

Replacement of Vintage Piping:

Avista Utilities Aligns with Contractors in Implementing Keyhole Technology

When Avista Utilities was planning an accelerated replacement of Aldyl A transition piping at steel service tees, the company made sure that trenchless technology would be a major element of the effort.

“There have been great strides in the development of keyhole tools and other trenchless technologies in recent years, and we’re taking advantage of that,” explains Dan Gigler, Gas Operations Contract Construction Manager at Avista. “At our company, we have long recognized the benefits of small-hole excavation. Today, we benefit from the fact that our company and our contractors use a wide array of cost-saving technologies to help us keep our operations costs as low as possible.”



Dan Gigler, Avista's Gas Operations Contract Construction Manager

Keyhole technologies are being used in Avista’s program in its territory in Oregon, Washington, and Idaho to systematically remove and replace select portions of DuPont Aldyl A gas piping, a medium-density polyethylene pipe produced from the 1960s through the early 1980s that has been found to be subject to premature brittle-like cracking. As part of a 5-to-7-year program beginning in 2013, approximately 17,000 short sections of Aldyl A service piping that are connected between rigid steel service tees and existing Aldyl A service piping will be re-made.



Keyhole coring and vacuum-excitation operations are conducted to access the pipe. The 24-inch cores are reinstated in place following pipe removal and replacement. Avista expects that 12,900 keyholes will be made for service tee replacements.

Avista plans to capitalize on this technology as much as possible for its main-pipe replacement project as well. Avista started their pipe replacement project in 2012 and is estimated to take 20 years to complete the replacement of more than 700 miles of Aldyl A main piping.

Contractor Alliances

While Avista crews conducted keyhole operations (e.g., coring, vacuum excavation, and horizontal boring), the company also manages a coordinated effort with its contractors to also provide the required equipment and personnel training (e.g., coring and horizontal boring.)

“There was an initial challenge in identifying qualified contractors; however, we have since formed alliances with contractors with the appropriate expertise who are embracing new technologies,” says Gigler. “There is a common understanding of the task at hand and what it takes to complete the job.”

One of the attributes Avista considered in selecting Northern Pipeline Company (NPL) as a contractor is NPL's proven expertise and capability to perform pipe-splitting and keyhole construction techniques.

"It is a win-win for everyone," says Gigler. "Avista is saving money for our ratepayers, and the community is seeing less disruption to their roads and landscapes."

Partly driving the use of keyhole technologies are the pavement cutting and remediation policies of local jurisdictions, which can have a significant impact on the scheduling, logistics, and ultimate cost of pipe-replacement activities.

"There appears to be a general trend among jurisdictions to establish more restrictive moratoria on cutting in newer arterials and streets," says Gigler, "and much more expansive requirements for backfill and patching or repaving of streets cut for replacement activities."

Avoiding Expensive Repaving

Gigler notes that while the cost of street repair has gone up substantially, "keyhole technologies are helping to keep these costs as low as possible."

Part of the company's rationale for the accelerated replacement of transition tees, particularly in its Oregon service area, was to avoid the very expensive repaving costs through the application of alternative construction techniques, such as pipe splitting and keyhole techniques, that would minimize pavement breaking, excavations, and restoration.