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Cotati meeting Feb. 5 on wastewater treatments

By Denise Cadman

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What happens to polluted water from household toilets, sinks and showers, or from business and industry? Mon., February 5 at 7 p.m. is your chance to find out. Denise Cadman, Natural Resource Specialist for the City of Santa Rosa will give an illustrated presentation on this topic at the Stony Point Room at the Cotati Community Center.

The Laguna Treatment Plant, serving Santa Rosa, Rohnert Park, Cotati and Sebastopol, treats an average of 22 million gallons of sewage per day. Sewage reaches the Llano Road facility through 500 miles of pipe that carry polluted water away from homes, businesses and industry.

Sewage receives a three-step or tertiary treatment followed by disinfection. In the first step of the treatment process, called primary, water is separated from the solids. Solids settle allowing them to be removed to anaerobic tanks where they are broken down by bacteria. Bacteria produce methane gas which is mixed with natural gas and used to power about 1/3 of the energy needs of the treatment plant. After thirty days in the digester, solids are ready for reuse as a fertilizer during the growing season or blended with yard waste and sold as compost. A small quantity is sent to the landfill.

Water receives secondary treatment in aeration basins, injected with oxygen to stimulate the growth of bacteria and other microscopic organisms that consume the dissolved wastes, cleaning the water of pollutants. The microorganisms are then removed in clarification tanks, where they settle to the bottom and are returned to the aeration basins to repopulate them with fresh bacteria.

The third step or tertiary treatment is filtration of water through a four foot bed of coal, trapping fine suspended solids and some potential pathogens. Lastly, water is disinfected with ultraviolet light, destroying bacteria and viruses.

At this point the recycled water is ready to return to the environment. Water is initially sent into a series of storage ponds. These ponds are rich with wildlife including waterfowl. What happens to the water depends of the amount in storage, inflow to the plant, and time of year.

During the growing season recycled water is irrigated over 6,400 acres. About 80 percent of this land is agricultural, growing hay, pasture grasses, wine grapes, turf and vegetables. The remainder is urban reuse for parks, schools, ball fields and golf courses. The majority of land is privately owned, giving landowners an opportunity to replace the use of groundwater with recycled water. The City of Santa Rosa owns about 1,500 acres in the Laguna de Santa Rosa, leasing some of the land to local agricultural producers but also taking the opportunity for many habitat enhancement projects in the unfarmed areas and buffer zones.

Throughout the year an average of 11 million gallons per day is sent to the Geysers recharge project (of 2003) high in the Mayacamas Mountains. The Geysers steamfield is the largest geothermal operation in the world. Water injected into the earth makes enough electricity for up to 85,000 households in the North Bay Area.

During times of high rainfall and high flow when opportunities to recycle water are minimal, water may be discharged into the Laguna de Santa Rosa.

Future issues in sewage treatment and recycled water will include testing for chemicals, such as pharmaceuticals that are not currently regulated. Due to new regulatory requirements, the City of Santa Rosa is currently investigating the possibility of direct discharge to the Russian River. Dual piping is being considered for some new residential and commercial developments in Santa Rosa and Rohnert Park to supply recycled water for outdoor irrigation, saving our precious potable water for indoor uses.

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