BACTERIOLOGICAL ANALYSIS

organisms resulting from fecal contamination. detects E. coli, an organism that always originates from mammal or bird intestinal tracts. If supply is not properly protected from contamination. The "defined substrate method" also some soils, and decaying vegetation. Coliform bacteria are used as "indicator" organisms Coliform bacteria are found in the intestinal tract of warm-blooded animals, surface water, Evaluation of the bacteriological quality of drinking water is done using "coliform" testing laboratories use the "defined substrate method." A positive result may indicate that a water Michigan Department of Environmental Quality (DEQ) laboratory and many private If they are present, pathogenic, or disease-causing organisms, could be present. E. coli is detected, it is more likely that the water supply may contain disease-causing The

RESULTS OF COLIFORM ANALYSIS

R

esult Code	This means:
R	"Not Detected" – No coliform organisms were detected in the water sample. The sample met the state drinking water standard for bacteriological quality at the time of sampling. (Similar results may be reported as negative; absent; or zero, "0.")
Pos	"Positive" – Coliform organisms were present in the water sample. Safety cannot be assured. Collection of a resample to confirm the original result is recommended. An investigation into the cause of the problem by a qualified individual is advised. (Similar results may be reported as present or any number from 1 to 200.)
EC-POS	"E. coli detected" – E. coli organisms were detected in the water sample. E. coli organisms are found in the intestines of warm-blooded animals, and as such, their presence in a water supply is considered an indication of sewage contamination. Precautions are recommended in the use of the water supply. These results are the same as fecal coliform positive; however, E. coli results indicate sewage contamination with more certainty.

PARTIAL CHEMICAL ANALYSIS

water quality problems. Parameters listed in Table II are associated with aesthetic drinking water health advisory levels for public water supplies associated problems. Table I lists three parameters where analysis." parameters in a routine procedure called a "partial chemical The DEQ laboratory analyzes eight commonly requested the USEPA and the state of Michigan have established Below are two tables of these parameters and

Test results are reported in milligrams per liter (mg/l)

	Test Good	Nitrate as ND to 3	Nitrite as ND to	Fluoride 0.7 to		Test Good	Chloride ND to	Hardness 50 to	NO	Iron 0.2	ii ii	lum
	ъ	3	3 to	2 ⁴ to		od	oto	5 to	ND to	2	2 to	0.2 ND to 20
TABLE	Satisfactory	4 to 10	0.4 to 1	ND to 0.7 or 1.2 to 4	TABLE	Satisfactory	20 to 250	125 to 250	0.2 to 0.3	Special diets m Persons on sev consult with the the water suppl varies with sen	consuir with their physician to the water supply. Acceptability varies with sensitivity to taste over 250	
Œ I	Caution	Over 10 ¹	Over 1 ¹	Over 4 ⁵	EII	Caution	Over 250	Over 250	Over 0.3	ay require wa erely restricts ir physician re y. Acceptabil sitivity to taste	Over 250	
	Problem	Methemoglobinemia ^{2,3} (blue baby) esp. infants.	Methemoglobinemia ^{2,3} (blue baby) esp. infants.	Low levels are beneficial in preventing tooth decay. High levels may cause mottling of enamel.		Problem	Taste, corrosion.	Scaling of water fixtures, soap scum at high levels, corrosion at low levels.	Staining, turbidity, taste, odor.	Special diets may require water of low sodium content. Persons on severely restricted sodium diets should consult with their physician regarding continued use of the water supply. Acceptability of sodium concentration varies with sensitivity to taste.	Taste, odor, scaling in boilers & heat exchangers	

COMMENTS

Coliform organisms may die during sample holding time (time from collection to testing). The laboratory will comment that results may not be representative/valid if sample holding time is longer than 48 hours. The

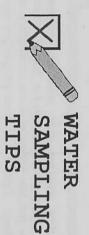
federal standard for a coliform holding time limit for public water supplies is

*USEPA drinking water standard

**See DEQ pamphlet EQC2033 "Nitrate in Drinking Water" 2/00

³USEPA requires analysis within 48 hours

USEPA drinking water standard is 4.0 mg/L for the state of Michigan Optimal range of fluoride concentration per American Dental Association



- Use a clean, indoor faucet.
- Do not use a dirty or contaminated or swing-type faucets. Try to avoid threaded taps, leaky
- Do not sample through a hose or
- Always sample the cold water. treatment device.
- collecting the sample or until the stream at least 5 minutes before Allow the water to run in a steady pump runs.
- Do not set the bottle cap down.
- or bottle. Do not touch the inside of the cap
- Do not allow the cap or bottle to touch the faucet.
- Do not rinse the bottle.
- Maintain a steady low-flow stream
- not overfill. Fill the container to the fill line. Do
- Seal the container as soon as it is Enclose submission slip and
- early in the week. Send/transport samples to the lab the same day of collection and proper payment with sample.



a false sense of security. A defective well conforming to state standards may give you cannot be assured. bacteriological tests, but its continued safety constructed, and maintained, a test result Unless your water well is properly designed produce intermittent satisfactory

in deciding what type of testing is needed testing may be appropriate for your site. solvents, heavy metals, herbicides and detect testing are good screening tools, they do not While coliform bacteria and partial chemica Your local health department can assist you petroleum More complex and expensive products, industria

Drinking Water & Radiological Protection Division Michigan Department of Environmental Quality For further information contact your Ground Water Supply Section local health department or the Lansing, MI 48909-8130 Phone: 517/241-1377 Fax: 517/241-1328 PO Box 30630

Internet address: www.deq.state.mi.us/dwr

Michigan Environmental Health Association Phone: 517/485-9033 Lansing, MI 48901 Fax: 517/485-6412 PO Box 13276

Internet address: www.meha.net

UNDERSTANDING WATER SAMPLE RESULTS

