

INSTRUCTIONS

Read all instructions before sample collection

Before collecting samples, review the contents of this test kit (page 2). This kit allows testing of **five** samples. Use test materials in sample pack labeled “Sample 1” for your first sample location. Use test materials in sample pack labeled “Sample 2” for your second sample location, and so on for all five sample locations. Record test results on the enclosed index card.

Process samples immediately after collection.

Warranty information can be found on page 2 of these instructions.

A. Recording Background Information

1. Fill in all background information on the index card included in sample pack. Proceed to Section B.

B. Sample Collection

Note: Use the following procedures for each sample.

1. Put on the pair of rubber gloves, provided in sampling pack.
2. Remove cap from tube labeled Tube 1.
3. Use the mouth of Tube 1 to scrape blister/deposit materials and water into tube. You may also use the tongue depressor or cotton swab.
4. Replace Tube 1 cap.
5. Shake Tube 1 vigorously to mix sample. You have just created what is known as a *slurry*.
6. Proceed to Section C.

C. Microbiological Tests

Note: Use the following procedures for each sample.

1. Label the three purple-capped bottles 1, 2, and 3, respectively.
2. Place an 18g needle onto a 1 ml syringe. Tighten needle onto syringe by pushing in and turning needle shield clockwise.
3. Remove needle shield. Place syringe needle into Tube 1, and withdraw **1.0** milliliter (ml) of slurry.
4. Flip plastic cap off first purple-capped bottle (labeled #1).
5. Insert syringe needle through rubber stopper. Inject sample into bottle.
6. Shake bottle #1 well.
7. Withdraw **0.1** (one-tenth!) ml of solution from bottle #1, and inject into purple-capped bottle #2.
8. Shake bottle #2 well.
9. Withdraw **0.1** ml of solution from bottle #2 and inject into purple-capped bottle #3.
10. Withdraw **1.0** ml of slurry from Tube 1 and inject into red-capped bottle.
11. Withdraw **1.0** ml of slurry from Tube 1 and inject into green-capped bottle.
12. Proceed to Section D.

D. Chemical Tests

Note: Use the following procedures for each sample.

pH/Total Alkalinity Test (Test Water in Void)

1. Perform test on water in void.
2. Follow instructions provided on wrapper.
3. Record results.

Chloride Test (Test Water in Void)

1. Perform test on water in void.
2. Dip lower end of chloride test strip into water in void. **Do not** dip test strip further than 9 mark.
3. Wait for horizontal orange completion string (at top of test strip) to turn dark.
4. Note where the tip of white, bullet-shaped peak on vertical orange titrator falls on number scale.
5. Record results.

Sulfide Test (Test Slurry from Section B)

Note: Tube 2 used in this test contains 1 ml of 2 Normal Hydrochloric Acid. Use care when handling this tube.

1. After you exit the void, use the 1 ml syringe/needle used in Section C to *carefully* add 1.0 ml of slurry from Tube 1 to Tube 2.
2. Carefully sniff area around mouth of Tube 2.
3. A distinct rotten-egg odor indicates sulfides are present.
4. Record results.
5. Dispose of the acid in Tube 2 properly.
6. Proceed to Section E.

For technical assistance, to request MSDS, or to place an order:

Call Toll Free: 970.884.4629

Or E-mail: products@bti-labs.com

E. Interpretation of Microbiological Results

After 5 and 15 days incubation, compare bottles with written descriptions, below. Record results.

1. Purple-capped bottles detect low nutrient bacteria (LNB). These bottles will turn cloudy if LNB are present.
2. Red-capped bottles detect organic acid-producing bacteria (APB). These bottles will turn cloudy orange or cloudy yellow if APB are present.
3. Green-capped bottles detect sulfate-reducing bacteria (SRB). These bottles will turn black or will have black slime form on the iron nail along the bottom of the bottle if SRB are present. The presence of black or gray flecks is **not** a positive reaction for SRB.

F. Interpretation of Chemical Results

Compare chemical results with Interpretations Chart on index card.

G. Formal Interpretation

Place all test materials, including completed index card with results, into the sampling pack. Seal the pack with tape and send to BTI Products via one or two-day express delivery service.

Address: 652 Silver Hills Road
Bayfield, CO 81122

Usage & Storage: Use by expiration date printed on kit box label. Store test materials in a cool, dry place out of direct sunlight. Do not eat or drink any of the contents of the kit. Keep out of the reach of children. Material Safety Data Sheets available upon request.

Disposal of Test Materials: Properly dispose of all kit components. Needles must be destroyed before disposal by cutting or bending back the needle. Syringes must be destroyed by breaking or shattering the barrel. Federal and local laws apply.

Used media bottles must be properly disposed of according to local regulations. Alternatively, bottles/kits may be returned to **BTI Products, LLC** for proper disposal for a fee of \$26.00 per kit.

Rev 5/10/19

MICkit[®] Barge: List of Kit Contents

Each of 5 Sampling Packs, Containing:

1. 3 Bottles BTI-LNB Medium (Purple Flip-Off Caps)
2. 1 Bottle BTI-APB Medium (Red Flip-Off Caps)
3. 1 Bottle BTI-SRB Medium (Green Flip-Off Caps)
4. 1, 15 ml Sampling Tube with 10 ml Sterile, Deionized Water (labeled "Tube 1")
5. 1, 15 ml Sampling Tube with 1 ml 2 Normal Hydrochloric Acid (labeled "Tube 2")
6. 1, 1 ml Syringe
7. 1, 18g Needle
8. 1 Sterile Tongue Depressor
9. 1 Sterile Cotton-Tipped Swab
10. 1 pH/Total Alkalinity Test Strip
11. 1 Chloride Test Strip
12. 1 Pair Rubber Gloves

WARRANTY

BTI Products, LLC's products are warranted by **BTI Products, LLC** to perform as described in the technical literature supplied with each product, provided the products are used, stored, and maintained in accordance with the directions provided. They must also be used before the expiration date. Adequate quality control must be done by the user of the products.

BTI Products, LLC disclaims any implied warranty of merchantability or fitness of its products for any other purpose than described in its technical literature, and in no event shall **BTI Products, LLC** be held liable for any consequential damages arising out of the aforesaid express warranty.

Should you have questions about this product or any of the products and services we provide, please call or write:

BTI Products, LLC
652 Silver Hills Road
Bayfield, CO 81122
970.884.4629
products@bti-labs.com

We welcome all comments and inquiries.

Need Help?

Call 970.884.4629

ANALYTICAL REQUESTS SHEET

Please fill out completely and return with the sample(s).

Send to: BTI Products, LLC

652 Silver Hills Road

Bayfield, CO 81122

970.884.4629

products@bti-labs.com

I. Sample Information

1. Sample name or site designation _____
2. Date sample collected _____
3. Date sample shipped _____
4. Type and location of sample _____
5. Company name and address _____
6. Contact name _____
7. Telephone and email _____
8. PO or Credit Card # _____
9. Name on card _____
10. Billing address _____

Please indicate below which analyses you wish to have performed on the sample. If you have any questions, please contact us at 970.884.4629.

II. Sample Analyses

A. Microbiological Analyses

- | | Cost Per Sample | Yes |
|---|-----------------|-------|
| 1. Viable culture | | |
| a. MICKit [®] Barge -- Inoculated by client and read by BTI Products | \$380 | _____ |
| b. MICKit [®] Barge -- Inoculated and read by BTI Products | \$721 | _____ |
| 2. Other (specify) _____ | _____ | _____ |

B. Other

- | | | |
|--------------------------|-------|-------|
| 1. Pipe analysis | Quote | _____ |
| 2. Photodocumentation | Quote | _____ |
| 3. Other (specify) _____ | _____ | _____ |

INTERPRETATIONS CHART

Microbiological Tests	Results	# Viable Bacteria per mL Sample or Slurry	Explanations
Low nutrient bacteria	0 positive bottles	None	2 or more positive LNB bottles is strong indication of MIC
	1 positive bottle	1 to 10	
	2 positive bottles	100 to 1,000	
	3 positive bottles	>10,000	
Acid producing bacteria	0 positive bottles	None	1 or more positive APB bottles indicates advanced MIC
	1 positive bottle	1 to >10	
Sulfate reducing bacteria	0 positive bottles	None	1 or more positive SRB bottles indicates highly advanced MIC
	1 positive bottle	1 to >10	
Chemical Tests	Results	Interpretations	Explanations
pH	<7	Acidic	Values below 7 are increasingly acidic & corrosive
	7	Neutral	Value of 7 is neutral
	>7	Alkaline	Values above 7 are increasingly alkaline & scaling
Alkalinity	0-40 ppm	Low	The higher the alkalinity value, the higher the scaling potential
	40-100 ppm	Moderate	
	>100 ppm	High	
Chloride	1.4 - 2.0	Relatively low	The higher the chloride value, the greater the potential for chloride-assisted pitting corrosion
	2.0 - 3.4	Moderate	
	3.4 - 5.0	High	
	>5.0	Very high	
Sulfide	"Rotten egg" odor	Present	Strong indication of MIC
	No "rotten egg" odor	Absent	Neutral with respect to MIC

TEST RESULTS

TEST DATA	SAMPLE #				
Sample Number	1	2	3	4	5
Background Information					
Barge Number					
Void Number					
Test Date					
Type of Sample Tested					
Color of Sample Tested					
Microbiological Results					
Low Nutrient Bacteria (# Positive Bottles)					
Acid Producing Bacteria (# Positive Bottles)					
Sulfate Reducing Bacteria (# Positive Bottles)					
Chemical Results					
pH					
Total Alkalinity (ppm)					
Chloride (Number Scale Value)					
Sulfide (Present--Yes or No)					