



This project is funded by  
The European Union

## Environmental Protection of International River Basins Project



A project implemented by a Consortium  
led by Hulla & Co. Human Dynamics KG

### TERMS OF REFERENCE

## Refurbishment of Groundwater Monitoring Network in Central Kura pilot Basin District of Azerbaijan

### 1. Background and Objectives

I. The consultant will assist Human Dynamics to fulfil its requirements under the EU technical assistance contract 'Environmental Protection of International River Basins (EPIRB)' (Terms of Reference given in Annex 1). The overall objectives of the EPIRB project are:

- To improve availability and quality of data on the ecological, chemical, and hydro-morphological status of trans-boundary river basins including groundwater; and
- To develop River Basin Management Plans for selected river basins / sub-river basins according to the requirements of the WFD.

The project is being implemented in six countries (Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine) and five pilot river basins:

- Akhurian Basin District (Armenia),
- Central Kura (Azerbaijan),
- Upper Dnieper Basin (Belarus, Ukraine),
- Chorokhi-Adjaristkali Basin (Georgia),
- Prut Basin (Moldova, Ukraine)

As part of the River Basin Management Plan development process the project will implement selected number of improvement measures from the overall Programme of Measures (PoM), as defined under the Water Framework Directive. The selected measures have been agreed with the beneficiaries in each country and will be executed in accordance with the EC contractual conditions.

The following assignment is to help refurbish the groundwater monitoring network in the EPIRB pilot Central Kura Basin District (BD) of Azerbaijan.

In Central Kura BD ground waters are used for different purposes including irrigation and potable water and regulation and management is overseen by the AZERSU JSC (potable water) and Azerbaijan Amelioration and Water Management (irrigation). The existing groundwater monitoring network operated by the State Hydrogeological Expedition of the Ministry of Ecology and Natural Resources consisted of 52 observation boreholes and some springs and artesian wells at which water quality and water levels are measured. Unfortunately as most GW monitoring boreholes are located in open area without protection facilities, many of them are affected by population in nearby living areas. The main impact bring physical damage to monitoring wells and surroundings, such as filling of them with stones, sand and other materials therefore many are not operational currently.

To address the problem it is necessary to clean and restore the monitoring boreholes allowing baseline data to be collected on ground water levels, quality, and exploitation thus improving decision-making in ground water management. The current assignment will comprise the cleaning and restoration of approximately 25 existing monitoring boreholes.

The total duration of the pilot groundwater project will be 4 months and it is expected to complete it by end of May 2016.

## 2. Scope of work

The work will include the repair and cleaning (including purging), painting and installation of protection heads of a minimum of 25 groundwater monitoring boreholes in the basin. Example of protection head is shown in figure 1 below.



Figure 1. Refurbished borehole with protection wellhead

At each refurbished borehole measurements of water levels and water quality will be undertaken by the EPIRB project groundwater expert KE5 and local experts during the EPIRB 2016 surveys, scheduled for May. The contractor will prepare an inception report detailing the location of boreholes and the level of work required for repair and approximate cost estimate. Once proved the repair works will take place under the supervision of the Ministry of Ecology and Natural Resources who will provide oversight of the construction and rehabilitation works,

and upon successful completion of all works, shall issue all official certificates of completion in accordance with the required by the Azerbaijan legislation. The borehole sampling shall be undertaken in May 2016 in accordance with the EPIRB guidelines and will be supervised by project KE5. KE5 together with local GW experts from the State Hydrogeological Expedition and CWME will check refurbished monitoring boreholes, measure water levels and take groundwater samples from the restored wells

### **I. Programme and deliverables**

The programme of the above work is given below:

- Preparation of inception report which will include a survey of status of all monitoring boreholes, estimate of repair and cleaning and selection of chosen sites – 15 February 2016
- Repair cleaning, installation of protection wellheads and painting of a minimum of 25 boreholes – 1<sup>st</sup> May 2016
- Certification of works and sampling of boreholes – 31 May 2016

### **II. Remuneration and payment schedule**

The contractor will receive a maximum lump-sum of 8000 **Euro** for the above services to be paid in two tranches. The first tranche of 4000 euro to be paid on the approval of the inception report and the second tranche of 4000 euro - upon submission of the completion certificate and approval of EPIRB project KE5 on groundwater.

It is recommended that the Contractor will be supervised by the State Hydrogeological Expedition of the Ministry of Ecology and Natural Resources which owns the monitoring boreholes and knows what kind of rehabilitation works needed. They will be the end users of the monitoring boreholes.

### **III. Reporting**

The contractor shall report to Timothy Turner, the project Team Leader, and Bernardas Paukstys, KE 5, regarding overall deliverables and Rafiq Verdiyev, the Country Water Management Expert, for all day-to-day management issues.

