

# Pleasant Valley Water Supply Drill

**2-hr Tanker Shuttle Exercise  
May 20, 2007  
Summary Report**



# Overview

In the Spring of 2007, the Pleasant Valley Community Fire Company (Carroll County) hosted a rural water supply seminar and drill which was sponsored by the Maryland State Fireman's Association's Rural Water Supply Committee and delivered by GBW Associates, LLC of Westminster, MD. This presentation is a summary of the seminar and the drill.

# The Purpose

The purpose of the rural water supply seminar was two-fold. First, the Pleasant Valley VFD has been considering the purchase of a large-capacity tanker and wanted to host a drill to see how such a tanker would fit into their existing water supply operations.

# The Purpose

Second, a water supply drill had not been run in the northern part of Carroll County for quite some time and several departments in the area had expressed interest in participating in such a drill.

# The Seminar

- In order to prepare for the drill, participants attended a 6-hour refresher seminar in late April to review the basics of rural water supply operations. The seminar was delivered at the Pleasant Valley VFD.
- Seminar topics included the history of rural water supply, tanker construction, dump site operations, fill-site operations, and shuttle operations.

# The Drill

- The actual water supply drill was held on May 20, 2007, in Pleasant Valley VFD's first-due area.
- The drill replicated the 2-hour Fire Flow Test used by ISO in their evaluation of fire department water supply capabilities.
- The ISO 2-hour test is a reasonable standard by which fire departments can compare their water supply operations.

# The Drill

- There are three critical time segments of the ISO 2-hour Test:
  - 0:00 to 5:00 minutes
  - 5:01 to 15:00 minutes
  - 15:01 to 120:00 minutes

# The Drill: 0:00 to 5:00 Minutes

- A drill site is selected and the units due to respond on the first-alarm assignment for that site 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 this first 5 minutes, but the crew must be prepared to flow water when the 5-minute mark is reached.



# The Drill: 5:01 to 15:00 Minutes

- At the 5-minute mark, a flow of at least 250 gpm must begin and 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, whatever the flow rate is at that time, that rate must be maintained for the remainder of the 2-hour test.

# The Drill: 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.
- Most of these ISO drills include the simulation of mutual aid response and allow additional water supply units to arrive and assist in the delivery process as they would on a real incident.

# The Participants

*The participants for the Pleasant Valley drill were from five counties and two states and were representative of the type of water supply support that would respond to a fire in the Pleasant Valley response area.*

Participating in the drill were:

- Pleasant Valley Engine 63
  - 1500 gpm pumper w/1000 gal tank
- Pleasant Valley Special Unit 6
  - 1500 gpm pumper w/500 gal tank

# The Participants

- Taneytown Engine Tanker 54
  - 1500 gpm pumper w/ 1500 gal tank
- Taneytown Engine 52
  - 1500 gpm pumper w/ 500 gal tank
- Winfield Engine 142
  - 1500 gpm pumper w/ 1000 gal tank
- Winfield Tanker 14
  - 3500 gal tanker w/ 1500 gpm pump
- Arcadia Engine Tanker 431 (Baltimore Co)
  - 1250 gpm pumper w/ 2500 gal tank

# The Participants

- Littlestown Engine Tanker 20 (Adams Co, PA)
  - 1250 gpm pumper w/2500 gal tank
- Littlestown Brush 20 (Adams, Co, PA)
  - 500 gpm pump w/300 gal tank
- Lake Shore E202 (Anne Arundel Co.)
  - 1500 gpm pump w/3000 gal tank

# The Participants

- Laytonsville Engine Tanker 17 (Montgomery Co.)
  - 1750 gpm pumper w/2000 gal tank
- Sandy Spring Tanker 4 (Montgomery Co.)
  - 3500 gal tanker w/1250 gpm pump
- Clinton Engine 251 (Prince Georges Co)
  - 2000 gpm pumper
- Clinton Engine 252 (Prince Georges Co)
  - 2000 gpm pumper

# The Drill Begins

Pleasant Valley Engine 63 arrives on the scene and the stopwatch is started



Command is established and additional water supply resources are requested

400-ft of 5-inch is laid



A flow of 250 gpm is started at the 4:58 mark.

# E142 Arrives



E142 (Winfield) arrives and begins to set-up the dump site.



# Tanker 14 Arrives

Winfield's Tanker 14 arrives next and supports the fire flow by pumping the LDH manifold while the dump site is being set up.



Tanker 14 was used in this drill to simulate the impact that a Pleasant Valley VFD tanker would have on water supply operations.

# Supporting the Attack



An LDH manifold is used to support the supply line. Of course, the kinks need to be removed!

# The Dump Site is Built



Littlestown Engine Tanker 20 arrives and helps build the site.



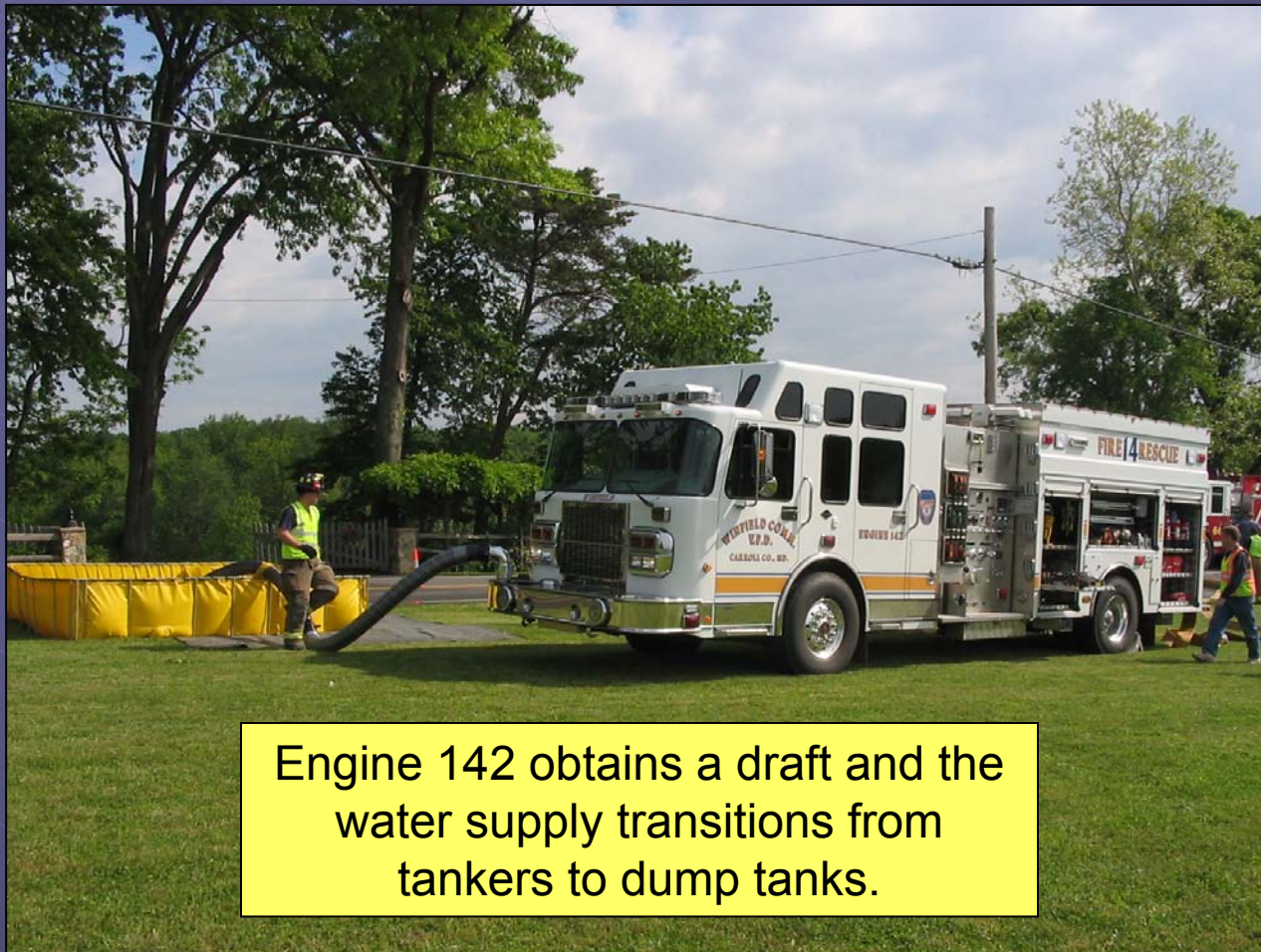
The first tank is set-up and drafting operations are ready.

# Tankers Support the Attack



Taneytown's ET54 arrives on the scene and provides additional water supply support to Engine 63.

# E142 Obtains a Draft



Engine 142 obtains a draft and the water supply transitions from tankers to dump tanks.

# Flow Transitions and Is Increased

At the 15:00 minute mark, the flow is raised to 500 gpm.



# A Second Tank is Ordered



The dump site expands and another dump tank is set-up.

# Additional Tankers Arrive

ET54 supports the primary dump site while the second tank is being set up.





# Dump Operations Expand



More tankers arrive and flow  
is maintained at 500 gpm

# A Third Tank is Put Into Service

Sandy Spring Tanker 4 arrives and dumps;  
meanwhile, a third dump tank is put into service.

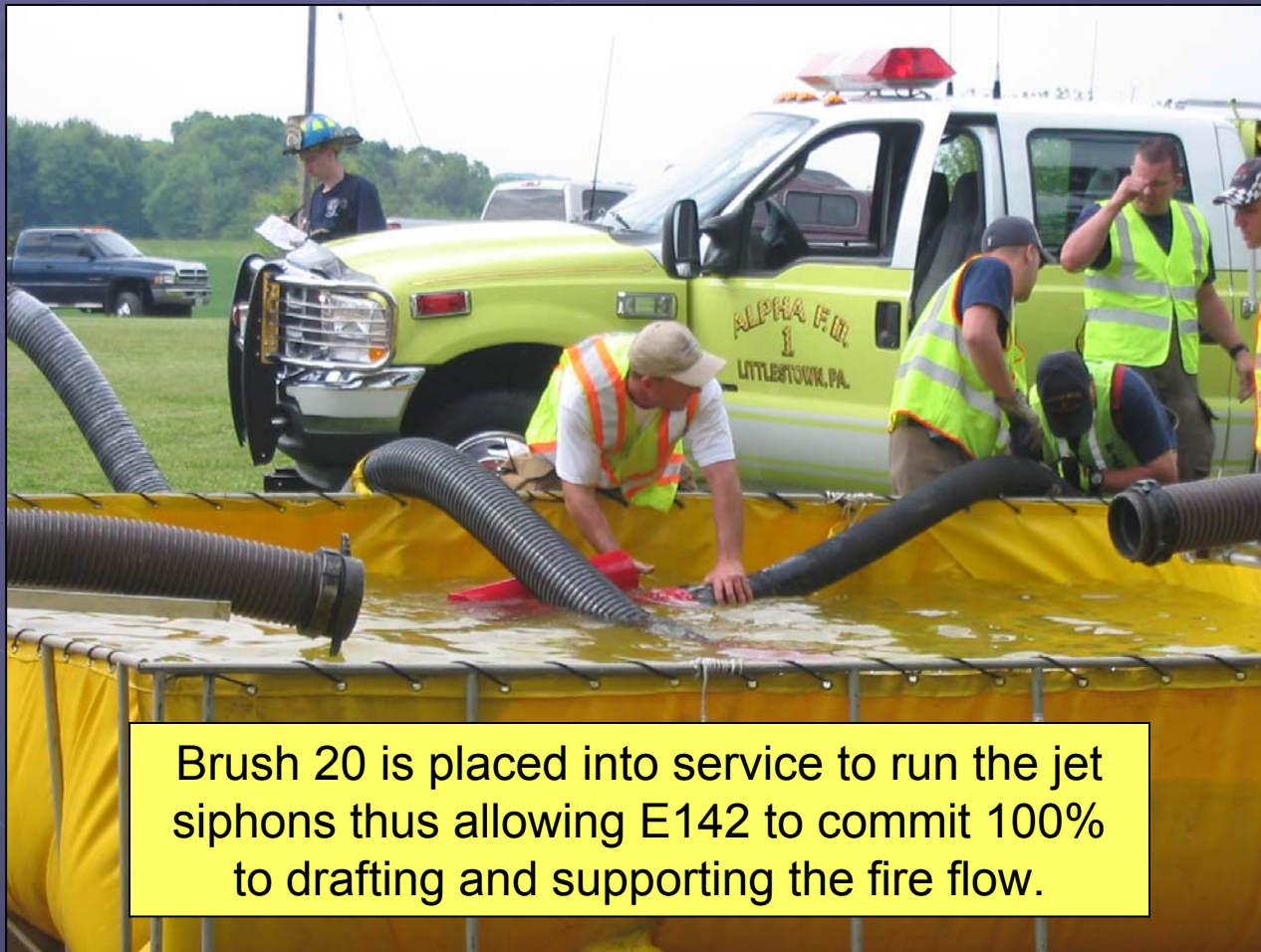


# The First Tankers Return to Dump



At 23:15 minutes, the first tanker returns from a fill site.

# Brush 20 Used to Run Jet Siphons



Brush 20 is placed into service to run the jet siphons thus allowing E142 to commit 100% to drafting and supporting the fire flow.

# Jet Siphons Help Move Water



A Kocheck low-flow strainer with a built-in jet siphon.



A "home made" jet siphon.

# Water Flows to the Drafting Tank



# The Shuttle Continues



Laytonsville ET17 dumps.

# The Dump Site in Operation

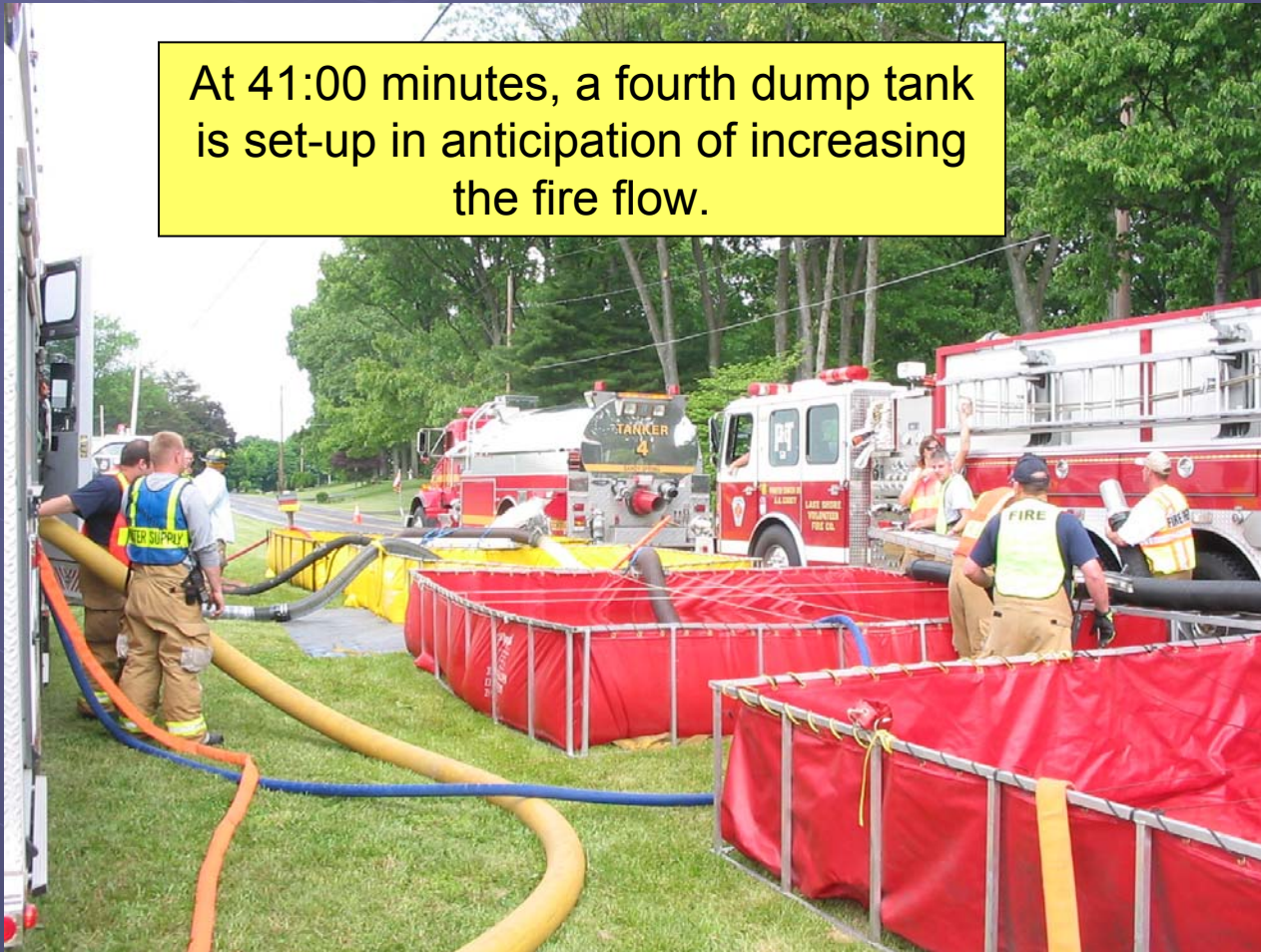


ET20 dumps for a third time.



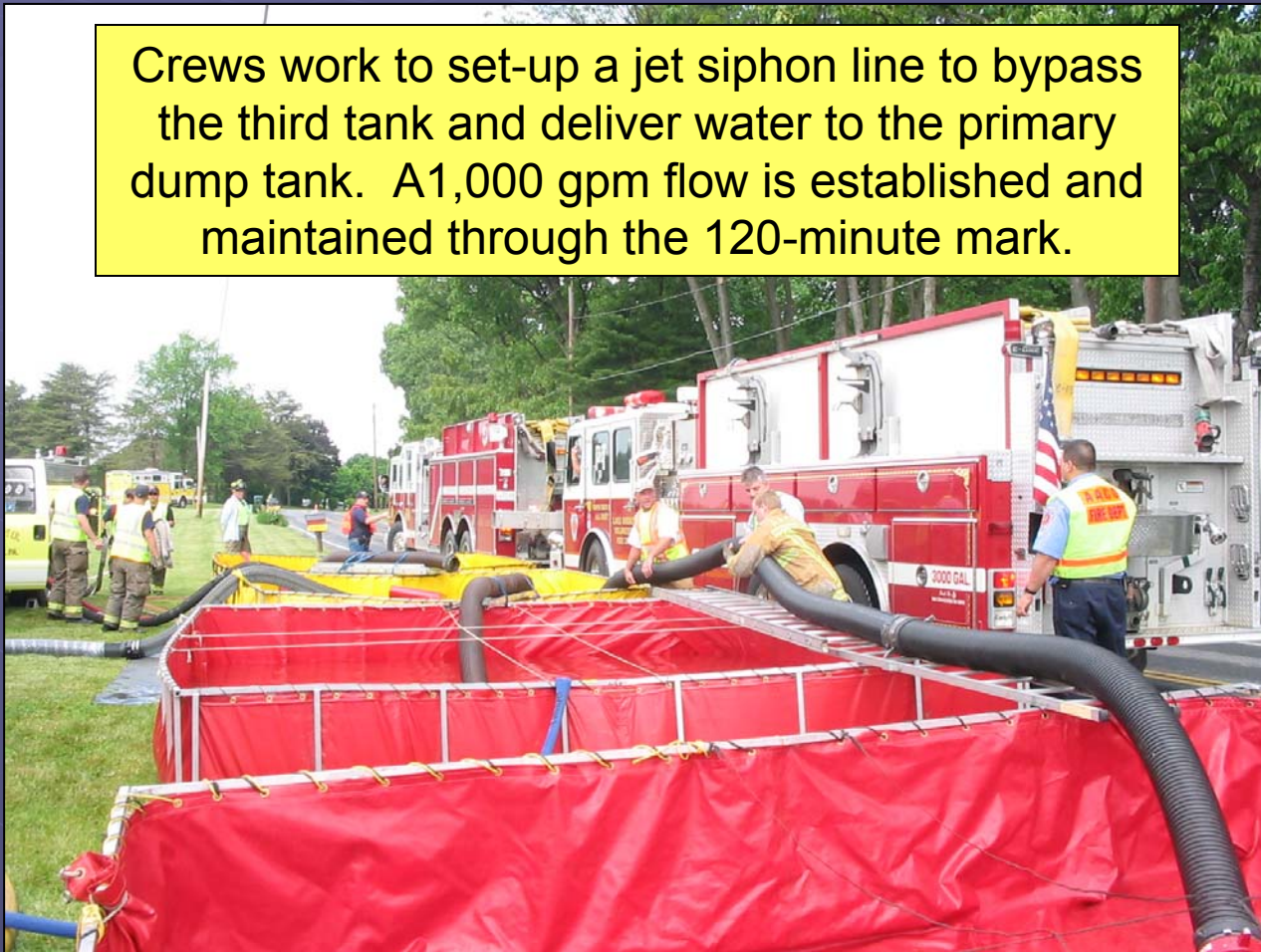
# A Fourth Tank is Set-up

At 41:00 minutes, a fourth dump tank is set-up in anticipation of increasing the fire flow.



# The Dump Site Grows Again

Crews work to set-up a jet siphon line to bypass the third tank and deliver water to the primary dump tank. A 1,000 gpm flow is established and maintained through the 120-minute mark.



# The Fill Sites

- Three fill sites were initially established for the drill; an underground tank on Cherrytown Road, a stream on Old Hanover Road at Union Mills, and a pond on Leppo Road.
- The underground tank proved troublesome and was abandoned early in the drill.

# Union Mills Fill Site

This was the first fill-site established. SU6 went there directly when the call was dispatched and had fill operations ready at the 9:55 minute mark.



At the peak of operation, Special Unit 6 and Water Supply 25 (Old) work together to fill tankers



Sandy Spring Tanker 4 gets filled using a 5-inch line.

# Union Mills Fill Site

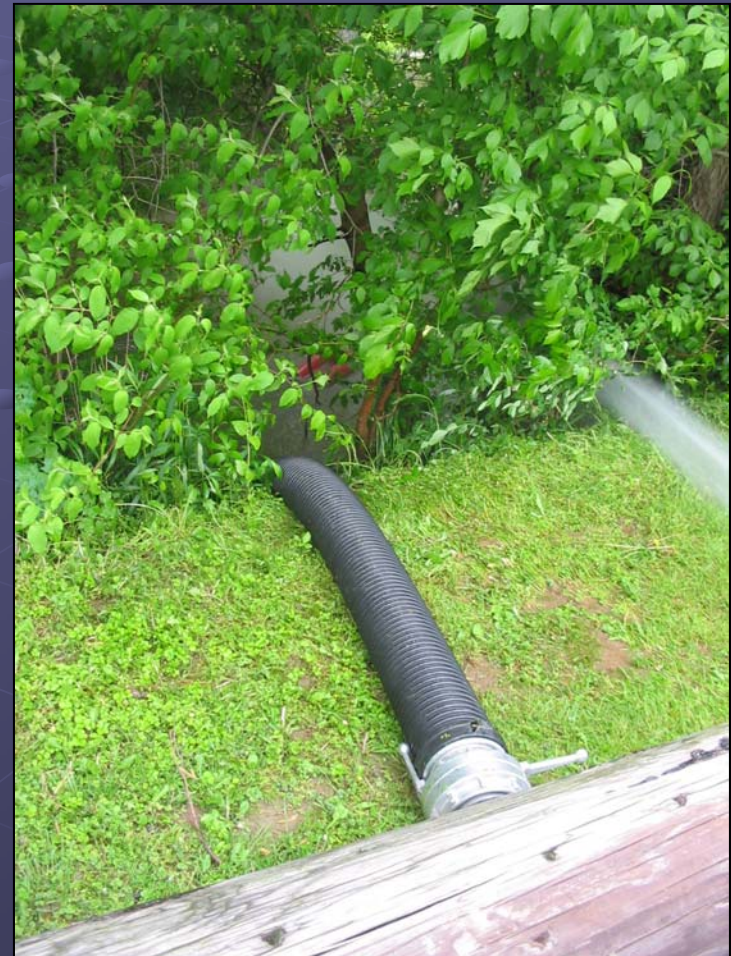
This fill site provided a 5.6 mile round trip for tankers.



Water Supply 25 (Old) drafts  
from a stream.

# Union Mills Fill Site

6-inch Storz couplings are used to speed the drafting the set-up process.



# Union Mills Fill Site

An LDH manifold and a jumbo wye are used to meet the needs of the tankers.



# Murkle Road Fill Site

This fill site provided a 5.9 mile roundtrip for tankers.

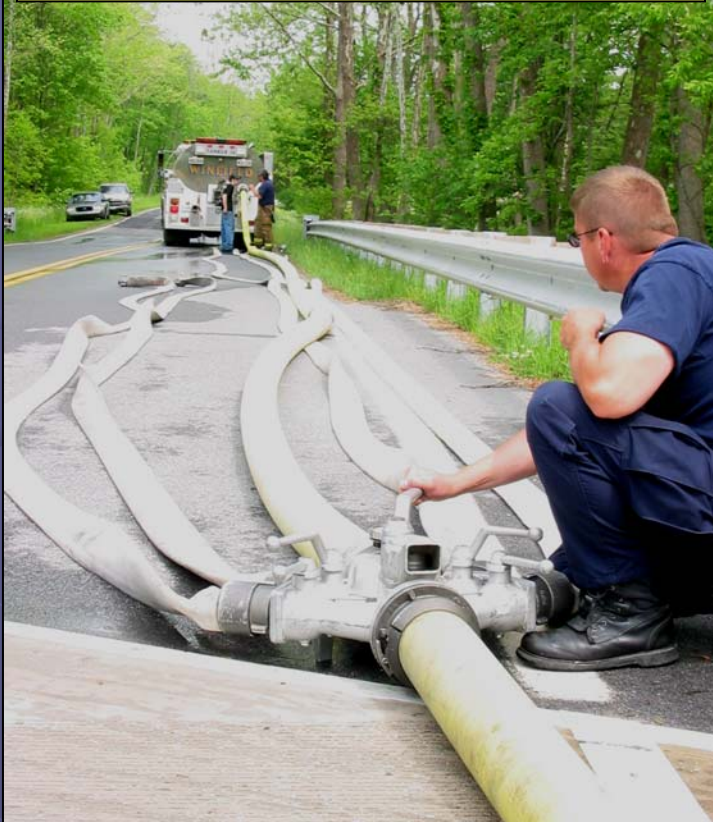


Water Supply 25 drafts through a dry hydrant on the Murkle Road bridge and fills Tanker 14.



# Murkle Road Fill Site

An LDH manifold and adaptors are used to meet the fill demands of the tankers.



# Murkle Road Fill Site



This bridge-mounted dry hydrant has a high lift but Clinton's 2000 gpm is just the answer.



# Murkle Road Fill Site



# Leppo Road Fill Site

This fill site provided a 4.5-mile loop for the tankers.



Taneytown's E52 ran this fill site at a local farm pond.

# Leppo Road Fill Site



Extra suction hose was needed to reach this pond and a floating strainer was used to guarantee adequate flow.

# Leppo Road Fill Site



As with the other two fill sites, an LDH manifold was used to control the flow of water to the tankers.

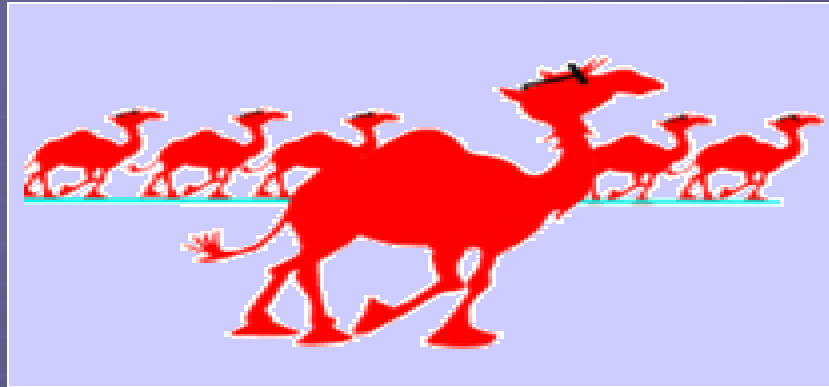
# The Results

- The drill concluded after 120-minutes of operation.
- Water flow was never interrupted for any longer than a couple seconds, and that only occurred once - early in the drill.
- A total of 106,500 gallons were moved during the 2-hour event resulting in an average flow of 887.5 gpm.

# Summary

- The drill was a success. It showed the value of having large tankers available early in the response and the value of using multiple-dump tanks.
- All of the crews worked very well together and all of the apparatus proved quite capable of delivering water.
- Many thanks to the Pleasant Valley VFD for hosting the program and for the MSFA Rural Water Supply Committee for providing the support.





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