www.GotBigWater.com

Valley Shore Mutual Aid Association
Killingworth, Connecticut

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
August 9, 2026
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

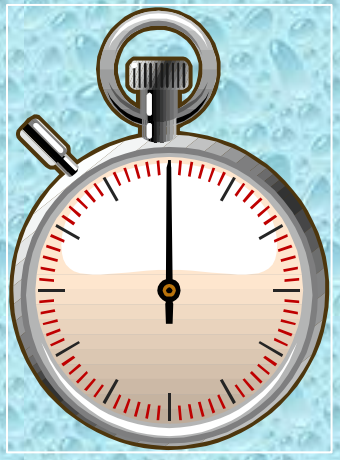
- The 2-day seminar started with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the Haddam Killingworth Middle School.
- Once the classroom part was over, the seminar continued with 8 hours of practical work on fill-site and dump site operations.
- The program concluded with the 2-hr ISO tanker shuttle exercise and program review.
- Seminar participants were from the Valley Shore Mutual Aid Association and surrounding area.

The 2-hour Water Supply Drill

- The tanker shuttle drill was held on August 9th at the Haddam Killingworth Middle School.
- 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**
North Madison	Tanker 10-68	1500 gpm	3000 gal	3500 gal
Essex	Engine 5	2250 gpm	300 gal	2500 gal
Essex	Engine 2	1500 gpm	750 gal	NA
Middlefield	Engine 3	1750 gpm	500 gal	NA
Middlefield	Tanker 5	1250 gpm	2700 gal	3000 gal
Clinton	Engine 953	1500 gpm	1000 gal	NA
Clinton	Tanker 961	500 gpm	2500 gal	(2) 2500 gal
Clinton	Tanker 962	1000 gpm	2500 gal	(2) 3000 gal
Essex	Tanker 663	500 gpm	1800 gal	2100 gal
Durham	Engine 1	2250 gpm	300 gal	NA
Durham	Tanker 1	500 gpm	2500 gal	(2) 2500 gal
Guilford	Tanker 4	1500 gpm	3500 gal	2500 gal
Westbrook	Tanker 3	1250 gpm	3000 gal	3000 gal
Old Lyme	Tanker 2	500 gpm	2000 gal	3000 gal
Old Lyme	Hose Tender 38	1500 gpm	NA	NA
Haddam	Tanker 2	1000 gpm	2800 gal	3000 gal
Haddam	Engine 1	1500 gpm	1000 gal	NA
Killingworth	Engine 1	1500 gpm	1000 gal	NA

- *The participants for the drill were from several different fire departments in the Valley Shore Mutual Aid Association and the water hauling apparatus was representative of the type of water supply support that would respond to a structure fire in the Killingworth area.*

The Drill Begins

The drill started with Essex Engine 5 laying out dual, 5-inch supply lines. The red line was 700-ft and supplied a pumper; the yellow line was 900-ft and supplied a quint.

Rural Hitch Operations

North Madison's tanker was first to arrive and went to work supplying the "rural hitch" at 300 gpm.

Rural Hitch Operations

A 5-inch “jumbo” wye was used as the rural hitch appliance at the end of the red supply line – which was feeding the 1500 gpm pumper on the fire ground.

Dump Site Operations

Around the 15-minute, Killingworth Engine 1 (1500 gpm) arrived, and work began on building out a dump tank operation.

Dump Site Operations

Flow was moved to 500 gpm at the 15-minute mark and then to 625 gpm once dump tanks were operational.

Dump Site Operations

By the 56-minute mark, flow was moved to 1500 gpm. Three dump tanks were operational and more were being built out so that the two aerial towers could be supplied at the same time.

Dump Site Operations

A separate pumper was used to support water transfer operations. This pumper used two dump tanks to support the water transfer process.

Dump Site Operations

After a mechanical issue with the water transfer pumper, Essex Engine 2 was brought in to take over the water transfer operation.

Dump Site Operations

By the 70-minute mark, flow was moved to 3000 gpm. Essex Engine 5 was deployed to support the second aerial tower. Engine 5 used a 3-dump tank set-up to support the operation.

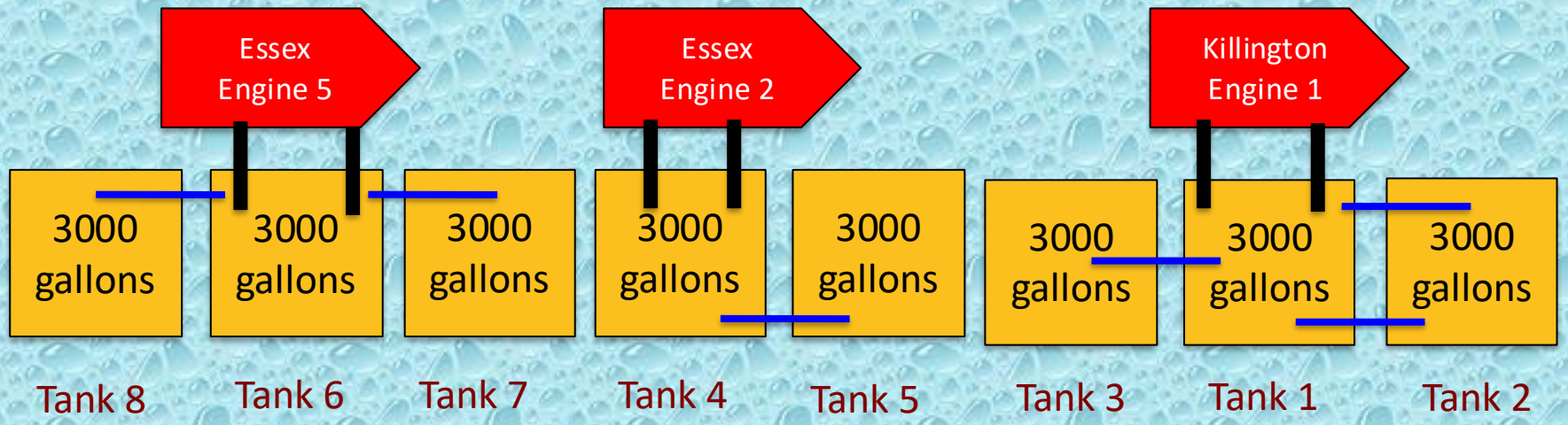
Dump Site Operations

At the peak of operation, flow pushed the 3000 gpm+ range using a total of eight dump tanks and three pumpers.

Dump Site Operations

The fireground at peak flow! (Photo supplied by FillTheBox Fire Photography)

Dump Site Layout



Suction Hose

Jet Siphon

The Fill Sites

- For this drill – two fill sites were used – both at a nearby pond on Lovers Lane.
- The sites provided about a 2.8-mile roundtrip for the units hauling water.
- The pond had ample water volume to support the drill, and access was not a problem.
- A 1750 gpm pumper and a 2250 gpm were used at the pond.

Pond Fill Site

Middlefield Engine 3 (1750 gpm) and Durham Engine 1 (2250 gpm) both took draft from the pond. At first glance, the pond looked shallow and full of vegetation; but there was at least 4-ft of water depth, and both engines loaded tankers easily at the 1000 gpm target fill rate.

Pond Fill Site

5-inch LDH was used to supply manifold appliances that were then used to control the loading of tankers.

Pond Fill Site

Just about every tanker loaded using twin, 3-inch lines. The standardization of fill lines/connections allowed the rigs to quickly get back on the road hauling water.

Pond Fill Site

One of the challenges at the fill site was the limited road space with which to work. The road had no shoulders, so pumper placement and tanker parking became very important.

Pond Fill Site

Crews did a really great job of getting the tankers loaded and back into the shuttle.

Pond Fill Site

As with any large-scale tanker loading operation, the “loader” position is critical to getting rigs loaded in a timely manner. This position is really important, especially as the operation grows in size.

The Results

- The drill was stopped at the 120-minute mark.
- Water flow was interrupted once for about 3-minutes around the 17:30-minute mark due to a valve malfunction on one of the tankers.
- An estimated 145,000 gallons of water were flowed from the dump site during the drill producing an average flow rate of 1394 gpm.
- Around the 70-minute mark, flow peaked at 3000 gpm for about 20-minutes.

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 ran smooth for the most part.

The Lessons Learned

- As the flow increased, additional suction lines were added as were additional dump tanks.
- Water transfer was handled by a separate 1500 gpm pumper which freed up the other two pumpers to do nothing but support the fireground flow.
- The 8 dump tanks were operated without flaw; no easy feat given the amount of apparatus involved in the event.

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, every tanker loaded in excess of 1000 gpm and just about every rig used the same type of fill line connection.

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. All the engines and tankers participating in the drill were very well-outfitted with hose and 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 DEMHS Region 2 for sponsoring and the Valley Shore Mutual Aid Association for hosting the seminar.

www.GotBigWater.com

This program was developed by
GBW Associates, LLC

For more information contact us at
thebigcamel@gotbigwater.com