

**Introduction workshop, on-site training and evaluation workshop under the UNECE projects on improving mining / tailings safety in  
Kazakhstan, Tajikistan and beyond in Central Asia**

**Kokshetau, Kazakhstan**

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# Mapping tailings in the EECCA region

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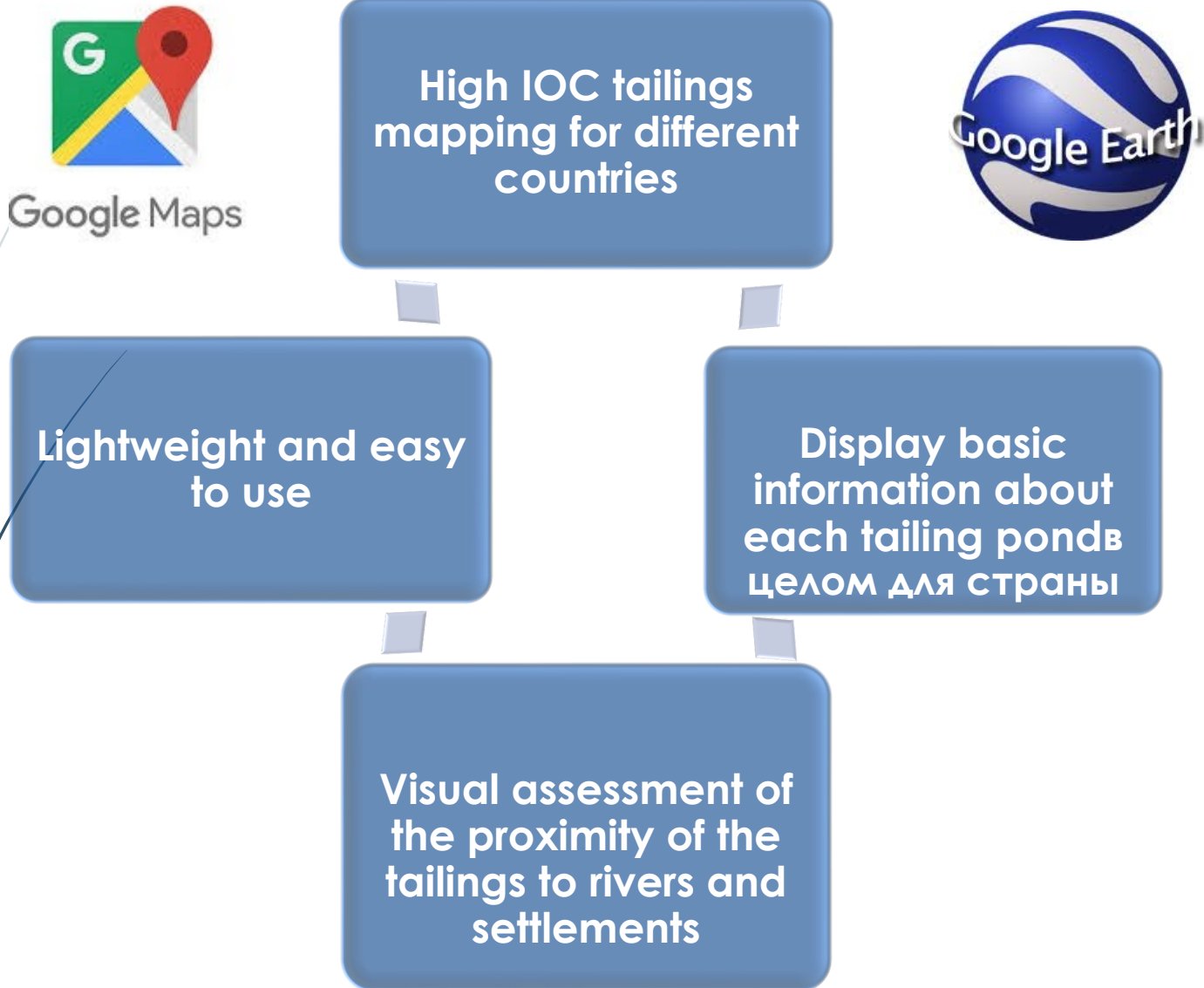
UNECE Convention on the  
Transboundary Effects of  
Industrial Accidents

**Assistance  
Programme**



Jointly organized by the UNECE Convention on the Transboundary Effects  
of Industrial Accidents and the Government of Kazakhstan

# Tasks set when creating a map



# Map of tailings of countries participating in the project

Project “ASSISTANCE IN IMPROVING THE SAFETY OF TAILINGS IN ARMENIA AND GEORGIA”

Armenia 23  
tailings

Georgia 5  
tailings

Kyrgyzstan  
16 tailings

Romania  
119 tailings

Hungary  
35 tailings

Serbia  
23 tailings

# Tailings Information

4

**Tailing name**

**Region, city /  
district**

**Latitude,  
Longitude**

**Tailings storage  
volume**

**Stored material**

**Hazard Class**

**Status**

**Maximum  
horizontal  
ground  
acceleration**

**Flood  
Frequency (HQ-  
100)**

**Dam: material**

**Dam: ridge  
width**

**Year of  
commissioning**

**TI extended**

**TI range**



# Card Maker Application

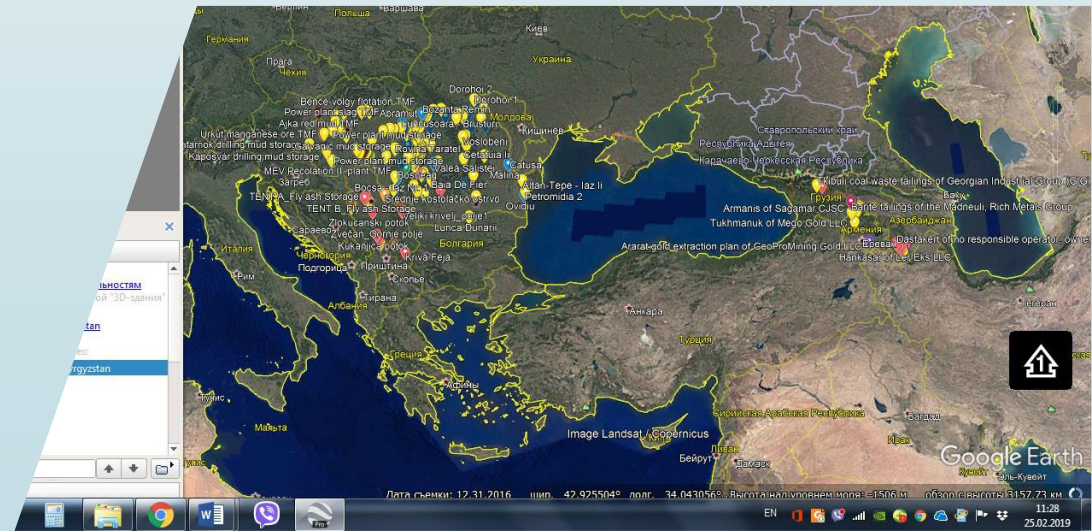
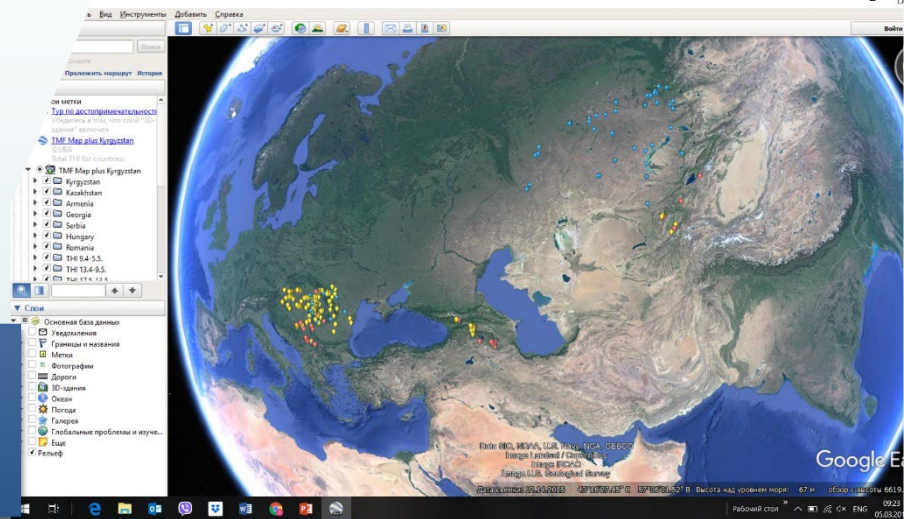
is free

Image  
combining



More layers

Assessment  
of changes  
over time



## TI range

<b>A country</b>	<b>TI min</b>	<b>TI Max.</b>
<b>Armenia</b>	<b>11.9</b>	<b>16.6</b>
<b>Georgia</b>	<b>12.2</b>	<b>16.5</b>
<b>Kyrgyzstan</b>	<b>11.5</b>	<b>15.9</b>
<b>Hungary</b>	<b>8.0</b>	<b>12.9</b>
<b>Romania</b>	<b>6.3</b>	<b>14.8</b>
<b>Serbia</b>	<b>11.3</b>	<b>16.3</b>

## General TI for countries

7

<b>A country</b>	<b>General TI for the country</b>
<b>Armenia</b>	<b>14.00</b>
<b>Georgia</b>	<b>14.00</b>
<b>Kyrgyzstan</b>	<b>13.38</b>
<b>Hungary</b>	<b>10.80</b>
<b>Romania</b>	<b>11.53</b>
<b>Serbia</b>	<b>14.13</b>

# TI range for international level

**TI range**

**Low level  
5.5-9.4**

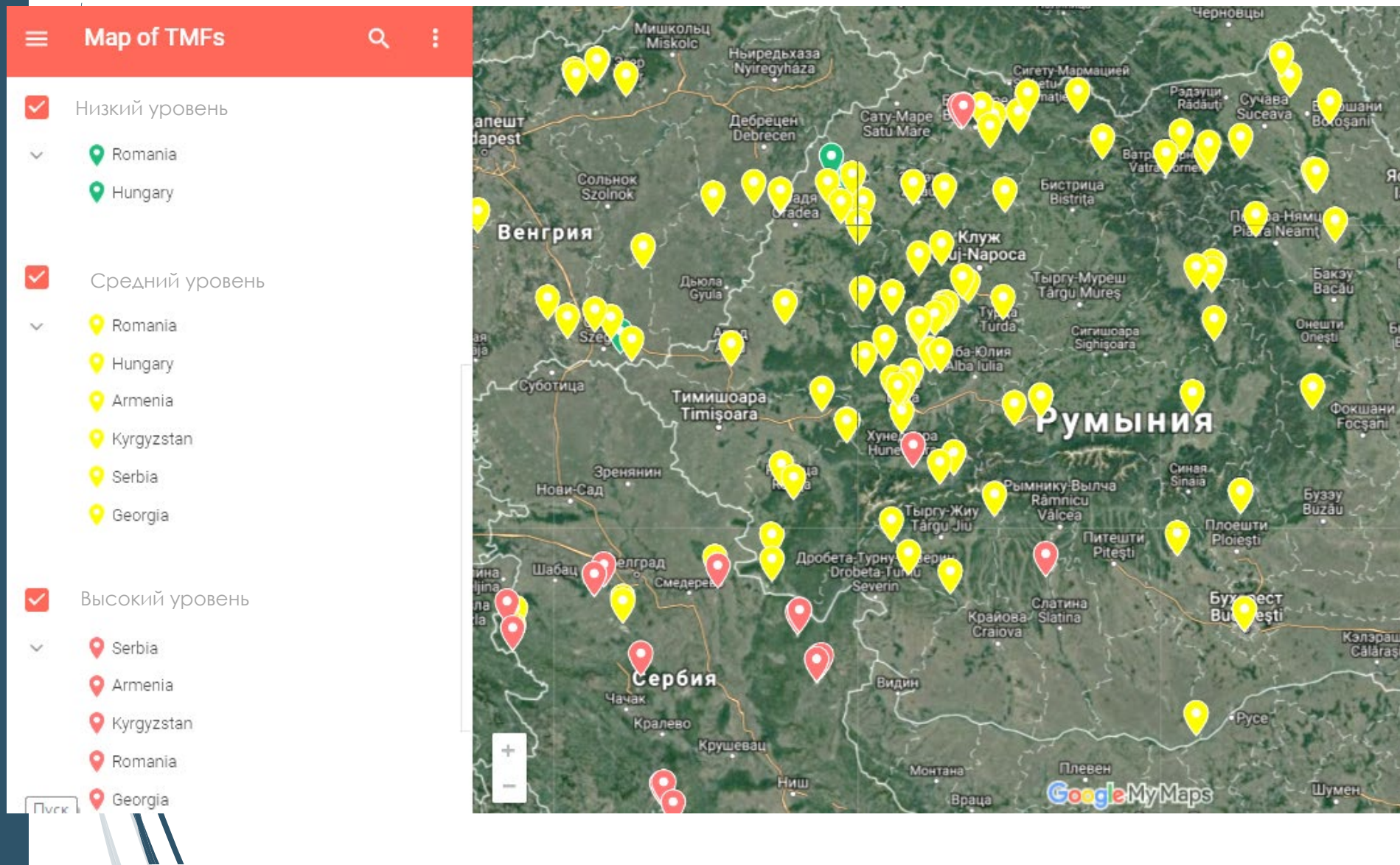
**Average level  
9.5-13.4**

**High level  
13.5-17.5**





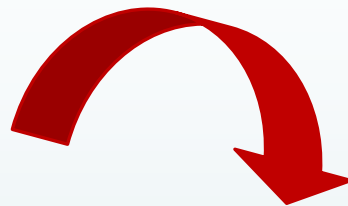
# Visualization aspects of the example of European tailings



# An example of the display of tailings (Armenia) on the map

Карта хвостохранилищ

- Armenia
  - Tukhmanuk of Mego Gold LLC
  - Ararat gold extraction plan of GeoProMi...
  - Nahatak of Akhtala Ore Processing Plant...
  - Explosive substances gorge of Akhtala ...
  - и ещё 19
- Georgia
  - Copper-pyrite tailings of the Madneuli, Ri...
  - Barite tailings of the Madneuli, Rich Met...
  - Tailings of agglomerates of Georgian ma...
  - Chiatura site 1 "Ghurgumela" of Georgia...



← Nahatak of Akhtala Ore Pr... →

Name of TME  
Nahatak of Akhtala Ore Processing Plant CJSC

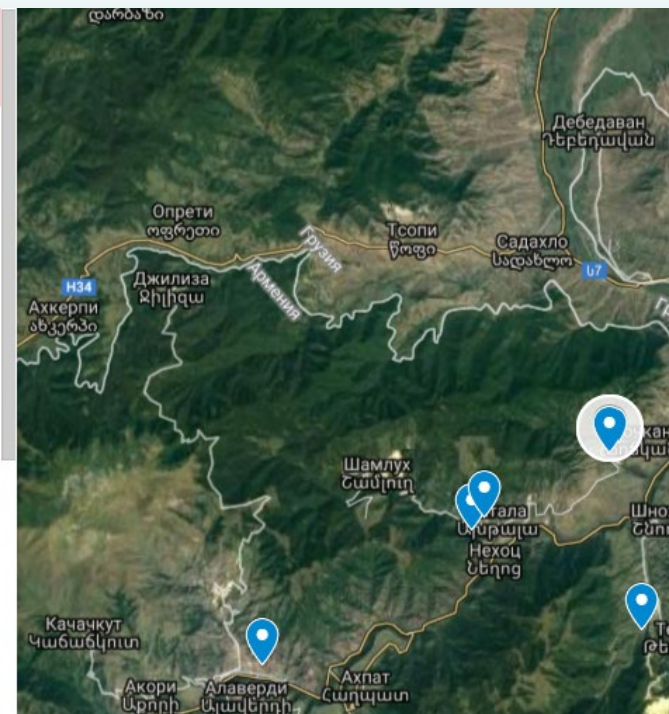
Region, district  
Lori, Mets Ayrum village

Latitude, Longitude  
41.17249, 44.82076

Capacity, mln m3, Design  
3.75

Volume of stored tailings materials, Mio m3  
3.3500

Status





# Tailings Information Display Example

← Nahatak of Akhtala Ore Pr...



Name of TMF

Nahatak of Akhtala Ore Processing Plant CJSC

Region, district

Lori, Mets Ayrum village

Latitude, Longitude

41.17249, 44.82076

Capacity, mln m3, Design

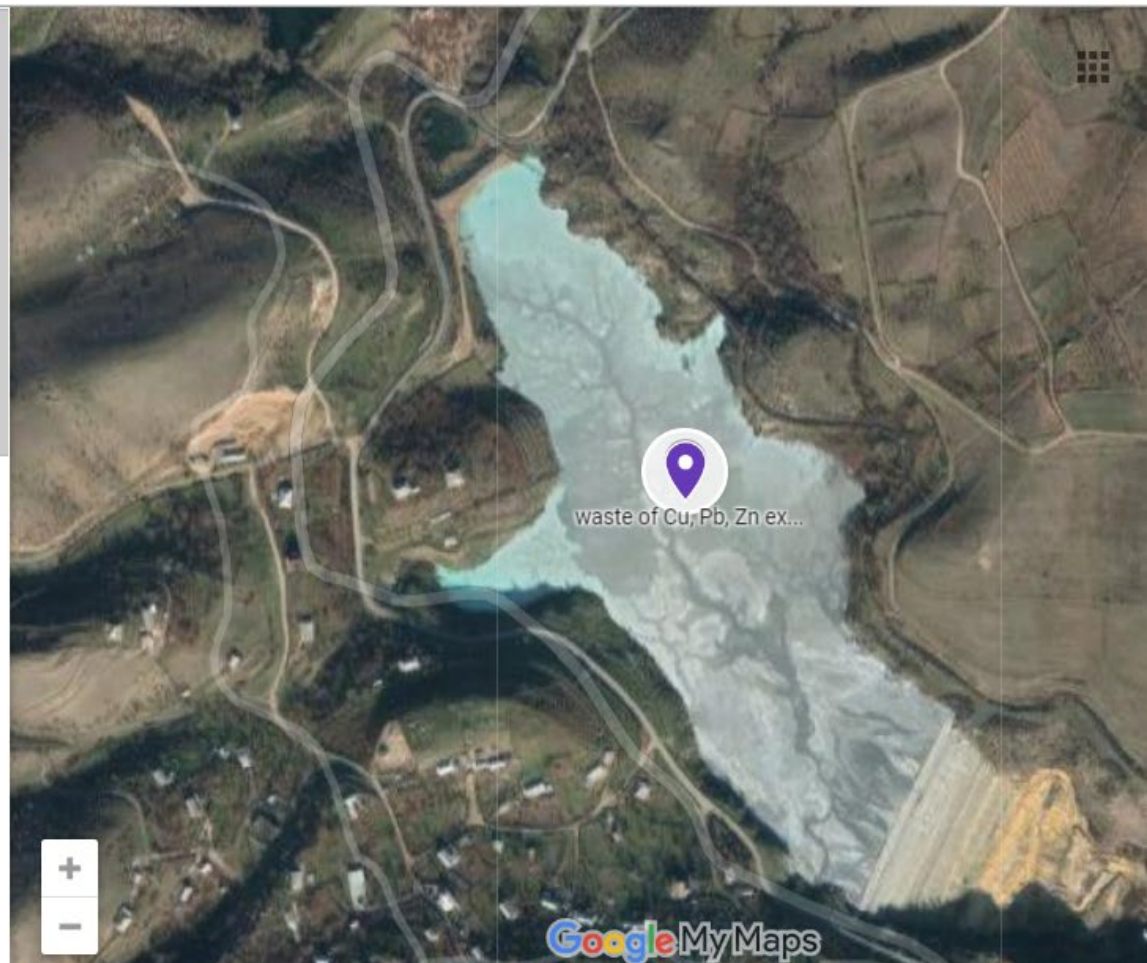
3.75

Volume of stored tailings materials, Mio m3

3.3500

Status

Active



# Work with map

12





# Assessment of TI at the national level on the example of Kyrgyzstan

Карта хвостохранилищ

- 11.5  
TMF of LLC Full Golg Mining
- 11.7  
Terek TMF of open JSC Kyrgyzaltyn
- 12.2  
TMF of LLC Kazakhmys Gold Kyrgyzs...
- 12.6  
TMF at the At-Jailoo deposit of Kyrgy...
- 13.3  
Salt storage of open JSK Kadamzhay...
- 14.0  
TMF Nr.1, responsibility of Ministry o...
- 14.1



# Initial map of tailings of Kazakhstan (76 tailings from 121)

1

North-Kazakhstan region

10

Akmola region

4

Jambyl Region

7

Kostanay region

25

East Kazakhstan region

8

Pavlodar region

15

Karaganda region

6

Aktobe region



# An example of a visual display of the tailings of Kazakhstan on the map

☰ Карта хвостохранилищ :

▼ Total THI for countries: ☆  
Armenia - 14.00  
Georgia - 14.00  
6 просмотров  
[ПОДЕЛИТЬСЯ](#) [ИЗМЕНИТЬ](#)

☐ Kyrgyzstan

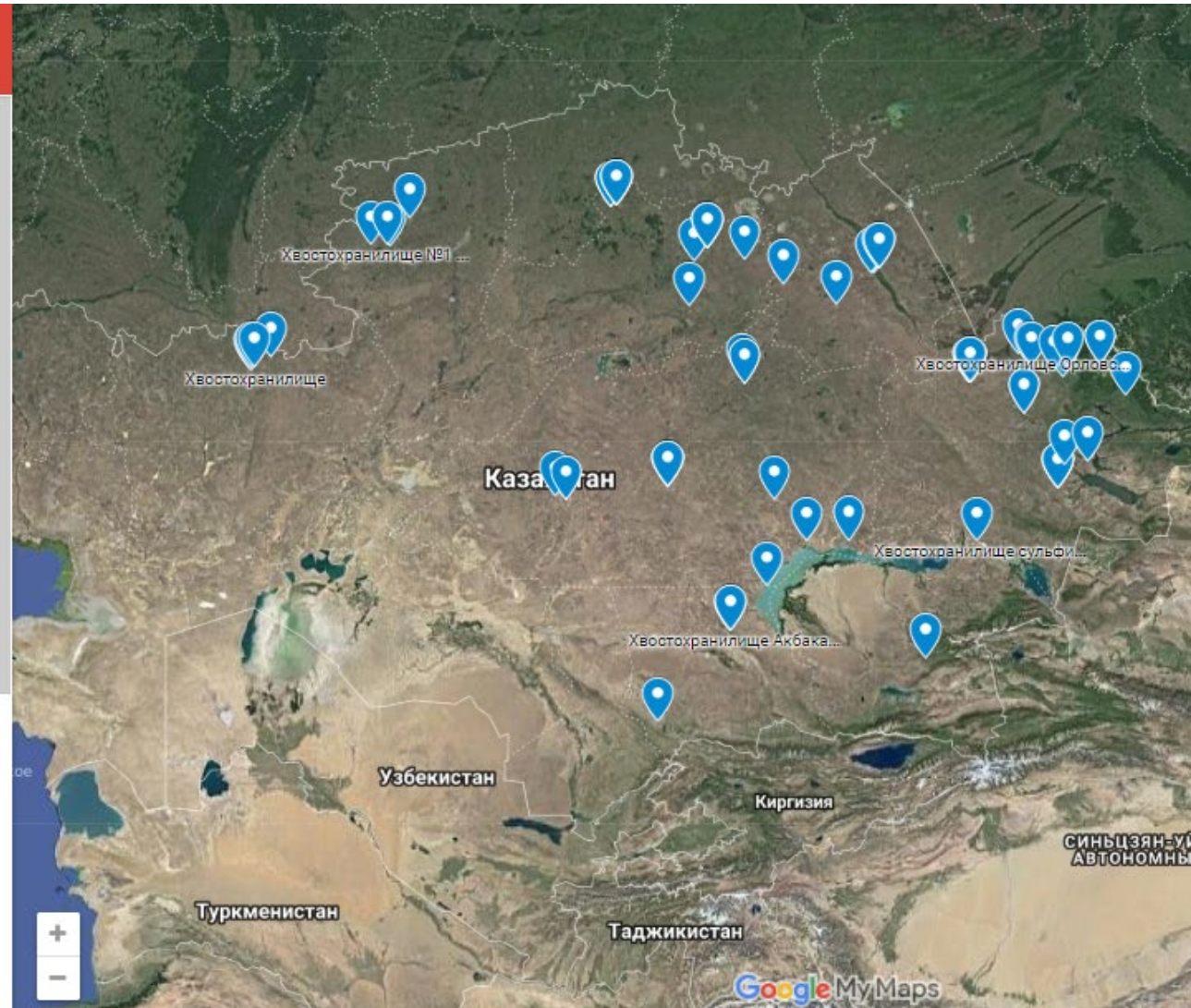
☒ Kazakhstan

▼  
📍 Хвостохранилище флотации №1  
📍 Хвостохранилище сорбции №2  
📍 Пруд отстойник №3  
📍 Хвостохранилище №1  
и ещё 72

☐ Armenia

☐ Georgia

☐ Sebia



# An example of a visual assessment of the distance from the river tailings of Kazakhstan

← Постоянное хвостохранилище...

Name of the TMF site

Постоянное хвостохранилище Карагайлинской обогатительной фабрики. Обогатительный производственный комплекс ТОО «Корпорация Казахмыс»

Location of the TMF site, Region, district

Казахстан, Карагандинская область, Каркаралинский район, поселок Карагайлы пром. зона

Latitude

48.504713889

Longitude

83.250869

Volume of stored tailings materials, Mio m3

4.9160

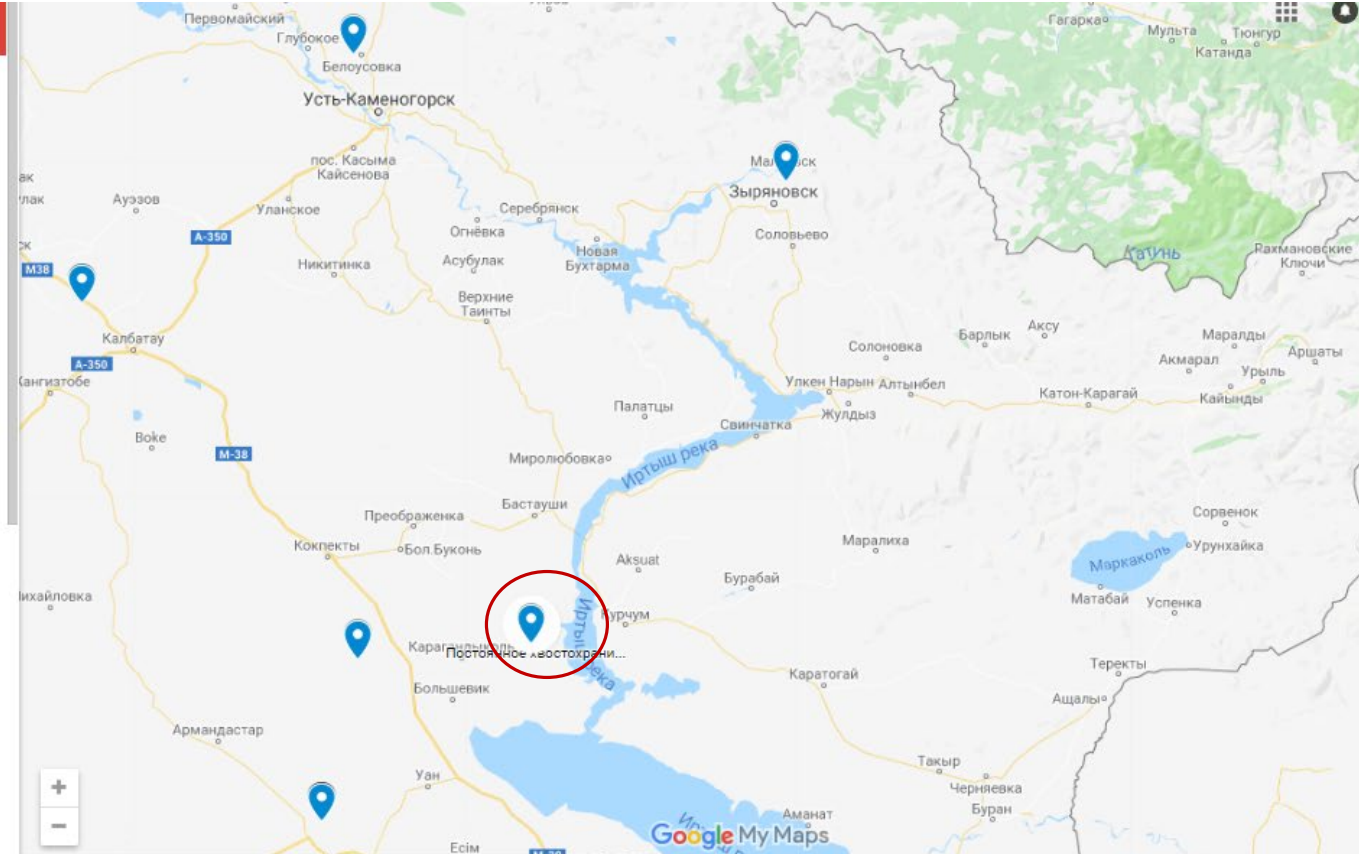
Tailings materials, Material stored

хвосты обогащения

Hazard Class

4

Status



# Thanks for attention!

17

