

Mining Issues in the Republics of Armenia and Georgia

by **Michael Burnside, USFS (ret.)**

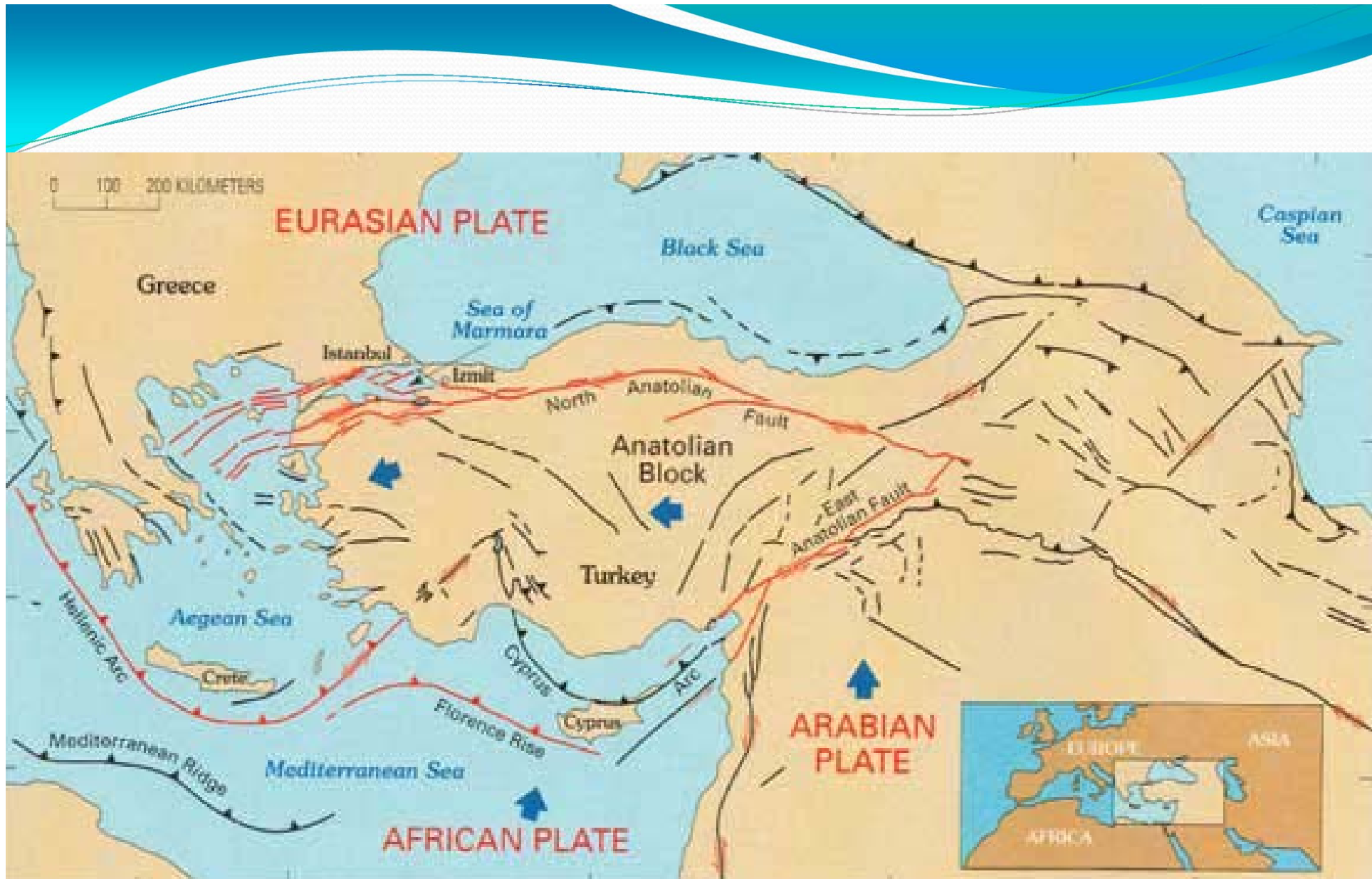
*for the Mine Design Operations & Closure Conference
May 2015*

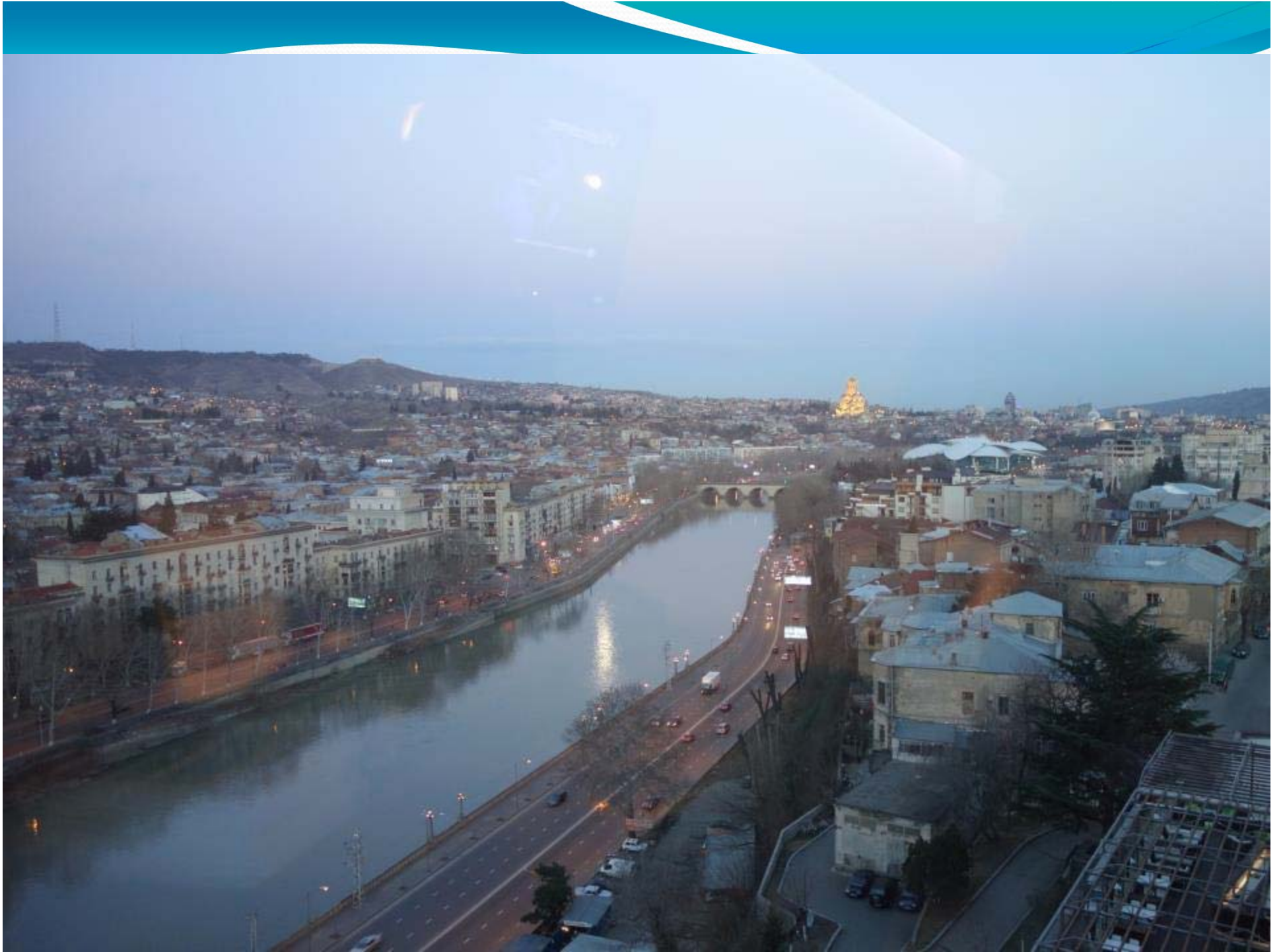














საგჟოთა ოკუპაციის მუზეუმი
ფაქციური გამოფენა

SOVIET OCCUPATION MUSEUM
PERMANENT EXHIBITION

სამუშაო საათები
10:00
18:00
შუაგვიანი, რეკონსტრუქციის
და რეაბილიტაციის
პროგრამების რეკონსტრუქციის



WORKING HOURS
10:00 AM
06:00 PM
CLOSED ON MONDAYS
AND
PUBLIC HOLIDAYS



ერთ-ერთი იმ ვაგონთაგანი, რომლებშიც
1924 წლის 30 აგვისტოს ჩეკისტებმა
ჩატხრილეს ანტიბოლშევიკური ეროვნული
ამბოხების მონაწილენი.

ONE OF THE CARRIAGES IN WHICH CHEKISTS SHOT
DOWN THE PARTICIPANTS OF THE ANTI-BOLSHEVIK
UPRISING OF AUGUST 30, 1924

საქართველო
დღევანდელი ოკუპირებული ტერიტორიები

GEORGIA
OCCUPATION CONTINUES





KQ&B
still watching you

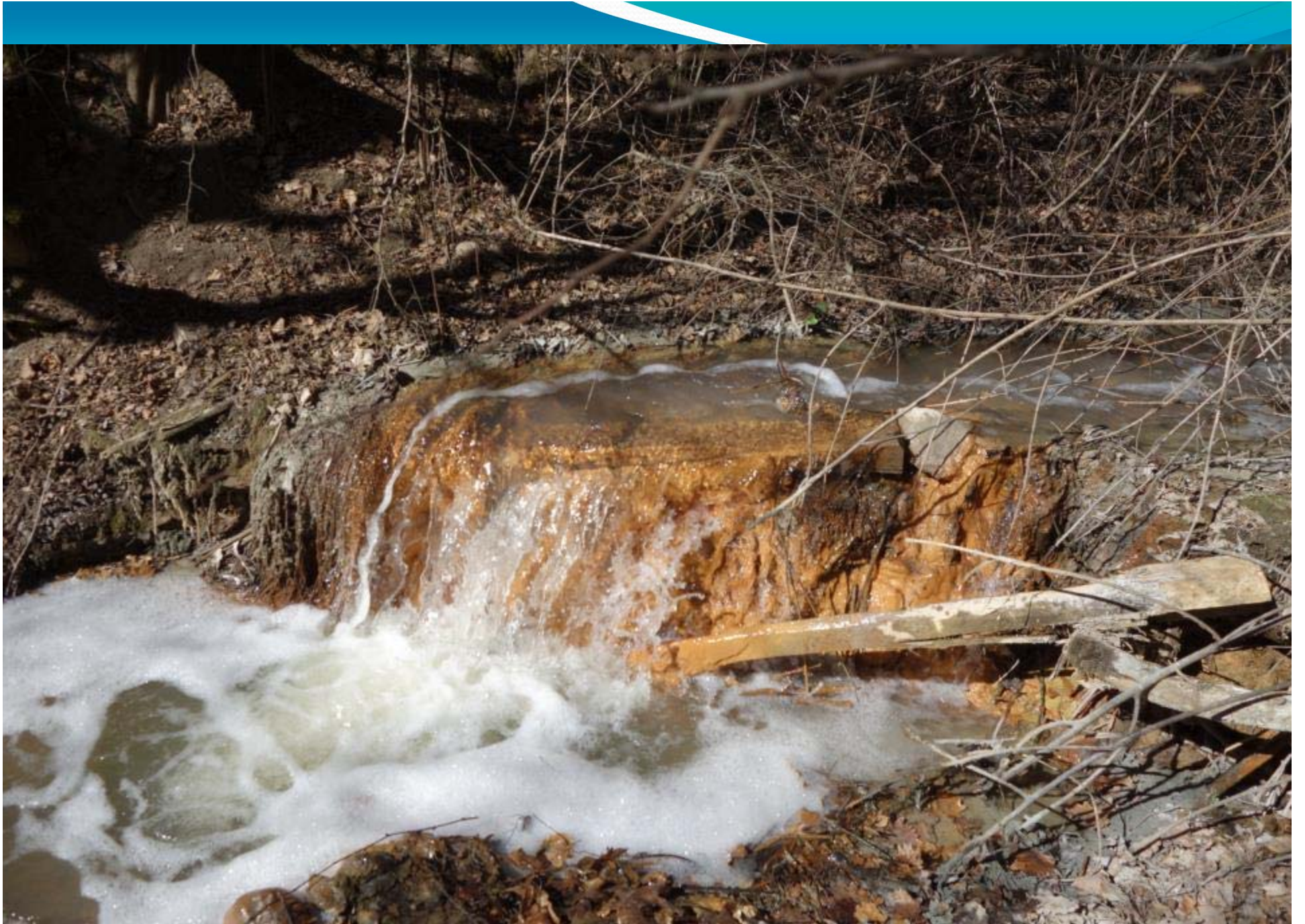


Madneuli mine tailings dam







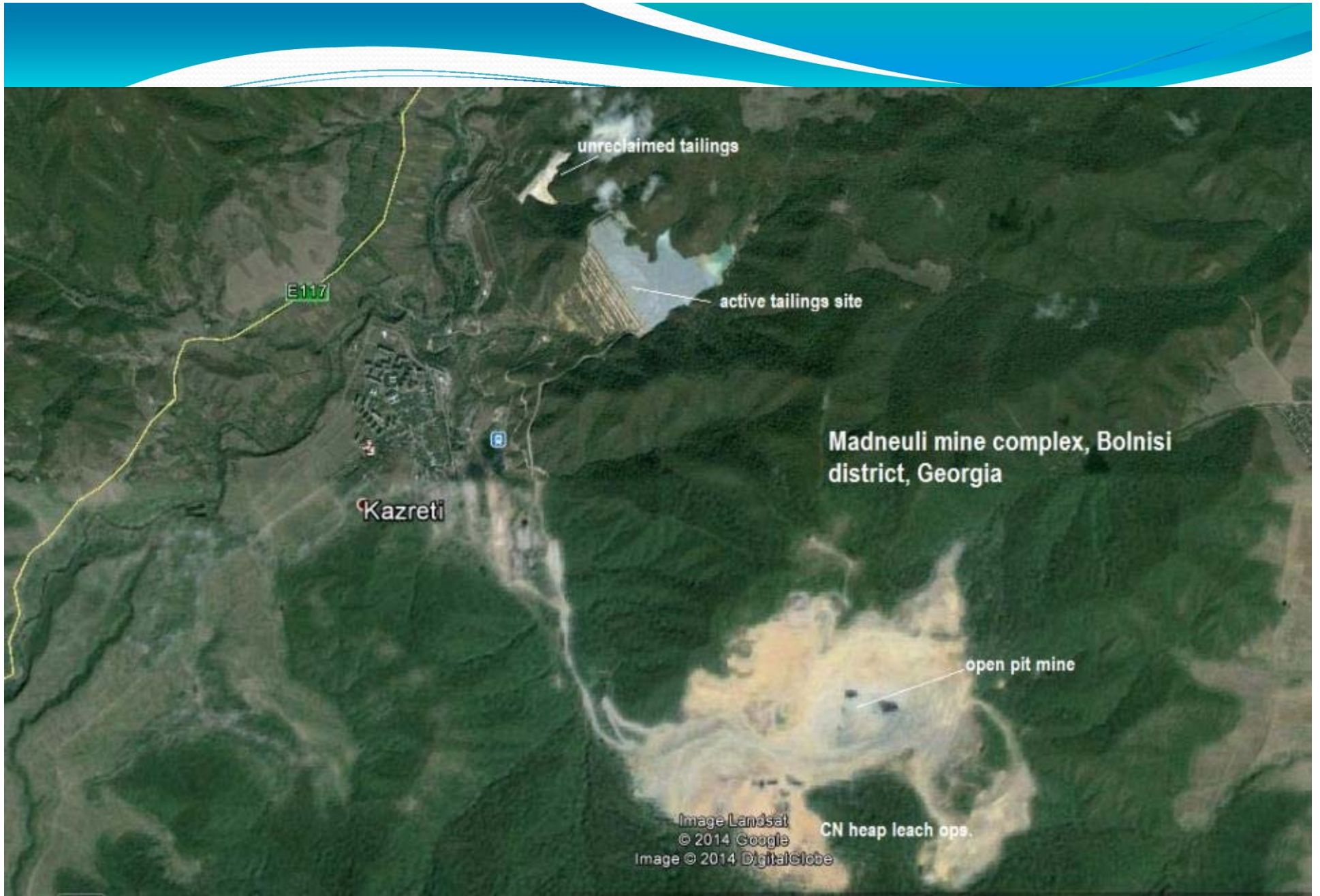












unreclaimed tailings

E117

active tailings site

Madneuli mine complex, Bolnisi district, Georgia

Kazreti

open pit mine

Image Landsat
© 2014 Google
Image © 2014 DigitalGlobe

CN heap leach ops.







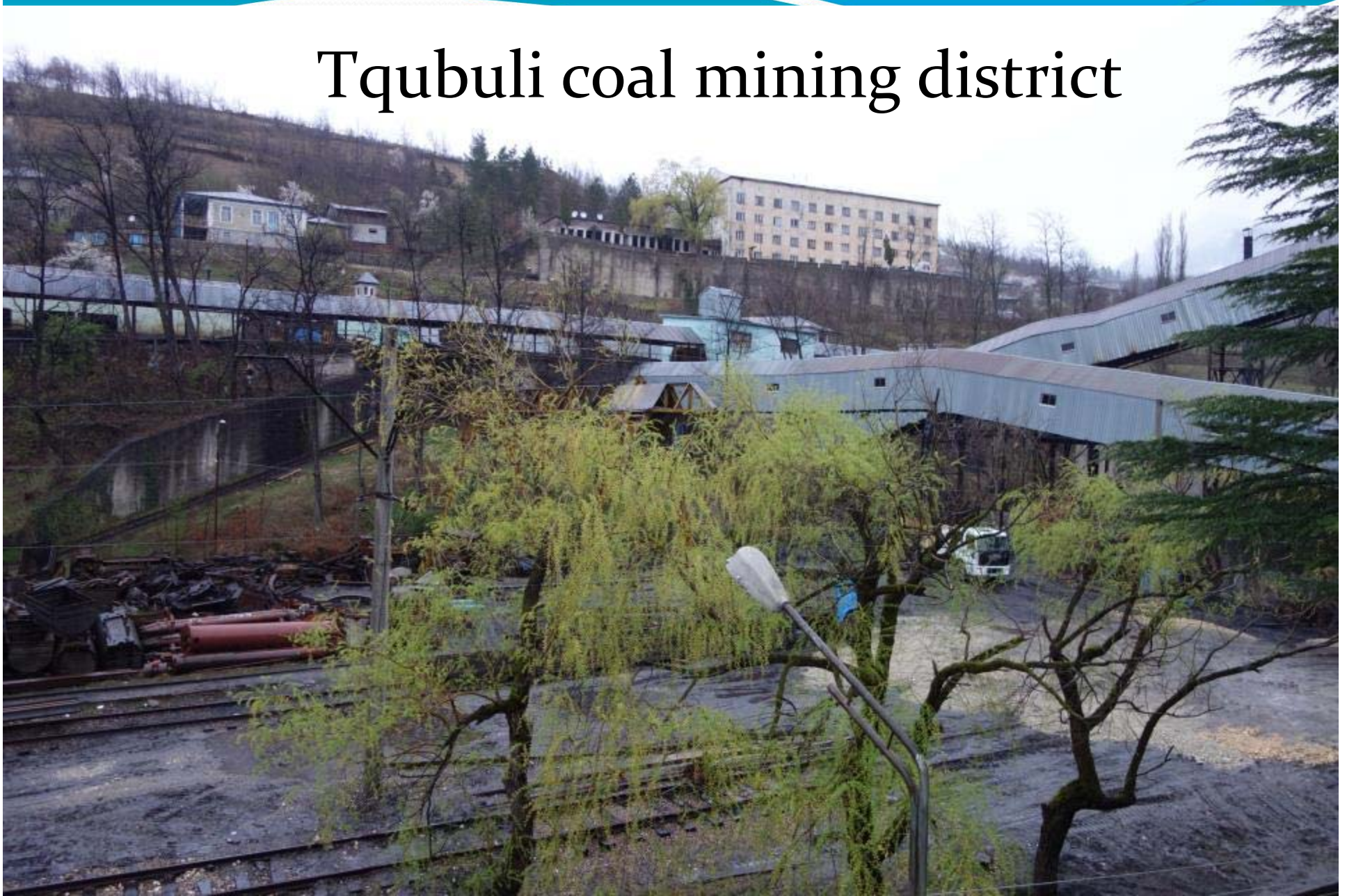


Tchiatura manganese district NW Georgia





Tqubuli coal mining district









THE ARMENIAN GENOCIDE: 1915-1923



Massacr sites: The marker size represents the number of deaths.



Death March Routes: Turkish troops forced Armenians into the desert, without food or water, to die of starvation and heat exhaustion.



Concentration Camps



Deportation Checkpoints



Present day regional country borders

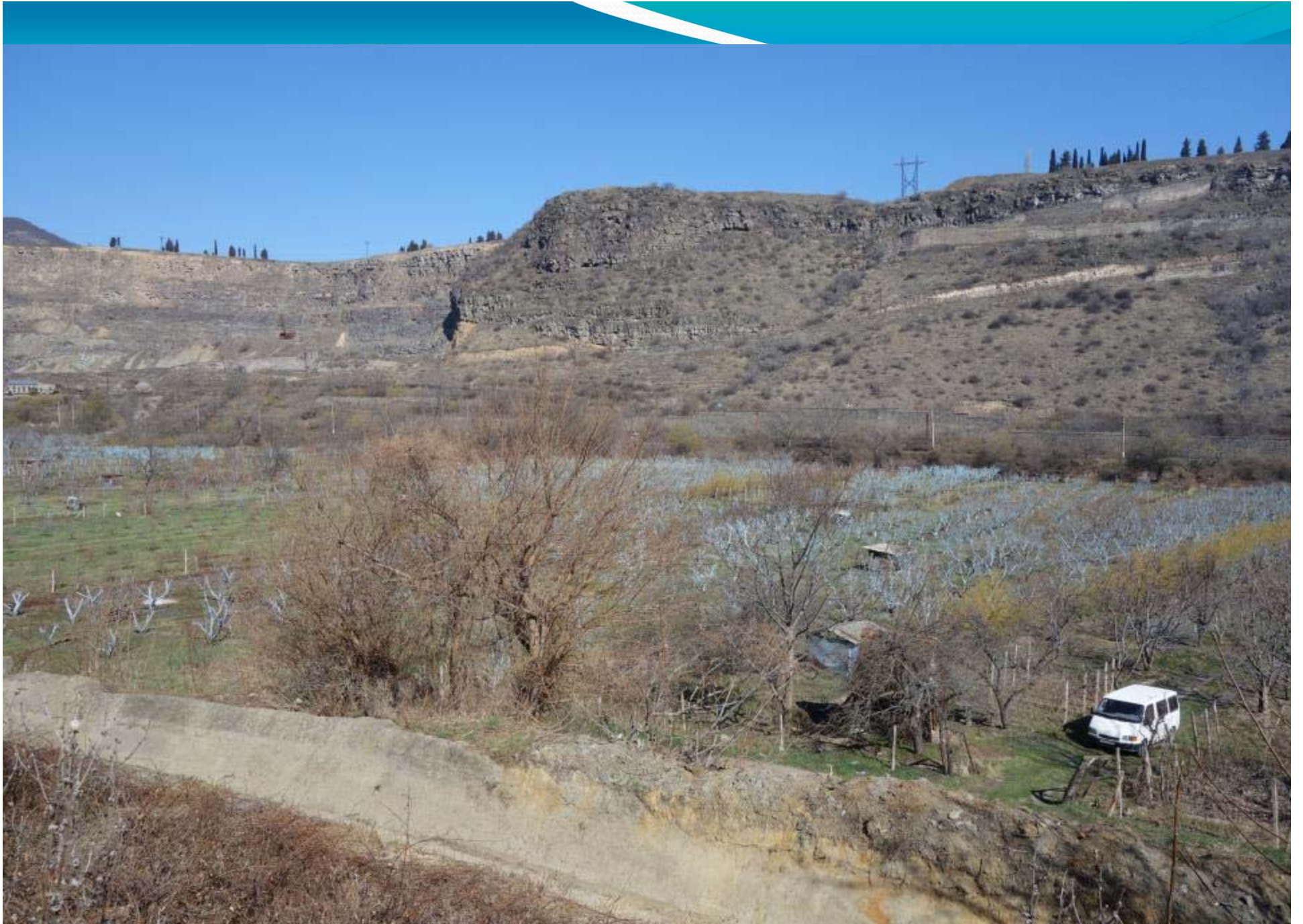


Historic Armenia borders



Current Armenia borders

© 2004 Armenian National Committee of America
 Armenian National Committee of America
 888 17th Street NW, #904 | Washington, DC 20006
 phone: 202.775.1918 | fax: 202.775.5648
www.anca.org | anca@anca.org





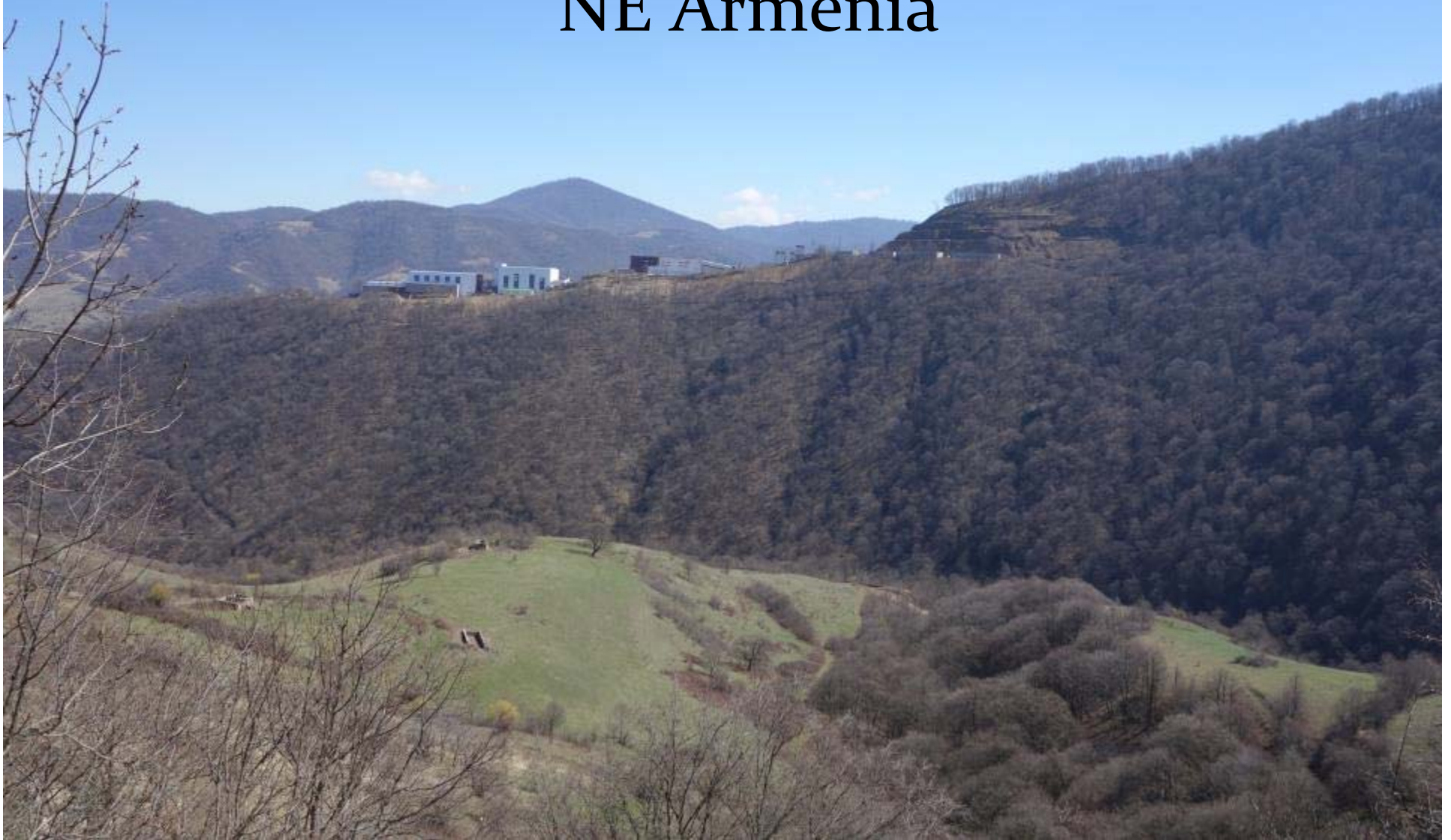




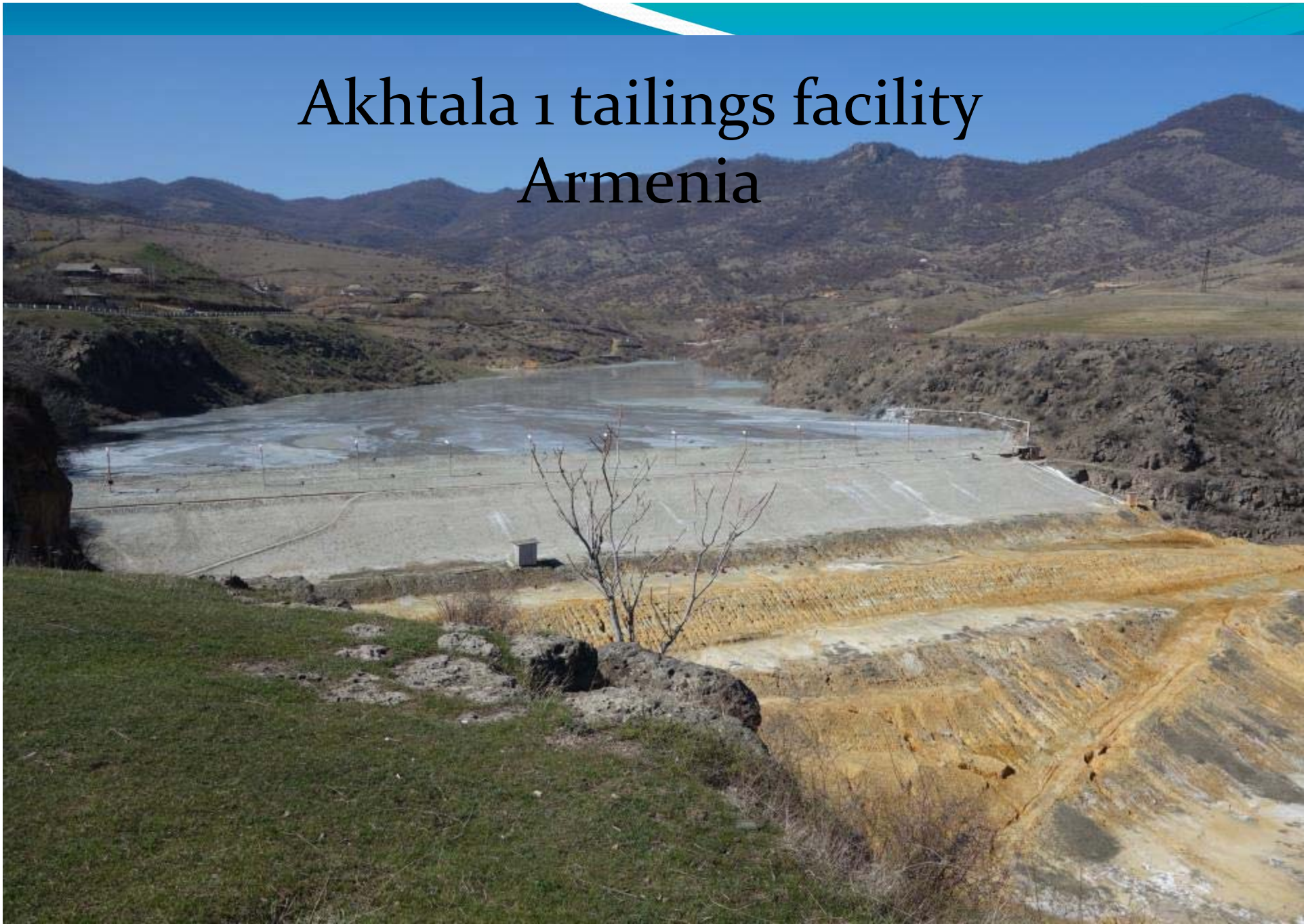
Shnokh, Armenia
near proposed Teghut open pit mine



Proposed Teghut mine tailings site NE Armenia



Akhtala 1 tailings facility Armenia







Akhtala 1 tailings site

Mets Ayrum

Debet River

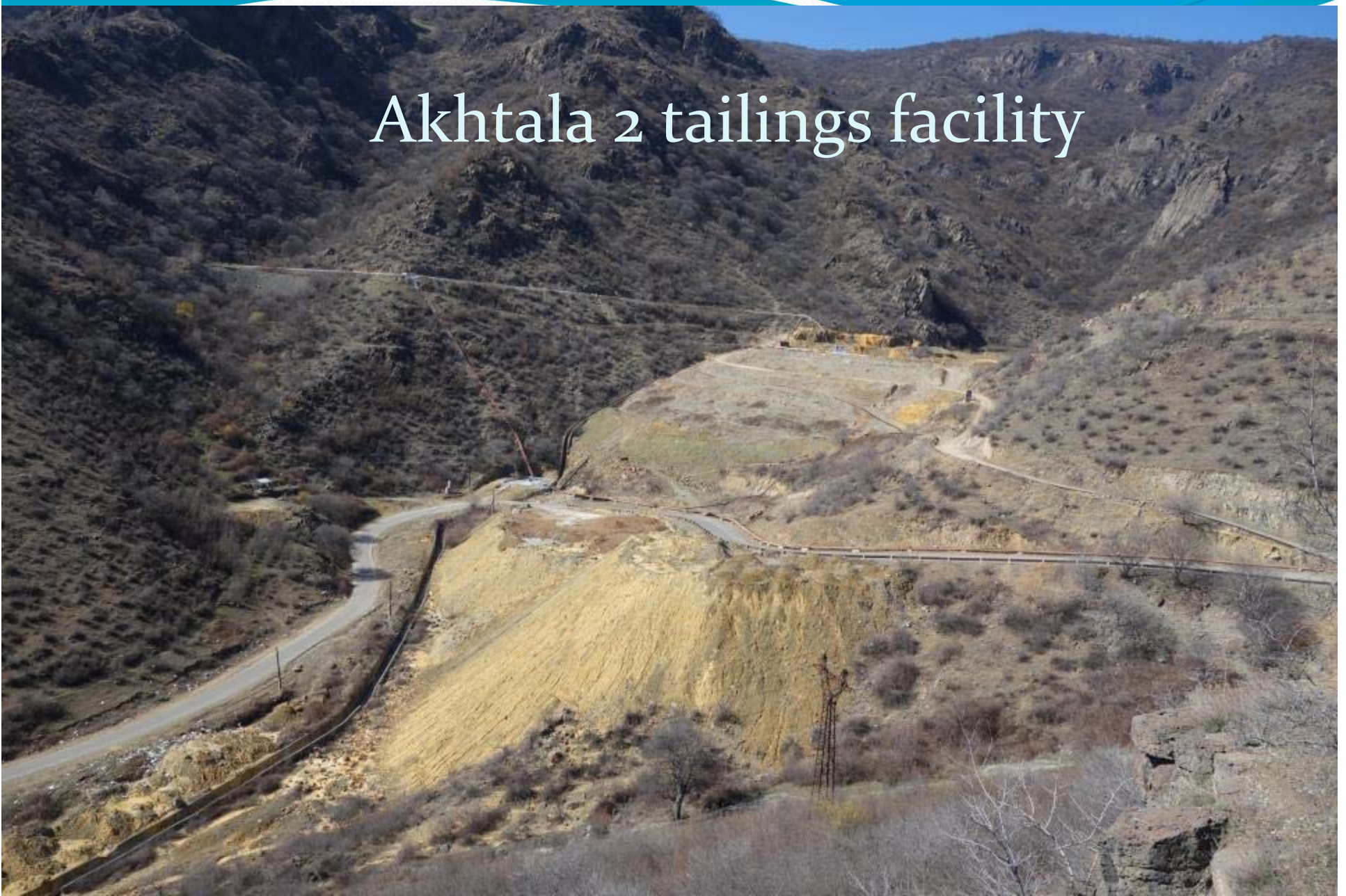
Image © 2014 DigitalGlobe
© 2014 Google

Google earth

2005

Imagery Date: 11/11/2006 41°10'07.54" N 44°49'46.10" E elev. 1995 ft eye alt. 10214 ft

Akhtala 2 tailings facility





Debet River

Concrete by-pass channel

Eroding tailings







Akhtala 2 tailings sites

Debet River

concrete "bypass" channel

Image © 2014 DigitalGlobe
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Google earth

2006

41°09'15.19" N 44°47'06.44" E elev. 2098 ft eye alt. 8779 ft







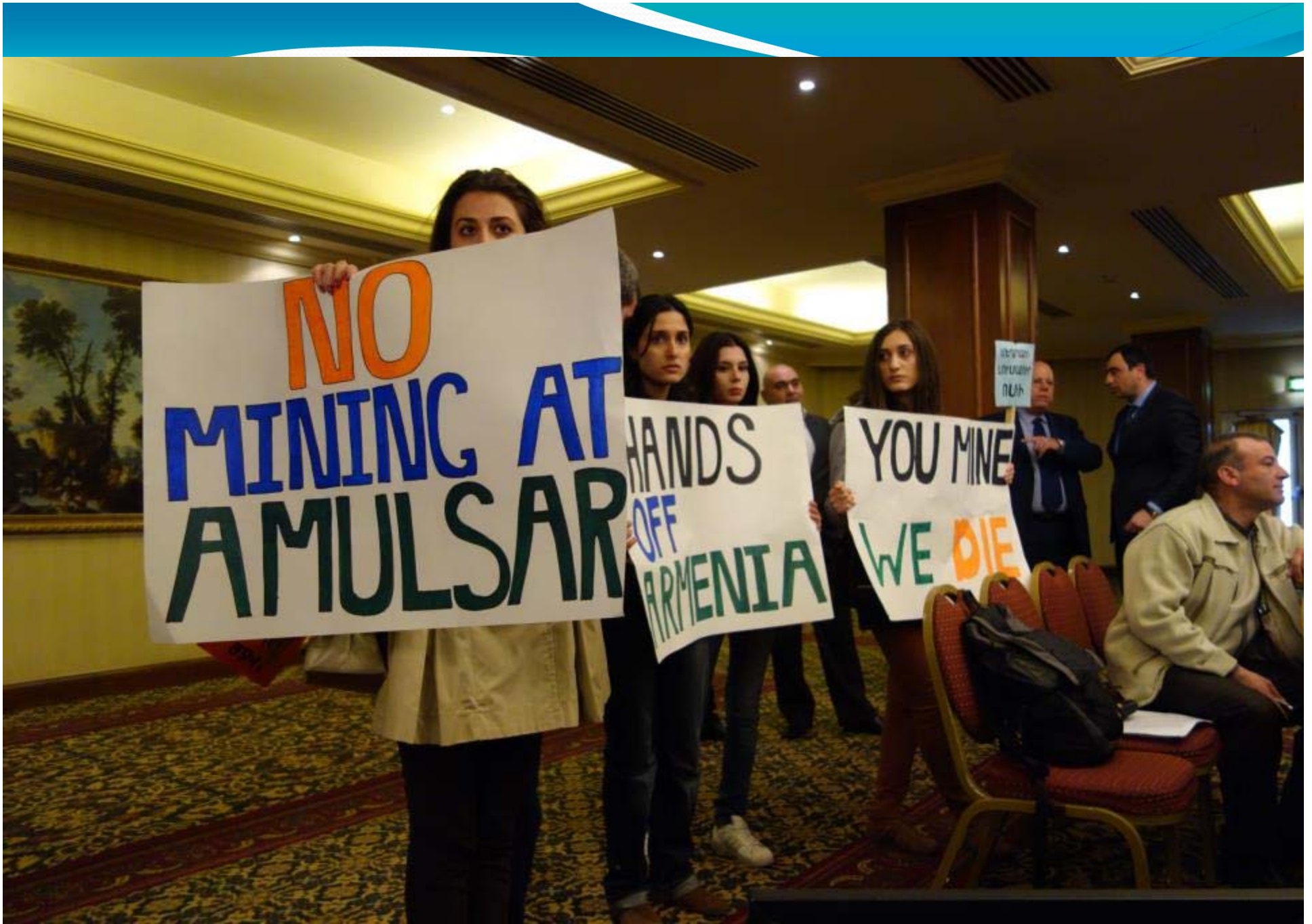












Summary of US process for environmental assessment and management of mine issues

Step 1:

- A. Obtain a complete proposal
- B. Obtain necessary baseline information
- C. Identify issues & concerns
- D. Develop alternatives & compare
- E. Analyze & disclose environmental impacts



Step 1 management of mine issues (cont.):

- F. Assess impacts of alternative components & manage risk
- G. Allow public review & revise EIA as needed
- H. Require bond (damage deposit or financial assurance) for mitigation & reclamation if operator defaults

Step 2: Implement the decision

- **Issue the permit with:**
 - stipulations from EIA
 - monitoring plans
 - contingency plans
- **Reclamation bond**
 - Finalize cost calculations
 - Collect the bond or damage deposit prior to permit approval

Step 3: Administer the Permit

- ❖ Have regular site inspections with documentation & enforcement
- ❖ Revise & update the permit & bond as needed
- ❖ Hire & train agency mine inspectors



Areas for future cooperation:

- USFS advise and comment on draft legislation & rules
- USFS advise and assist in training and capacity building
- USFS organized mine study tour for 14 participants from Caucasus in July 2015
- US State Dept. fellowships for 3 Caucasus community leaders to study mining management in US



Questions?