



pH is a term used to indicate the alkalinity or acidity of a substance as ranked on a scale from 1.0 to 14.0. Acidity increases as the pH gets lower. A pH of 7 is neutral. Source: US Environmental Protection Agency: <http://water.epa.gov/type/rsl/monitoring/vms54.cfm>



Turbidity is the measure of relative clarity of a liquid. Drinking Water should be 0 NTUS, Ambient conditions are 20 NTUs, and post rain event are usually 50 NTUs. More information can be found at: <http://water.epa.gov/type/rsl/monitoring/vms55.cfm>



The conductivity of rivers in the United States generally ranges from 50 to 1500  $\mu\text{mhos/cm}$ . Studies of inland fresh waters indicate that streams supporting good mixed fisheries have a range between 150 and 500  $\mu\text{mhos/cm}$ . Conductivity outside this range could indicate that the water is not suitable for certain species of fish or macroinvertebrates. Industrial waters can range as high as 10,000  $\mu\text{mhos/cm}$ . Source: US Environmental Protection Agency:  
<http://water.epa.gov/type/rsl/monitoring/vms59.cfm>



25 B	x	x	x	x	x	x	x	1.7
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Nitrates are essential plant nutrients, but in excess amounts they can cause significant water quality problems. Together with phosphorus, nitrates in excess amounts can accelerate eutrophication, causing dramatic increases in aquatic plant growth and changes in the types of plants and animals that live in the stream. This, in turn, affects dissolved oxygen, temperature, and other indicators. Excess nitrates can cause hypoxia (low levels of dissolved oxygen) and can become toxic to warm-blooded animals at higher concentrations (10 mg/L or higher) under certain conditions. The natural level of ammonia or nitrate in surface water is typically low (less than 1 mg/L); in the effluent of wastewater treatment plants, it can range up to 30 mg/L.

Source: US Environmental Protection Agency

<http://water.epa.gov/type/rs/monitoring/vms57.cfm>

Mill Creek Watershed Total Maximum Daily Load September 2004

Target nutrient values for Mill Creek Watershed:

Nitrates: 2.5mg/l



GHF 1	x	x	x	x	x	x	0.95	x
GHF 2	x	x	x	x	x	x	0.4	x
25 B	x	x	x	x	x	x	x	0.11

Both phosphorus and nitrogen are essential nutrients for the plants and animals that make up the aquatic food web. Since phosphorus is the nutrient in short supply in most fresh waters, even a modest increase in phosphorus can, under the right conditions, set off a whole chain of undesirable events in a stream including accelerated plant growth, algae blooms, low dissolved oxygen, and the death of certain fish, invertebrates, and other aquatic animals. Source: US Environmental Protection Agency <http://water.epa.gov/type/rsl/monitoring/vms56.cfm>

Mill Creek Watershed Total Maximum Daily Load September 2004

Target nutrient values for Mill Creek Watershed:

Total Phosphorus: 0.25 mg/l

Yellow- Total Coliforms (Most Probable Number)

Site #	April	May	June	July	August	September	October*	November
1	>2419.6	>2419.6	>2419.6	>2419.6	x	>2419.6	2419.6	2419.6
2	>2419.6	>2419.6	>2419.6	>2419.6	x	1732.9	298.7	>2419.6
3	>2419.6	1986.3	>2419.6	>2419.6	x	>2419.6	>2419.6	2420.6
3 D	x	x	x	x	x	>2419.6	x	x
4	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	1986.3	1413.6	>2419.6
4 D	x	x	x	x	x	x	x	>2419.6
5	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	1553.1	>2419.6
5 D	x	x	x	x	x	x	x	>2419.6
6	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	2419.6	>2419.6
6 D	x	x	x	x	x	x	x	>2419.6
7	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	920.8	>2419.6
8	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	1299.7	1553.1
8 D	x	x	x	x	>2419.6	>2419.6	x	x
9	1986.3	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	1986.3
9 D	x	x	x	>2419.6	x	x	x	x
10	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	920.8	>2419.6
10 D	x	x	x	x	>2419.6	x	x	x
11	>2419.6	>2419.6	>2419.6	x	>2419.6	>2419.6	1413.6	>2419.6
12	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	727	980.4
13	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	1299.7	>2419.6
13 D	x	x	x	x	x	x	980.4	x
14	1553.1	>2419.6	>2419.6	>2419.6	>2419.6	x	1119.9	1413.6
14 D	1413.6	x	x	x	>2419.6	x	x	x
15	>2419.6	>2419.7	>2419.6	>2419.6	>2419.6	>2419.6	980.4	x
16	>2419.6	1986.3	>2419.6	x	>2419.6	>2419.6	x	>2419.6
16 D	x	x	x	x	x	>2419.6	x	x
17	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	1553.1	>2419.6
18	>2419.6	>2419.6	>2419.6	x	x	>2419.6	x	>2419.6
19	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	980.4	>2419.6
19 D	x	x	>2419.6	x	x	x	x	x
20	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	1299.7	>2419.6
20 D	x	x	x	x	x	x	1299.7	x
21	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	1986.3
21 D	x	x	x	x	x	x	x	1986.3
22	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	1046.2	>2419.6
22 D	>2419.6	x	x	x	x	x	x	x
23	>2419.6	>2419.6	>2419.6	x	x	>2419.6	x	1986.3
24	>2419.6	>2419.6	>2419.6	>2419.6	x	>2419.6	1553.1	>2419.6
24 D	x	x	x	x	x	x	1413.6	x
25	>2419.6	>2419.6	x	x	x	x	1732.9	>2419.6
26	x	>2419.6	x	x	x	x	>2419.6	>2419.6
27	x	x	x	x	x	x	>2419.6	x
GHF 1	x	x	x	x	x	x	1413.6	x
GHF 2	x	x	x	x	x	x	1986.3	x

\*Diluted by 1/5

Total coliforms are a group of bacteria that are widespread in nature. All members of the total coliform group can occur in human feces, but some can also be present in animal manure, soil, and submerged wood and in other places outside the human body. Thus, the usefulness of total coliforms as an indicator of fecal contamination depends on the extent to which the bacteria species found are fecal and human in origin. For recreational waters, total coliforms are no longer recommended as an indicator. For drinking water, total coliforms are still the standard test because their presence indicates contamination of a water supply by an outside source. Source: US Environmental Protection Agency  
<http://water.epa.gov/type/rsi/monitoring/vms511.cfm>

Fluorescent- E.coli (Most Probable Number)

Site #	April	May	June	July	August	September	October*	November
1	>2419.6	2419.6	1046.2	613.1	x	125.9	20.1	2419.6
2	>2419.6	>2419.6	866.4	613.1	x	34.5	12.1	>2419.6
3	>2419.6	>2419.6	1413.6	>2419.6	x	140.8	1119.9	2420.6
3 D	x	x	x	x	x	648.8	x	x
4	>2419.6	>2419.6	>2419.6	547.5	>2419.6	95.9	35.5	>2419.6
4 D	x	x	x	x	x	x	x	>2419.6
5	770.1	>2419.6	1299.7	648.8	1732.9	123.4	29.1	>2419.6
5D	x	x	x	x	x	x	x	>2419.6
6	920.8	>2419.6	2419.6	1203.3	>2419.6	344.8	22.1	>2419.6
6 D	x	x	x	x	x	x	x	>2419.6
7	>2419.6	>2419.6	>2419.6	>2419.6	>2419.6	1203.3	46.4	>2419.6
8	727	>2419.6	1119.9	816.4	1986.3	35	53	1553.1
8 D	x	x	x	x		33.2	x	x
9	1553.1	1986.3	648.8	275.5	1413.6	88.4	6.3	1986.3
9 D	x	x	x	178.9	x	x	x	x
10	2419.6	>2419.6	866.4	686.7	2419.6	209.8	23.8	>2419.6
10 D	x	x	x	x	x	x	x	x
11	1413.6	>2419.6	920.8	x	980.4	243.6	15.8	>2419.6
12	547.5	>2419.6	488.4	648.8	1986.3	107.6	11.9	980.4
13	>2419.6	>2419.6	1553.1	435.2	1732.9	238.2	45.7	>2419.6
13 D	x	x	x	x	x	x	46.4	x
14	198.9	>2419.6	1203.3	648.8	1986.3	x	41.4	1413.6
14 D	161.6	x	x	x	x	x	x	x
15	461.1	2419.6	>2419.6	686.7	>2419.6	686.7	44.1	x
16	1119.9	>2419.6	>2419.6	x	1046.2	145.5	x	>2419.6
16 D	x	x	x	x	x	101.4	x	x
17	648.8	>2419.6	>2419.6	240	1299.7	27.5	47.1	>2419.6
18	980.4	>2419.6	488.4	x	x	292.4	x	>2419.6
19	>2419.6	2419.6	920.8	238.2	579.4	99	33.6	>2419.6
19 D	x	x	1299.7	x	x	x	x	x
20	1732.9	>2419.6	>2419.6	613.1	980.4	88.8	27.5	>2419.6
20 D	x	x	x	x	x	x	30.5	x
21	686.7	2419.6	1413.6	1986.3	1203.3	61.3	44.1	1986.3
21 D	x	x	x	x	x	x	x	1986.3
22	866.4	>2419.6	1046.2	613.1	816.4	60.2	38.8	>2419.6
22 D	1299.7	x	x	x	x	x	x	x
23	1413.6	>2419.6	1413.6	x	x	191.8	x	1986.3
24	920.8	>2419.6	>2419.6	>2419.6	x	250	41.4	>2419.6
24 D	x	x	x	x	x	x	71.2	x
25	1986.3	>2419.6	x	x	x	x	46.5	>2419.6
26	x	>2419.6	x	x	x	x	>2419.6	>2419.6
27	x	x	x	x	x	x	37.3	x
GHF 1	x	x	x	x	x	x	14.5	x
GHF 2	x	x	x	x	x	x	5.2	x

\*Diluted by 1/5

*E. coli* is a species of fecal coliform bacteria that is specific to fecal material from humans and other warm-blooded animals. EPA recommends *E. coli* as the best indicator of health risk from water contact in recreational waters; some states have changed their water quality standards and are monitoring accordingly. Source: US Environmental Protection Agency <http://water.epa.gov/type/rsl/monitoring/vms511.cfm>