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Wheatland County Fire Services Strathmore, Alberta

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
July 20, 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 Wheatland County Services Complex.
- 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 water shuttle exercise and program review.
- Seminar participants were from Wheatland County.

The 2-hour Water Supply Drill

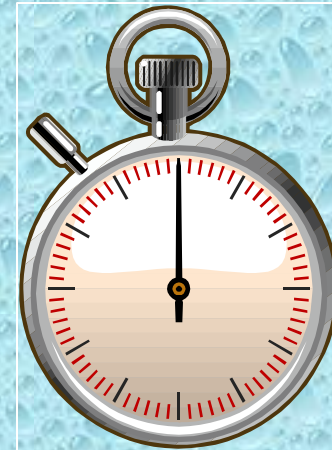
- The water shuttle drill was held on July 20th on Range Road 230 in Standard, Alberta.
- The drill attempted to replicate the 2-hour Water Supply Delivery Test used by ISO (USA) in their evaluation of fire department water supply capabilities.
- While ISO no longer uses the physical demonstration of 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 tender shuttle flow capabilities.*



The Fire Underwriters Survey's (CA) Superior tender Shuttle Service rating uses testing practices similar to ISO.

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
Standard	Tender 71
Standard	Tender 77
Strathmore	Tender 1
West Wheatland	Engine 9
Siksika	Tender 1
Carseland	Tender 8
Rockyford	Tender 58
Gleichen	Engine 34

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

The Drill Begins



The drill started with Rockyford Tender 58 arriving and going to work as the attack tender (no pumper was available). The plan was to supply the tender using a rural hitch set-up and some 5-inch LDH. No double-clappered Siamese was available, so a single-clappered one was used in conjunction with a gate valve.

Rural Hitch Operations



Standard Tender 77 arrived around the 7-minute mark and supplied water to Tender 58 using the rural hitch and some 65 mm (2-1/2") hose.

Rural Hitch Operations



Standard Tender 71 was the next arriving tender and took position to support the rural hitch. Gleichen Engine 34 also arrived and positioned to begin build out of a dump site.

Rural Hitch Operations



As Tender 71 takes over the rural hitch, flow is moved to 500 gpm. Two more tenders are enroute and a dump tank operation is being built.

Rural Hitch Operations



Crews work to get the first dump tank (3000-gal) set up for a load of water. A barrel strainer was used because it was the best performing strainer available.

Rural Hitch Operations



Siksika Tender 1 (left) and Strathmore Tender 1 (right) continue to support the rural hitch operation at 625 gpm while work continues on the dump site.

Dump Site Operations



Around the 55-minute mark, the first load of water is dumped in the dump tank and the transition from rural hitch to dump tanks ops is completed.

Dump Site Operations



Dump tank operations continue and crews work to expand the site to include a second dump tank.

Dump Site Operations



Around the 60-minute mark, a second dump tank (2500 gal) is operational and water transfer operations are underway.

Dump Site Operations



Twin, 5-inch jet siphon water transfer devices were used to support the drill. The devices were both powered by Engine 34.

Dump Site Operations



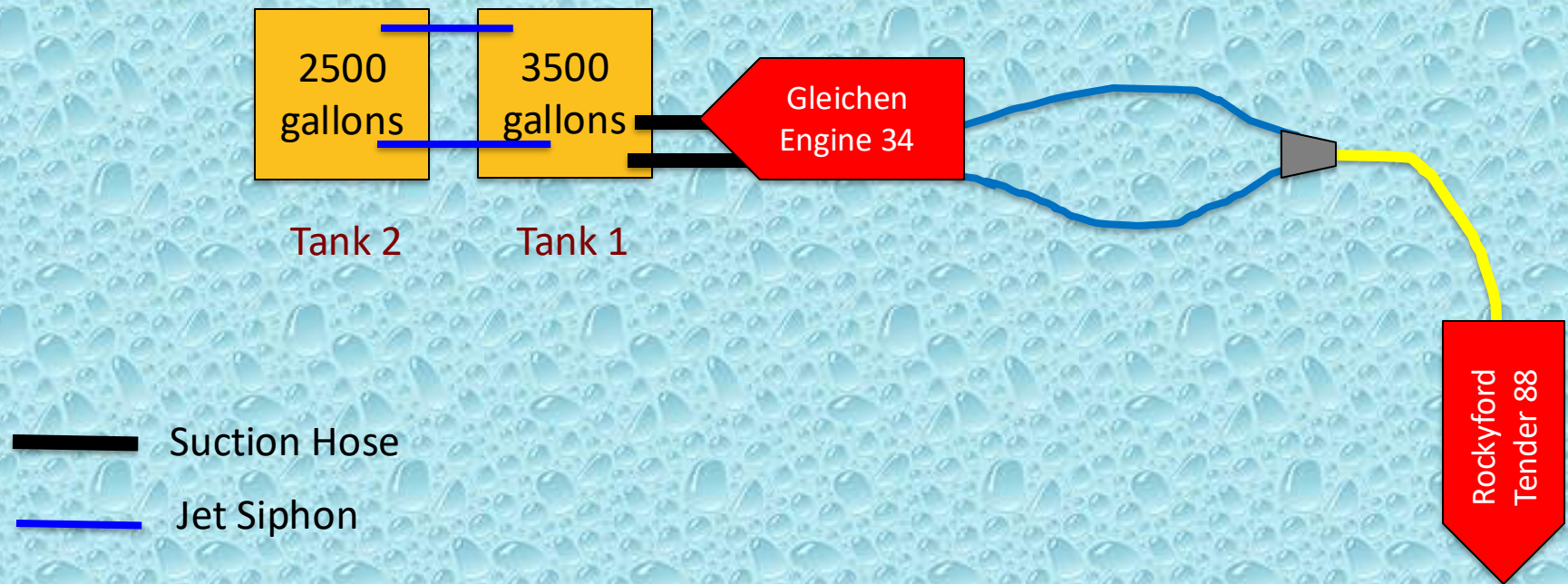
Around the 90-minute mark, Engine 34 supplied a second line to the rural hitch appliance and flow was pushed to over 1000 gpm.

Dump Site Operations



At the peak flow of the operation, two, TFT Blitzfires and one, 125 gpm TFT bumper turret were used at Tender 58.

Dump Site Layout



The Fill Site

- For this drill – one fill site was used; an irrigation canal on Range Road 230.
- The fill site provided about a 6.2-kilometer round trip for the units hauling water.
- The canal had ample water volume to support the drill and access was not a problem.
- A 4,700 lpm (1250 gpm) pumper was used at the canal to support the tender loading station.

Canal Site



Wheatland West Engine 9 takes suction out of the WID irrigation canal and prepares to load tenders.

Canal Site



Tenders were loaded in a variety of ways with some taking in additional water through their fire pump.

Canal Site



3-inch cam lock style fittings were used on all the tenders that were equipped with threaded fill connections.

The Results

- The drill was stopped at the 2-hour mark.
- Water flow was never interrupted!
- An estimated 82,000 gallons of water were flowed through the attack tender during the drill producing an average flow rate of 707 gpm.
- For the last 30-minutes of the drill a flow of 1,000 gpm or greater was supplied.
- A peak flow of 1,250 gpm was achieved for a short period of time.

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 flawlessly.

The Lessons Learned

- As the flow increased, additional suction lines were added as was an additional dump tank.
- The dump site pumper, Engine 34 was able to supply a peak flow of 1250 gpm to the simulated fire ground and feed water to two jet siphons due to using two suction intake lines.

The Lessons Learned

- A tender fill-site needs to run like a NASCAR pit stop. Anything that slows down the loading of tenders is going to reduce the efficiency of the tender shuttle.
- At this drill, there was some variance in how the tenders loaded – meaning the fill connection. Had fill connections been the same for every tender, flow most certainly could have been higher at the dump site.

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 tender – 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 Wheatland County Fire Services for sponsoring and hosting the seminar.



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