For each question, list any books, articles, or web sites that you used to gather information.
(You do not have to list the ones that are given in the questions themselves.)

1. (15 pts) Answer the following in your own words. No credit for copying!
   a. Define primary and secondary drinking water standards as these terms are used under the Safe Drinking Water Act. Be sure to specify the most important difference(s) between the two.
   b. Primary drinking water standards are generally specified in one of two ways. What are the two ways?
   c. Define maximum contaminant level (MCL) and maximum contaminant level goal (MCLG), specifying the most important difference(s) between the two. Find an example of a contaminant that has an MCL equal to its MCLG, and an example of a contaminant where the MCL is greater than the MCLG. Why is the MCLG never greater than the MCL?

   Answer the following questions in your own words.
   a. What change was made to the MCL for arsenic in the early 2000’s? Why was this change delayed for a while, and why was it ultimately approved?
   b. What are some of the benefits of lowering the arsenic standard? What are some of the costs?
   c. Briefly explain why we are concerned about arsenic levels. What human health effects are associated with arsenic exposure?
   d. Where does arsenic in drinking water come from?
3. (15 pts) Answer the following in your own words.
   a. Why is there no MCL for microorganisms such as *Giardia lamblia*, *Legionella*, and viruses?
   b. What types of treatment are required to require these microorganisms? What are the required levels of inactivation for *Giardia*, viruses, and *Legionella*?
   c. Recently, EPA has been instituting a set of “enhanced surface water treatment rules” (ESWTR). What is the main objective or purpose of this set of rules?

4. (20 pts) Read the following article:
   I’ll try to get a PDF copy to distribute, but you should be able to access this article from a USF computer by going to http://pubs.acs.org and searching for it there. After reading the article, answer the following questions (in your own words, of course).
   a. Summarize the approach and the specific steps used by EPA in setting a drinking water standard for trichloroethene (TCE).
   b. In your opinion, is it reasonable to establish a MCL for this contaminant? In other words, is there need to regulate TCE specifically in public water supplies?

5. (15 pts) Read the following short articles:
   I will try to get PDF copies to distribute, but you can access these from a USF computer via the http://pubs.acs.org web site. You can also refer to the following EPA web site. [http://www.epa.gov/dwstandardsregulations/perchlorate](http://www.epa.gov/dwstandardsregulations/perchlorate)
   Based on what you read, do you think it is appropriate for EPA to set an MCL for perchlorate at this point? Why or why not? Hint: answer question 5 after you answer question 4, because question 4 will help you understand what is involved in setting an MCL.

6. (15 pts) Get a copy of the annual report that your city sends you about the quality of your drinking water. Turn in a photocopy of the report. Is your city in violation of any of the applicable regulations? Are there any contaminants that look like they might be cause for some concern? Explain briefly.