

REQUEST FOR CITY COUNCIL CONSIDERATION

Meeting Date: March 19, 2007

Agenda Item: 6B	Prepared By: Rony Joel, Public Works Director Date: March 2, 2007
Agenda Section: Business: Presentation	
Subject: Copper Pipe Pinhole Leaks	Department: Marco Utilities

BACKGROUND:

Council has requested that City Staff provide a report on the many leaks in copper pipe reported by our citizens.

The small holes in copper pipes are called *pinhole leaks*. They commonly are caused by pitting corrosion, a type of corrosion concentrated on a very small area of the pipe. In most cases, pinhole leaks appear as a green, wet area on pipe. They predominately occur in horizontal, cold water lines.

Pinhole leaks occur nationwide, but are most common in Florida, South Carolina, Virginia, Tennessee, Ohio, Massachusetts, Maryland, Maine, and California.

Copper pitting corrosion remains poorly understood despite a number of reports released in recent years. There have been cases of copper pitting problems in waters having low pH, high pH, low alkalinity, and significant levels of sulfate and chloride. In some of those cases, aluminum, silica, total inorganic carbon, biological activity and other materials have been implicated as the cause of pitting. The Environmental Protection Agency (EPA) report on the subject states, "the role of orthophosphate as a corrosion inhibitor and reducer of the pitting tendency of water has shown some promise." The City uses orthophosphate as a corrosion inhibitor. The EPA continues to research pitting corrosion.

The Marco Island Water Plants have not changed the treatment system since early 1990's. One minor change did occur in 2001 (convert from chlorine gas to bleach for safety reasons). Our water is considered "non-aggressive water." We are evaluating alternatives to the current corrosion inhibitors used. We have asked a nationally known water treatment chemistry expert to evaluate our treatment process and advise how we may be able to improve corrosion protection.

RECOMMENDED ACTION:

Receive presentation.

Reviewed by Department Director	Reviewed by City Manager
Council Action: Motion by:	Second by: