



Field Day Trivia Answers

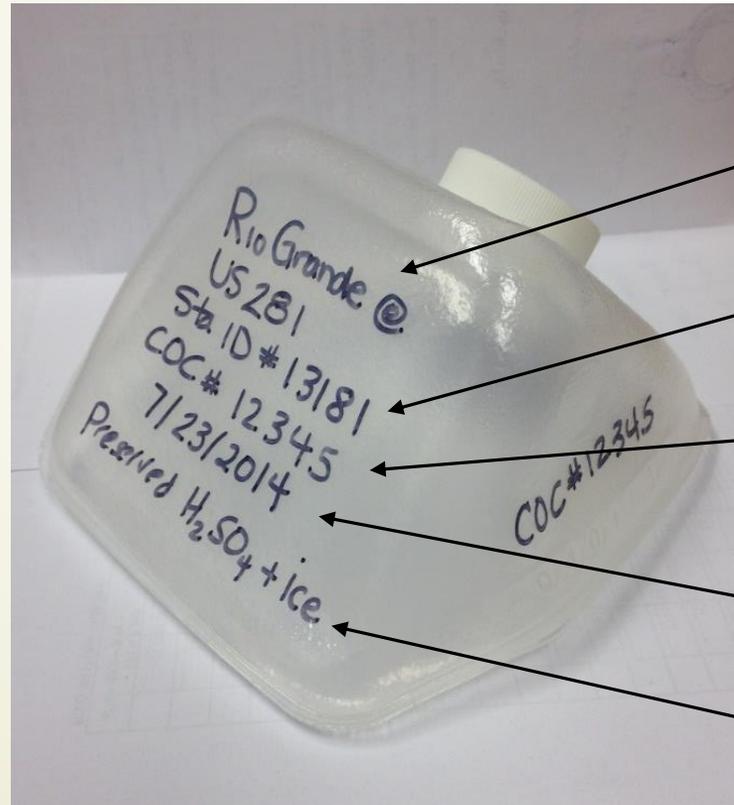
SWQM Workshop 2016

Water Quality: Part 1

1. A Quality Assurance document is in draft form and is making the rounds for review and comment. It's okay to begin collecting samples.
False
2. Multiprobe instruments are calibrated **in a temperature controlled environment, using NIST traceable standards, for specific conductance, pH, and DO.** (Chapter 8)
3. Rank the following in the order from most to least preferred location to collect a water quality sample. (Chapter 5-1)
 - 2 from a bridge
 - 1 by wading
 - 3 from a bank

Water Quality: Part 1

4. A container label should have enough information to allow the lab to associate the sample with the request for analysis tag or chain of custody. What information should be included? (Chapter 5-4)



Station Description

Station ID

Sample Tag ID, RFA #,
COC #

Date/Time

Preservation

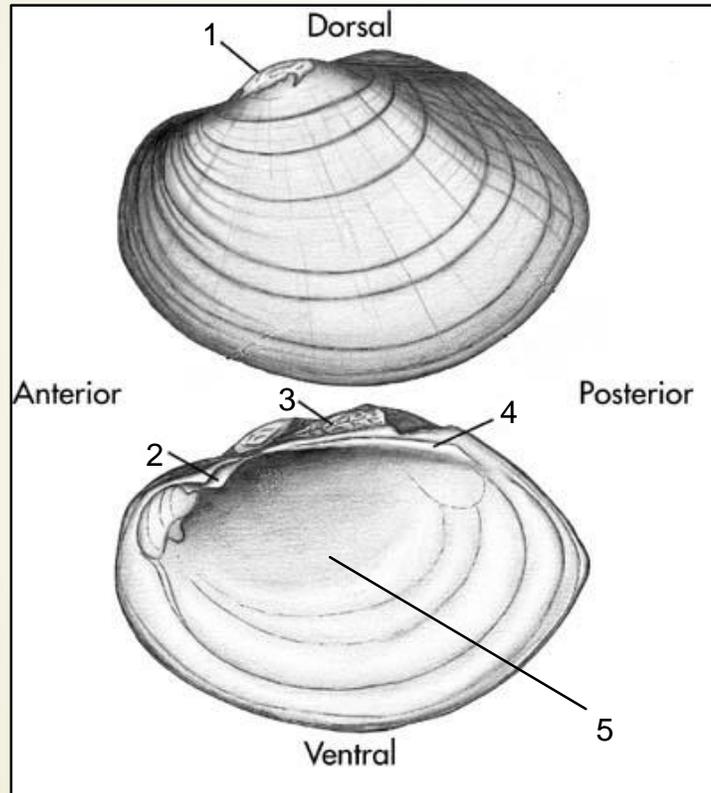
Water Quality: Part 2

5. The total depth at your sample site is 1.5 m (5 ft.). What depth should the water chemistry samples be collected? (Chapter 5-1)
at a depth of 0.3 m (1ft)
6. When sampling from a bridge, it's okay to dip your containers in the bucket as long as you rinsed the bucket 3 times and collected your bacteria sample first. (Chapter 4-3 and 5-1) **False**
7. After collecting water chemistry samples, sample preservation by both acid and ice must occur within 15 minutes. (Chapter 5-5)
8. Samples should be shipped the same day they are collected if possible. (Chapter 5-17) **True**
9. When packing samples **put the containers in a large plastic bag with enough ice to keep the samples < 6°C, and place the chain of custody forms in a ZipLock bag taped to the inside of the ice chest lid.** (Chapter 5-17)

Water Quality: Bonus Questions

1. What is the current Absolute Barometric Pressure (ABP) provided by your display unit? **Hopefully you got this one correct.**
2. What is the calculated ABP?
Local Corrected BP = 30.20 in. x 25.4 = 767.1 mm
ABP = 767.1 - 2.5 (1234/100) = 736.2 mm Hg
3. Based on the answers you provided in questions 1 and 2, does the barometer in your display unit need to be calibrated? **Probably yes.**
4. Using the ABP you calculated in #2, calculate the % Saturation value for Dissolved Oxygen (DO) with the following equation:
%Saturation DO = (736.2/760) x 100 = 96.8%

Mussel Monitoring: Part 1



1. Umbo (beak)
2. Pseudocardinal teeth
3. Hinge
4. Lateral teeth
5. Nacre

Mussel Monitoring: Part 2

6. The larvae of freshwater mussels are called **glochidia**.
7. List one freshwater mussel collection method. **Tactile, visual, snorkel, SCUBA**
8. How many total minutes are required to complete a 5 person-hour mussel survey with a 6 person field crew?
50 minutes total (10 minutes per person-hour survey period)
9. Name one benefit that freshwater mussels provide to aquatic ecosystems.
Food source for fish, mammals, and birds; contribute to nutrient cycling (filtering, burrowing); shells provide habitat for benthic organisms; dense mussel beds stabilize substrates; bioindicators; filter feeders; increase water clarity
10. List one threat to freshwater mussel survival.
Habitat modification, dams/impoundments, dredging, pollution, overharvest, siltation, hydrological changes, zebra mussels and other invasive species, loss of host fish

Mussel Monitoring: Bonus Questions

1. How many species are on display at the bonus question station? **Two**
2. Give the common name of a species on display at the bonus question station. **Pistolgrip or Southern Mapleleaf**
3. Name one Texas threatened freshwater mussel species.
Texas Pigtoe, Triangle Pigtoe, Texas Fatmucket, Sandbank Pocketbook, Southern Hickorynut, Louisiana Pigtoe, Texas Hornshell, Texas Heelsplitter, Salina Mucket, Golden Orb, Smooth Pimpleback, False Spike, Texas Pimpleback, Mexican Fawnsfoot, Texas Fawnsfoot

Stream Flow: Part 1

1. What is the most critical aspect of site selection necessary to yield reliable and repeatable discharge measurements? **Laminar flow conditions**
2. What is the minimum number of cross-sections recommended for a stream wider than 5 feet but narrower than 10 feet? **Ten**
3. What is the maximum percentage of the total discharge that should be contained in any single cross-section? **No more than 10%**
4. What does each double mark on the fixed rod of a top-setting wading rod represent? **0.5 feet**
5. When using a top-setting wading rod in a cross-section that is 1.6 feet deep, what number on the sliding rod should be across from 6 on the tenths scale? **One**

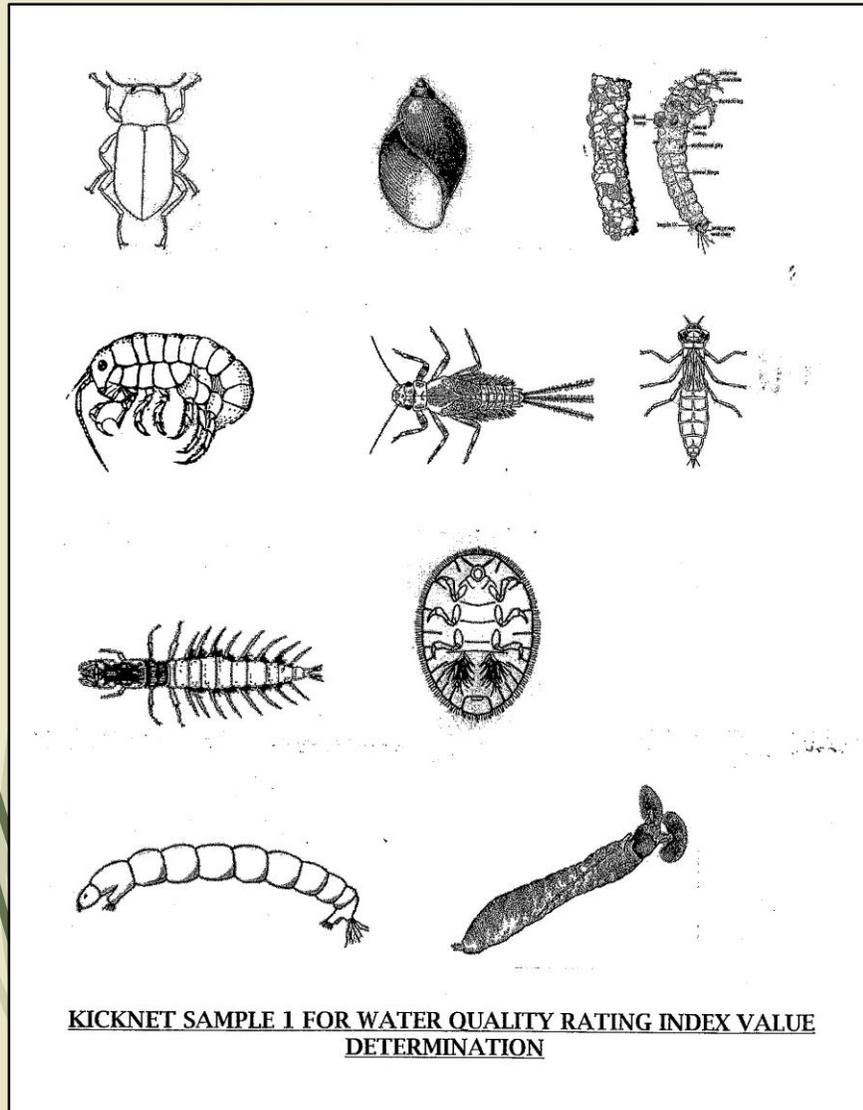
Stream Flow: Part 2

6. When measuring velocity at 0.6 (60%) of the depth, where should the flow sensor be placed in the water column: 60% above the bottom or 60% below the surface? **60% below the Surface**
7. Starting with which stream depth are 0.2 and 0.8 measurements (20% and 80% of depth) required? **2.5 feet**
8. Negative velocities should be treated as 0 when making discharge calculations. **False**
9. What value should be entered into SWQMIS for Storet/Parameter Code #00061 at a station with a calculated discharge of 9.35 cfs? **9.4**
10. When using a FlowTracker: If a QC error is reported for an angle greater than 20 degrees, the measurement should be repeated with rod turned far enough to eliminate the error. **False**

Stream Flow: Bonus Questions

1. How does one calculate the rod setting to make a 20% of the depth measurement?
Multiply the 0.6 depth setting by 2
2. In a stream that is exactly 10 feet wide, how far from the bank will the first measurement be taken?
0.5 feet
3. Discharge (stream flow) is calculated by multiplying which two numbers obtained through the flow measurement process?
Area and Velocity

Bug Collection: Kicknet Sample 1



KICKNET SAMPLE 1 FOR WATER QUALITY RATING INDEX VALUE DETERMINATION

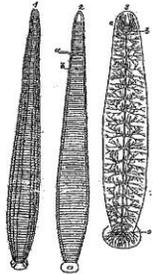
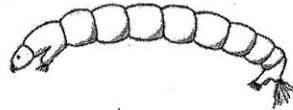
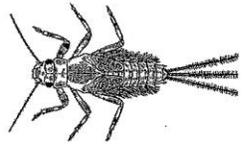
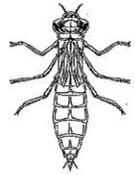
KICKNET SAMPLE 1

Index Value	Pollution Tolerance Categories	(Macroinvertebrates are not to scale)
Number of Circled Organisms <u>5</u> x 4 = <u>20</u> index value (ex: 5 mayflies count as 1 circled organism)	GROUP 1: SENSITIVE (These organisms are generally pollution-intolerant. Their dominance generally signifies GOOD WATER QUALITY.)	
Number of Circled Organisms <u>2</u> x 2 = <u>4</u> index value	GROUP 2: SOMEWHAT SENSITIVE (These organisms can exist in a wide range of water quality conditions.)	
Number of Circled Organisms <u>3</u> x 1 = <u>3</u> index value	GROUP 3: TOLERANT (These organisms are generally tolerant of pollution. Their dominance usually signifies POOR WATER QUALITY.)	
WATER QUALITY RATING Total Index Value = <u>27</u>	Water Quality Rating Indices <input checked="" type="checkbox"/> Excellent (>22) <input type="checkbox"/> Good (17-22) <input type="checkbox"/> Fair (11-16) <input type="checkbox"/> Poor (<11)	

Sources: <http://www.state.ty.us/nrepc/>
<http://www.discovercalifornia.com/html/s05nature05a09b.html>
<http://people.virginia.edu/~sos-1wla/Stream-Study/Methods/Form.HTML>

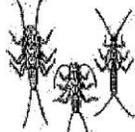
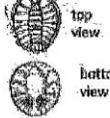
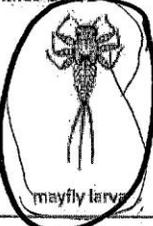
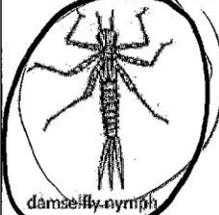
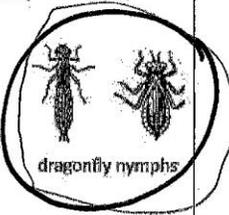
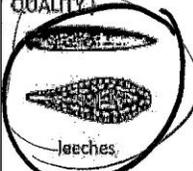
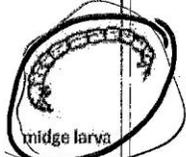
Adapted for the HELP program by HVA, tel: (413) 394-9795

Bug Collection: Kicknet Sample 2



KICKNET SAMPLE 2 FOR WATER QUALITY RATING INDEX VALUE DETERMINATION

KICKNET SAMPLE 2

Index Value	Pollution Tolerance Categories	(Macroinvertebrates are not to scale)
Number of Circled Organisms <u>1</u> x 4 = <u>4</u> index value (ex: 5 mayflies count as 1 circled organism)	GROUP 1: SENSITIVE (These organisms are generally pollution-intolerant. Their dominance generally signifies GOOD WATER QUALITY.)  riffle beetle adult  dobsonfly larva other snails  caddisfly larvae  stonefly larvae  water penny larvae  mayfly larva	 top view  bottom view
Number of Circled Organisms <u>2</u> x 2 = <u>4</u> index value	GROUP 2: SOMEWHAT SENSITIVE (These organisms can exist in a wide range of water quality conditions.)  damselfly nymph  sowbug clams  crayfish  beetle larva  scud  dragonfly nymphs crane fly larva	
Number of Circled Organisms <u>2</u> x 1 = <u>2</u> index value	GROUP 3: TOLERANT (These organisms are generally tolerant of pollution. Their dominance usually signifies POOR WATER QUALITY.)  leeches aquatic worms  pouch snails  midge larva  black fly larva	
WATER QUALITY RATING Total Index Value = <u>10</u>	Water Quality Rating Indices <input type="checkbox"/> Excellent (>22) <input type="checkbox"/> Good (17-22) <input type="checkbox"/> Fair (11-16) <input checked="" type="checkbox"/> Poor (<11)	

Sources: <http://www.state.ky.us/nr/epc/>
<http://www.discovercarolina.com/html/s03nature05a03b.html>
<http://people.virginia.edu/~sos-lwls/Stream-Study/Methods/Form.HTML>

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