General Technical Assignment of the Bodorna Due Dilligence: Dam Field-Instrumental, Engineering Research and Monitoring System

# **Recognosing the place and finding technical documentation**

* Research works.
* Design of the monitoring system.
* Tool Installation
* BOQ elaboration
* Term of execution

1. Field studies:

* Ortho-topographical capture/planning of the full perimeter of the dam and the lower bay.
* Geophysical survey:
  + Detailed geoelectric tomography along the dam trunk and base to detect filtration, possible sufosive phenomena and anomalies;
  + Perhaps other methods may be used (GPR, Electro-magnetic, Seismic....)
* Geotechnical drilling/research and arrangement of piesometers (preferably according to the initial results of geophysical research...)
* Taking water samples from the reservoir and filtering sources and analyzing them in a laboratory to detect suffusion processes and more...
* A one-time campaign to identify/measure the costs of surface filtering sources (this infobox will also be useful for determining and arranging the parameters of permanent expenditure nodes)... At the same time, one-time measurements of all inflow-outflow costs of all other inflows and drain costs can be carried out and the number of filters can be determined ....
* Determining the volume of work

1. Engineering Studies:

* Analysis/evaluation of dam sustainability and filtration regimes (baseline) based on the results of the field study and factual data, the issuance of appropriate recombinations, including the development of a monitoring system and observation campaign concept.
* Dam breakthrough modeling
* Determining the volume of work

Monitoring System Design

1. Monitoring system:

* Piezometers (arranged as part of the geotechnical survey)
* Vertical and horizontal displacement of dams and concrete structures - geodetic network (arrangement of pumps and monumnets (stamps) on dam snow...
* Arrangement of permanent automatic maintenance nodes on filtered sources
* Determining the volume of work

Compilation of total cost estimates.