

WASTEWATER PLANT BENEFITS FROM EFCO FORMWORK SOLUTION

Barrancabermeja, Colombia

FORMWORK PARTNER OF CHOICE / WHY CHOOSE ANYONE ELSE?

Committed to their environmental responsibilities, the city of Barrancabermeja is building two impressive anaerobic digester tanks at the *San Silvestre* wastewater treatment plant. EFCO, the formwork partner of choice for this construction project, provided a solution using standard and leasable EFCO formwork equipment.

WASTEWATER TREATMENT PLANT RETURNS CLEAN WATER

The *San Silvestre* wastewater treatment plant is part of an environmental protection project underway in Colombia impacting the Magdalena River, all three of the Miramar, Sal Silvestre, and Juan Esteban lakes, and several streams and wetlands surrounding the area associated with the city of Barrancabermeja. When the *San Silvestre* wastewater treatment plant is complete, it will purify 90% of the polluting organic material and decontaminate these water supplies returning clean water to the citizens who are reliant on the plant and the benefits they will receive. ▶

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We chose EFCO again because they have always provided us with the best formwork engineering solutions, attention, and support on-site. EFCO formwork systems are very versatile and adapt to all structures.

Eng. Edmundo Sánchez Bretón
Project Manager

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EFCO SUPER STUDS were attached to the vertical E-BEAMS, acting as walers.



FORMWORK PARTNER IN EVERY STAGE

Consortio PTAR San Silvestre has been awarded the contract to build the *San Silvestre* wastewater treatment plant. This joint venture comprises Fypasa Construcciones of Mexico and Construvicol of Colombia. Their success in working with EFCO on previous projects led them to choose EFCO again. A formwork partner like EFCO means support at every project stage, from planning and bidding to detailing the most productive and cost-efficient formwork solution. EFCO provides the lowest in-place concrete costs.

FORMWORK SOLUTION FOR AN AGGRESSIVE SCHEDULE AND LIMITED CRANE CAPACITY

Major stipulations of this project included an aggressive project schedule and a limited-capacity crane. EFCO designed a formwork solution for constructing the two anaerobic digesters using EFCO **E-BEAM & SUPER**

STUD® equipment. Both digesters measure 14.5 m (47'-7") in height with an internal diameter of 16 m (52'-6").

E-BEAM & SUPER STUD FORMWORK SOLUTION

Typically, the EFCO E-BEAM & SUPER STUD formwork design requires E-BEAMS to run horizontally to EFCO SUPER STUDS, which get positioned vertically and act as stiffbacks. With this project's formwork solution, it was required that the E-BEAMS run vertically as ribs, enabling the crew to secure contractor-supplied plywood directly to the E-BEAMS. To achieve the predetermined radius of the tank, E-BEAMS were placed vertically on a shaping table, then plywood was conformed and secured to them. EFCO SUPER STUDS were then attached to the vertical E-BEAMS, acting as walers. In certain locations, blocking was placed between the SUPER STUDS and the E-BEAM ribs to support and keep the shape of the radius.

SAFETY AND COST-EFFICIENT FORMWORK

EFCO engineers designed a safe and cost-efficient formwork cycling method to maximize the consortium crew's productivity by completing each of the 3 m (9'-10 1/2") gang lifts. Safety and productivity are always most important for any formwork or shoring project.

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The assembly drawings made by EFCO engineering contain details and information that are very easy to understand for crew personnel. YouTube videos and on-site support are vital for staff training.

*Eng. Cristian Gómez
Project Engineer*

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EFCO EQUIPMENT E-BEAM & SUPER STUD

PTAR SAN SILVESTRE CONSORTIUM

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DECEMBER 27 | 2022

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