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Summit Station Volunteer Fire Company  
Wayne Township, Pennsylvania

Rural Water Supply Operations Seminar  
2-hr Water Supply Drill  
March 13, 2016  
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 Summit Station 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 tanker shuttle exercise and program review.
- Seminar participants were from Schuylkill County and surrounding areas.

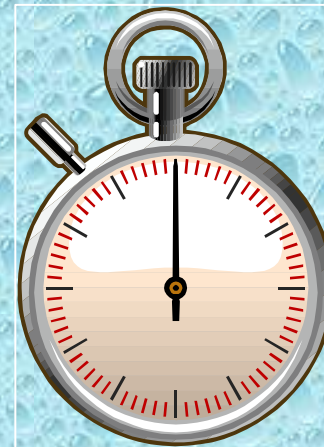
# The 2-hour Water Supply Drill

- The tanker shuttle drill was held in Summit Station at a fairgrounds complex on March 13<sup>th</sup>.
- 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 everyone in the fire service may not agree on ISO's evaluation of fire department capabilities, the 2-hour test is still a reasonable standard by which fire departments can compare their water supply operations.



# 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 10 different fire departments in the Schuylkill 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 Summit Station area.*

# Drill Participants

- Summit Station Squad 34-55
  - 1,500 gpm pump  
w/500 gal tank
- Summit Station Tanker 34-36
  - 1,000 gpm pump  
w/3,000 gal tank



# Drill Participants

- Mahoney City Engine 454
  - 2,000 gpm pump  
w/600 gal tank
- Auburn Tanker 39-30
  - 1,500 gpm pump  
w/2,000 gal tank



# Drill Participants

- Friedensburg Tanker 34-30
  - 1,500 gpm pump  
w/3,000 gal tank
- Lawn Tanker 3
  - 1,000 gpm pump  
w/3,000 gal tank



# Drill Participants

- Liberty Wagon 736
  - 1,000 gpm pump  
w/500 gal tank
- Liberty Tanker 738
  - 750 gpm pump  
w/2,000 gal tank



# Drill Participants

- North End Tanker 58-37
  - 2,500 gal tank
- North End Engine 58-15
  - 1,250 gpm pump  
w/750 gal tank



# Drill Participants

- Good Will Tanker 41-38
  - 1,000 gpm pump  
w/2,000 gal tank
- Bernville Tanker 29
  - 1,000 gpm pump  
w/2,000 gal tank



# Drill Participants

- Strausstown PT50
  - 1,250 gpm pump  
w/2,500 gal tank





# Preparation



Units staged at the Summit Station fire station where they received drill assignments and a safety briefing.

# Dump Site Operations



Squad 34-55 and Tanker 34-36 were the first units to arrive on the scene. The timer was started when the crews went to work setting up a dump site.

# Dump Site Operations



The dump site crew chose not to use a nurse tanker operation and instead move right into a dump tank operation. Folks worked feverously to get that first dump tank set-up and ready for use during the 5-minute set-up period.

# Water Flow Started



Water flow was started at the 5:00-minute mark without incident. The flow was 500 gpm instead of 250 gpm and there was no problem supporting that quantity.

# Dump Site Operations



Additional tankers began to arrive and plans were underway to expand the operation to a 3-dump tank set-up. As tankers arrived to dump their water, crews acquired the items needed to expand the operations.

# Dump Site Operations



By the 10:00-minute mark a second dump tank was brought on line. Notice the good looking, solid stream of water coming from the jet siphon. This is the type of flow we want to see when transferring water between dump tanks.

# Dump Site Operations



At the 15:24-minute mark, a third dump tank was brought on line and flow was being maintained at 500-gpm.

# Dump Site Operations



Tankers that were not part of the 1<sup>st</sup> Alarm assignment were grouped into Tanker Task Forces and were dispatched to assist using a time delay. The tanker shown here was the last tanker to dump its first load of water.



# Dump Site Operations



Just shy of the 28-minute mark, the dump site situation looked to be in trouble. The flow had been maintained since the 5-minute mark at 500 gpm...but there were NO tankers in line to dump. Fortunately, a tanker arrived just in time and water flow was never interrupted!

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# Dump Site Operations



At the 35-minute mark, the flow was moved to 750 gpm as conditions at the dump looked stable.

# Dump Site Operations



By the one-hour mark, four dump tanks were in operation and the flow was moved to 1,000 gpm. Two fill sites were up and running and the operation had stabilized.

# Dump Site Operations



Around the 80-minute mark, one of the fill sites had to shut down due to a “neighborhood” issue. This forced the dump site operation to back down to a 750 gpm flow which was then maintained for the duration of the drill.

# Trying Something Different



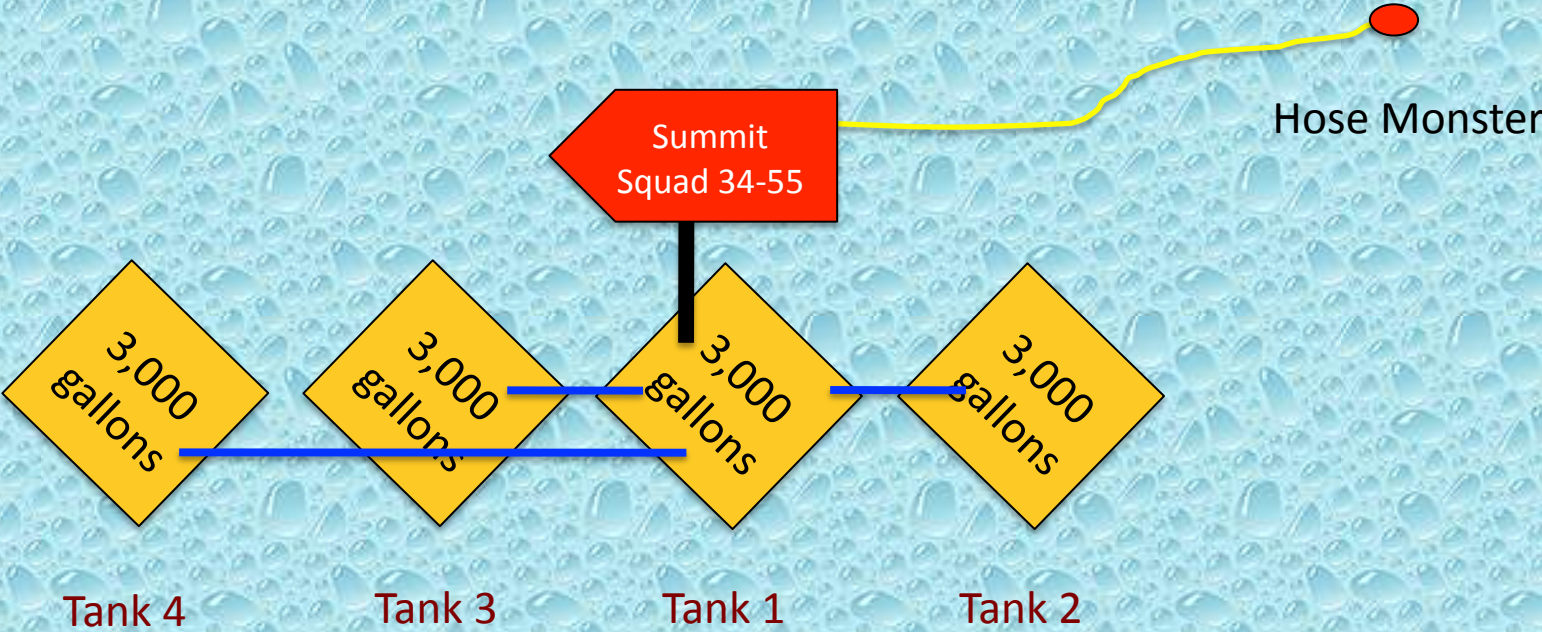
The folks tried using a short length of 5-inch LDH in place of suction hose to transfer water. An adaptor was needed, and water was transferred from the 4<sup>th</sup> dump tank into the primary dump tank. It seemed to work okay.

# Dump Site Operations



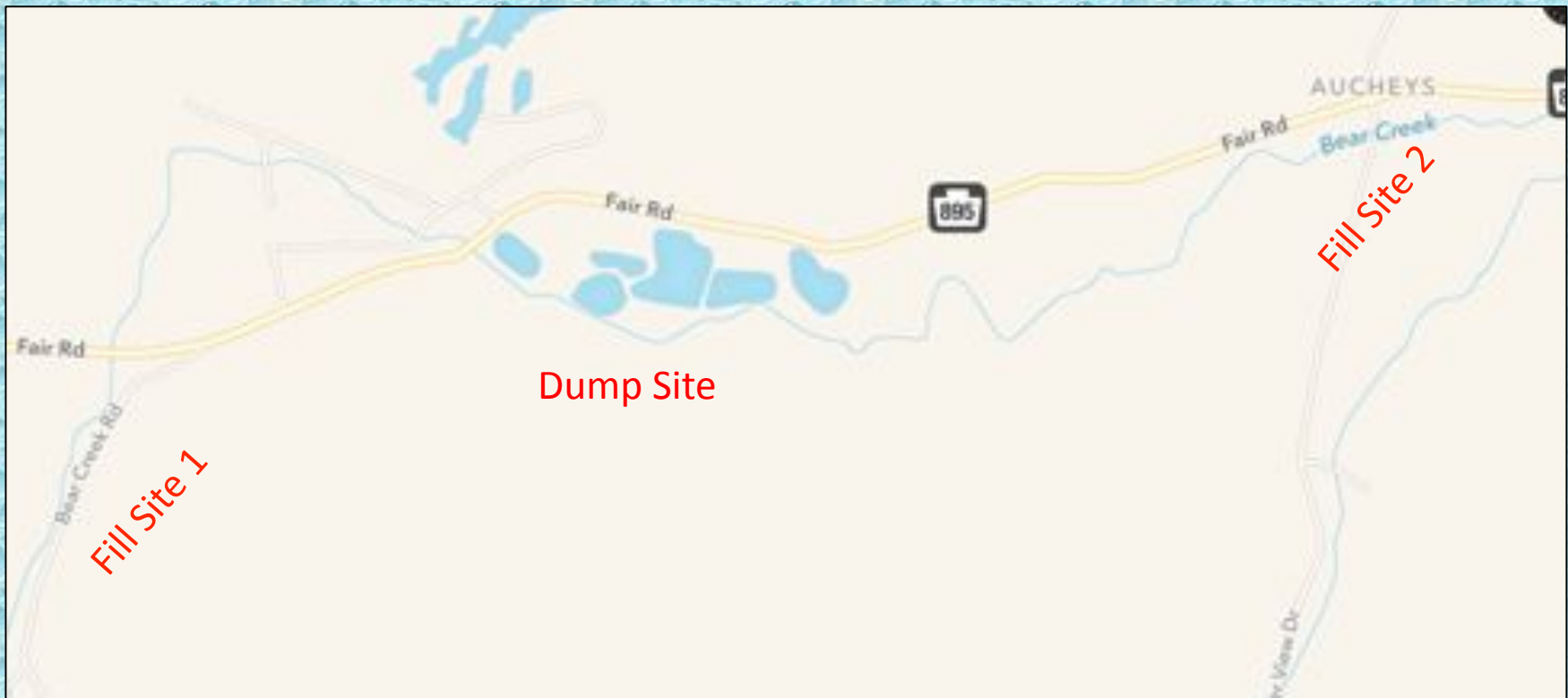
The drill was stopped at the 105-minute mark due to time constraints. The flow was 750 gpm.

# Dump Site Layout



# The Fill Sites

- For this drill – two fill sites were used. One to the east and one to the west of the dump site.





# The Fill Sites

- The first fill site set up was located on Bear Creek Road at a stream west of the dump site and provided about a 1.2-mile round trip for the units hauling water.
- The stream provided ample water volume to support the drill and access was not a problem.
- A single, 2,000 gpm pumper was used at the stream to support the tanker fill station.

# The Fill Sites

- The second fill site was located on West Deer View Drive to the east of the dump site and provided a 2.4-mile round trip for the units hauling water.
- The site used a stream that provided ample water volume to support the drill and access was not a problem.
- A single, 1,000 gpm pumper was used at the stream to support the tanker fill station.

# Fill Site Operations



Liberty Wagon 63-16 drafted through several lengths of suction hose from the stream.

# Fill Site Operations



Most of the tankers were loaded using dual, 3-inch lines equipped with Storz-style quick connect couplings. The goal was to load at 1,000 gpm.

# The Results

- The drill was stopped at the 105-minute mark.
- Water flow was never really interrupted during the drill, however the flow had to be reduced some in order to maintain the flow.
- An estimated 72,500 gallons of water were flowed through the attack engine during the drill producing an average flow rate of 725 gpm.

# The Lessons Learned

- At this drill, the crews decided to start right off with a dump tank set-up and not do any type of nurse tanker operation.
- This meant that they had to work quickly and efficiently to get a dump tank in operation before the 5-minute mark – which they did!

# The Lessons Learned

- Dump tank arrangement is critical to successful dump site operations. At this drill, a diamond shape layout was used to accommodate both rear dumping and side dumping tankers. There was plenty of parking lot space to accommodate this layout.

# The Lessons Learned

- A tanker fill-site needs to run like a NASCAR pit stop. Anything that slows down the loading of tankers is going to reduce the efficiency of the tanker shuttle.
- At this drill, most all of the tanker fill connections were the same –thus, the fill sites ran quite efficiently. Having a standardized fill connection for all tankers increases fill efficiency and decreases fill time.



# 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 tanker – as well as adaptors.
- The “bundling” of water hauling mutual aid resources has proven successful in many drills. The tanker 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 the Summit Station Fire Company for sponsoring and hosting this seminar.



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