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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 5, 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

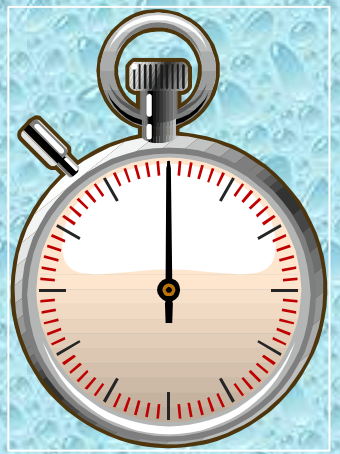
- The 2-day seminar started with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the Entrec Centre just south of Grande Prairie.
- Once the classroom part was done, the seminar continued with 8 hours of practical work on fill-site and dump site operations.
- The program concluded with the 2-hr FUS 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 5th also 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 ten different fire departments in the Grande Prairie Area (plus a few folks from much farther away), and the water hauling apparatus was representative of the type of water supply support that would respond to a structure fire in the County of Grande Prairie.*

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

- Grande Prairie County Engine 1701
  - 2,000 gpm pump w/1,000 gal tank

The Drill Begins

Engine 1402 was the first unit to arrive on the scene. The timer was started when the engine came to a stop. The crew then had 5-minutes before water flow had to be started at 1,000 lpm (250 gpm).

Dump Site Operations

Tender 1701 was the first tender to arrive on the scene and it arrived right behind Engine 1402. The crew deployed the tender's dump tank and was ready to off-load its 14,000 liters (3,500 gal) of water once the engine was ready to draft.

Dump Site Operations

The first dump tank was set up very quickly and the engine was ready to draft within 3-minutes of arrival. However, due to an air leak, obtaining a draft was delayed and thus, so was establishing the initial flow.

Dump Site Operations

At the 7:45-minute mark, a second tender arrived – Tender 201 from Teepee Creek. This tender brought another 14,000 liters of water and another large dump tank (14,000 liters)

Dump Site Operations

A third tender arrived a few minutes later (Tender 601) bringing with it another 8,000 liters (2,000 gal).

Dump Site Operations

Realizing that they wanted to maximize their flow capability from this engine, the crew began hooking up additional suction lines so that more water could be taken into the pump. Engine 1402 is equipped with dual, 3-inch front suction intakes. The crew is shown in this photo connecting to one of those intakes.

Dump Site Operations

Engine 1701 “hopped” into the shuttle operation by hauling loads of water (4,000 liters). The rig is equipped with a high-flow discharge and the crew used that discharge to pump off the water. They did this when no other tender was available to dump – that way the engine did NOT block out a tender.

Dump Site Operations

A third dump tank was added around the 20-minute mark. Flow was increased to about 2,000 lpm at the 31-minute mark and then again to about 3,000 lpm at the 44-minute mark.

Dump Site Operations

For the drill, only two large tenders were available, which meant that crews had to work with significantly different sized dump tanks. But…they made it work out just fine.

Dump Site Operations

At the peak of the drill, approximately 3,000 lpm were flowed using a Blitzfire and a 65mm handline.

Dump Site Operations

In order to support the 750 gpm flow, multiple jet siphons were needed to transfer the water. In all, four jet siphons were used – all supplied by Engine 1402!

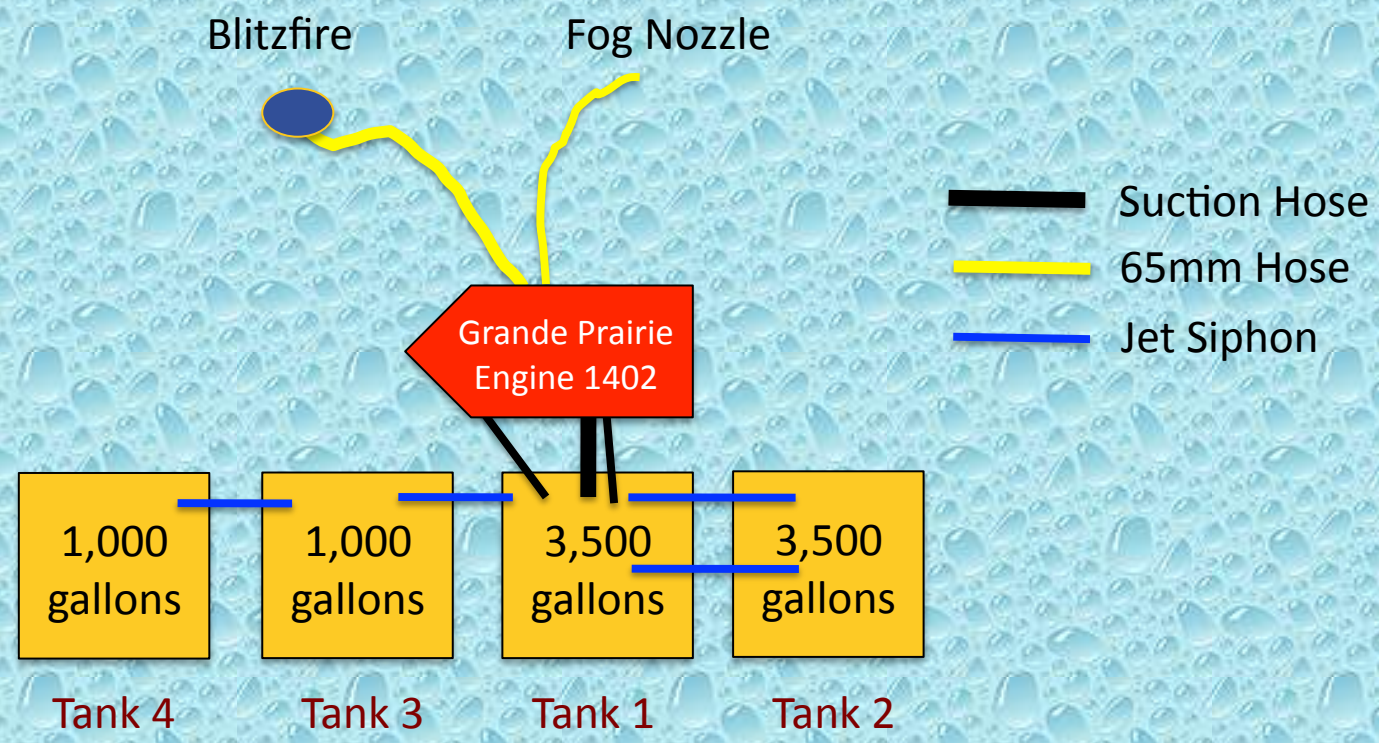
Dump Site Operations

A handheld pitot tube was used to accurately measure the flow during the drill.

Dump Site Operations

Engine 1402's operator was kept quite busy and the pumper was used to its maximum capability. A third suction line was placed into service (not shown here) later on to gain additional intake capability.

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 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 and the other hydrant used a 750 gpm pumper to load tenders.

Fill Site Operations

Engine 11 (750 gpm) and a crew of four personnel operated one of the fill sites using this fire hydrant. The crew did a very good job of supplying water to the engine using dual, 65mm lines and a 100 mm line. The engine crew loaded tenders at over 4,000 lpm and they worked like a “pit stop crew.”

Fill Site Operations

The second fill site used a fire hydrant without an engine. Tenders loaded directly from this hydrant using dual, 65mm lines.

The Results

- The drill was stopped at the 108-minute mark due to time constraints.
- Water flow was interrupted a couple of times during the drill – once because of a train crossing the travel path of the tenders.
- An estimated 204,400 liters of water were flowed through the attack engine during the drill producing an average flow rate of 2,272 lpm.

The Lessons Learned

- At this drill, the dump site pumper was delayed in getting flow started due to an air leak in the suction hose. Once the leak was fixed – flow was established very quickly.
- Engine 1402's operator worked very hard to keep the 3,000 lpm pumper operating at its maximum limit. The pumper needed three suction intakes in order to supply the Blitzfire, 65mm hand line, and the four jet siphons.

The Lessons Learned

- The use of different size suction hose between rigs requires a good collection of adaptors.
- 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

- 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 use of additional suction lines allowed the dump site pumper to increase its pumping capacity so that jet siphons could be run while supplying 3,000 lpm to the Blitzfire and 65mm handline.

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 Grande Prairie Regional Fire Service for sponsoring and hosting this seminar.

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This program was developed by
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