

Una manera de hacer Europa



BUENAS PRÁCTICAS Actuaciones Cofinanciadas

**Expansion and Improvement of the Wastewater Treatment Plant in Coca
(Segovia)**

Directorate General for Roads and Infrastructure

**Programa Operativo
de Castilla y León**

Año 2019

Fondo Europeo de Desarrollo Regional

Good Practise presented by the Directorate General for Roads and Infrastructure consisting in the Expansion and Improvement of the Wastewater Treatment Plant in Coca (Segovia).

The Directorate General for Roads and Infrastructure carries out actions whose main purpose is to comply with the obligations arising from Directive 91/271/EEC of 21 May 1991 on urban wastewater treatment, and thus make progress in complying with the Water Framework Directive, by implementing infrastructure for wastewater treatment and to improve the quality of life.

At the end of the 1990s, the original treatment plant had been designed for a population equivalent of 5,000 was built in Coca (Segovia). The lack of appropriate maintenance and operation of this facility, together with the characteristics of the discharges from the industrial activity, caused several non-compliances in the water analysis carried out of the water discharged into the river.

To correct this situation, the Directorate General for Roads and Infrastructure implemented the action being presented here as good practise, Expansion and Improvement of the Coca Wastewater Treatment Plant.

This operation involves building a new well with a volume of 20.3 m³ to decant the larger solids (over 5cm), and compact pre-treatment equipment to remove solids up to 3 mm, sand and grease.

Improvements have also been made to the plant's main circular aeration tank, which constitutes the "heart" of the treatment plant. After its emptying, it was cleaned and waterproofed, and the entire installation in charge of diffusing oxygen inside was replaced, together with the equipment in charge of stirring the water body. Finally, all the metal items were restored.

Likewise, the equipment that was damaged, in bad condition or that did not work properly has been replaced; improvements have been made to the pumping systems, both for wastewater and for the sludge generated, new equipment has been introduced to dry the sludge; at the same time, the equipment that generates the air that is introduced into the tank has been replaced and the equipment responsible for measuring different parameters (ph, temperature, flow, dissolved oxygen, quantity of solids, etc.) and to control the plant has been improved.

Finally, a general improvement of the plant's urbanisation and buildings has been carried out, repairing items and damages, a new system of pulleys has been introduced in the building to make it easier to assemble and disassemble equipment, and improvements have been made in the electrical installations, automation systems and fire protection.



The total cost of the operation amounts to 515,060 euros, representing an ERDF aid of 257,530 euros.

The impact of this action is estimated at population equivalent of 5,000. This item also includes, in addition to the population of the Coca agglomeration, the contribution of livestock and industrial

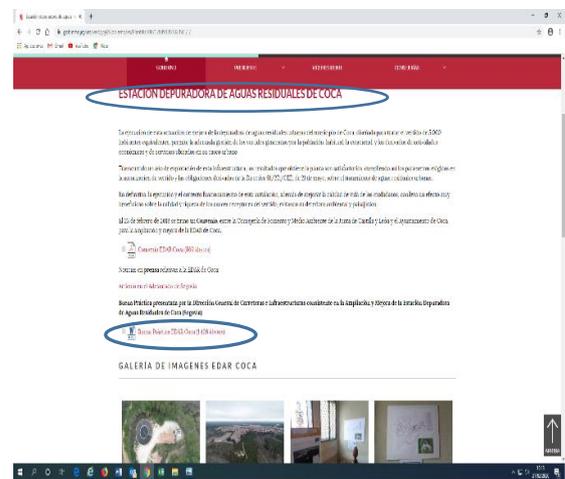
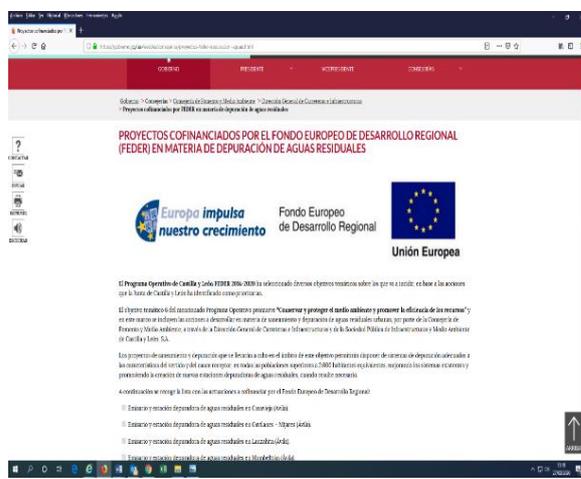
activities, and services, to water pollution. The plant's treatment capacity is estimated at an average daily flow of approximately 450 m³/day.

This action is considered a good practise as it meets the following criteria:

1. The operation has been adequately disseminated to beneficiaries, potential beneficiaries and the general public.

The Directorate General for Roads and Infrastructure of the Regional Ministry of Development and of the Environment has a website that lists the actions that will be co-financed by the European Union, through the ERDF Operational Programme:

<https://gobierno.jcyl.es/web/es/consejerias/proyectos-feder-depuracion-aguas.html>



All regulatory measures have been complied with and the corresponding work sign and permanent plaque have been placed during the project's implementation.



Two meetings were held at the Coca Town Hall to report on the operation's development, with the participation of technicians from the Regional Ministry of Development and of the Environment and municipal representatives. The corresponding posters were put up at both meetings.



Likewise, to enable Coca citizens to get to know this infrastructure and its co-financing by the ERDF, various actions have been promoted, in cooperation with the Town Hall, such as a photographic exhibition in the Town Hall relating to the installations carried out, (description, process lines, etc.) since December 2019, also with the explanations provided by the technical staff of the Territorial Environmental Service, as shown in the following images:



Also, in cooperation with the Coca Town Hall, a visit by students of the Public School of this town to the facilities of the treatment plant is planned for the month of April 2020. These visits will also have the participation of the technical staff of the Segovia Territorial Environment Service.

In conclusion, it should be noted that this operation has been publicised through press reports.



2. The actions incorporate innovative elements.

The action carried out has made it possible to equip the wastewater plant with a management and control system, allowing to remotely monitor the different parameters. In other words, the personnel in charge of operating the plant do not have to travel physically to the facilities to know these parameters at all times, which facilitates their monitoring in real time.

At the same time and in order to achieve energy efficiency at this facility, the system allows to adjust the plant's operation to achieve the highest performance with the lowest energy cost. Thus, for example, the operating hours of the items with the highest energy consumption can be adjusted to the time slots where the price of electricity is cheaper.

3. Adaptation of the results obtained to the established objectives.

The Coca plant was built in the late 1990s. However, the analyses of the discharge carried out in 2016 confirmed that the limits of some of the parameters contained in the discharge authorisation granted were exceeded practically every month. Ammonium levels were particularly high, reaching 48 mg/l, when the regulations stipulate that they must be under 10 mg/l.

This action has allowed these non-compliances to be overcome, so that throughout the year of operation, 2019, and after performing monthly analyses of the water entering and leaving the treatment plant, it has been confirmed that the results obtained by the plant are satisfactory, meeting the parameters required by the discharge authorisation and therefore by the regulations.

4. Contribution to the resolution of a problem or weakness detected in the territorial scope of implementation.

In Castilla y León, the characteristics of most of the municipalities in this region, such as their small size and high geographical dispersion, undoubtedly constitute a major difficulty when it comes to implementing and operating urban wastewater treatment infrastructures.

To overcome this difficulty and ensure that these towns have treatment systems adapted to the characteristics of the discharge and the receiving waterway, it is essential to articulate formulas for cooperation between the different Administrations involved.

Particularly, the natural environment of the town of Coca, surrounded by a large forest mass of pine trees, makes the business of pine (manufacture of resin and its derivatives, wood, pine nuts) one of the main economic activities. The livestock sector is mainly dedicated to producing and processing meat products and animal feed, and also employs part of the municipality's working population.

As for the service sector, especially the hospitality industry (rural houses and rural hotels), which has developed to take advantage of both the wealth of monuments (Mudejar castle, medieval wall, Gothic Renaissance church) and the landscape.

Both the population resident in the municipality and the services and other economic activities carried out therein benefit from this action.

Once the work to improve the WWTP has been completed, and after the one-year period for starting up the facility has elapsed, the local authorities, the economic activities and Coca's own residents have the necessary infrastructure to guarantee the correct treatment of the wastewater generated in the municipality, as they have the required facilities to minimise the impact that their activity could generate on the environment that receives their discharges.

5. High coverage of the target population.

The action carried out aims to purify the discharges in the municipality of Coca, generated by both the usual resident population and the seasonal population, in addition to those corresponding to the economic and service activities connected to the municipal collectors.

Specifically, the additional population benefiting from improved wastewater treatment is 5,000 population equivalent. This term includes, in addition to the population of the Coca agglomeration, everything that it implies, from the point of view of water pollution, livestock, industrial and service activities.

6. Consideration of the cross-cutting equal opportunities and non-discrimination criteria, in addition to social responsibility and environmental sustainability.

The very characteristics of the project implemented, which will provide the municipality of Coca with the required water treatment infrastructure for this town, and whose use will be carried out indistinctly by all citizens, mean that it has no impact from the perspective of equal opportunities between men and women.

Regarding environmental sustainability, this project's impact is very important since it contributes to solving the water treatment problems of the municipality of Coca by achieving the correct treatment of its urban wastewater and adapting the discharge to the limits established in the authorisation granted.

The operation of this installation contributes to improving the quality of life of the inhabitants of Coca and also has a very beneficial impact on the quality and richness of the channels receiving the waste, preventing its environmental and landscape deterioration.

7. Synergies with other policies or public intervention instruments

The Water Framework Directive aims to establish a framework for the protection of water, to prevent the deterioration of aquatic ecosystems, to improve their status and to promote the sustainable use of water and available water resources.

In particular, in relation to surface water, it sets a series of environmental objectives, which must be included in the planning instruments that are approved. This planning must detail, in each territory, the measures required to comply with the Directive, in aspects as important as preventing the deterioration of water bodies, reaching its improvement and regeneration, and all this in order to achieve the good condition and correct protection of public water.

The materialisation of Coca's WWTP improvement action makes it possible to comply with the commitments laid down in the National Water Quality Plan: Sanitation and Purification, and is in line with the Programme of Measures for the Hydrological Plan of the Spanish part of the Duero River Basin Hydrographic Demarcation for the 2016-2021 horizon.

Specifically, the aforementioned Plan of Measures indicates that this action, which is considered to be a basic measure and therefore necessary, is intended to meet the environmental objectives of the Water Framework Directive, by contributing to reducing pollution from urban discharges into the water body linked to it (the Voltoya River from the vicinity of Nava de la Asunción to its confluence with the Eresma River).

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