

Case #MO-2014-01 (Monitor Hydrant Washdown Application)

# City of O'Fallon WWTP

## O'Fallon, MO

### Challenge

#### Cleaning equalization basin using fire hose:

- Physically demanding job
- Dangerous working conditions due to workers enter the steep slopes of the basin sides
- Very time consuming and labor intensive

The City of O'Fallon Wastewater Treatment Plant (WWTP) located in O'Fallon, Missouri has two existing equalization basins. The first a 75' x 200' sized rectangular shaped-basin with a 3 million gallon capacity, while the second a 100' x 250' sized rectangular-shaped with a capacity of 4 million gallons.

One of the most challenging aspects related to retention basins is cleaning them up after filling with storm water runoff. This needs to be done soon after large rain storms to control issues with overflow.

Equalization basin clean up at the O'Fallon WWTP was a very arduous and time consuming task, usually taking up to 2-3 days to complete. It involved two workers hooking up and dragging a 1½" fire hose while slowly and methodically spraying the debris off the side of the basin into the catch basin located in the middle of the basin floor.

It is a physically demanding job as it involves hauling a 100' hose full of water that contains approximately 15 gallons of water with a dead weight of 125 pounds. Additionally, to remove all the sediment on the sides and floor of the



basin, workers were required to step down the steep slopes of the basin sometimes causing injuries due to slipping and sliding. Truly an exhausting and dangerous operation that needed to be done on a weekly or more frequent basis.

### Solution

Working with the experts at Kupferle, a 157 year old company based in St. Louis, Missouri, the City of O'Fallon WWTP implemented a new strategy and technology for washing down equalization basins.

First, they retrofitted the basins with an engineered piping system that surrounded the perimeter of

the basins. Next they located and tapped strategic connection points for the installation of a monitor hydrant system. Finally, they purchased and installed 6 pre-engineered MainGuard #7500M Washdown Hydrants from Kupferle that connected directly to the piping system at the strategic points. These freeze-less hydrants are designed to drain to ground

and can be used year round in cold climates. Additionally, they purchased 2 monitor assemblies (for two workers) designed to attach to each hydrant using a quick disconnect. Designing the hydrants with quick disconnects allowed workers to move the monitors from station to station saving the city money.

#### Monitor Hydrant Information

[www.hydrants.com](http://www.hydrants.com)

800-231-3990

[info@hydrants.com](mailto:info@hydrants.com)

[www.youtube.com/kupferle1857](http://www.youtube.com/kupferle1857)



Plant workers cleaning retention basin using Kupferle's MainGuard #7500M Monitor Hydrants

## Results

After installing the new Kupferle MainGuard #7500M Monitor Hydrants O'Fallon WWTP was able to reduce the time it took to clean the retention basins from 2-3 days to 2-3 hours (a 87% reduction in labor time). This significantly reduced labor costs and allowed plant workers to attend to other tasks.

Additionally, by implementing the monitor hydrants workplace injuries involved with cleaning up the retention basins literally

ended, again reducing costs and eliminating workers missing work due to injuries. ***"Safety for the crew was the main factor in installing these hydrants and by installing them this was accomplished"***, stated Dave Scherer, Assistant Superintendent of the O'Fallon WWTP.

Savings in labor costs of cleaning retention basins (90% per session), the reduction of costs due to injuries, and the quicker, more efficient process of clean-

ing retention basins quickly offset the initial cost of installation (approximately \$52K) within two years.

Mr. Scherer summarized about implementing the new monitor hydrant system this way, ***"At first I was skeptical about the hydrants being able to accomplish what they were intended for, but after seeing them in action all doubts were removed"***

***"Safety for the crew was the main factor in installing these hydrants and by installing them this was accomplished"***



Kupferle's MainGuard #7500M Monitor Hydrant has an effective throw range of approximately 175'

## Case Study Information

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## Kupferle Washdown Hydrants

**MainGuard #7500M (4")**



**MainGuard #77M (2")**



**MainGuard #80WD (2")**

