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Waverly-Barton Fire District
Waverly, New York

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
June 8, 2025
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

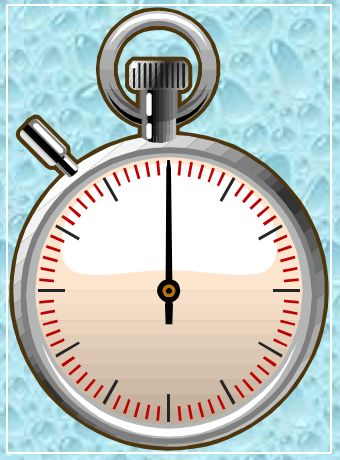
- The 2-day seminar started with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the Waverly-Barton fire station.
- Once the classroom part was over, the seminar continued with 8 hours of practical work on fill-site and dump site operations.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

The 2-hour Water Supply Drill

- The tanker shuttle drill was held on June 8th at a local auto auction facility.
- 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**
Waverly	Engine 1302	1500 gpm	1000 gal	NA
Waverly	Tanker 1311	1250 gpm	3000 gal	3000 gal
Sayre	Engine 2	1750 gpm	1000 gal	NA
Tioga Center	Tanker 1121	1250 gpm	2000 gal	2500 gal
Tioga Center	Tanker 1122	1250 gpm	3000 gal	3000 gal
Litchfield	Tanker 26T1	200 gpm	2200 gal	2100 gal
Athens Twp	Tanker 24T1	500 gpm	2200 gal	2100 gal
Community	Tanker 2461	1500 gpm	2500 gal	NA
Ulster	Tanker 17T4	250 gpm	2000 gal	2000 gal
Athens Twp	Engine 24E1	1500 gpm	1500 gal	NA
Lockwood	Tanker 1921	250 gpm	2500 gal	2500 gal

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

The Drill Begins

The drill started with crews executing a rural hitch operation using a 5” double-clappered siamese. Tanker 1311 arrived on the scene and went to work supporting the siamese that was already in place simulating an attack pumper that had laid out 5-inch supply hose. At the 2-minute mark, Tanker 1311 started water flow at around 500 gpm.

Dump Site Operations

Tanker 1311's driver executed the "rural hitch" by himself and without incident. Meanwhile the dump site pumper (Engine 1302) had arrived and was going to work on building out a dump tank operation.

Dump Site Operations

The dump site crew went to work collecting equipment and building out a 2-dump tank arrangement in preparation for transitioning over from the rural hitch operation.

Dump Site Operations

Meanwhile, additional arriving tankers continued to support the rural hitch until such time the dump site was ready for the first load of water.

Dump Site Operations

The dump site crew is shown here around the 12-minute mark connecting the pumper's supply line (red) to the Siamese in preparation for the transition.

Dump Site Operations

With two dump tanks set and the pumper ready to draft, all that is needed is a load of water.

Dump Site Operations

The first load of water got dumped by Tioga Tanker 1122 around the 18-minute mark and the transition to dump tank operations began.

Dump Site Operations

Shortly after dump site operations began the folks changed out an under-performing suction strainer and put a 6-inch TFT low-level strainer in its place. They did this without ever shutting down the flow.

Dump Site Operations

By the 39-minute mark, three dump tanks were now in operation as were two jet siphon-style water transfer devices.

Dump Site Operations

By the one-hour mark flow was at 1000 gpm and jet siphon control was removed from the pump operator and placed next to the dump tanks.

Dump Site Operations

Also around the one-hour mark a 2-1/2-inch suction line (with a low-level strainer) was added to the operation from the driver's side of the rig.

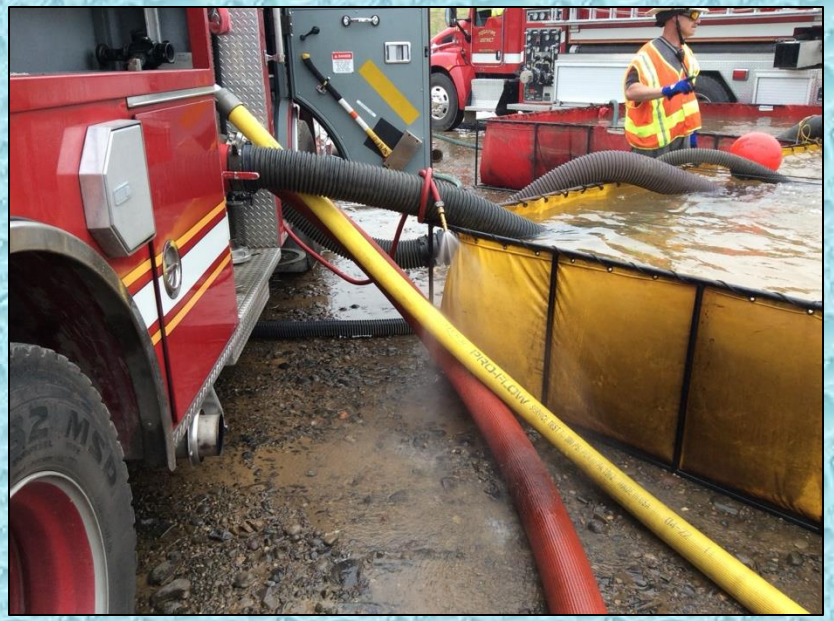
Dump Site Operations

About 20-minutes later the crew was able to add a second, 6-inch suction line; it was outfitted with a barrel strainer. The additional suction line allowed the pumper to move to a 1500 gpm flow and run three jet siphon devices.

Dump Site Operations

The three suction lines were a big improvement to the overall performance for this 25-year old 1500 gpm pumper.

Dump Site Operations

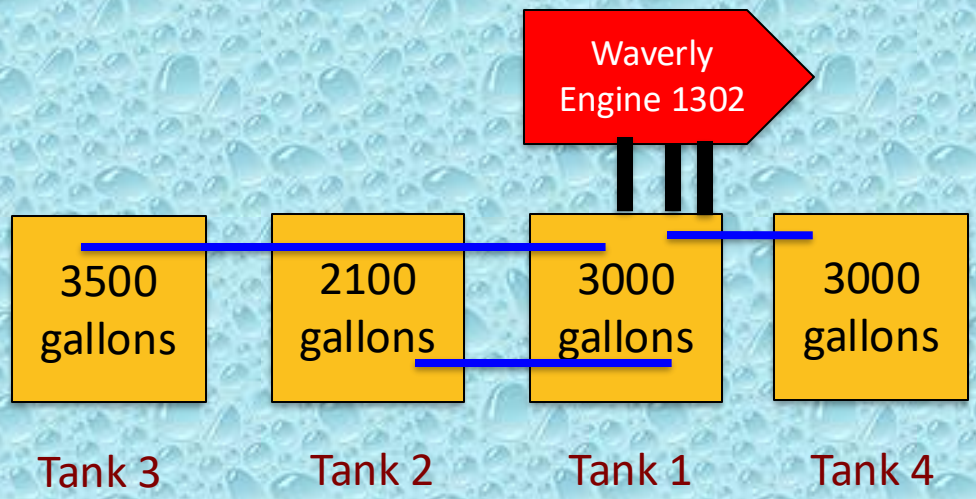


The dump site became a busy place during the final 30-minutes of the drill as everyone hustled to keep the tanks full and the water flowing.

Dump Site Operations

A four-dump tank arrangement was the final layout that supported a peak flow of 1663 gpm!

Dump Site Layout



Suction Hose

Jet Siphon

The Fill Sites

- For this drill – two fill sites were used – one on Cayuta Creek and one a fire hydrant at the Waverly-Barton fire station.
- The fill sites both provided 3.5-mile and 2.0-mile round trips respectively for the units hauling water.
- Both sites had ample water volume to support the drill, and access was not a problem.
- A 1500 gpm pumper was used at the creek fill site; a 1750 gpm pumper at the hydrant fill site.

Cayuta Creek Fill Site

Athens Twp 24E1 (1500 gpm) was used at the creek fill site. Three portable pumps were used to support and ”open relay” operation where water was pumped from the creek into a dump tank and then drafted and loaded into tankers.

Cayuta Creek Fill Site

The combined flow of the portable pumps was enough to allow the fill-site pumper to load tankers at a rate of just under 1000 gpm.

Hydrant Fill Site

Sayre Engine 2 (1750 gpm) took in 5-inch supply lines from the fire hydrant and was able to support two loading stations on the firehouse apron. The fire hydrant provided over 2000 gpm which allowed Engine 2 to then load two tankers at a time when the need arose.

The Results

- The drill was stopped at the 2-hour mark.
- Water flow was interrupted a few times but quickly restored each time.
- An estimated 105,250 gallons of water were flowed through during the drill producing an average flow rate of 956 gpm.
- For the last 60-minutes of the drill a flow of 1,000 gpm or greater was supplied.
- For the last 5-minutes, a flow of 1,663 gpm was supplied!

The Lessons Learned

- At this drill, crews chose to use a rural hitch operation to get things started.
- Using the rural hitch gave the crews time to get a dump tank set-up without the added pressure of having to draft and flow water right away.
- Once the first dump tank was up and running the operation was only interrupted once.

The Lessons Learned

- As the flow increased, additional suction lines were added as were additional dump tanks.
- The dump site pumper, Engine 1302 was able to supply a peak flow of 1663 gpm to the simulated fire ground and feed water to three jet siphons.

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, three portable pumps supplied all of the water needed at one fill site, hence showing their versatility in the rural setting.

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.

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 Waverly-Barton Fire District for sponsoring and hosting the seminar.

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For more information contact us at
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