



# Select IAEA Activities for Uranium Production Legacy Sites

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## Worldwide Regulatory Challenges of Radioactive Legacy Sites



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# Contents

- International Forum for the Regulatory Supervision of Legacy Sites (RSLs)
- Coordination Group for Uranium Legacy Sites (CGULS)



# RSLS and CGULS

- Both projects are supported through multiple IAEA General Conference Safety Resolutions
- Each has received extra-budgetary contributions from Norway (RSLS) and the EU (CGULS)



# International Forum for Regulatory Supervision of Legacy Sites

## RSLs

<http://www-ns.iaea.org/projects/rsls/legacy-sites-reg-supervision-tm.asp>



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# Goal of the International Forum for the Regulatory Supervision of Legacy Sites (RSLs)

- Facilitate establishment of strong independent regulatory bodies in order to manage existing legacy sites, and to avoid the creation of new ones.



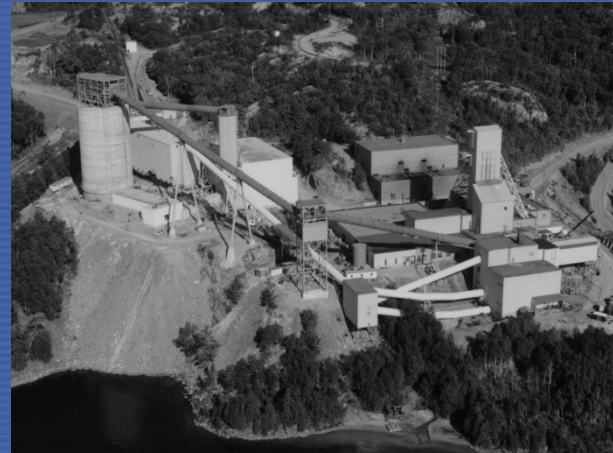
# Strategy

- Create a forum in which regulators from well developed mature regulatory regimes share experience with those of developing or newly formed regulatory bodies.
- Compare and contrast various types of legacy sites and Member State approaches to addressing them



# Events in 2014

- International Workshop and Scientific Visit on the Remediation of Uranium Legacy Sites: A Canadian Experience from 28 April to 2 May 2014  
Elliot Lake ,Canada
- International Workshop on Regulatory Control of Nuclear Legacy Sites and Radioactive Waste Management 19-21 November 2014  
Moscow, Russian Federation



# Coordination Group for Uranium Legacy Sites

## CGULS

<http://nucleus.iaea.org/sites/connect-members/cguls/Pages/default.aspx>



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# Background

- The legacy of Uranium mining in CA is of great extent resulting from 50 years of exploitation
- Sites typically located in areas with high seismic activity, steep mountainous terrain and extreme weather conditions
- The area is prone to mudslides and landslides
- Production ceased abruptly without adequate remediation
- The legacies are the source of concern for local and national populations, the authorities, and neighboring countries
- These countries have limited resources and have requested international assistance



# Coordination Group for Uranium Legacy Sites (CGULS)

- Coordination group comprised of national and international stakeholders

- Provide forum for information exchange
- Support project planning and implementation issues
- Address radioactive waste management issues
- Coordination mechanism to avoid duplication of efforts and optimize resources
- Provide targeted technical support

- Technically supported by IAEA secretariat





# CGULS

- Project developed in response to IAEA Member States and international organizations to identify and prioritize activities needed to address the uranium legacy problems and provide technical coordination for remediation related activities primarily in Central Asia

## Member States:

Kazakhstan, Kyrgyzstan, Ukraine, Uzbekistan, Tajikistan

## Organizations:

IAEA, EU, UNDP, OSCE, UNEP, NATO, NRPA, EurAsEC, WB



# Strategic Plan

## Strategic Plan developed with the following four objectives:

- 1) To **promote continuous cooperation** and common understanding among the affected countries and between them and international stakeholders and potential donors.
- 2) To provide **expert services** and advice to Member States and international organizations in support of efforts to develop comprehensive environmental impact assessments and feasibility studies for legacy uranium production sites.
- 3) To provide **technical oversight and support in the field.**
- 4) Reinforcing **regulatory framework** by supporting national and international initiatives consistent with IAEA Safety Standards.



# Objective 1: Promote Continuous Cooperation

- Annual CGULS Technical Meeting (June 2013)
- EurAsEC, EC, IAEA, MS's Coordination Meetings (June, November 2013)
- CGULS **webpage was created and presented to the Member States** at the first Technical Meeting of CGULS in June 2013.
  - Member States are encouraged to send to the IAEA Secretariat relevant to the remediation activities documents and regulations to be posted on the CGULS webpage in order to facilitate information exchange.
  - Documents and presentations from CGULS meeting, IAEA relevant publications, **Member States laws and regulations are already uploaded on the website.**
  - For Member States convenience, **CGULS webpage has had a Russian language interface added to the opening page.**
- CGULS is compiling current **roadmap** existing and planned UPLS programs, projects and activities in the region. IAEA is working with UNDP on this action

## Objective 2: Provide Expert Services

- Report on Technical and Analytical Capabilities of Laboratories in Central Asia
- Strategic Action Plan for Complex Remediation of Uranium Legacy Sites in Mailuu-Suu Kyrgyzstan
- Radiological Hazard Analysis of Uranium Production Legacy Sites near Min Kush Kyrgyzstan
- Concept and Proposal to Develop Site Specific Monitoring and Surveillance Programs at Uranium Production Legacy Sites in the Republic of Kyrgyzstan

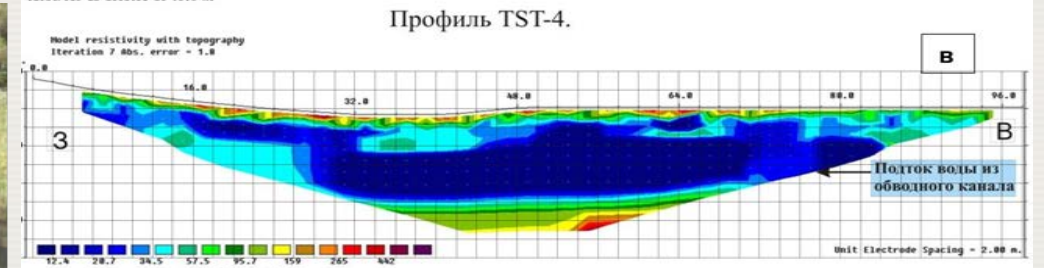
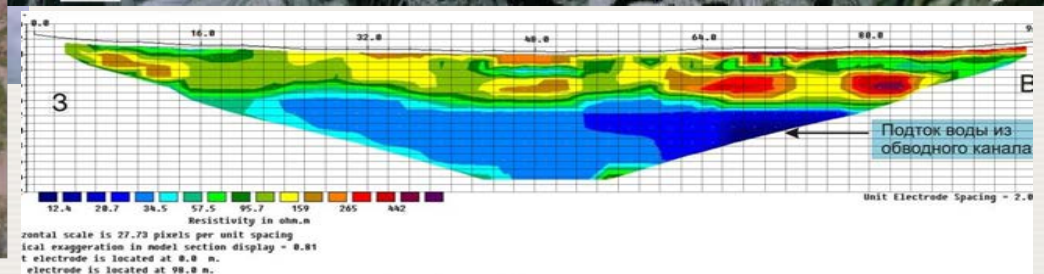
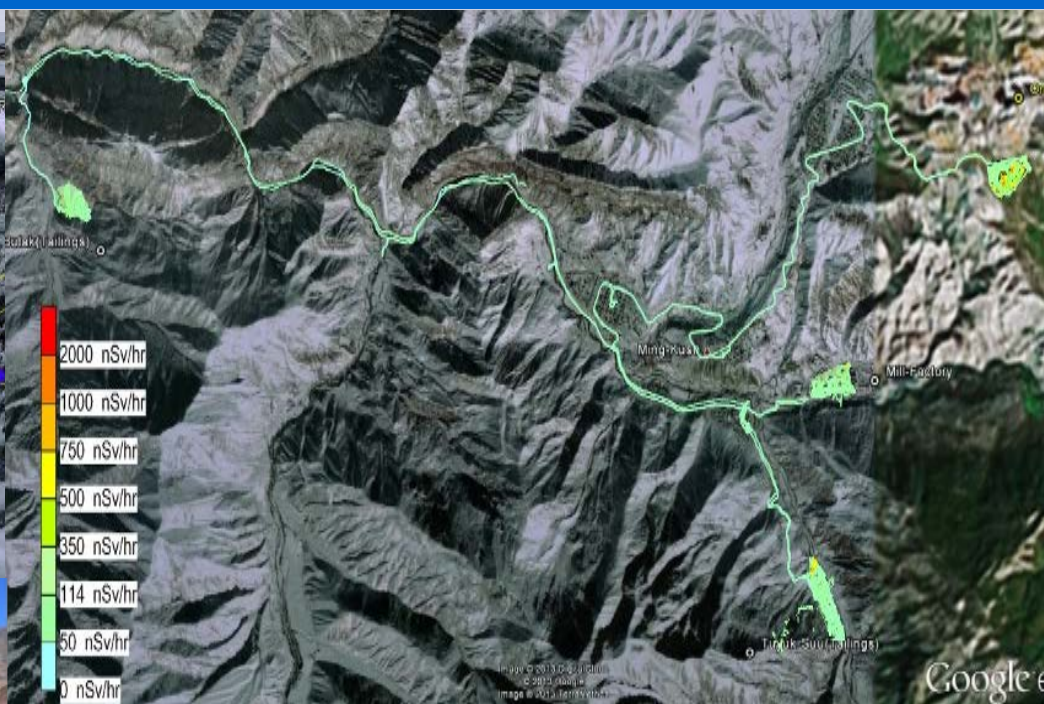
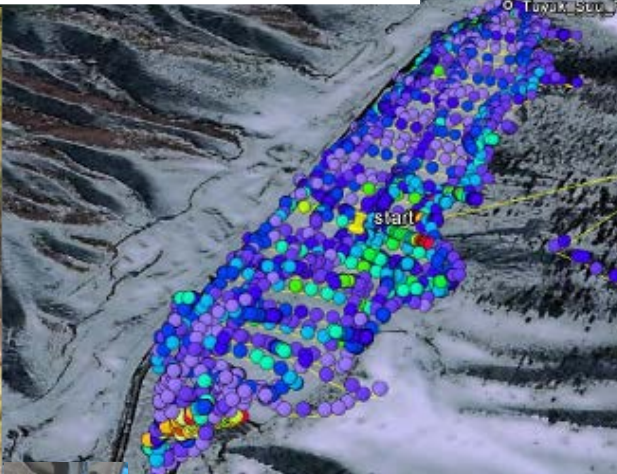
# Objective 3: Technical Oversight and Support in the field

- Gamma surveys of Min Kush and training with portable gamma spectrometer and dosimetry instruments
- Contaminated Media Characterization at Tuyuk Suu
  - Tailings, surface and groundwater, aerosols
  - Sample acquisition, blending, duplicates, transport
  - Analytical Comparison Exercise
- Panel of Experts on Remedial Strategies at Mailuu



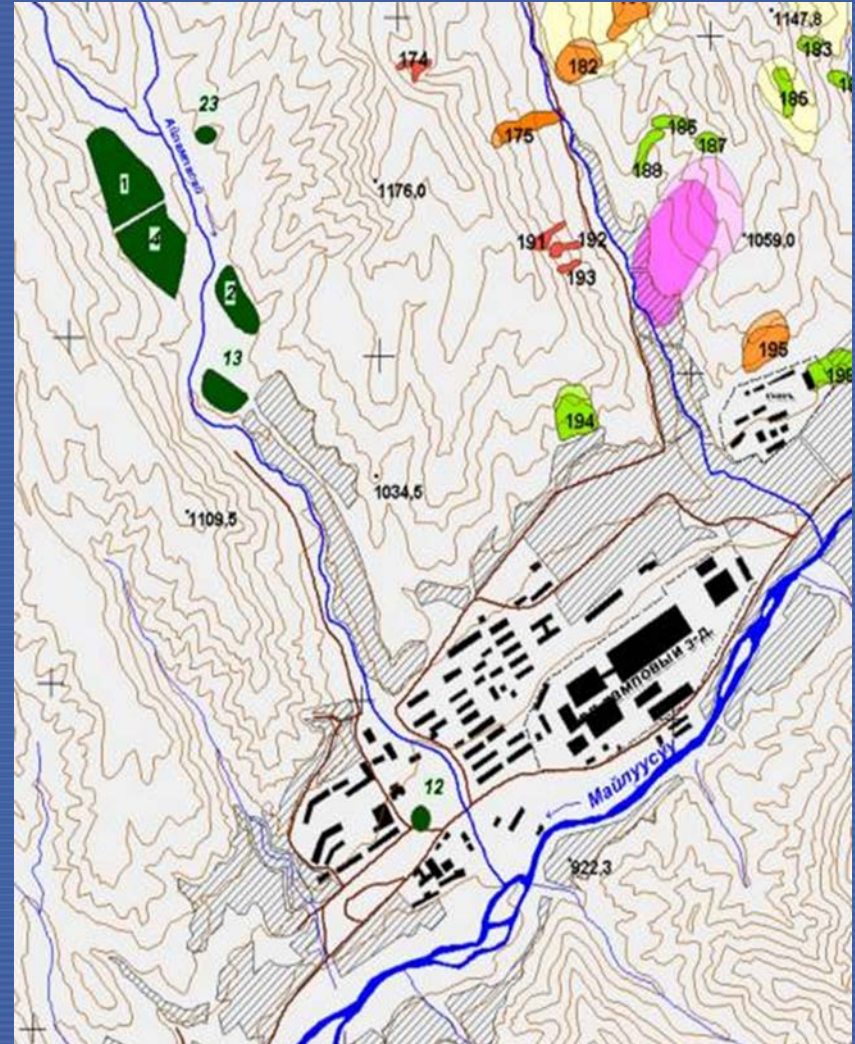
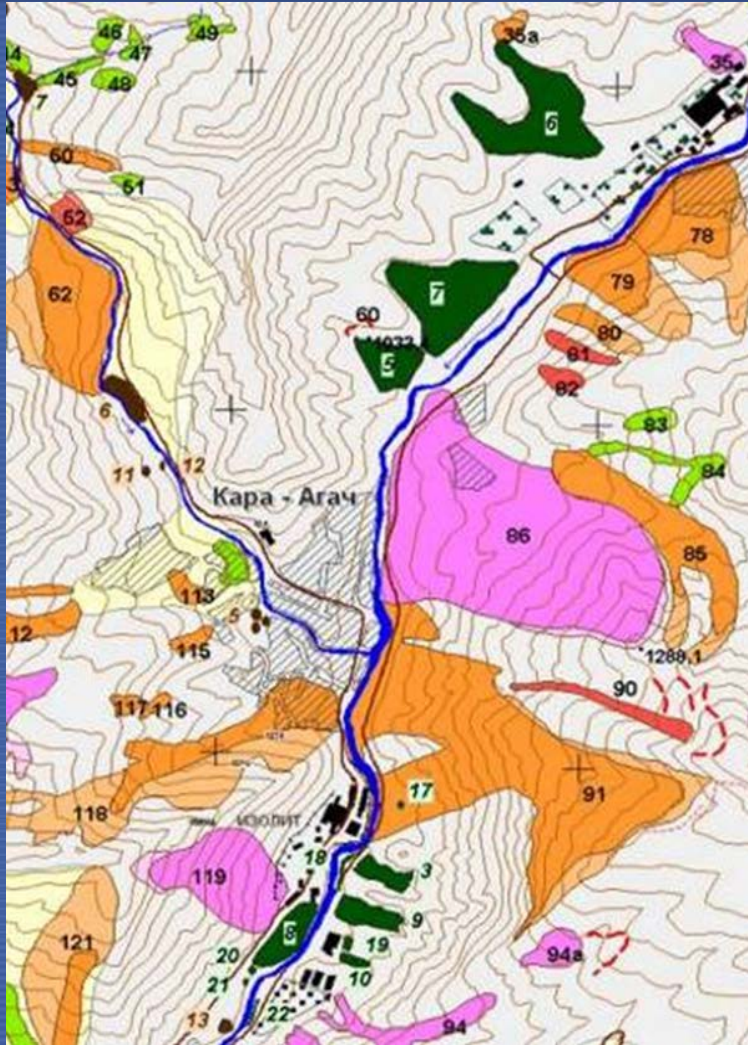
# IAEA Min-Kush Site Characterization, May and September 2013

## Tuyuk Suu. Gamma dose rate survey





# Mailuu-Suu and Alyampa Say



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# Strategic Action Plan for Complex Remediation of Uranium Legacy Sites in Mailuu-Suu, Kyrgyzstan





# Water is a key exposure pathway at Mailuu Suu

**Former U-extraction facility,  
2012**



**River Mailuu Suu**



**Former U-extract. facility Isolit is flooded in  
2005**

**Mailuu Suu River impacted by acid drainages**



# Recommendations for Future Remedial Strategy at Mailuu Suu

Conduct a **feasibility evaluation** of the remedial options for the most urgent remediation actions and early **involvement of the local Public** into defining the core aspects of the Program.

The **most urgent candidates** for remediation/relocation are the tailings directly exposed to river erosion, such as **tailings piles # 18 and # 8 and those vulnerable to erosion by mudflows (TSF #13 and #2).**

**TSFs #12, #14** in the Mailuu Suu valley and **TSF #23** in the Aylampa Say valley **should be remediated/relocated** due to their proximity to the river and town.

The conclusion of the expert team is that any “in-valley” or in situ remediation would only increase the lifetime costs of each remediated facility without offering a sustainable solution.

Among the sites outside of the domain of the Mailuu Suu River or mudflow risk valleys, the TSF site # 15 is the closest to the international requirements placed on a final tailings disposal site. Because the #15 site is a remote site a feasibility study would be required on which mode of tailings relocation would be best to implement.



# Objective 4 : Reinforcing Regulatory Framework

- “Regulatory Framework Implementation Working Group” comprised of CGULS members (MS and international organizations) planned in June 2014
- Compilation of existing relevant regulations by country in the region-on-going
- Development of regulatory guidance templates initiated for distribution Q4 2014



# Upcoming Activities

- Technical exchange meeting between Coordination Group for Uranium Legacy Sites (CGULS) Member States and the Moab UMTRA project in Moab, Utah, USA to discuss design considerations for uranium waste disposal facilities with the design engineers of the USDOE's Moab UMTRA project.
- Annual CGULS Technical Meeting in June 2014 to be held in Bishkek, Kyrgyz Republic.
- 2 expert missions in the 2<sup>nd</sup> quarter of 2014 to Tajikistan and Uzbekistan to develop draft monitoring programs.
- Draft of the Summary of Regulatory documents to be proposed as an optimal mode to provide efficient Remediation Planning
- Revised draft of Technical Baseline Document

# Questions?

Thank-you !



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