



<https://www.brgm.fr/fr>  
<https://www.pole-avenia.com/fr/>  
<https://terranalytix.com/fr/accueil-2/>

# Mining waste: from managing risk to managing potential resources

**Les déchets miniers : de la gestion du risque à la gestion d'une ressource potentielle ?**

Mardi, 26 Nov. 15:30 - 16:00 South Stage

Dans le contexte du règlement sur les substances critiques récemment adopté (CRM Act) et de l'importance d'évaluer certains déchets comme des ressources potentielles de métaux, il est proposé de s'interroger sur les challenges liés au retraitement des déchets miniers. Connait-on bien les déchets miniers et quelles techniques...

Economie circulaire

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# Mining waste: from managing risk to managing potential resources

- What do we know about this resource? Historical stocks.
- How can we better characterise it? Using proven or exploratory techniques.
- -What are the challenges and obstacles to the potential reprocessing of mining waste?
- What innovative processes can be developed and applied more widely?
- How can the associated/residual environmental issues be managed?
- How is this issue dealt with in Europe and outside Europe (e.g. Quebec, Australia).

Inventory/  
background data  
and management



Example of an  
innovative onsite  
combined analysis  
solution



Viewpoint of a  
competitiveness  
cluster



# Real-time chemistry and mineralogy measurement of your materials on your site with the LuxREM solution



Transportable

Robust

Speed

Flexibility

Automation

Accurate



On site chemistry and mineralogy analysis with the **VanLab** from TerrAnalytiX.



On site morphology, chemistry and mineralogy analysis with the **ScanLab** from TerrAnalytiX.

Time optimization

Money saving

Full of Data

Quality of information

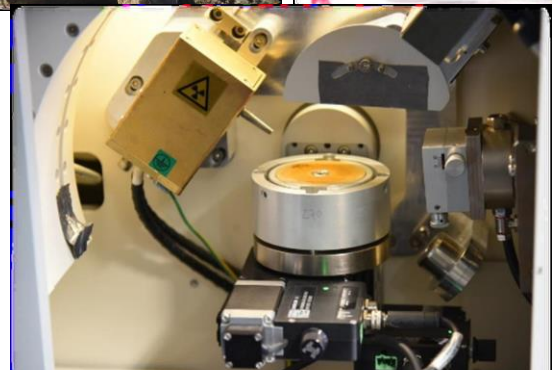
Ability to decide

# An efficient and fast solution for the management of Excavated Soil (TEX) on a former industrial site

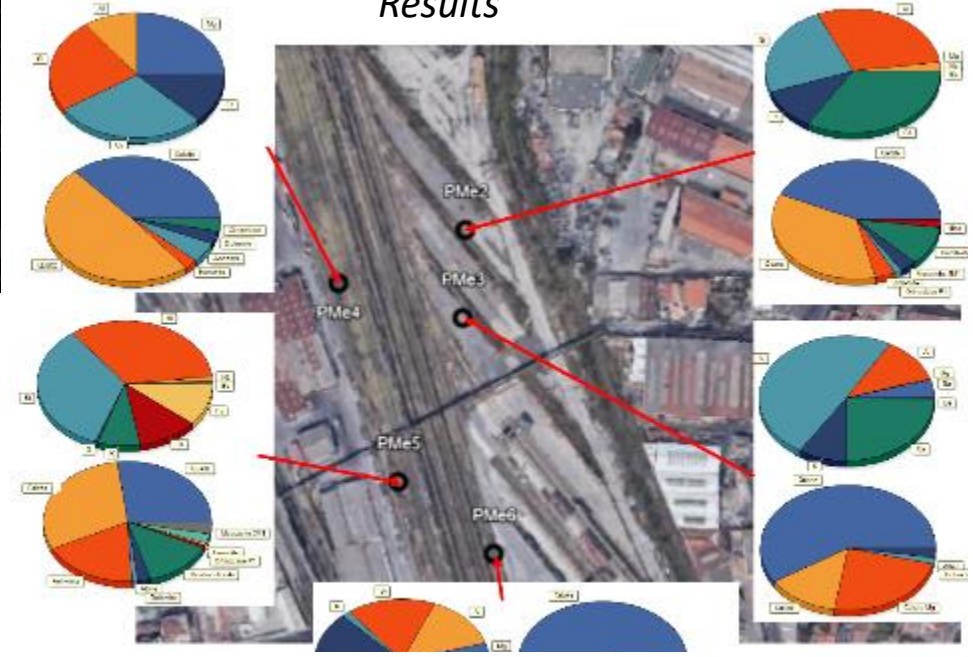
Example on a former industrial area (railway activity) which is to be converted into a park

1. Need to identify polluted areas (trace metallics, sulphates, etc.)
2. Reclamation approach through the creation of a "small soil cycle" → excavated sterile soil which, once extracted from the environment, is re-used locally, in particular to carry out urban landscaping

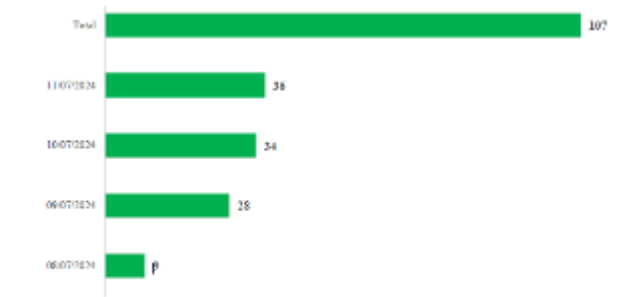
Sample collection



Results



Cadence  
Number of analysis per days



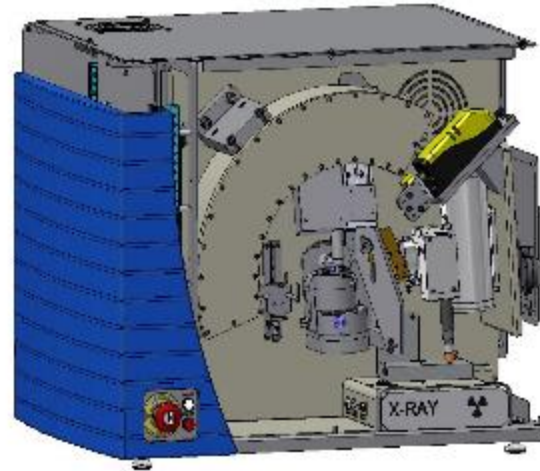
Average time between each scan



Preparation, acquisition & data treatment

## Application 2: Abbaretz old Tin (Sn) mine

### ➤ Installation of MODULAB next to the mine tailings

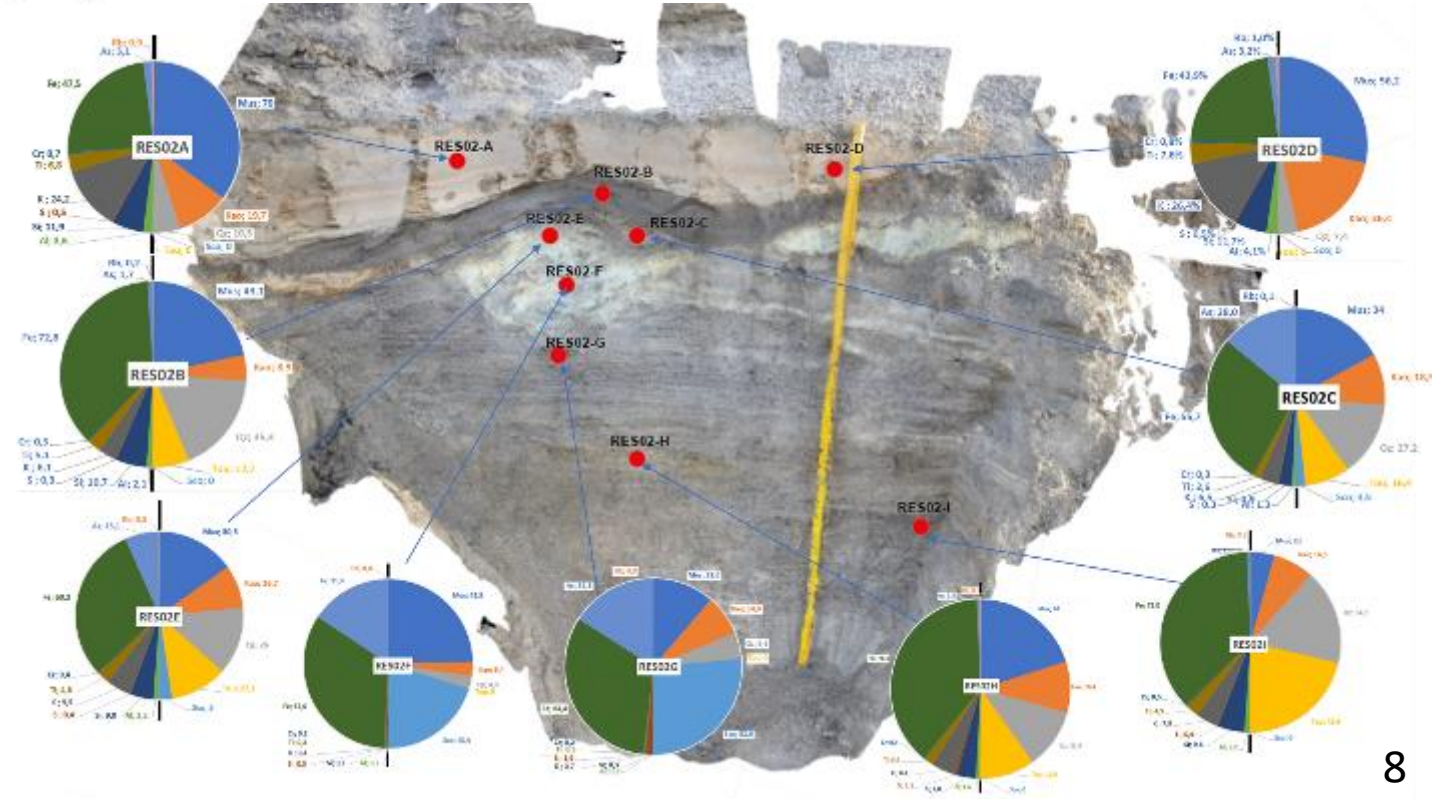


Arsenopyrite → Scorodite + Goethite  
 Muscovite → Kaolinite + Quartz  
 Tourmaline → Kaolinite + Goethite

XRD-XRF combined analysis

- Some results on grab samples:

- Sampling, preparation and measurement of 9 samples in 3h (30 min / sample)
- Identification and quantification of chemical elements and their bearing phases



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## A novel coupled XRD and XRF technique and methodology

