

Board Members

John "Jack" Mill III

Khalid Abdi

Katherine Tonelli

Leanne Harris

Caryn Smith

Derek Kwok, Health Director

Justin Tucker, Night Board Secretary



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TOWN OF MEDWAY
COMMONWEALTH OF MASSACHUSETTS

BOARD OF HEALTH
MINUTES

Date/Time of Meeting: Monday March 20, 2023

Location of Meeting: Medway Public Library, 26 High Street

Committee Members Roll Call Jack Mill ☒ Khalid Abdi ☒ Katherine Tonelli ☒ Leanne Harris ☒
and in Attendance: Caryn Smith ☒

Visitors Present: Frank Fallon - Homeowner 14 Alexandria Drive

Town Employees Present: Derek Kwok, Justin Tucker

Call to Order: 5:30pm

Minutes Review: March 6th: Approved with revisions

Agenda Item 1:

14 Alexandria Drive
(Sodium Private Well
Variance)

Mr. Fallon was present to discuss his request for a variance for reporting the sodium levels in his well water. Mr. Fallon and his wife are preparing to downsize, and in the midst of testing, his well water came back with a higher concentration of sodium (24.6 and 25.6 mg/L on two separate tests) than the guidelines recommend. Mr. Fallon had two requests concerning the sodium levels. He requested a variance from the deed restriction, and requested clarification concerning reverse osmosis systems on meeting the town's guidelines. Mr. Fallon stated that sodium is not stated on the national primary drinking water regulations, nor is it stated on the secondary drinking water regulations. Mr. Fallon stated that the EPA put out a drinking water advisory on sodium, and he provided a copy of the executive summary from the document. In short, the summary warns of consuming too much sodium in an individual diet, and it is based on this suggested level of sodium intake (500mg for a sodium restricted diet) that the guidelines for sodium levels in water (20 mg/L) were decided on. Mr. Fallon researched that the state of Massachusetts follows the federal guidelines. Sodium is mentioned in private well guidelines, and Mr. Fallon's sodium levels would qualify as "very low" according to those standards. Mr. Fallon questioned if there was a less drastic way of being transparent about the levels of sodium in the well water instead of a deed restriction, which is fairly permanent and would negatively affect the property value. Mr. Fallon would like to leave the choice for treatment up to the new owners of the house due to the various products, vendors, and service providers available to treat the sodium. Mr. Fallon reported that the usual filtration system would be a reverse osmosis system at the point of entry or point of use. Mr. Fallon reported that the point of entry system is very expensive, and the point of use systems would be near impossible in the multiple bathrooms and kitchen in his house. Mr. Kwok stated that the Board of Health regulations do not go into reverse osmosis systems. Mr. Kwok commented that his research corroborated Mr. Fallon's research that shows that over 20 mg/L is not a health risk to people who are not on a sodium restricted diet. Mr. Kwok also stated that the Board has granted this variance two other times recently. *A motion to approve the variance was made by Mr. Mill and seconded by Ms. Smith and approved by all.*

Agenda Item 2:

33 Highland Street
(septic repair)

Mr. Kwok stated that he reviewed the plans and everything is in order.

Mr. Mill made a motion to approve, seconded by Mr. Abdi, and approved by all.

Agenda Item 3:
246 Main Street
(Title V System
Repair)

The designer has not gotten back to Mr. Kwok with the new plan yet. The agenda item will be removed if the revisions have not been sent by the next Board of Health meeting. Item is tabled until the next meeting if plans are made available.

Agenda Item 4:
6 Juniper Road
(Title V System
Repair)

The designer has not gotten back to Mr. Kwok with the new plan yet. The agenda item will be removed if the revisions have not been sent by the next Board of Health meeting. Item is tabled until the next meeting if plans are made available.

Agenda Item 5:
Katherine MacDonald
(Body Art Practitioner
Permit for The Glow
Factory)

Mr. Kwok has reviewed and issued the permit.
A motion to ratify the permit is made by Mr. Mill, seconded by Ms. Smith, approved by all

Topic Update:

**Committee Member
Roll Call to
Complete Meeting:**

Jack Mill ☒ Khalid Abdi ☒ Katherine Tonelli ☒
Leanne Harris ☒ Caryn Smith ☒

Next Meeting Date: Monday, April 3, 2023

Adjourn: 5:55pm

Respectfully submitted by Justin Tucker

Drinking Water Standards and Health Advisories

March 2018

Page 12 of 12

Drinking Water Advisory Table

Chemicals	Status	Health-based Value	Taste Threshold	Odor Threshold
Ammonia	D '92	Not Available	30 mg/L	
Methyl tertiary butyl ether (MtBE)	F '98	Not Available	40 µg/L	20 µg/L
Sodium	F '03	20 mg/L (for individuals on a 500 mg/day restricted sodium diet).	30-60 mg/L	
Sulfate	F '03	500 mg/L	250 mg/L	

Taste Threshold: Concentration at which the majority of consumers do not notice an adverse taste in drinking water; it is recognized that some sensitive individuals may detect a chemical at levels below this threshold.

Odor Threshold: Concentration at which the majority of consumers do not notice an adverse odor in drinking water; it is recognized that some sensitive individuals may detect a chemical at levels below this threshold.

DRINKING WATER ADVISORY: CONSUMER ACCEPTABILITY ADVICE AND HEALTH EFFECTS ANALYSIS ON SODIUM

Executive Summary

The EPA Office of Water is issuing this Drinking Water Advisory to provide guidance to communities that may be exposed to drinking water containing sodium chloride or other sodium salts. The Advisory provides a summary of the current health hazard information and an evaluation of available data on taste problems associated with sodium in drinking water. This Advisory does not recommend a reference dose because data for quantifying risk are limited. The Advisory provides guidance on concentrations at which problems with taste would likely occur.

EPA requires periodic monitoring of sodium at the entry point to the distribution system. Monitoring is to be conducted annually for surface water systems and every 3 years for groundwater systems (40 CFR:141.41). The water supplier must report sodium test results to local and State public health officials by direct mail within 3 months of the analysis, unless this responsibility is assumed by the State. This provides the public health community with information on sodium levels in drinking water.

Conclusion and Recommendation

This Advisory recommends reducing sodium concentrations in drinking water to between 30 and 60 mg/L based on esthetic effects (i.e., taste). This recommendation is not federally enforceable but is intended as a guideline for States. States may establish higher or lower levels depending on local conditions, such as unavailability of alternate source waters or other compelling factors, provided that public health and welfare are not adversely affected. A goal of 2.4 g/day dietary sodium has been proposed by several government and health agencies. Drinking water containing between 30 and 60 mg/L is unlikely to be perceived as salty by most individuals and would contribute only 2.5% to 5% of the dietary goal if tap water consumption is 2 L/day.

At the present time the EPA guidance level for sodium in drinking water is 20 mg/L. This value was developed for those individuals restricted to a total sodium intake of 500 mg/day and should not be extrapolated to the entire population

Sodium in the Environment

Sodium is the sixth most abundant element on Earth and is widely distributed in soils, plants, water, and foods. Most of the world has significant deposits of sodium-containing minerals. Sodium ion is ubiquitous in water because of the high solubility of many sodium salts. Groundwater typically contains higher concentrations of minerals and salts than do surface waters. Sodium is present in road deicing chemicals, in water treatment chemicals, in domestic water softeners, and in sewage effluents. These uses contribute significant quantities of sodium to water.

Sodium is a normal component of the body, and adequate levels of sodium are required for good health. Food is the main source of daily human exposure to sodium, primarily in the form of sodium chloride (salt). Most of the sodium in our diet is added to food during processing and preparation. Various studies have reported that dietary intakes of sodium range from 1,800 to 5,000 milligrams per day (mg/day), depending on methods of assessment and on whether discretionary sodium use is assessed. Discretionary sodium intake is variable and can be quite large. The Food and Drug Administration has found that most American adults tend to consume between 4,000 and 6,000 mg of sodium/day, and therapeutic sodium-restricted diets can range from below 1,000 to 3,000 mg/day.

Studies of Sodium Effects

Cancer Studies. Ingestion of sodium ion is not believed to cause cancer. However, some studies suggest that sodium chloride may enhance cancer risk caused by other chemicals in the gastrointestinal tract. Sodium salts have generally produced inconclusive or negative results in *in vitro* or *in vivo* genotoxicity tests.

Noncancer Studies. Very high oral doses of sodium chloride may cause nausea, vomiting, inflammation of the gastrointestinal tract, thirst, muscular twitching, convulsions, and possibly death. For long-term, lower level exposures, the primary health effect of concern is increased blood pressure (hypertension). A large body of evidence suggests that excessive sodium intake contributes to age-related increases in blood pressure leading to hypertension. Increased blood pressure has also been clearly demonstrated in several animal species given high concentrations of sodium chloride in their diets.

High doses of sodium chloride (about 1,570 mg sodium/kg body weight) have been observed to cause reproductive effects in various strains of pregnant rats. Effects on the dams have included decreases in pregnancy rates and maternal body weight gain. Developmental effects have included increased blood pressure and high mortality. However, these effects were observed only in SHR rat pups (a type of rat specifically bred to be hypertensive) fed high sodium diets for up to 4 months after parturition. This study reported no developmental effects in Sprague-Dawley or WKY rat pups (both normotensive strains). Developmental effects have not been studied in other species.

Studies on Taste and Odor. Several studies are available on the taste threshold of sodium chloride in drinking water. It is not possible to identify precise threshold values for the taste of sodium in drinking water because detectable concentrations vary among individuals and for the same individuals at different times. Age and health status also impact a person's ability to detect the taste of sodium. Other factors affecting taste of sodium in drinking water include possible masking by other dissolved substances, water temperature, and the anion forming the salt. The average taste threshold for sodium in water at room temperature differs substantially among individuals and ranges from about 30 mg/L to 460 mg/L. Sodium in water does not by itself cause odor problems. The World Health Organization has established a drinking water guideline of 200 mg of sodium/L on the basis of esthetic considerations (i.e., taste). When sodium chloride is dissolved in distilled water, it is possible to detect the overall impact on taste prior to recognition of the taste as salty.

Characterization Summary. Although numerous human studies have examined the relationship between sodium intake and blood pressure, these studies are not suitable for defining a quantitative dose-response relationship because (1) the dose-response relationships varied among the different studies, (2) sodium intake measurements were generally indirect (determined by the amount of sodium excreted in the urine), and (3) the results may have been influenced by nutrients in the diet other than sodium, by lifestyle, and by patterns of behavior.

Drinking water does not play a significant role in sodium exposure for most individuals. Those that are under treatment for sodium-sensitive hypertension should consult with their health care provider regarding sodium levels in their drinking water supply and the advisability of using an alternative water source or point-of-use treatment to reduce the sodium. For individuals on a very low sodium diet (500 mg/day), EPA recommends that drinking-water sodium not exceed 20 mg/L. In order to avoid adverse effects on taste, EPA recommends that sodium concentrations in drinking water not exceed 30 to 60 mg/L, a threshold for taste-sensitive segments of the population. Many individuals will not be able to detect the presence of sodium in this concentration range.

EPA requires periodic monitoring of sodium at the entry point to the distribution system. Monitoring is to be conducted annually for surface water systems and every 3 years for groundwater systems (40CFR:141.41). The water supplier must report sodium test results to local and State public health officials by direct mail within 3 months of the analysis, unless this responsibility is assumed by the State. This provides the public health community with information on sodium levels in drinking water.