



# Fluid facts

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## Moecherville Water Treatment Plant Is - **An EFI "Package"**

For years the Village of Moecherville, Illinois has had its own water system drawing from three wells. Each well charges a hydropneumatic tank to hold the

matic tanks. Akhras Associates Consulting Engineers, were called in to develop system improvement plans and specifications; and to acquire the financing and approvals for these improvements.



system gradient. The wells are started and stopped in cascade fashion based on system pressure set points.

Corrosion had degraded the hydropneu-

matic tanks. Akhras Associates Consulting Engineers, were called in to develop system improvement plans and specifications; and to acquire the financing and approvals for these improvements.

Mr. Salem Akhras, P. E. recommended a complete upgrade of the water system by the erection of an elevated water storage tank, an Iron-Manganese oxidation and filtration treatment system and a booster pumping station at the base of the storage tank to pump the finished water into the tank. The three existing wells would remain; new and secure well head buildings would be provided. The treatment train was designed for 150 GPM.

On the strength of two previous successful projects, Mr. Akhras called upon Engineered Fluid, Inc. to design and fabricate a Pre-Manufactured, factory-built water treatment system, the new well houses, and the skid booster station with a fully integrated control and telemetry system. Bowen Engineering, as the general contractor, began the project late in 2005; the work was completed mid-year of 2006 including the CBI elevated tank.

*The pictures portray the main aspects of the facility and its construction.*



Here shown is the peripheral foundation and footing upon which both halves of the treatment facility are to be placed.



Here shown is the western half of the treatment facility being lifted and guided into place on the foundation.



Here shown is the eastern half of the treatment facility being lifted for placement on the foundation next to the western half.



Here shown is the eastern half of the building being guided into its final location.



Here shown is the western half being moved into its final location by “walking” it into place using the end lifting points.



Here shown is the western half being moved into its final position by having the crane lift the back edge slightly while a push is given to the front end by a small backhoe.



Here shown is the trussed roof structure spanning across both flat roofs of the side-by-side building halves with plywood sheathing over the trusses and ready for shingles.



Here shown is the the man-door and overhead door in the eastern building half for access to the 4500 gallon detention tank and two 7 foot diameter pressure filter tanks with filter controls.



Here shown is the the finished installation with the roof complete, the fascia, soffits, gutters, downspouts, and seam strips attached. The three doors, rear to front, are the pre-treatment chlorine feed room, the office and control room, and the stand-by generator room to the front.



Here shown is a view into the elevated tank base showing the skid, tri-plex booster station and pump controls.





Here shown is the pre-treatment chlorine feed room with piping from each of the three wells coming into the station from underground. The three well lines have chlorine injection points and are connected to a common header with an air release valve and a flanged connection point for a pipe to connect to the other side of the station taking water to the detention tank.



Here shown is the inside of the office and the system Master Control/Telemetry panel. The control panel contains an Allen-Bradley SLC 503 PLC which controls the total process from wells forward to the booster station all based on elevated tank levels. Each well has a PLC based radio telemetry RTU communication with the master control panel shown.



Here shown is the emergency, natural gas engine generator set with an automatic transfer switch and utility power entrance.



Here shown is one of the new well-houses fabricated complete and installed over the well head following demolition of the old well house.

## Who's Who

**Project Location:**

Moecherville, Illinois  
Moecherville Water Dist.

**Engineer:**

Akhras Associates  
Mr. Salem Akhras, P.E.

**General Contractor:**

Bowen Engineering

**Tank Contractor:**

CBI Constructors

**Treatment Equipment:**

Tonka Equipment Co.

**Equipment:**

New Elevated Water Storage Tank  
EFI Water Treatment Facility  
EFI Booster Pumping Station  
EFI Distribution System Upgrades

**Financing:**

USDA  
Kane Co. CDBG



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