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Stratham Fire Department
Stratham, New Hampshire

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
October 4, 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 Stratham 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 the Stratham area.

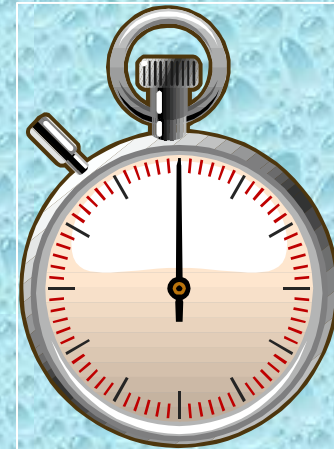
The 2-hour Water Supply Drill

- The tanker shuttle drill was held on October 4th at the Stratham Memorial 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



Event Summary

Tanker Shuttle Exercise
Stratham, NH
10/4/2026

Participants

Department	Unit	Pump Size	Tank Size	Dump Tank
Stratham	Engine 1	1500 gpm	1200 gal	NA
Stratham	Tanker 8	2000 gpm	3000 gal	3000 gal
Hampton Falls	Engine 8	1500 gpm	1000 gal	NA
Hampton Falls	Tanker 4	1250 gpm	2500 gal	2500 gal
Newfields	Engine 3	1500 gpm	2250 gal	NA
Newfields	Engine 4	1500 gpm	1000 gal	NA
Kennebunk	Tanker 22	750 gpm	1800 gal	2000 gal
Greenland	Tanker 1	1250 gpm	3000 gal	3000 gal
Kensington	Tanker 4	1500 gpm	3000 gal	3000 gal

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

The Drill Begins



The drill started with crews executing a rural hitch operation using a 4-inch double-clappered Siamese. Stratham Tanker 8 arrived first at the hitch and went to work setting up to pump the line.

Rural Hitch Operations



While the rural hitch was being supplied by tankers, Stratham Engine 1 arrived and that crew went to work building out a two-dump tank operation.

Dump Site Operations



Water flow was kept to around 500 gpm during the rural hitch operation. As additional tankers arrived, they prepared to pump the hitch until the dump tanks could be brought on-line.

Dump Site Operations



Greenland Tanker 1 was the next tanker to arrive, and the crew began supporting the rural hitch just as Tanker 8 was nearing empty.

Dump Site Operations



By the 19-minute mark, the dump site was ready for water and Hampton Falls Tanker 4 was the first tanker to dump its water. Being a rear-dumping tanker only, the rig had to be backed into the first dump tank to offload. All future trips had the tanker dumping in the farthest dump tank.

Dump Site Operations



Kensington Tanker 4 was next and because the first tanker was still dumping, Tanker 4 also had to back into position at the dump tank. All future loads were side-dumped.

Dump Site Operations



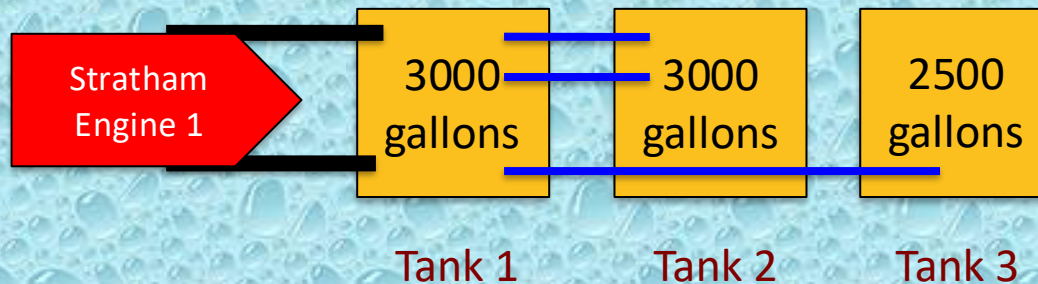
With flow at 750 gpm, work began on building out a third dump tank.

Dump Site Operations



By the 52-minute mark, three dump tanks were in operation and flow was near 750 gpm. Stratham Engine 1 was using twin, 6-inch suction lines and also supplying three jet siphon transfer devices.

Dump Site Layout



— Suction Hose
— Jet Siphon

The Fill Sites

- For this drill – two fill sites were used – both were ponds outfitted with a dry fire hydrant.
- The sites provided about a 4-mile and 6-mile round trip 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 each site.

Heron Way Fill Site



Newfields Engine 4 took draft from a pond dry fire hydrant on Heron Way and used 4-inch LDH to load the incoming tankers.

Heron Way Fill Site



A number of 4-inch appliances were used to streamline the loading operations and provide a means for easy draining when breaking the fill lines.

Heron Way Fill Site



Tankers were loaded right around the 1000 gpm target fill rate at this site. The location provided a 4-mile roundtrip for the rigs hauling water.

Circle Fill Site



Hampton Falls Engine 8 took draft at the pond dry fire hydrant at this site which was located at a large, traffic circle-like location near the Stratham fire station. The location provided about a 6-mile roundtrip for units hauling water. The crew was also able to load tankers at the 1000 gpm target fill rate.

The Results

- The drill was stopped at the 85-minute mark.
- Water flow was interrupted a couple times due to not enough tankers hauling water given the flow, travel distances, and traffic conditions.
- An estimated 43,085 gallons of water were flowed through the dump site pumper during the drill producing an average flow rate of 566 gpm.
- A peak flow of 750 gpm was supplied for about 26-minutes during the latter half of the drill.

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 flow interruption occurred a few times because there were only 6 tankers hauling water and traffic conditions were less than optimal.
- The dump site pumper, Stratham Engine 1, was able to supply a peak flow of 750 gpm to the simulated fire ground and also 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, the tankers were able to load using 4-inch LDH and Storz connections which made for smooth loading operations and getting the tankers back on the road in short order.

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 Stratham Fire Department for sponsoring and hosting the seminar.



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