www.GotBigWater.com

North Hays Fire Rescue
Dripping Springs, Texas

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
February 24, 2019
Summary Report

The Purpose

- The purpose of the seminar and drill was to review the basics of rural water supply operations and to practice water supply operations in a non-hydranted setting.
- The drill also allowed mutual aid companies to work together in a real-life training situation.

The Seminar

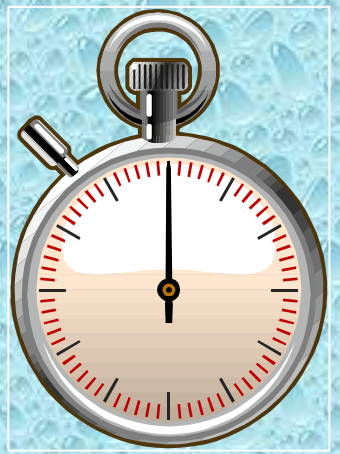
- The 2-day seminar started with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the North Hays fire station.
- Once the classroom part was done, the seminar continued with 8 hours of practical work on fill-site and dump site operations.
- The program concluded with the 2-hr ISO tender shuttle exercise and program review.
- Seminar participants were from Hays County and the surrounding area.

The 2-hour Water Supply Drill

- The tender shuttle drill was held on February 24th in Dripping Springs at an office complex.
- The drill attempted to replicate the 2-hour Water Supply Delivery Test used by ISO in their evaluation of fire department water supply capabilities.
- While ISO no longer uses the physical demonstration of water supply delivery*, the 2-hour test is still a reasonable standard by which fire departments can compare their water supply operations.
- *ISO now uses computer modeling to predict tender shuttle flow capabilities.*

The ISO Test

- The ISO 2-hour Water Supply Delivery Test has three critical time segments:
  - 0:00 to 5:00 minutes
  - 5:01 to 15:00 minutes
  - 15:01 to 120:00 minutes



ISO Test *0:00 to 5:00 Minutes*

- A drill location is selected and the units due to respond on the first-alarm assignment are dispatched.
- Time starts when the first engine arrives on the scene and comes to a complete stop.
- There is no requirement to flow water during the first 5 minutes, but the crew must be prepared to flow water once the 5-minute mark is reached.

ISO Test *5:01 to 15:00 minutes*

- At the 5-minute mark, a flow of at least 250 gpm must be started - and it must be sustained.
- During the next 10-minutes, crews can work to further develop their water supply and increase their flow, however…
- At the 15-minute mark (5+10), whatever amount of water is flowing at that time must be maintained for the remainder of the 2-hour test.

ISO Test *15:01 to 120:00 minutes*

- Once the 15-minute mark has been reached, the remainder of the 2-hour test is really just about ***sustaining*** the flow.
- The ISO test includes the simulation of automatic mutual aid response and allows additional water supply units to arrive and assist in the delivery process as would happen on a real incident.
- The real advantage of the ISO test is that it gives a fire department the chance to see where improvements can be made in their water supply delivery process.

It is one thing to say that your fire department can deliver 500 gpm for two hours – it is another thing to prove it in a real-life drill scenario!

Water Supply Drill Participants

- *The participants for the drill were from several different fire departments in the Hays County region and the water hauling apparatus was representative of the type of water supply support that would respond to a structure fire in the Dripping Springs area.*

Drill Participants

- North Hays Engine 75
  - 1250 gpm pump w/1,000 gal tank
- North Hays Tender 75
  - 500 gpm pump w/2000 gal tank

Drill Participants

- North Hays Tender 62
  - 1,000 gpm pump w/1800 gal tank

- North Hays Tender 71
  - 250 gpm pump w/2000 gal tank

Drill Participants

- North Hays Tender 74
  - 250 gpm pump w/2000 gal tank

- South Hays Tender 13
  - 1,000 gpm pump w/2000 gal tank

Drill Participants

- Bastrop Tender 243
  - 1,000 gpm pump w/2000 gal tank

The Drill Begins

Tender 62 arrives on location and the two-person crew works to get a dump site set up while pumping off water to the simulated attack engine. The tender's 1,000 gpm pump was about to be challenged trying to support the fire attack and run jet siphons at the same time. The tender was used as the dump site engine because no other engine was available.

Dump Site Operations

Tender 75 was the first-arriving tender and dumped its 2,000 gallons of water into the first dump tank. The water supply operation then switched from a nurse tender operation to a dump tank operation.

Dump Site Operations

As additional tenders on the first alarm arrived on the scene, the crews worked to deploy additional dump tanks in preparation for expanding the water supply operation.

Dump Site Operations

With two dump tanks in operation, work is underway deploying a third dump tank and bringing it on line.

Dump Site Operations

The “single-lane” tank arrangement was used so that a lane of traffic could be kept open for the tenders. One challenge was finding sufficient jet siphons to make water transfer operations work efficiently.

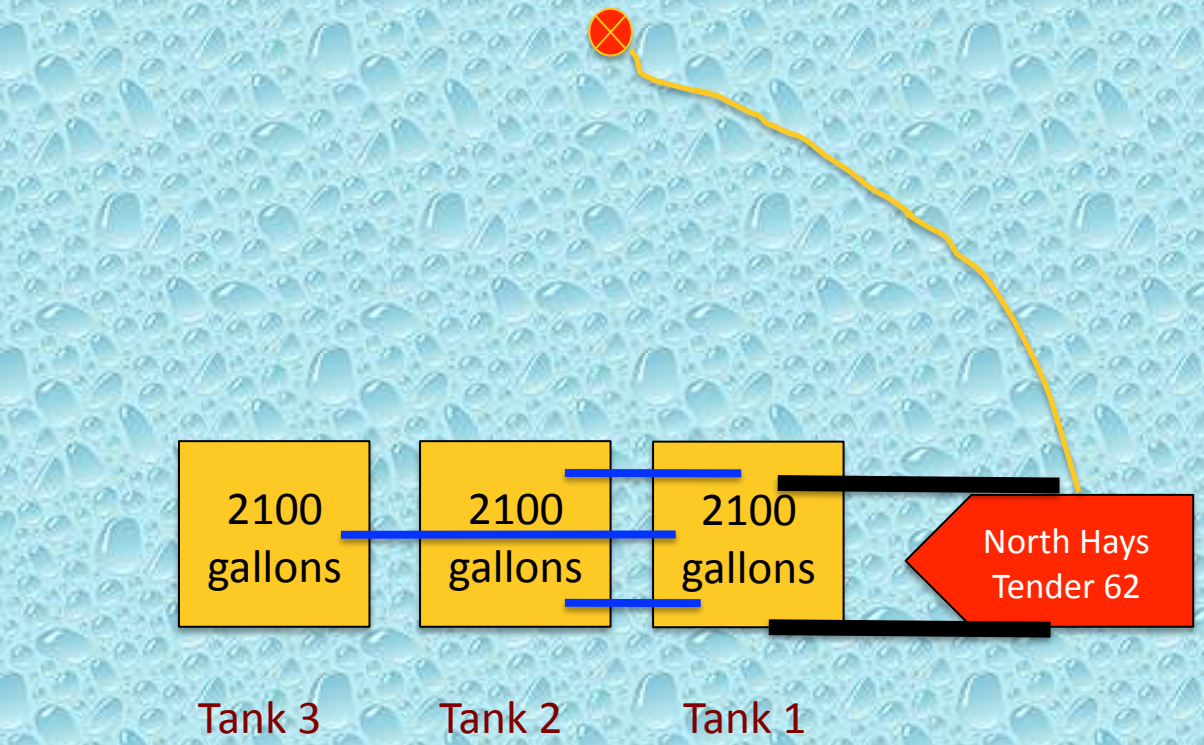
Dump Site Operations

The single-lane arrangement worked really well and simulated much of the type of roadways on which the folks in Hays County have to operate. The dump tank numbering signs really helped with the tender off-loading process.

Dump Site Operations

A 250-gpm floating pump was used to help transfer water from the 3rd dump tank to the 1st dump tank. While not as efficient as a jet siphon, the floating pump did make a positive impact on water flow.

Dump Site Layout



The Fill Site

- For this drill – one fill site was used…a fire water storage pond on the office complex property.
- The fill site provided about a 1/2-mile round trip for the units hauling water so a time delay was added to the route by emptying some tenders ahead of time and letting them cycle through without water.
- The pond provided ample water volume to support the drill and access was not much of an issue.
- A 1,250 gpm pumper was used at the pond to support the tender fill station.

Fill Site Operations

North Hays Engine 75 (1,250 gpm) drafts through a dry fire hydrant at the pond and works to load tenders as fast as possible.

Fill Site Operations

South Hays Tender 13 is seen here being loaded by Engine 75's crew. One person made and broke connection;, one person served as the "loader" and operated the supply line valve; and one person operated the pumper. Tender 13's driver remained in the driver's seat ready to leave as soon as filling was done.

The Results

- The drill was stopped at the 90-minute mark due to time constraints.
- Water flow was never interrupted during the entire drill.
- An estimated 42,000 gallons of water were flowed through the simulated attack engine during the drill producing an average flow rate of 490 gpm.

The Lessons Learned

- At this drill, a nurse tender operation was used during the early moments of the drill which allowed the crews to set-up the dump site without the pressure of running out of water in a couple of minutes.
- The single-lane arrangement of dump tanks proved successful. The arrangement allowed for easy travel, side-dumping, and kept a lane of traffic open.

The Lessons Learned

- A tender fill-site needs to run like a NASCAR pit stop. Anything that slows down the loading of tenders is going to reduce the efficiency of the tender shuttle.
- At this drill, folks worked to try and use the same fitting to load all of the tenders – this made the loading very efficient. Only one tender required the use of a different fill hose.

The Lessons Learned

- Being short one engine, an 1800-gallon tender equipped with a 1,000 gpm pump was used to run the dump site. This arrangement worked quite well and reinforced the value of having a fire pump on a tender.
- Dual suctions where used by the dump site tender in order for the rig to supply a 500 gpm flow and run several jet siphons. Getting more water into a pump means getting more water out of the pump.

The Lessons Learned

- Jet siphons, suction hose, and dump tanks are needed at most every dump tank operation – therefore, it is wise to carry those items on every tender – as well as plenty of adaptors.
- The "bundling" of water hauling mutual aid resources has proven successful in many drills. The tender task force concept again proved to be an effective process for requesting and using additional rural water supply resources.

Drill Videos

Be sure to watch videos from the drill on the GotBigWater YouTube Channel.

Summary

- The drill was a success. For the new folks, they got to see how dump tank operations work.
- For the older, experienced folks, it was a chance to practice their "craft."
- The success of the drill showed the importance of mutual aid response practices and procedures – and the importance of mutual aid interoperability.
- Many thanks to North Hays Fire Rescue for sponsoring and hosting this seminar.

www.GotBigWater.com

This program was developed by
GBW Associates, LLC

For more information contact us at
thebigcamel@gotbigwater.com