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April 26, 2016

Modified Comprehensive Performance Evaluation Team
South Sangamon Water Commission
c/o Capt. Michael D. Curry, P.E.
Curry and Associates Engineers, Inc.
P.O. Box 246
Nashville, IL 62263-0246

Dear Captain Curry:

The Illinois Department of Public Health (IDPH) has received your request regarding an evaluation of the South Sangamon Water Commission (Commission) potable water supply. The Illinois Environmental Protection Agency (Illinois EPA) has requested that a Modified Comprehensive Performance Evaluation be performed to identify potential problems with the Commission's potable water supply. As part of the evaluation, you have requested that IDPH provide assistance in identifying possible water quality-related causes of hair loss and skin rashes.

IDPH reviewed the Agency for Toxic Substances and Disease Registry toxicological profiles for chemical exposures associated with alopecia (hair loss) in humans. Two chemicals, selenium and thallium, have been associated with hair loss. IDPH reviewed the Commission water results available at the Illinois EPA website (<http://water.epa.state.il.us/dww/index.jsp>) to determine if these chemicals have been present in previous samples. Selenium and thallium have not been detected in Commission water system sampling.

There is limited research indicating that hard water (water that contains a large amount of dissolved minerals, primarily iron, magnesium and calcium) can cause hair loss. A study of the effects of hard water on hair in the International Journal of Trichology compared the tensile strength and elasticity of hair treated in hard water and hair treated in distilled water. The study determined that the hardness of water does not interfere with the tensile strength and elasticity of hair. While clinical research has not found a connection between hard water and hair loss, the mineral content might cause dryness and breakage of the hair which may make it seem as if hair is falling out at an increased rate.

According to the American Academy of Dermatology, daily hair loss can be up to 100 hairs per day. There are many causes of hair loss. Some women lose hair after pregnancy and some people with high levels of stress experience noticeable hair loss. Many people, especially men, find their hair thins with age and it's estimated that 50 percent of men have bald spots by the age of 50.

Other causes of hair loss include chemotherapy, infections, some medicines, and eating disorders. Some hair chemicals as such as dyes and straighteners, and some styling products like hair dryers and hair irons can damage and break the hair. Daily hair loss is normal and usually not noticeable because it is replaced and keeps growing. Individuals who feel they are losing an unusual amount of hair should consult a dermatologist.

IDPH also evaluated system water samples results with respect to the complaint about the water causing skin rashes (dermatitis). Most common skin rashes can be caused by contact with acids, solvents, fabric softeners, or other chemicals. IDPH did not find the presence of chemicals that would account for the complaints of skin rashes. However, washing in hard water can cause dry skin because the minerals prevent products from dissolving completely. These undissolved products may leave a residue on skin, often causing irritation. Sometimes, especially in winter, frequent bathing or showering in hot water may irritate the skin. While dermatitis is a common condition that is not contagious, it can be troublesome and uncomfortable. A dermatologist should be consulted by anyone experiencing unusual rashes, but simple steps such as making sure to rinse thoroughly after bathing and showering, can help to alleviate the appearance of rashes.

I hope this information is helpful. Residents should be encouraged to consult with their physician regarding any medical conditions they may be experiencing. If you have additional questions, please contact me at 217-782-5830 or ken.mccann@illinois.gov.

Sincerely,



Ken McCann, MA, LEHP
Chief, Division of Environmental Health

cc: Dave McMillan, IEPA, Division of Public Water Supplies
Jim Stone, Sangamon County Health Department
Lynne Williams, IDPH, Edwardsville Regional Office