

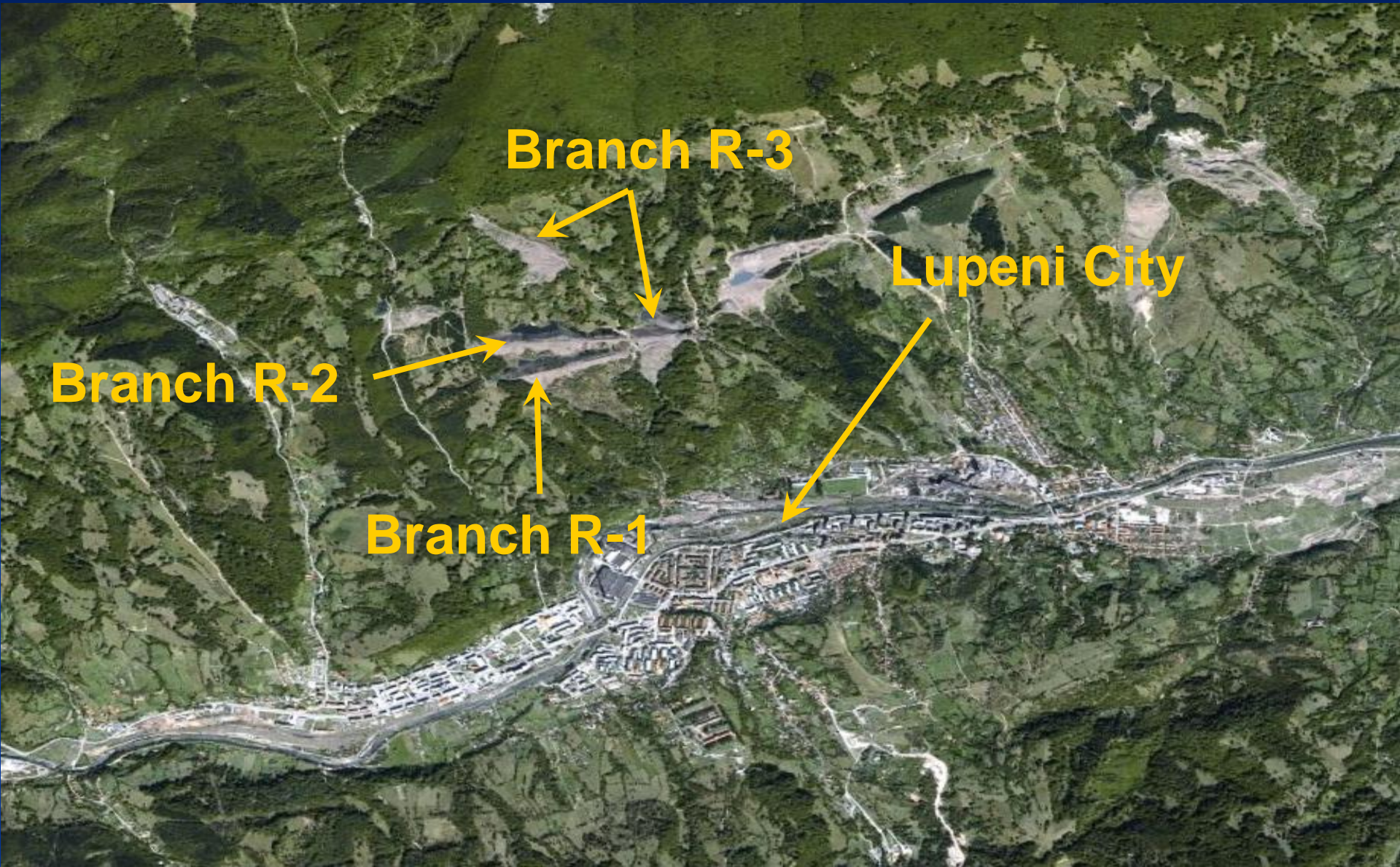
*A preliminary assessment of the
environmental impact of the tailing dumps
belonging to Lupeni mine (Valea Jiului)*



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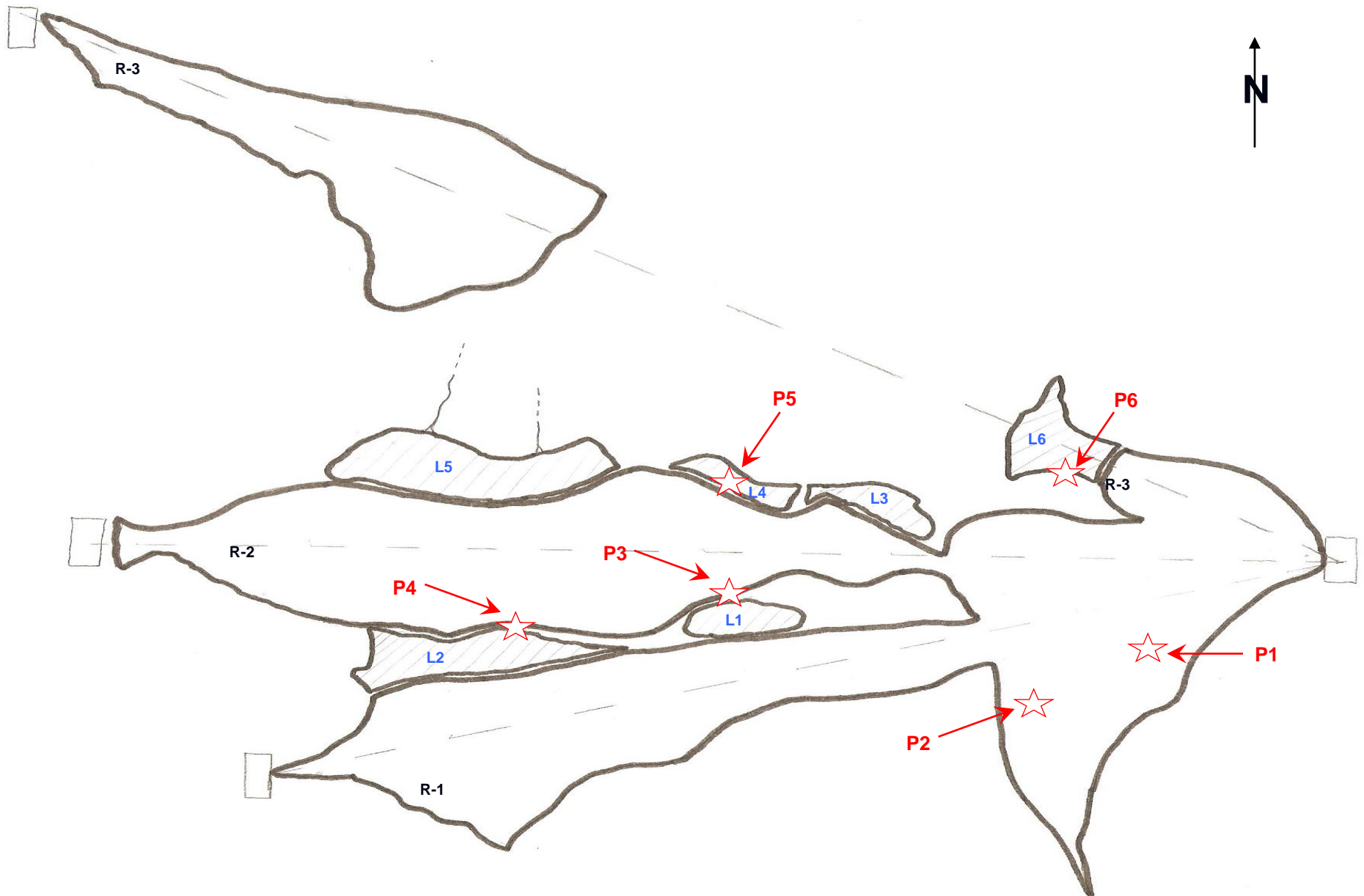
The location of the tailing dumps belonging to Lupeni mine in relation with Lupeni town (Google Earth)



Methodology

- Direct observations,
- Field measurements,
- Laboratory analysis:
 - ✓ electrochemical analysis (*WTW Multiparameter Portable Consort and Multiparameter inoLab 720 and C533*);
 - ✓ biological analysis (*microscope*)

The location of the water sampling points (without scale).



Legend: R1 – R3: the branches of the waste dump; L1 – L6: the lakes from the area of the waste dumps; P1 – P6: the sampling points

Results

➤ Landscape impact

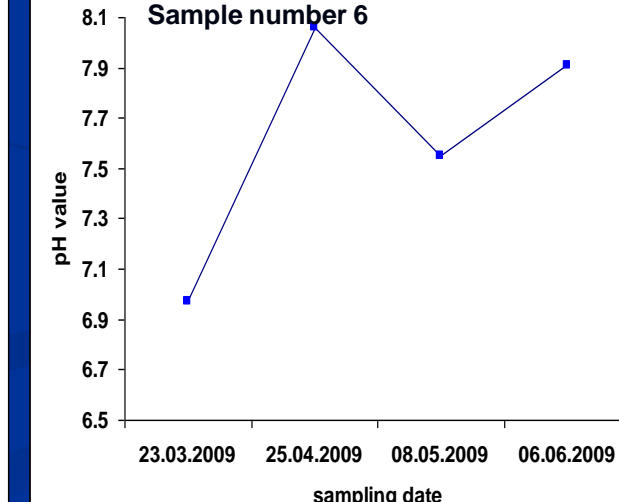
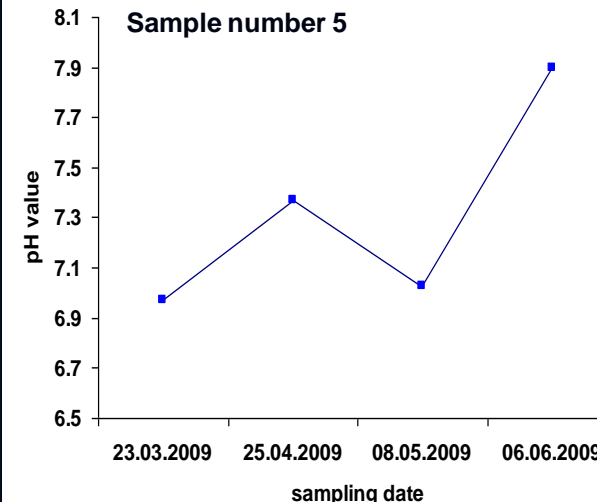
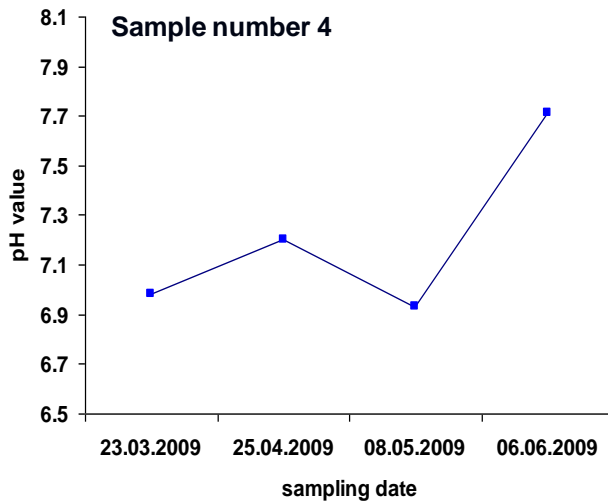
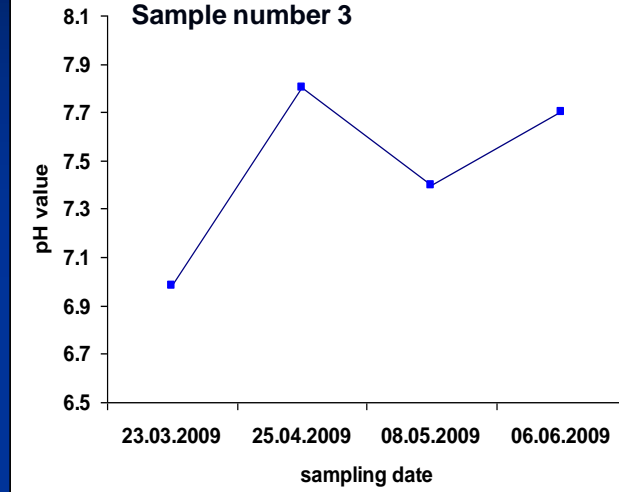
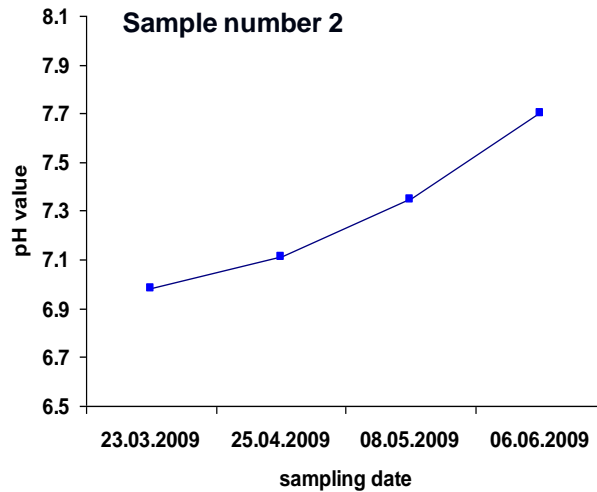
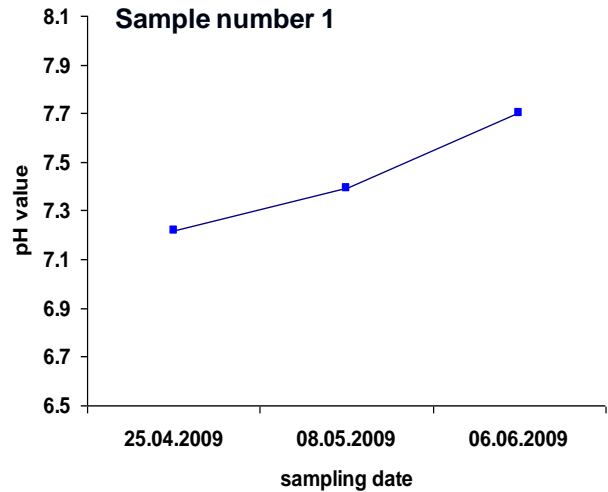
➤ Morphology changes

➤ Hidrology changes

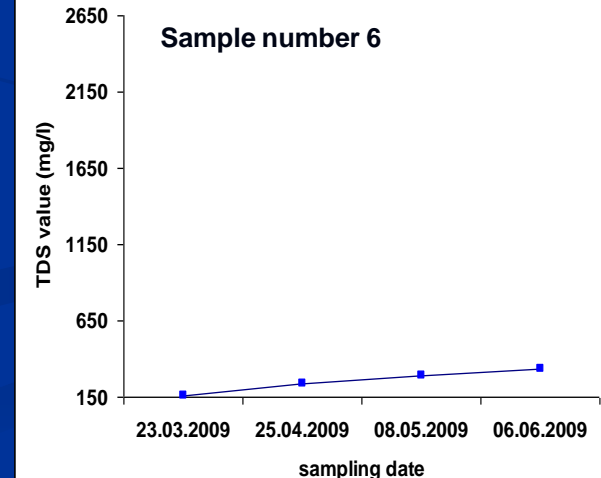
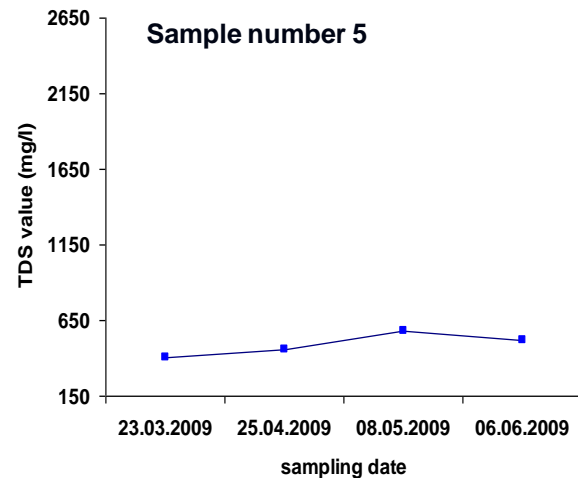
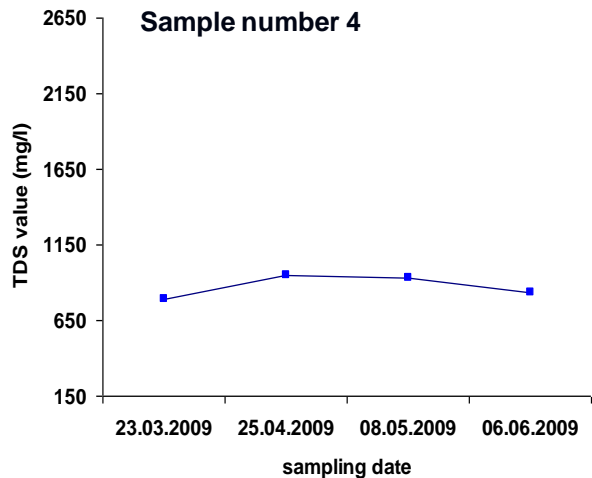
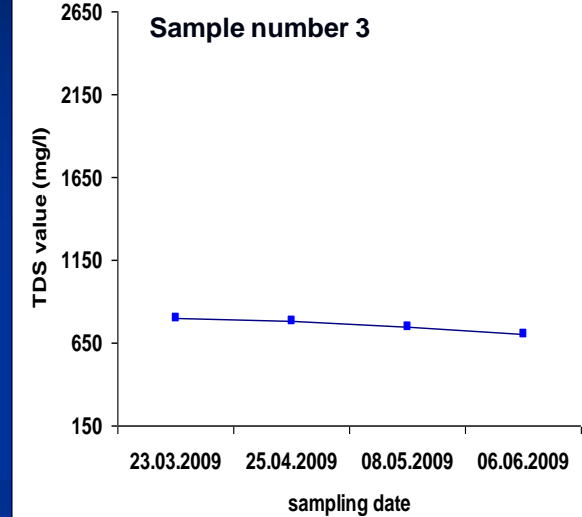
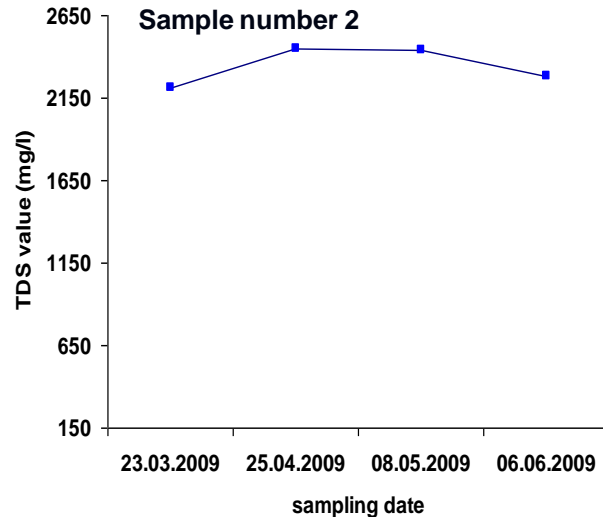
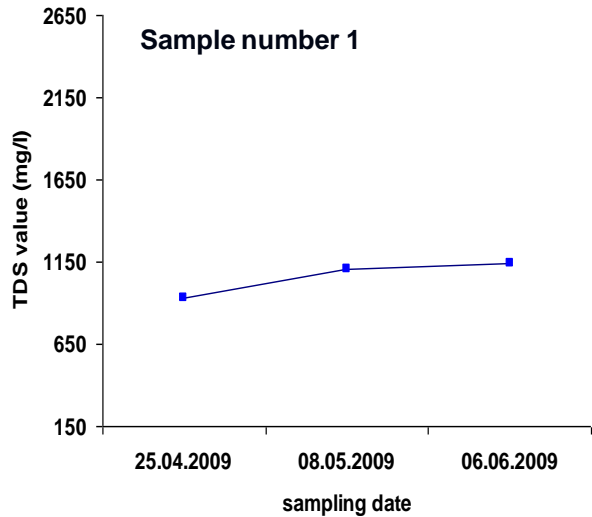
➤ Instability phenomena



Variation of pH in time



Variation of the TDS (mg /l) in time



Biological analysis

- Species characteristic for clean water (Protozoa phylum and Crustacea and Uniramia subphylum);
- Indices of saprobity that placed the water in oligo β mezosaprobe waters category

Conclusions

- *Tailing dumps present some instability phenomena especially erosions.*
- *The values of the physico–chemical parameters studied for the water from the lakes are within the limits allowed by law for surface water, while those for the water from the springs located on the waste dumps (only for the TDS's values), exceed these limits.*
- *The quality of the aquatic biotic environments is high, as the lakes are populated by numerous plant and animal species including bioindicator species characteristic for clean water.*
- *The tailing material has a high capacity for life development and natural regeneration.*

A scenic landscape featuring a calm lake in the foreground, surrounded by dense forests with vibrant autumn foliage in shades of orange, yellow, and green. In the background, a mountain range is visible under a clear blue sky with scattered white clouds. The foreground on the right shows a rocky, gravelly slope. The text "Thank you for your attention!" is overlaid in the center in a bold, blue font.

**Thank you for
your attention!**