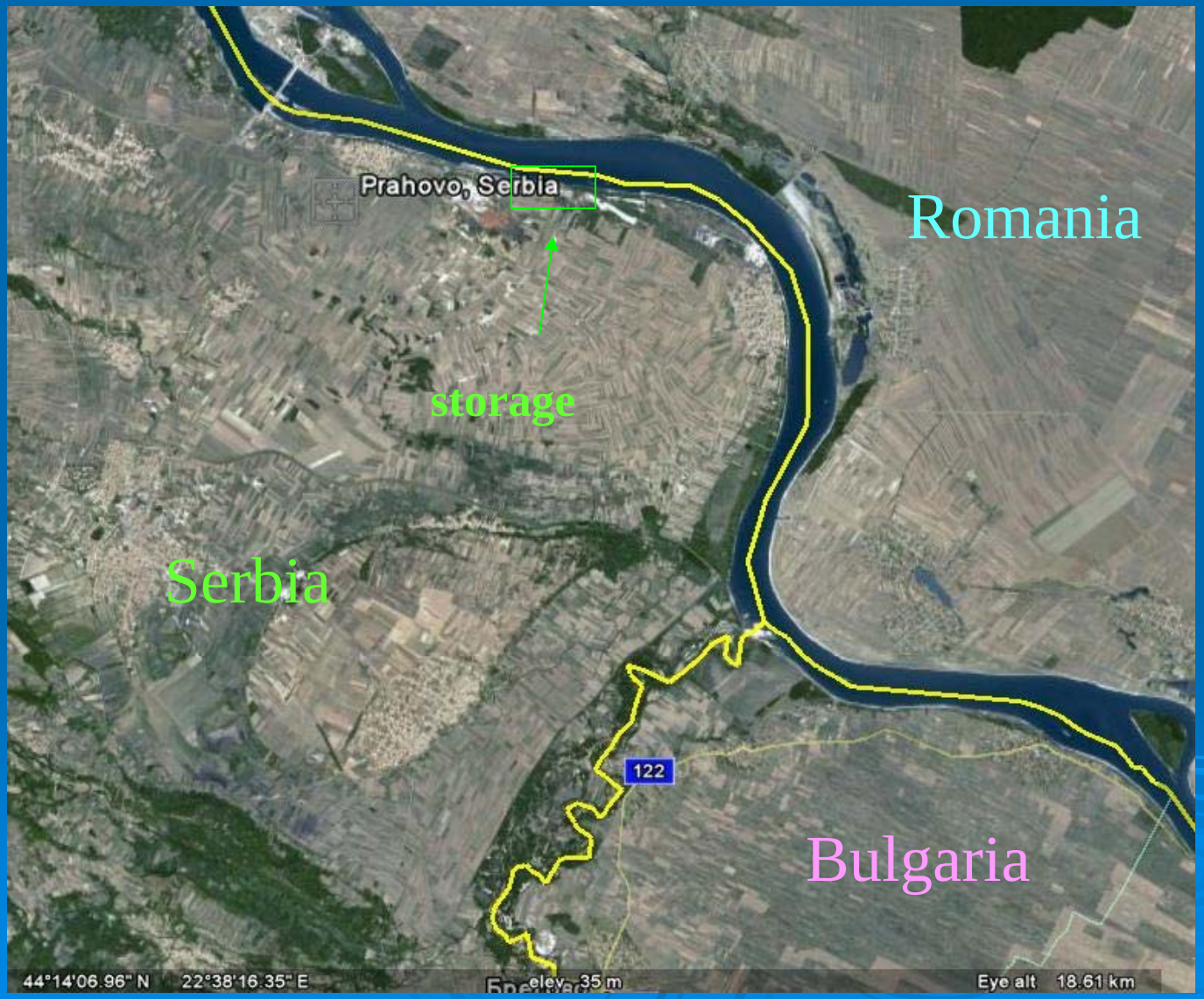
  Dangerous for the environment

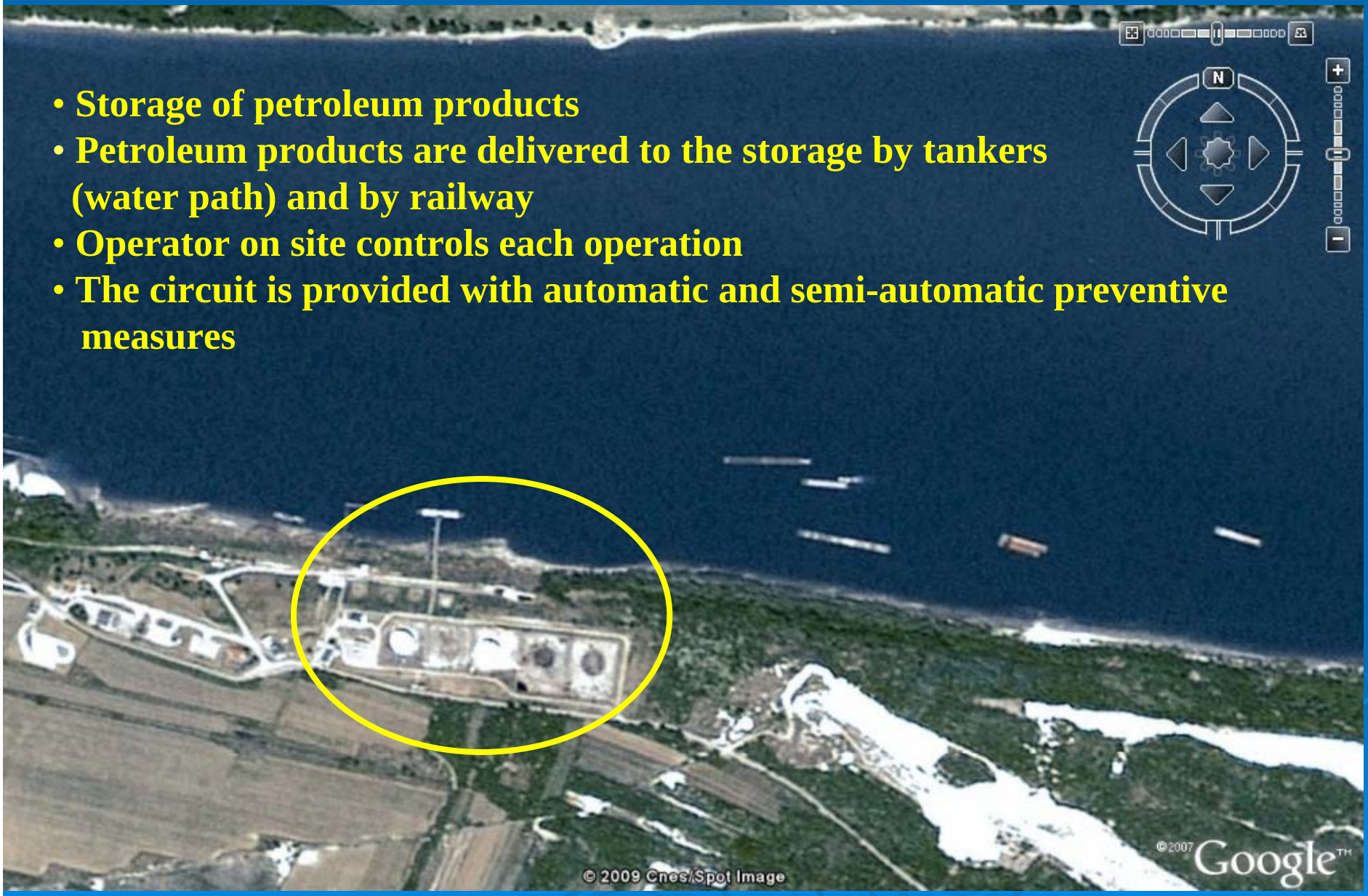
- Total capacity of the storage is: ***24000 m^3 of petroleum products (≈ 20 000 tones) - under the threshold of Annex I***

Location criteria

- Installation is located at the right side of river Danube, Eastern Serbia.
- Border with Romania is on the river Danube.
- Storage is approximately 9 km distant from Bulgaria through air path; approximate distance by water path to Bulgaria is 13 km.
- In diameter of 3km around the installation there are no protected natural resources, cultural or social objects.

Border between three countries




• Storage of petroleum products
• Petroleum products are delivered to the storage by tankers (water path) and by railway
• Operator on site controls each operation
• The circuit is provided with automatic and semi-automatic preventive measures
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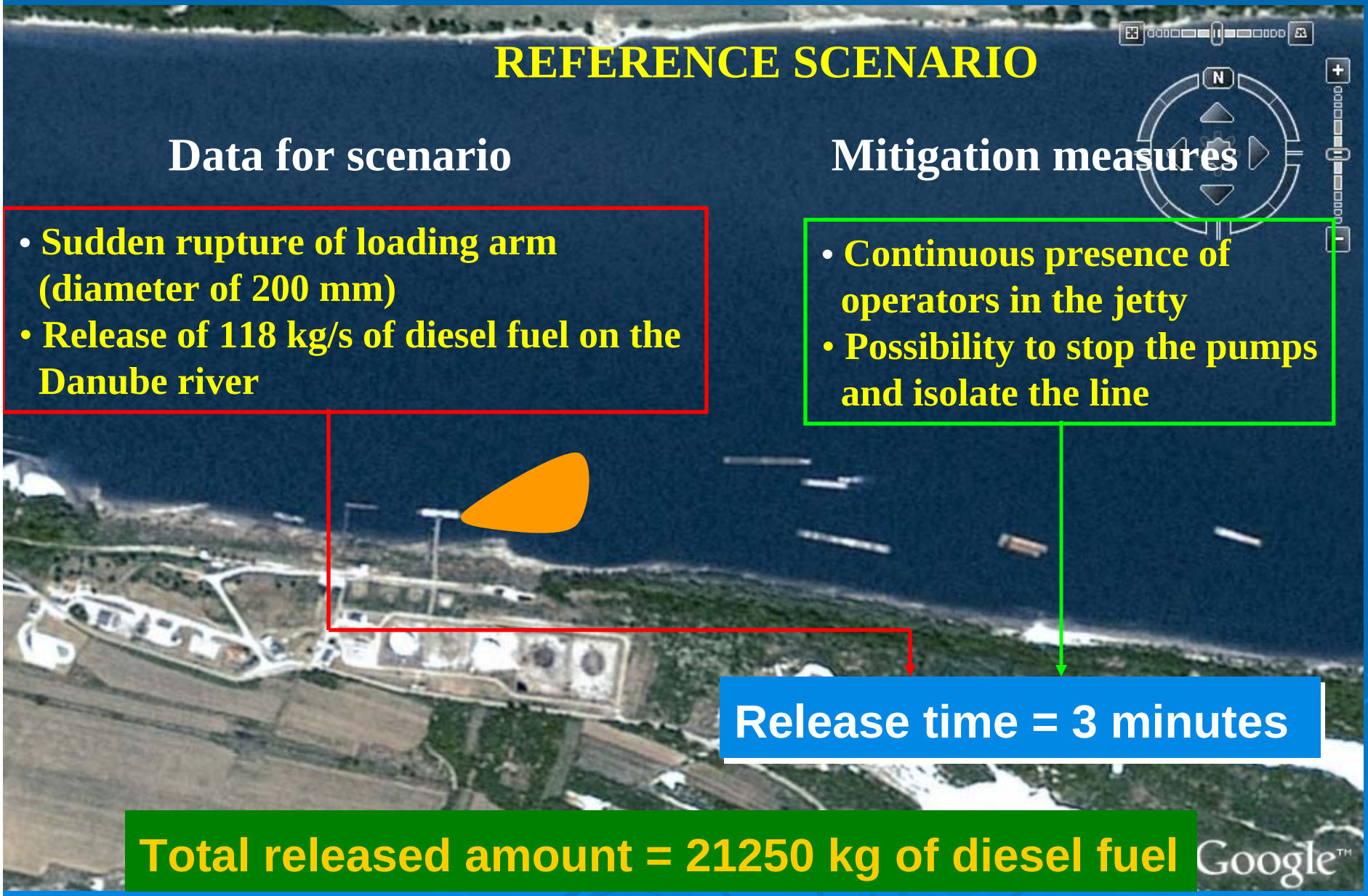
REFERENCE SCENARIO

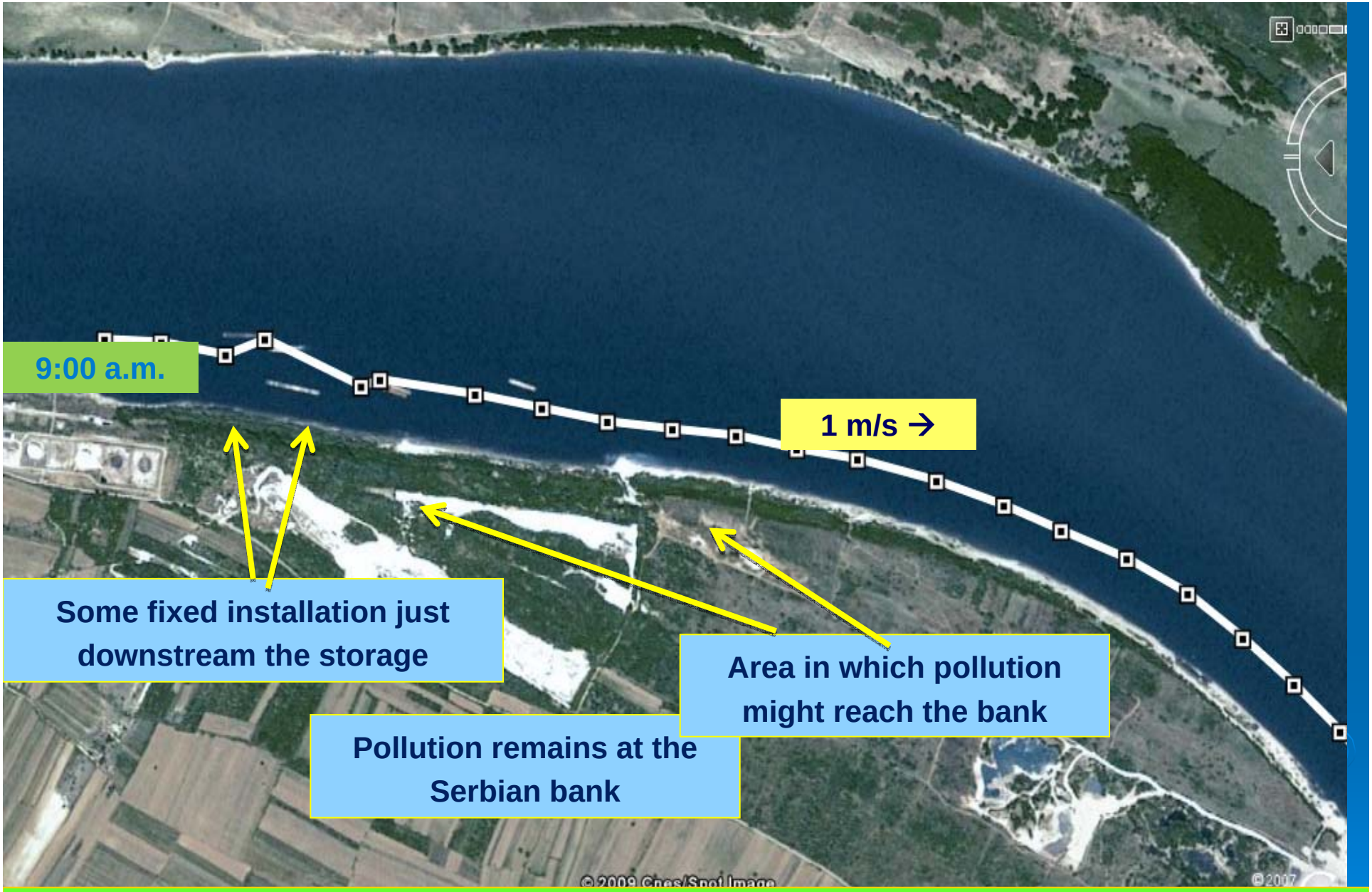
Data for scenario

- Sudden rupture of loading arm (diameter of 200 mm)
- Release of 118 kg/s of diesel fuel on the Danube river

Mitigation measures

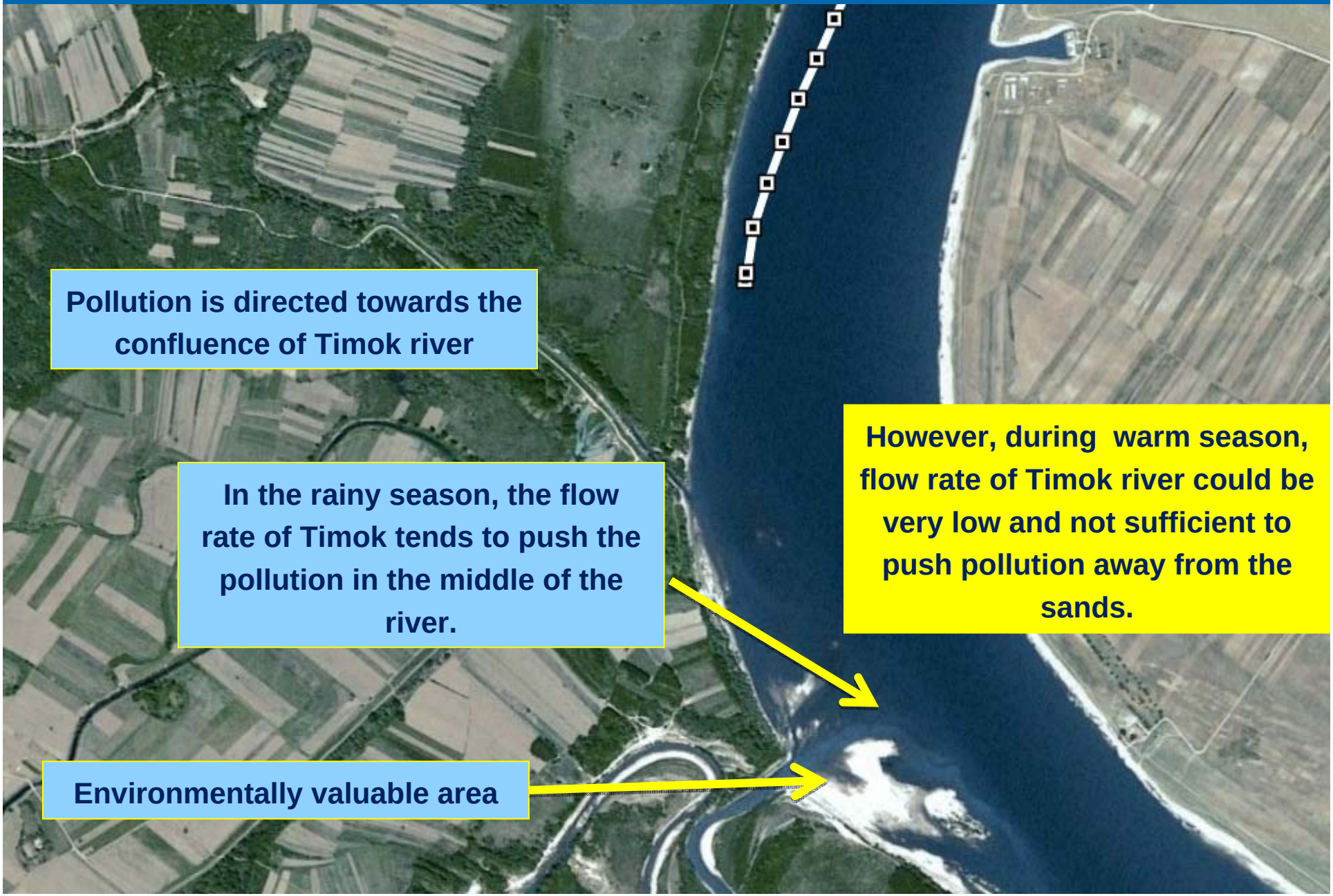
- Continuous presence of operators in the jetty
- Possibility to stop the pumps and isolate the line

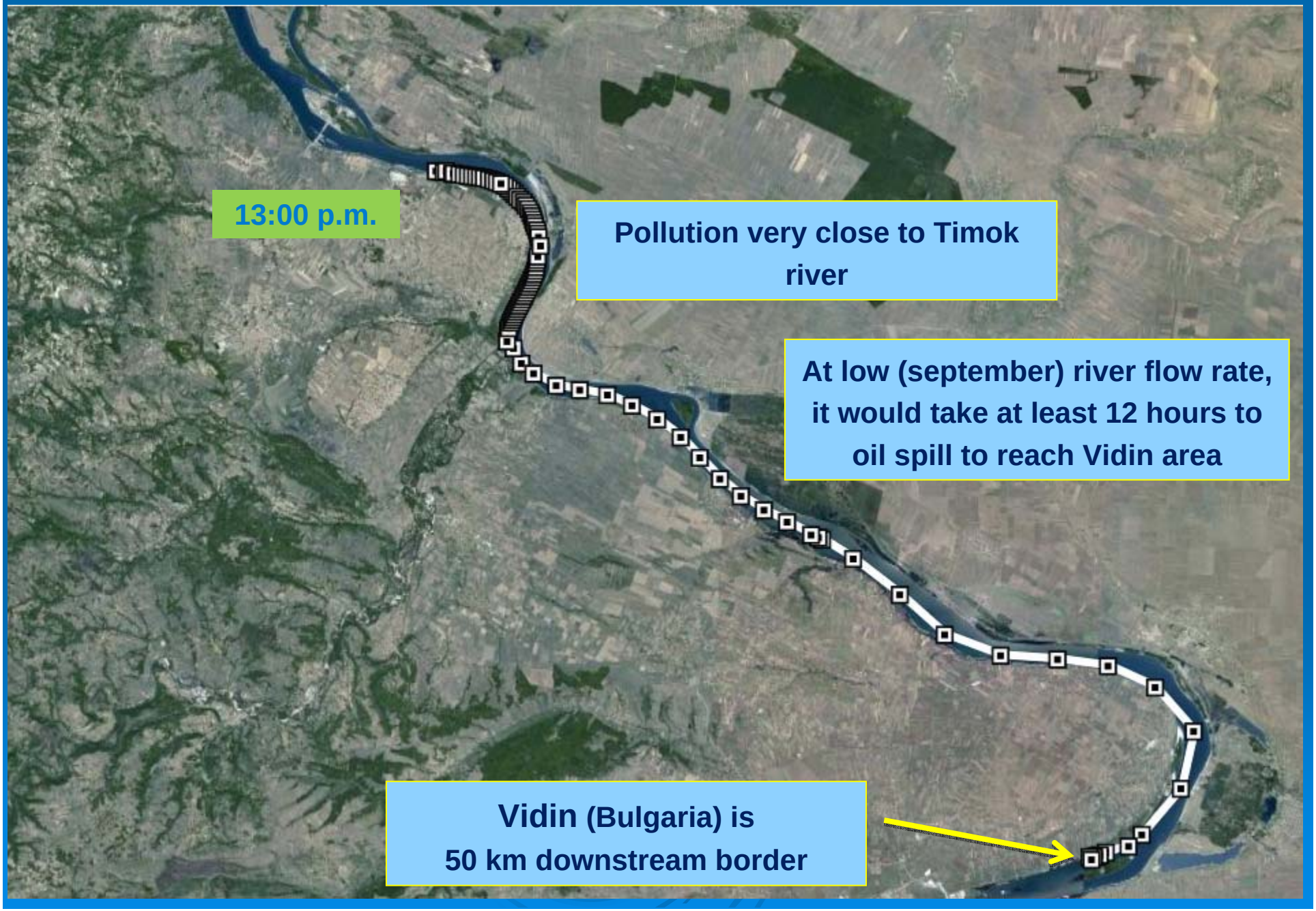




MODELLING – ASSESSMENT OF CONSEQUENCES

Use of modeling tools in assessing the movement of the spill


Pollution is directed towards the confluence of Timok river
In the rainy season, the flow rate of Timok tends to push the pollution in the middle of the river.
However, during warm season, flow rate of Timok river could be very low and not sufficient to push pollution away from the sands.
Environmentally valuable area


13:00 p.m.
Pollution very close to Timok river
At low (september) river flow rate, it would take at least 12 hours to oil spill to reach Vidin area
Vidin (Bulgaria) is 50 km downstream border

Conclusion

- **Hazardous activity meeting the substance criteria**
- **Quantity criteria – under the threshold quantity**
- **Within catchment area of transboundary and border river – 13 km distance from the border**
- **Risk assessment – assessing the movement of the pollution**
- **It is estimated that pollution will reach the border in four hours**
- ***Hazardous activity is under the Convention.***

Follow - up

- Establishment the Joint Expert Group for elaboration, validation and review/revision the List of hazardous activities which may cause chemical accidents with transboundary effects
- Establishing the procedure for determining hazardous activities which may cause chemical accidents with transboundary effects, i.e. keeping the register of these hazardous activities and procedure for validation
- Organizing the trainings for authorities responsible for applying the procedure for determining hazardous activities which may cause chemical accidents with transboundary effects


THANK YOU FOR YOUR ATTENTION!