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County of Grande Prairie Regional Fire Service  
Grande Prairie, Alberta

Rural Water Supply Operations Seminar  
2-hr Water Supply Drill  
July 3, 2015  
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 Entrec Centre just south of Grande Prairie.
- Once the classroom part was done, the seminar continued with 7 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 Grande Prairie County and other areas in Alberta and British Columbia.

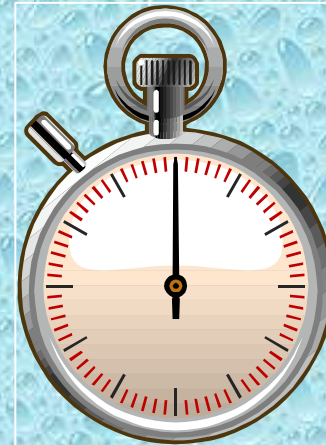
# The 2-hour Water Supply Drill

- The tanker shuttle drill was held on July 3<sup>rd</sup> at the Entrec Center.
- The drill attempted to replicate the 2-hour Superior Tanker Shuttle Service -Water Supply Delivery Test used by FUS in their evaluation of fire department water supply capabilities.
- While everyone in the fire service may not agree on FUS evaluation of fire department capabilities, the 2-hour test is still a reasonable standard by which fire departments can compare their water supply operations.



# The FUS Test

- The FUS 2-hour Water Supply Delivery Test for a Superior Tanker Shuttle Accreditation has two critical time segments:
  - 0:00 to 5:00 minutes
  - 5:01 to 120:00 minutes





# FUS 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.



# FUS Test *5:01 to 120:00 minutes*



- For dwelling target hazards, at the 5-minute mark, a flow of at least 1,000 lpm must be started - and it must be sustained for the remainder of the drill – which is 120 minutes.
- For commercial property target hazards, a flow of at least 2,000 lpm must be started and sustained for a total of 60 minutes.



# Water Supply Drill Participants



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



# Drill Participants

- Grande Prairie County Engine 11
  - 750 gpm pump w/1,000 gal tank
- Grande Prairie County Engine 1402
  - 750 gpm pump w/1,000 gal tank



# Drill Participants

- Grande Prairie County Tender 201
  - 1,250 gpm pump w/3,500 gal tank
- Grande Prairie County Tender 601
  - 350 gpm pump w/2,000 gal tank





# Drill Participants

- Grande Prairie County Tender 1701
  - 1,000 gpm pump w/3,500 gal tank



# The Drill Begins



Engine 1402 served as the first-arriving engine with a crew of four people. The timer was started when the engine came to a stop at the dump site location. The crew went to work stretching a Blitzfire line and getting set up to draft from a dump tank.



# Dump Site Operations



Tender 1701 arrived very shortly after the first engine. The tender's crew of two helped deploy the 3,500-gallon dump tank. Once Engine 1402 was ready to draft, Tender 1701 dumped its 3,500 gallons of water into the dump tank and left for the fill site. At the 5-minute mark, water flow was started at 300 gpm.

# Dump Site Operations



Tender 201 was the second tender to arrive on the scene and its crew helped to deploy its 3,500-gallon dump tank and then dump the tender's 3,500 gallons of water before heading to the fill site.



# Dump Site Operations



Just shy of the 14-minute mark, two dump tanks were down and in operation. Crews were working to expand the operation further in anticipation of using a third dump tank and increasing the flow.

# Dump Site Operations



Only three tenders were used in this shuttle operation – which made it quite challenging to keep water flowing.



# Dump Site Operations



At around the 20-minute mark, flow was moved to 400 gpm using the Blitzfire equipped with smooth bore tips so that a handheld pitot could be used to accurately measure flow..

# Dump Site Operations



Engine 1402 had an interesting intake arrangement, in addition to the traditional steamer inlets, it also had two, 3-inch suction inlets on the front. The crew is shown here adding a 3-inch suction to bolster the 750 gpm pump's ability.



# Dump Site Operations



A third dump tank was eventually deployed, however it was just 1,000 gallons in size. A portable pump was also deployed to run a jet siphon, but the pump could not generate sufficient pressure to operate a jet siphon.

# Dump Site Operations



This photo taken around the 24-minute mark shows the dump tank arrangement. The engine used two suction lines ( 4-1/2" and a 3") to support the operation.



# Dump Site Operations



At the 47-minute mark, flow was increased to 600 gpm using the Blitzfire and a 65mm attack line with a variable flow nozzle set to 250 gpm.

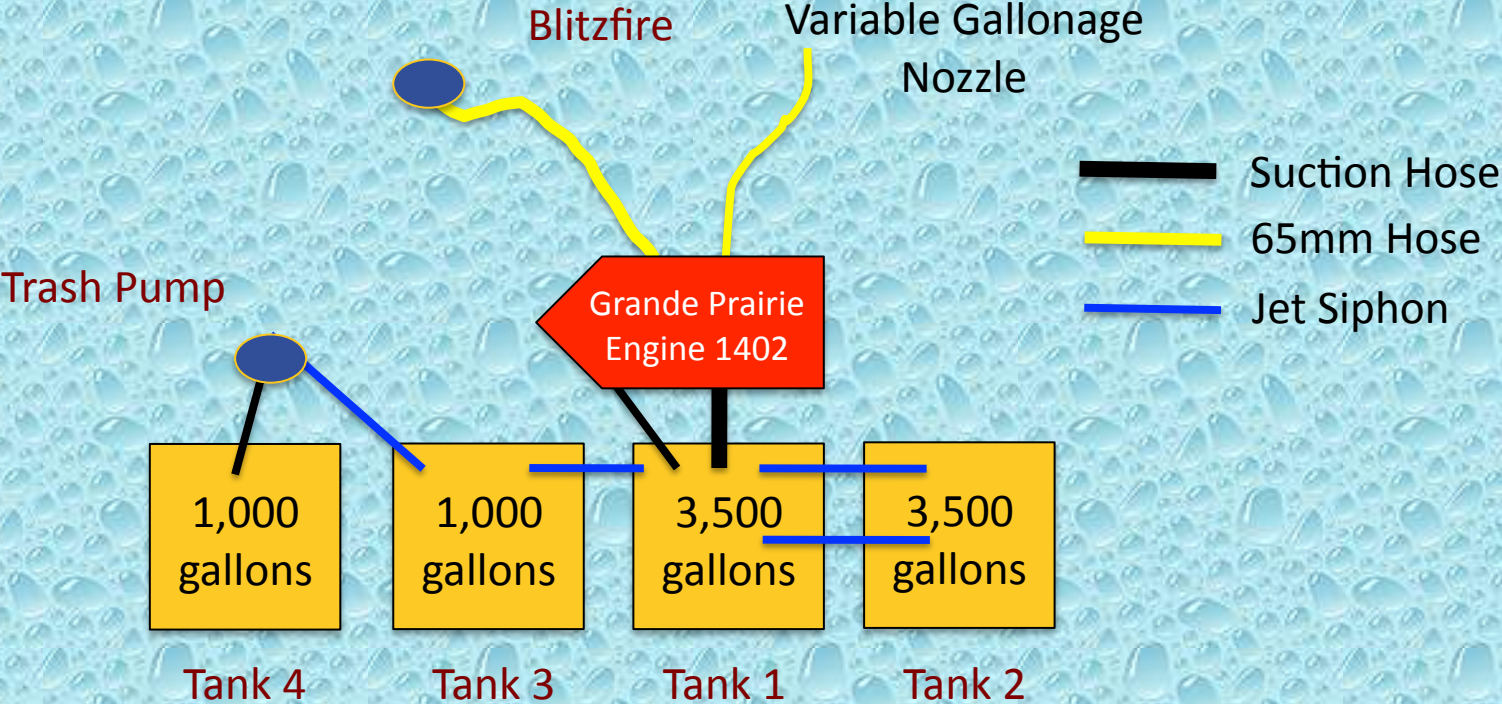
# Dump Site Operations



In order to transfer water at a sufficient rate, dual jet siphons were needed between the two, large dump tanks.



# Dump Site Layout



# The Fill Sites

- For this drill – two fill sites were used.
- Both sites utilized municipal fire hydrants as the water supply source and the hydrants provided about a 5.0 km roundtrip for the rigs hauling water.
- Both hydrants provided ample water volume to support the drill and access was not a problem.
- One hydrant was used without a pumper on the hydrant.
- The second hydrant used a 750 gpm pumper to load tenders.



# Fill Site Operations



At this fire hydrant, the tender crews simply loaded their tenders directly off of the hydrant using two, 65mm lines. This site was not as fast as the second fill site, but the fill rate was respectable.

# Fill Site Operations



Engine 11 (750 gpm) was used at this hydrant and tenders were loaded using a single, 65mm hose line. Engine 11 was supplied by two, 65mm hose lines from the fire hydrant. This site loaded tenders much quicker.



# The Results

- The drill was stopped at the 110-minute mark.
- Water flow was interrupted four times during the drill.
- An estimated 42,650 gallons of water were flowed through the attack engine during the drill producing an average flow rate of 496 gpm.

# The Lessons Learned

- At this drill, the initial fill site was not set-up quite as had been planned and that resulted in an interruption of flow back at the dump site – but that is a “real life” scenario.
- Crews worked hard and were able to make the dump site functional and in the end, the site supported a peak flow of 700 gpm.
- The use of different size suction hose between rigs requires a good collection of adaptors.



# 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, all tenders did not have the same type or size of fill connection – which resulted in the need for adaptors at the fill sites as well.

# The Lessons Learned

- The engine crew working at the hydrant/engine fill site did a really good job of overcoming adverse conditions during the early phase of the drill. They transitioned into a “well-oiled pit stop crew.”
- 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.



# The Lessons Learned

- The use of additional suction lines allowed the 750 gpm dump site pumper to increase its pumping capacity so that jet siphons could be run while supplying 700 gpm to the Blitzfire and handline.
- Not all portable pumps generate sufficient pressure to operate a jet siphon.

# 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 County of Grand Prairie regional Fire Service for sponsoring and hosting this seminar.



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