



Second meeting of the Working group on Tailings Safety and Prevention of Accidental Water Pollution in Kazakhstan

15 March 2023, Astana

On updating the cadastre and mapping of tailings in Kazakhstan

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The task set during the creation of maps

creation of a practical and easy-to-use tool, also for personnel who do not have access to special software

- ✓ Map of tailings in the Syr Darya river basin
- ✓ Map of dangerous objects in the Syr Darya river basin

Offline maps
(Google earth)



Online maps
(Google my maps)



Accessible map layers of tailings in the Syr Darya river basin

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- ▶ Tailings in Uzbekistan
- ▶ Tailings in Tajikistan
- ▶ Tailings in Kazakhstan
- ▶ Tailings dumps in Kyrgyzstan
- ▶ Cross-border tailings
- ▶ THI ranking for all countries (national level)
- ▶ TRI ranking for all countries (national level)
- ▶ Ranking according to the THI according to the international gradation
- ▶ Ranking according to the TRI according to the international gradation



Map of tailings in the Syr Darya river basin

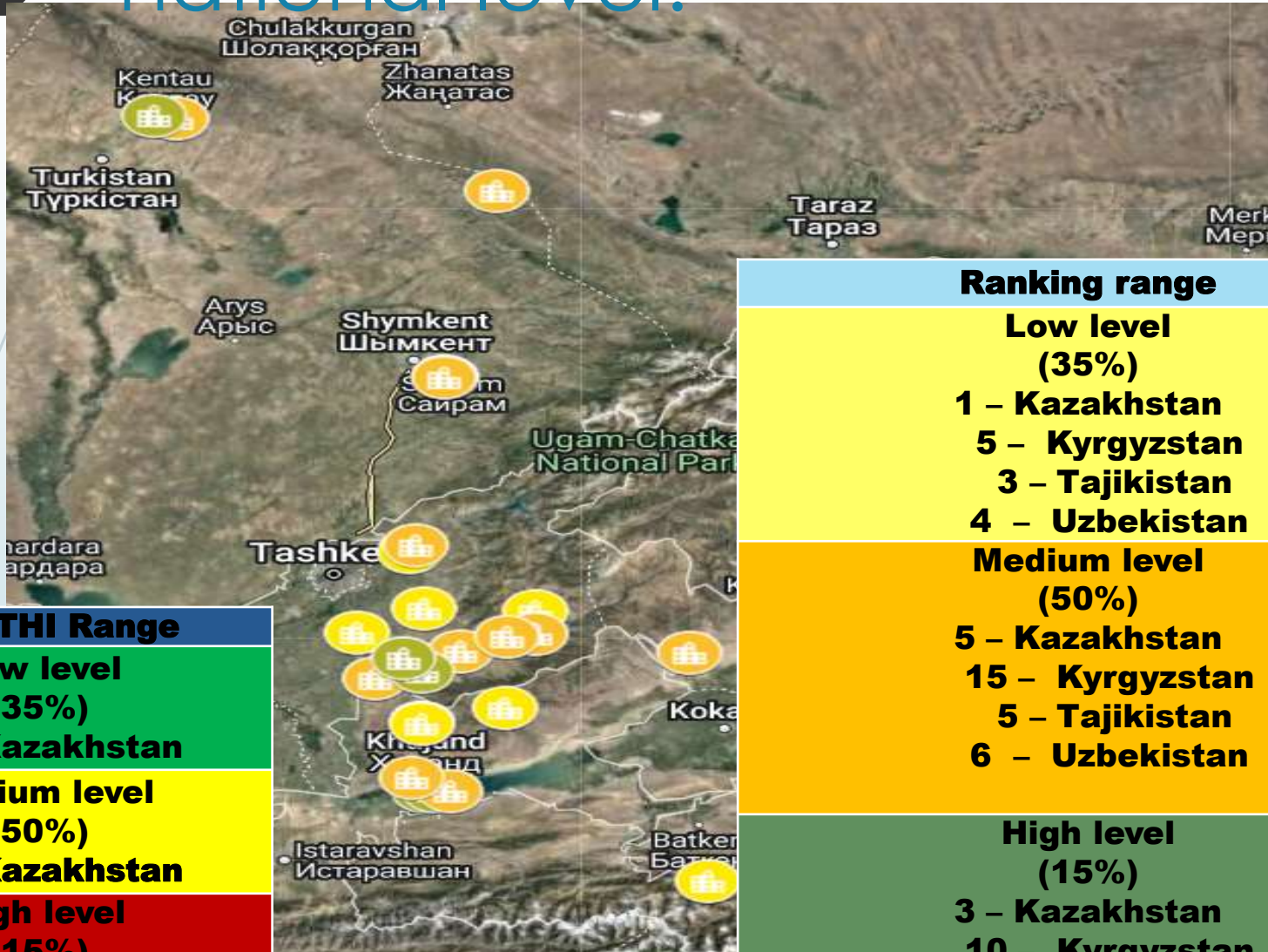


THI and TRI ranking for international level:

RANKING BY THE TAILING HAZARD INDEX (THI)	RANKING BY THE TAILING RISK INDEX (TRI)
Very low ($ИОХ \leq 8$)	Very low ($ИРХ \leq 13$)
Low ($8 < ИОХ \leq 10$)	Low ($13 < ИРХ \leq 15.5$)
Medium ($10 < ИОХ \leq 12$)	Medium ($15.5 < ИРХ \leq 18$)
High ($12 < ИОХ \leq 14$)	High ($18 < ИРХ \leq 20.5$)
Very High ($ИОХ > 14$)	Very High ($ИРХ > 20.5$)
Total tailings: Very high -28, high - 27, medium-6 Of which in Kazakhstan: medium – 2, very high- 7	Total tailings: Very high-28, high - 27, medium -6 Of which in Kazakhstan: high– 2, very high- 7

THI and TRI ranking for national level:

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2019 THI Range
Low level (35%) 42 – Kazakhstan
Medium level (50%) 61 – Kazakhstan
High level (15%) 18 – Kazakhstan

Ranking range
Low level (35%)
1 – Kazakhstan 5 – Kyrgyzstan 3 – Tajikistan 4 – Uzbekistan
Medium level (50%)
5 – Kazakhstan 15 – Kyrgyzstan 5 – Tajikistan 6 – Uzbekistan
High level (15%)
3 – Kazakhstan 10 – Kyrgyzstan 2 – Tajikistan 2 – Uzbekista

Tailings of Kazakhstan in the Syr Darya river basin

Name of the tailing	Tailings Hazard Index	Tailings Risk Index	THI range	TRI range	THI ranking for international level	TRI ranking for international level
ТОО «Кайнар» Шламонакопитель 1	12.0	19.0	Low level	Low level	medium	high
Kainar LLP Sludge accumulator 2	12.0	19.0	Low level	Low level	medium	high
Kainar LLP Sludge accumulator 3	14.2	21.2	Low level	Low level	very high	very high
Kainar LLP Sludge accumulator 4	14.6	21.6	Medium level	Medium level	very high	very high
Kainar LLP Sludge accumulator 5	15.0	22.0	Medium level	Medium level	very high	very high
Kainar LLP Sludge accumulator 6	15.5	22.5	Medium level	Medium level	very high	very high
Akimat of the Turkestan region Baizhansai tailing dump	15.7	22.7	Medium level	Medium level	very high	very high
Akimat of the Turkestan region Khantagin tailings	14.4	23.4	Medium level	Medium level	very high	very high
Akimat of the Turkestan region Bayaldyr tailings	15.8	24.8	High level	High level	very high	very high

Tailings with possible transboundary effect

- Хвостохранилища Узбекистана (12)
- Хвостохранилища Таджикистана (10)
- Хвостохранилища Казахстана (9)
- Хвостохранилища Кыргызстана (30)
- Трансграничные хвостохранилища (33)
 - ▼ Кыргызстан
 - Таджикистан
 - Узбекистан
- Ранжирование по ИОХ для всех стран ...



Information about individual tailings

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New Map

Tailings name
Nearest town
Latitude, Longitude
Usable capacity (million m³)
Material type
Toxic Substances
Substance toxicity (Water hazard class)
tailings status
Settlements in the risk zone
Nearest water body in the risk zone
The year to which the data refers
Cross-border effect
Tailings Hazard Index
Tailings Risk Index
THI ranking
TRI ranking
International ranking level for THI
International ranking level for TRI
A country

Map of 2019

Tailings name
Region, city / district
Latitude, Longitude
The volume of stored tailings materials
Stored material
Hazard Class
Status
Maximum horizontal ground acceleration
Flood frequency (HQ-100)
Dam: material
Dam: crest width
Year of commissioning
THI
THI range

Aspects of information visualization on the example of the Kazakh tailings

← Акимат Туркестанской обл...

Название хвостохранилища
Акимат Туркестанской области Хантагинское хвостохранилище

Ближайший населённый пункт
г.Кентау

Долгота
68.544106

Широта
43.507743


Используемая ёмкость (млн м³)
2.300

Тип материала
пульпа

Токсичные вещества
Pb, Zn

Токсичность веществ (Класс опасности для воды)
3

Статус хвостохранилища
закрытое



Shashtobe Шаштөбе

Bayaldyr Байылдыр

Karmaq Қармақ

Akyntuma Ақынтума

Kentaу Кентау

Kushata Құшата

Кентауское водохранилище (Кентау қаласының су қоймасы)

Google My Maps

Mapping of pollution sources

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Hazardous activities have been mapped, which include a wide range of chemical pollutants (from petroleum products and heavy metals to chemicals for processing agricultural products).

предупреждению и реагированию на загрязнение р. Сырдарья при аварийных ситуациях».

<https://unece.org/ru/pollution-syr-darya-river-emergency-situations>

Всего объектов I и II класса опасности 133:

Казахстан - 74

Кыргызстан - 20

Таджикистан - 12

Узбекистан - 27

114 views

Published on February 6

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EDIT

опасные объекты Кыргызстана (20)

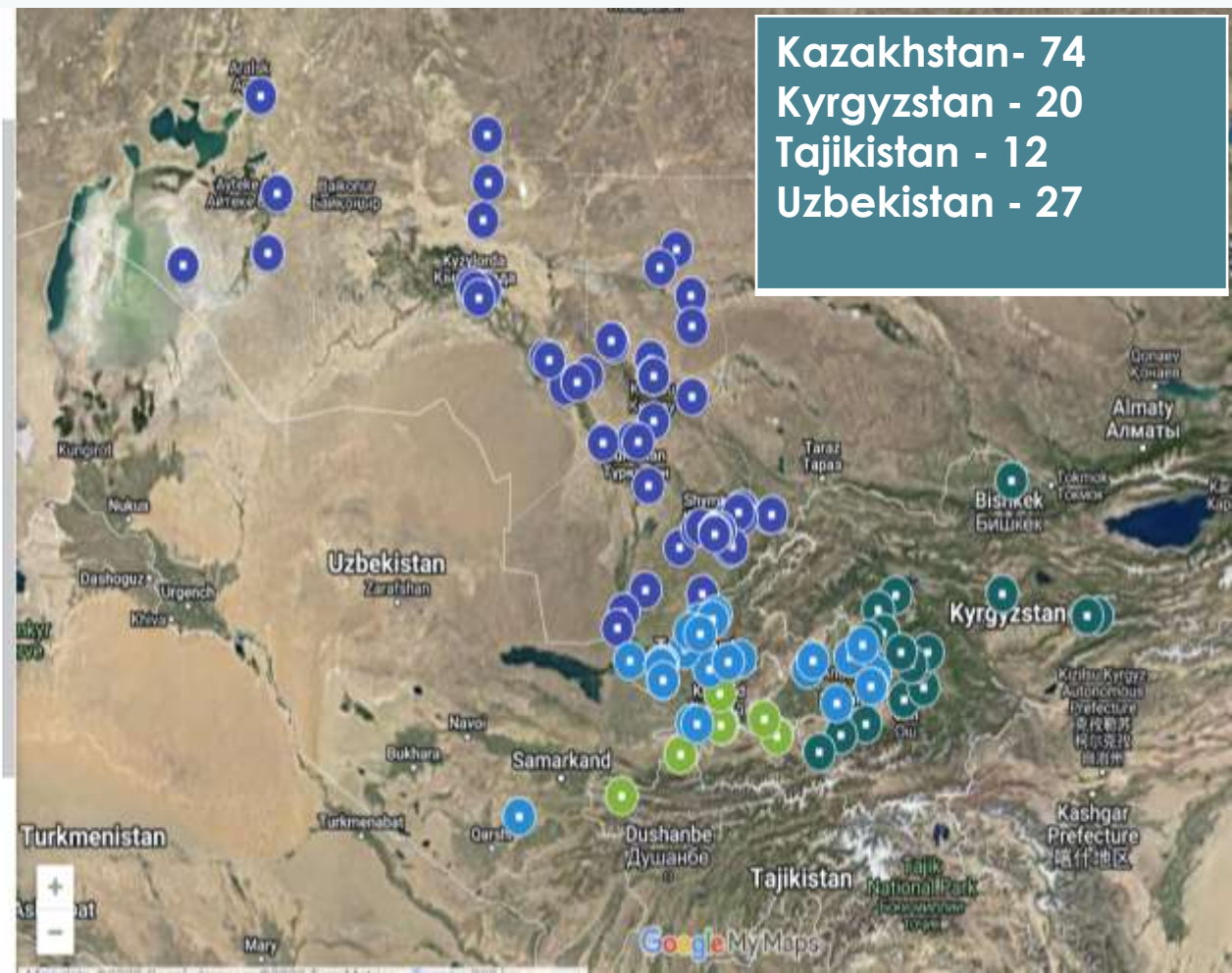
All items

опасные объекты Казахстана (74)

All items

опасные объекты Таджикистана (12)

All items



Information on individual hazardous objects(

Operator/owner

Latitude, Longitude

Location

River nearby

Hazard class (I or II)

Stored materials

The volume of stored materials (planned) or the volume of production per year

Object status

Year of launch (beginning of operation)

Main conclusions

- ▶ The map has been further improved to provide a useful tool for the competent authorities to collect and analyze information about the danger of objects and take preventive measures to prevent emergencies with negative consequences for the environment and public health.
- ▶ The map allows you to determine the affected areas, including settlements and polluted water bodies, in the event of an accident at the enterprise.
- ▶ This map can be used for integration into the country's cadastral system.
- ▶ The developed map allows countries to get an overview of hazardous facilities and tailings in order to subsequently take additional safety measures from the relevant competent authorities.



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Thank you!