



Case Study - Coliform Bacteria in Well Water



Address: 36145 Bore Tide Dr., Kenai, AK 99611

Contact Persons: Dan and Sherry Dahlen - Home owners

Phone Number: 907-283-4485

Test Performed By: **HydroFLOW West Inc.**
1955 Jadwin Ave. Suite 360
Richland, WA. 99354
509-940-5555

Dr. Rodolfo Nicacio email at: Rudy@hydroflowwest.com.

Mike Colton: mike@hydroflowwest.com

Background: This area on the Kenai Peninsula, rural Alaska, has well water contamination due to area flooding. Home owners had water tested by a local water testing Lab; **Tauriainen Engineering & Testing.**



October 30, 2013 - Prior to the installation of a *HydroFLOW* water conditioner on the incoming well pipe, a water sample was taken at the kitchen faucet. The lab test results stated the water was **Yellow and positive for Total Coliform - Unsatisfactory**.

**TAURIAINEN
ENGINEERING & TESTING**
35186 Spur Hwy Soldotna, AK 99669 (907)262-4624
FAX 262-5777 engineeringalaska@gcl.net

Please Read Instructions On Back
Print All Information

TOTAL COLIFORM BACTERIA DRINKING WATER ANALYSIS

Client Name: Sherrie Dahlen **Lab Use Only Lab Number:** 2013-1941

Mailing Address: 32045 Base Tide Dr **Phone:** 283-4485
Kenai, AK **Fax/Email:** 283-8450 sad@alaska.net

Sample Information: Residential Water System Public Water System ID No. _____

Legal Description: Lot 5 BKS Mariners Watch Sub

Sample Location: (bathroom, kitchen, etc.) Kitchen (unable to remove aerator)

Sampled: Date: 10-30-13 Time: 10:41 am Sampler's Initials: S.D.

Sample Type: Routine Special Purpose flooding
 Repeat Sample (For previous unsatisfactory sample with lab number (_____))

Disinfection: Untreated Treated (chlorine, UV, etc.)

Relinquished: Date: 10-30-13 Time: 10:40 am By: Sherrie Dahlen

Received: Date: 30 OCT 13 Time: 10:40 By: HW Paid CL# 5327 SD

Condition: Satisfactory Rejected Comments: _____

This report is for the exclusive use of the party to whom it is addressed. By submitting a sample for testing to Tauriainen Engineering & Testing, Inc. (TET), the Client agrees to the terms and conditions on reverse.

↓ To be filled out by Lab ↓

Date Test Started: 30 Oct 13 Time Test Started: 1545 Analyst: ST

COLILERT TEST RESULTS (SM 9223B)

Color:	Date	Time	Analyst
<input type="radio"/> Clear and Negative for Total Coliform - Satisfactory	<u>31 Oct 13</u>	<u>1545</u>	<u>ST</u>
<input checked="" type="radio"/> Yellow and Positive for Total Coliform - Unsatisfactory			
<input type="radio"/> Yellow w/ Fluorescence and Confirmed E. Coli.			

Comments: _____

DIRECTIONS: _____

T:\W-LAB\Water Lab Forms\Micro\COLIFORM Customer.frm REV5/13



January 28, 2014 - Prior to the installation of a *HydroFLOW* water conditioner on the incoming well pipe, the home owners treated the well with chlorine, a water sample was taken at the kitchen faucet. The lab test results stated the water was **Yellow and Positive for Total Coliform - Unsatisfactory**.

TAURIANEN
ENGINEERING & TESTING
35186 Spur Hwy Soldotna, AK 99669 (907)262-4624
FAX 262-5777 engineeringalaska@gci.net

Please Read Instructions On Back
Print All Information

TOTAL COLIFORM BACTERIA DRINKING WATER ANALYSIS

Client Name: Sherrrie Dahlen **Lab Use Only Lab Number:** 2014-0095

Mailing Address: 36145 Bore Tide Dr **Phone:** 398-4594 / 283-4485
Kenai, AK 99611 **Fax/Email:** Sad@alaska.net

Sample Information: Residential Water System Public Water System ID No. _____

Legal Description: Lot 5 Blk 5 Marinis Watch Subd

Sample Location: (bathroom, kitchen, etc.) Kitchen

Sampled: Date: 1/28/14 Time: 7:35am Sampler's Initials: SD

Sample Type: Routine Special Purpose
 Repeat Sample (For previous unsatisfactory sample with lab number (_____))

Disinfection: Untreated Treated (chlorine, UV, etc.)

Relinquished: Date: 1/28/14 Time: 4:15pm By: Sherrrie Dahlen

Received: Date: 28 JAN 14 Time: 4:15 By: HW Paid: CK# 5346

Condition: Satisfactory Rejected Comments: _____

This report is for the exclusive use of the party to whom it is addressed.
By submitting a sample for testing to Tauriainen Engineering & Testing, Inc. (TET), the Client agrees to the terms and conditions on reverse.

↓ To be filled out by Lab ↓

Date Test Started: 28 Jan 14 Time Test Started: 1620 Analyst: S7

COLILERT TEST RESULTS (SM 9223B)

	Date	Time	Analyst
Color: <input type="radio"/> Clear and Negative for Total Coliform - Satisfactory	<u>29 Jan 14</u>	<u>1620</u>	<u>S7</u>
<input checked="" type="radio"/> Yellow and Positive for Total Coliform - Unsatisfactory			
<input type="radio"/> Yellow w/ Fluorescence and Confirmed E. Coli.			

Comments: _____

DIRECTIONS: _____

T:\W-LAB\Water Lab Form\Micro\COLIFORM Customer.fm REV5/13



June 5, 2014 - The home owners installed a *HydroFLOW* S38 water conditioner on the incoming well pipe. Homeowners were left with four (4) BIOSAN Laboratories Bacteria & Fungi dip slides to perform home bacteria tests at weekly intervals.

June 17, 2014 - Weekly bacteria test shows zero bacteria in the well water.

June 23, 2014 - Homeowners took a water sample from the kitchen faucet to be tested in a lab. The lab test results stated the water was ***Clear and Negative for Total Coliform - Satisfactory.***

**TAURIAINEN
ENGINEERING & TESTING**
35186 Spur Hwy Soldotna, AK 99669 (907)262-4624
FAX 262-5777 engineeringalaska@gcl.net

Please Read Instructions On Back
PRINT All Information

TOTAL COLIFORM BACTERIA DRINKING WATER ANALYSIS

Client Name: Shernie Dahlen Lab Use Only Lab Number: 20140943
Mailing Address: 36145 Bore Tide Dr Phone: 283-4485
Kenai, AK 99611 Fax/Email: sad@alaska.net

Sample Information: Residential Water System Public Water System ID No. _____

Legal Description: Lot 5 Blk 5 Mariners Sub

Sample Location: (bathroom, kitchen, etc.) Kitchen

Sampled: Date: 6/23/14 Time: 7:18am Sampler's Initials: SD

Sample Type: Routine Special Purpose _____
 Repeat Sample (For previous unsatisfactory sample with lab number (____))

Disinfection: Untreated Treated (chlorine, UV, etc.) HydroFlow

Relinquished: Date: 6/23/14 Time: 9:05am By: Shernie Dahlen

Received: Date: 6/23/14 Time: 9:05am By: KL Paid: CK#5380

Condition: Satisfactory Rejected Comments: _____

This report is for the exclusive use of the party to whom it is addressed.
By submitting a sample for testing to Tauriainen Engineering & Testing, Inc. (TET), the Client agrees to the terms and conditions on reverse.

↓ To be filled out by Lab ↓

Date Test Started: 6/23/14 Time Test Started: 15:20 Analyst: mg

COLILERT TEST RESULTS (SM 9223B)	Date	Time	Analyst
Color: <input checked="" type="radio"/> Clear and Negative for Total Coliform - Satisfactory	<u>24 Jun 14</u>	<u>16:20</u>	<u>ST</u>
<input type="radio"/> Yellow and Positive for Total Coliform - Unsatisfactory			
<input type="radio"/> Yellow w/ Fluorescence and Confirmed E. Coli.			

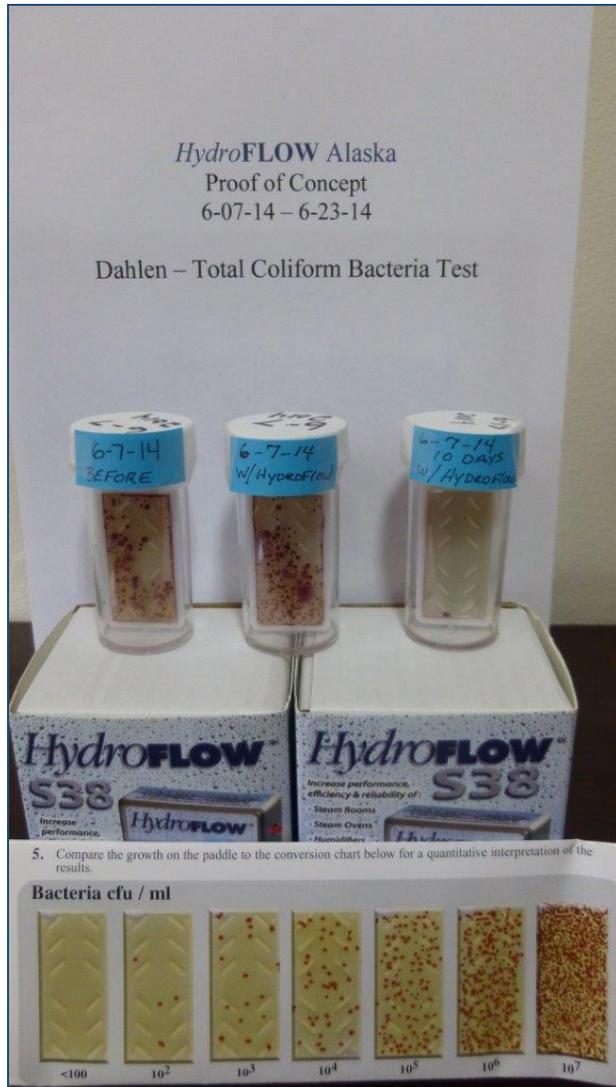
Comments: _____

DIRECTIONS: _____

G:\W-LAB\Water Lab Forms\Micro\COLIFORM Customer.fm REV1114

Customer comment: "We had the water tested and it came back clear. Yippee!"

Additional information:



The Very Unpleasant Facts about Total Coliforms:

The most basic test for bacterial contamination of a water supply is the test for **Total Coliform Bacteria**. Total Coliform counts give a general indication of the sanitary condition of a water supply.

Total Coliforms include bacteria that are found in the soil, in water that has been influenced by surface water, and in human or animal waste.

Fecal Coliforms are the group of the total Coliforms that are considered to be present specifically in the gut and feces of warm-blooded animals. Because the origins of fecal Coliforms are more specific than the origins of the more general Total Coliform group of bacteria, Fecal Coliforms are considered a more accurate indication of animal or human waste than the Total Coliforms.

Escherichia coli (E. coli) is the major species in the Fecal Coliform group. Of the five general groups of bacteria that comprise the Total Coliforms, only E. coli is generally not found growing and reproducing in the environment. Consequently, E. coli is considered to be the species of Coliform bacteria that is the best indicator of fecal pollution and the possible presence of pathogens.