



Tubkal

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TECHNICAL ASSESSMENT AND WORK PLAN PILZAN WELL WATER. ESTOPIÑÁN (HUESCA)

Background and objectives

On 21 February last, Mr César Alberini contacted TUBKAL INGENIERÍA for information on how to market water from a well located on a 12-ha property in Estopiñán (Huesca).

According to the information provided by the client, the well is 120-m deep and collects water from cut limestone at a depth of 100 m. The flow rate of the well, after gauging for 2 hours, was 17 m³/h. A partial chemical analysis is also available and indicates that it is a calcium bicarbonate water.

The objective of the work is limited to obtaining the administrative licence to use the well water. FIOREMAR will be responsible for the industrial project and business plan for the economic activity, with all the permits this entails (mainly local authorities, Industry, Environment and Health). When the time comes, TUBKAL is in a position to contact specialised engineering consultancy firms.

Regulatory framework

At present, water in Spain is sold and marketed as:

- Natural mineral or spring water, packaged¹.
- Prepared drinking water, packaged².
- Water for human consumption³.

¹ Royal Decree 1798/2010 of 30 December, regulating the exploitation and marketing of packaged natural mineral and spring waters for human consumption.

² Royal Decree 1799/2010 of 30 December, regulating the process for preparing and marketing packaged prepared waters for human consumption.

³ Royal Decree 140/2003 of 7 February, establishing health criteria for the quality of water for human consumption.



Project focus

Consideration is being given to the possibility of selling drinking water⁴ in tanks. The basin authority responsible for granting a licence for water for human consumption is the Ebro River Basin Authority (Spanish acronym: CHE). The licence could be applied for either for **supply** or for **uses other** than supply or irrigation.

Administrative feasibility

As explained in the 2018-04 NT ADMINISTRATIVE SITUATION OF THE LITERA AQUIFER, the wells are located in an area where new licences are granted according to the technical criteria applied by the CHE.

According to public data, the property is not located in a protected or restricted area.

Feedback from the basin authority

Following consultations made with the CHE⁵ and the General Provincial Council of Aragón (DGA)⁶, the well should be legalised as "**Groundwater for supply**".

A priori, we have not been informed of any impediment to the processing of the application for the project.

Once all the technical documentation has been submitted, the CHE will request reports from Health, Planning and Environment, which will be binding for the authorisation.

Given the use as drinking water, it is most likely that Health will require more details about the Project and will have more weight in the conditions to be established and in the final decision.

Catchment characteristics and necessary improvements

The well is made of steel plating that is 160 mm in diameter and 4 mm thick. It does not appear to have sanitary cementation. It has a protective manhole. The start of the pipeline is located a few centimetres below ground level.

The following photographs show the main catchment characteristics. The static water level was 48.96 m up the borehole on the day of the visit (12/07/18).

⁴ Water for human consumption is all water—in its original state or after treatment—used for domestic purposes, drinking water and the food industry, etc. and supplied to the consumer through public or private distribution networks, cisterns or public or private tanks.

⁵ Water Board. Management Dept. of the Public Hydraulic Domain Groundwater Service.

⁶ Directorate General for Public Health. Provincial Health Services of Huesca Environmental Health Section.



Agricultural environment (dry land) of the well



Well protection manhole



Measurement of the piezometric level



View of the well borehole

For a well for food use, these characteristics are not ideal, but neither are they mutually exclusive, meaning that a few small improvements can be made.

The minimum measures to be taken are aimed at preventing the well from being contaminated and from the well itself contaminating the aquifer. This makes it essential for the mouth of the well to be higher than the surrounding area.

The existing manhole must be removed and a length of pipe welded seamlessly, without pores, onto the outer metal casing until it protrudes a minimum of 30 cm above the ground surface.

Once the pipe has been welded, the temporary concrete manhole can be put back. The manhole must have a drainage hole.

The following protective measures (definitive manhole, closure of the mouth of the well) will be taken when the final pumping equipment is installed in the borehole.

N.B. Although TUBKAL will uphold FIOREMAR's interests vis-à-vis the suitability of the current installation, Health may require other materials (stainless steel or food-grade PVC in the installation of the well).



Start of processing-legalisation

The next step is to begin the administrative procedures to legalise the well.

For this purpose, TUBKAL INGENIERÍA will draw up the necessary technical project for the CHE, taking into account all the required technical issues. Highlights:

- A **description of all the installations**, including details of the intake works and the remaining water distribution installations,
- The **use** to be made,
- The **maximum** instant flow rate and the **maximum annual volume**.
- **Justification of water needs**.

TUBKAL will establish a hypothetical consumption scenario based on the characteristics of the well, which FIOREMAR will have to validate according to its business plan.

As water for human consumption, it must also comply with regulations on **sanitary** water quality criteria. An analysis must be made and submitted in accordance with RD 140/2003 on potability, including the modifications made by RD 314/2016.

Pumping equipment must be installed in the well for sampling purposes. As it has not been in use since it was built, the water must be pumped out for a certain period of time before the sample is taken in order to ensure the representativeness of the sample taken; this will avoid results that could go against FIOREMAR's interests.

To validate the analysis, the competent body is Health and its report is binding for the water to be marketed. Among other things, it is necessary to demonstrate:

- The suitability of the catchment characteristics for the use to be given to the water and the measures to protect it.
- That the water complies with the parametric values specified for drinking use.
- The need for treatment, the methodology to be applied and the characteristics of the installation itself.