

## WATER ENGINEERING BY THE EARLY PEOPLE

Water storage tanks are built of many materials, come in a wide range of capacities, and serve a variety of communities. But none has quite the story behind it as the one built by the "Early People," the likely ancestors of today's Pueblo Indians. The Early People's storage tank was built about one thousand years ago in the "Four Corners" where Utah, Colorado, New Mexico and Arizona meet. Despite the arid conditions, these people developed a thriving agriculture of maize, beans, and squash. Rain was infrequent, and when it did come it was usually a gully washer, providing large volumes of water which rapidly rolled down the valley. How could they capture and store water for the long run?



Cliff dwellings built by the Early People.

Photo by Robert Novick, District Sales Manager, Ford Meter Box.

Kenneth Wright, P.E., President of Wright Water Engineers, Inc., in Colorado and twenty-five other professionals investigated that possibility after noting Morefield Mound, as it's known, on a valley floor in the Mesa Verde National Park of southwestern Colorado. Was it a ceremonial area or burial ground? Could it have been an Early People food storage site? Maybe it was no more than an eroded hill.

In 1997, Wright's expedition penetrated the mound and the clues began to add up. Long horizontal layers of mostly sandy clay and silt lined the walls. The clay was impermeable and its tightness would have prevented seepage. Its distribution pattern matches deposits found after floods subside. Iron oxide deposits

Kenneth Wright points out an elevation during the dig in southwestern Colorado.

Photo compliments of Kenneth Wright, P.E.



stained the walls indicating contact with standing water. Evidence of feeder canals with a distinctly different gradient than the valley floor were unearthed. As the reservoir floor elevation rose due to accumulated soil deposits, the Early People adjusted the fall and altered the path of the canal to allow efficient water gathering in time for the next flood. Pottery fragments in the sediments provided valuable clues. Most likely they were used to transport water from the site.

The excavation revealed a structure built to serve an estimated population of 500. The integrated earth and stone facility yielded an approximate storage capacity of 120,000 gallons, and an operational life of about 350 years. The Early People accomplished a noteworthy public works project which allowed many generations to flourish. It is water management at its primitive best.



Members of the expedition carefully work to reveal artifacts. An overview of the dig is pictured in the inset.

Photo compliments of Kenneth Wright, P.E.

