

Name \_\_\_\_\_

Date \_\_\_\_\_

### Is it too salty? Hydrofracking

**Background:** Now that you know a bit more about water pollution, you will measure a variety of water samples to determine the levels of conductivity and/or chloride. Since you can't see this kind of pollution, you will be collecting water samples and bringing them back to the lab for testing. You will be testing surface water and tap water, depending on your class.

**Before you begin:** List the kinds of things that you think may impact the concentration of salt in the water:

Using the "Salt Pollution Reference Table", what level do you expect your water sample to have (safe, harmful to living things, harmful to human health, lethal)?

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Why? \_\_\_\_\_

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#### Materials:

- Sample bottles
- Tape & marker to label your bottles
- Gloves
- Conductivity or chloride meter

#### Procedure:

1. Collect samples from home and bring them back to the classroom the next day. Label your bottle and write down where you collected your sample.
2. When you return to the classroom, measure the conductivity levels of your samples.
3. Complete the data table below for your class data. Use the equation provided by your teacher to convert between conductivity and chloride levels.

*Write the equation here:*

4. Complete the chart by adding in the benchmark levels from the Reference Table.

Site #/description	Conductivity ( $\mu\text{S}/\text{cm}$ )	Chloride (mg/L)	Level
<i>Example: Site 1, school water fountain</i>	540	96	<i>Harmful to living things</i>
<b>Class Average</b>			

**Discussion Questions**

1. Create a graph of your data.
2. You calculated an average for your class. How do all of your data compare with this average (this is called *variability*)? In other words, are your data close to the average or do they vary greatly from one another? Why or why not?

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3. If you wanted to repeat this experiment, explain what you would do to improve your confidence in the results.

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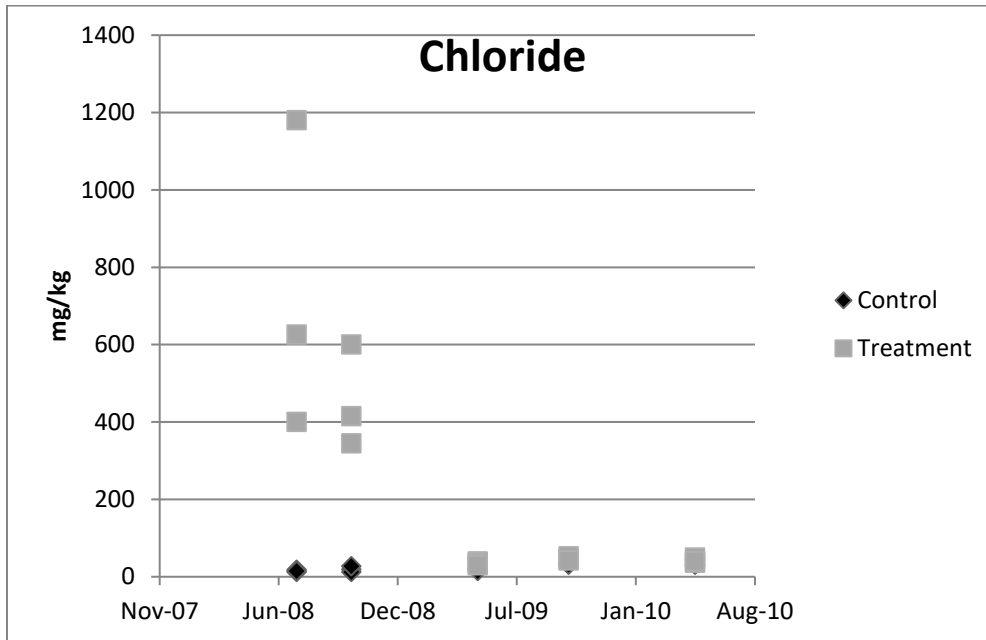
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4. Using the Salt Pollution Reference Table, decide whether the level of salt in your school district is a problem for other living things, or for human health?

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5. Think back to the first graph you saw of the scientists' chloride data from the flowback water. It is also provided below. How does your class average compare with data from the scientists? In other words, are your data similar to the results found by the scientists who were investigating the flowback water? Why or why not?




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6. The local town council needs to decide whether to allow the application of flowback water on roads in your area. Would you allow this to take place? Why or why not? Which data set do you feel is more useful for making a recommendation? Why?

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