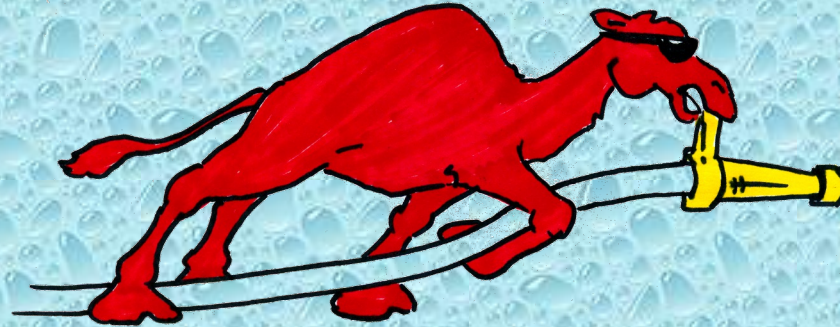


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Seneca County Office of Emergency Services  
Seneca County, New York

Rural Water Supply Operations Seminar  
2-hr Water Supply Drill  
April 15, 2023  
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 Fayette Fire Department.
- Once the classroom part was over, 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 Seneca County and the surrounding area.

# The 2-hour Water Supply Drill

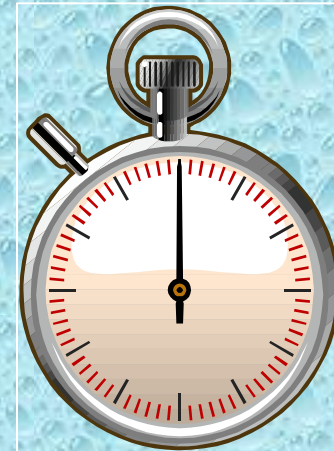
- The tanker shuttle drill was held on April 15<sup>th</sup> at a local farm.
- The drill attempted to replicate the 2-hour Water Supply Delivery Test used by ISO in their evaluation of fire department water supply capabilities.
- While ISO no longer uses the physical demonstration of water supply delivery, 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 tanker 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

Participants				
Department	Unit	Pump Size	Tank Size	Dump Tank
Fayette	402	1500 gpm	850 gal	NA
Fayette	421	350 gpm	2400 gal	3000 gal
Oaks Corner	3231	1000 gpm	1500 gal	2100 gal
Border City	221	500 gpm	3000 gal	3000/2000 gal
Ovid	1104	1000 gpm	350 gal	NA
Ovid	1121	1250 gpm	2000 gal	2500 gal
Junius	722	500 gpm	3000 gal	3000 gal
Lodi	821	500 gpm	1800 gal	2000 gal
Varick	1504	1500 gpm	2000 gal	2100 gal
Canoga	302	1250 gpm	1000 gal	NA
Canoga	321	NA	2300 gal	3000 gal
Waterloo	1621	NA	2500 gal	2500 gal
Interlaken	501	1250 gpm	1250 gal	2000 gal
Interlaken	503	1500 gpm	1500 gal	2500 gal
Romulus	1321	180 gpm	3000 gal	3000 gal
Seneca Falls	1403	1500 gpm	750 gal	NA
Sennett	TP 21-3	1500 gpm	1000 gal	NA
Sennett	TA-1	1250 gpm	2000 gal	2000 gal

- *The participants for the drill were from several different fire departments in the Seneca 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 Fayette area.*

# The Drill Begins



Fayette 402 arrives on the scene and lays out several hundred feet of 5-inch LDH supply line simulating a reverse lay from the fire out to a dump site area.



# Dump Site Operations



The 1<sup>st</sup> dump tank was deployed at around 90-second mark due to the quick arrival of the 1<sup>st</sup> tanker.



# Dump Site Operations



Water flow is started at 300 gpm at the 5:00-minute mark using a TFT Blitzfire.



# Dump Site Operations



As additional tankers arrived crews worked to build out the dump site. Three dump tanks are in-place and flow was moved to 500 gpm at the 15-minute mark..



# Dump Site Operations



The tankers on the drill were dispatched as Tanker Task Forces. A total of 3 tanker task forces were used to support the operation.



# Dump Site Operations



As flow increased, the need to transfer water between the dump tanks also increased. Transfer devices included Holley Pipes and traditional suction hose jet siphons.



# Dump Site Operations



Around the 20-minute mark a second, 6-inch suction line was added to Fayette 402 and water flow was increased to 750 gpm..

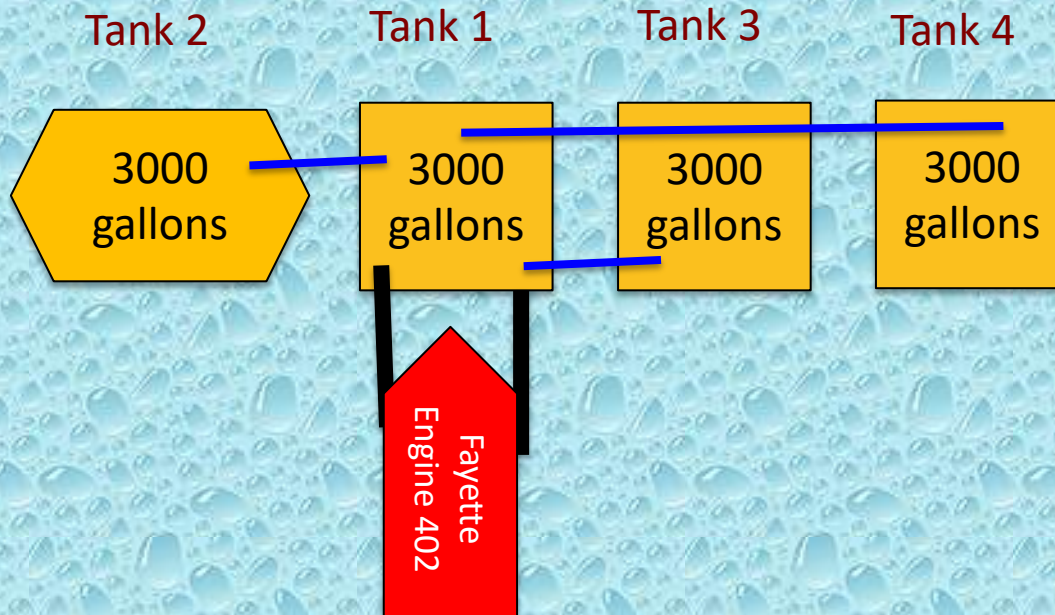


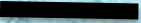

# Dump Site Operations



By the 46-minute mark, four dump tanks were in use and flow was moved to 1000-gpm.

# Dump Site Layout



-  Suction Hose
-  Jet Siphon



# The Fill Sites

- For this drill – two fill sites were used; both located at farm ponds.
- The fill sites both provided about a 6.0-mile round trip for the units hauling water.
- The ponds had ample water volume to support the drill and access was not a problem.
- A 1250 gpm and a 1500 gpm pumper were used at the ponds to support the two tanker loading stations.

# Fill Site #1



Seneca Falls Engine 1403 (1500 gpm) drafts from the pond using a dry fire hydrant and loads tankers using 4-inch LDH..



# Fill Site #2



Canoga Engine 302 (1250 gpm) drafts from the pond using a dry fire hydrant and loads tankers using 4-inch LDH.

# The Results

- The drill was stopped at the 90-minute mark.
- Water flow was interrupted once for about 90 seconds at the 21-minute mark during the change-over of a suction line.
- An estimated 58,250 gallons of water were flowed during the drill producing an average flow rate of 698 gpm.
- During the latter part of the drill a peak flow of 1,000 gpm was attained for about 15 minutes.



# The Lessons Learned

- At this drill, crews chose to go right to a dump tank operation and were able to get the 1<sup>st</sup> dump tank up and running by the 5-minute mark.
- The interruption in water flow occurred early in the drill as crews were working to bring an additional suction on-line. A control valve was inadvertently left closed.

# The Lessons Learned

- As the flow increased, additional suction lines were used to improve intake so that the flow could increase without impacting jet siphon operations.
- Another issue that arose with the water transfer process was the “giving up” of a couple jet siphons to another pumper and those jet siphons not being flowed on a consistent basis.



# 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 of the tankers had the same fill connection which allowed the rigs to get filled and be back on the road in little 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 Seneca County Office of Emergency Services and the Seneca County Chiefs Association for sponsoring and the Fayette FD for hosting the seminar.





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