



Randolph Fire District #1
Randolph Center, VT 05061

Annual Engineer's Report May 21, 2019

2018-2019 fiscal year was a very active and costly one. The following is a recap of the more significant events.

1. The electric heater in the pump house needed replacement. The tubing for the propane heater was replaced as it was leaking and not up to code. A second propane tank was installed as last winter we ran out of propane and it's impossible to get a delivery truck in there in the winter. **Cost for this was approx. \$1500.**
2. Repairs were made to badly corroded galvanized piping in the pump house. Replacement of all the pipe and fittings has been budgeted for this year.
3. During the hot, dry summer the water level in the spring dropped to a very low level. It was suspected that in addition to it being dry that there might possibly be some leaks in the reservoir and also in the pipes to the pump house.
4. In early October 3 or 4" of water was discovered in the basement of the pump station, which is unusual. It was thought that the drain might be plugged so a hose was connected to one of the pumps to flush it out but the pump was putting out very little water. It was determined that the pipes from the spring to the pump house were leaking badly and not enough water was getting to the pumps. Because of the depth of the pipes and that the ground is so wet around the spring, Picketts was called in with their big excavator. Once the pipes were uncovered they were found to be totally rusted out in places. The only solution was to replace them, which involved draining the spring reservoir to stop the flow of water. It took nearly a week to make all the repairs and to get the system up and running again. The pipes were so corroded inside the spring that they broke off under their own weight once the water was drained. The galvanized pipes were replaced with polyethylene and PVC to avoid any future corrosion problems. While the reservoir was drained, an engineer inspected the condition of the walls inside the reservoir. The engineer believes that the concrete is still structurally sound but that it is leaking in places and suggested that we may need to have a liner installed someday. **The cost of this repair was \$6,325.** It should be noted that since the repair, the spring has been overflowing at a high rate. The wet spring has certainly helped.
5. A side effect of the leaks on the spring lines was that one of the pumps ran nearly dry for a number of days, doing enough damage so that the pump wouldn't pump much water. The pump needed to be removed and rebuilt by a pump company which cost another **\$2200.**
6. In September a leak on a house service on Water Street was fixed. It was found that a hydrant on the southern end of the system was leaking from the nozzles. Even after replacing parts it continued to leak. Later in the month a service technician from EJ Prescott was also unsuccessful in fixing this hydrant.
7. In early November the leaking hydrant (that was installed in 1972) was replaced. The gate valve and other fittings were also replaced. While it was dug up a valve for the 1½" line that runs south from the end of the 6" line and an old service connection to a home were replaced. **Cost for this was \$6,444** with materials costing almost \$4,000.
8. In December it was discovered that a private home had pipes burst when the heat went off. It was determined from the meter reading that almost 135,000 gallons of water emptied into the house. It required an extra 45 hours of pumping over the course of 3 months to make up for the loss.

There were a number of other more routine events throughout the year that nevertheless still cost money. Water testing alone was \$1500.

Respectfully submitted
Bill DeFlorio
Fire District Engineer