Water Resources Lab:

I: Water Resources:

Use the Internet and local source to answers the following questions.

Part A: Drinking Water

What is the difference between potable water and non-potable water?

Where does Muscatine’s drinking water come from? Is this water groundwater or surface water from a river or lake? What is the source? Be specific.

Where does Chicago’s drinking water come from? Is this water groundwater or surface water from a river or lake? What is the source? Be specific.

List the location of this place. Where does Miami’s drinking water come from? Is this water groundwater or surface water from a river or lake? What is the source? Be specific.

Where does Los Angeles’s drinking water come from? Is this water groundwater or surface water from a river or lake? What is the source? Be specific.
Part B: Waste water

Describe the differences between "Blackwater" and "Greywater".

Describe the difference between primary water treatment and secondary water treatment.

What does Primary water treatment remove from wastewater?

What does secondary water treatment remove from wastewater?

Where does Muscatine’s wastewater go? What is the name of this place?

Where does Muscatine’s storm water go?
Part II: Bottled Water

Examine a bottle of bottled drinking water. (Example: Evian, Deja Blue, Dasina, etc.) Answering the following question. (some cases you may need to call the toll free number or check the company website for more information, than what is provided on the label.)

What’s the brand name of the water?

Who bottled the water?

What size did your bottled water come in: 1 liter, 1 quart, 20 oz., 500 milliliters, etc.?

Read the label carefully, is your water filtered or spring water?

How is your water processed: Purified, Filter, reverse osmosis, ultraviolet treated?

What is the source of your water?

Is anything added to the water for taste or quality.

How much did you water cost?

How much does it cast per oz? (1 liter = 33.28 oz.)

How much would the water cost per gallon if you bought it at the rate you calculated above? (1 gallon = 128 oz)

Do the following at the Local Supermarket.

Find the price for a gallon of milk. What is it?

Find the price for a gallon of gasoline. What is it?

Find the price of a gallon of bulk-filtered water. What is it?

Find the price of a gallon of bulk-distilled water. What is it?

How do those price compare with your bottled water?
LONDON – It made for great headlines, but the fact that the UK version of Coca-Cola's Dasani brand bottled water comes out of the London public supply should hardly have come as a surprise.

"Coke's in hot water," "Eau dear" and "The real sting" were three good examples of the newspaper headline writer's art, but the only real difference between Dasani and many other bottled waters is that the humble origin of the product is firmly in the spotlight.

Figures from independent beverage research company Canadean show that at least two out of every five bottles of water sold around the world are, like Dasani, "purified" waters, rather than "source" waters which originate from a spring.

Most of the supermarket own-label bottled waters consist of treated mains water. They may be dechlorinated, filtered further, purified using ultraviolet light and have minerals either added or subtracted. They may also be carbonated.

In short, they are subjected to many of the same treatments that source waters undergo to satisfy public health requirements after being pumped up from the ground.

Alongside flagship brands such as Evian, Perrier, and Malvern, most of the big-name water producers market several purified water lines, often in countries where the safety of the public water supply is a concern.

Nestle's Pure Life is one such leading brand and PepsiCo's Aquafina is another, while Danone's Sparkletts and Alhambra marques are top sellers in the United States, where mains water purity is not usually an issue.
You also have mixed source waters, like Nestle's Aquarel, which comes from seven different springs. Such spring water is cheaper to produce and therefore to sell, and has proved a big hit with consumers in Europe and elsewhere.

But generally speaking, anything that doesn't say "source" or "spring" on the label is just fancy tap water.

PURE HYPE?

So why all the brouhaha over Dasani, a fairly typical product in a rapidly expanding market?

The origin of UK Dasani (it's produced all around the world but is always purified rather than source water) came to light when a complaint was made to the British Food Standards Agency over Coke's use of the word "pure" in its Dasani marketing.

The complaint, now being dealt with by the local authorities where Dasani is bottled in Sidcup, east London, hinges on the charge that the marketing implies that tap water is 'impure'.

As a market for bottled water, the UK is relatively immature. Britons consume an average of 28 litres of bottled water per year, compared with about 140 litres for Italy and France.

So the fact that bottlers take water, purify it further and sell it on can hit the headlines, especially if the water producers take a substantial mark-up in the process.

"Coke didn't do itself any favours by not getting the water supplier on side to begin with," one drinks industry insider said of the local supplier Thames Water.

Like Nestle, McDonald's and Cadbury Schweppes, Coke makes a gratifying target for journalists, in that all those companies trade heavily on their brand.

That makes them extremely vulnerable to criticism, as Coke already found to its cost with its failed "New Coke" launch.

YOU'RE NOT JUST BUYING WATER
Coca-Cola's seven million pound marketing drive for Dasani has taken a savage hit, but the success of the brand in other countries, such as the United States where it is the number two seller, suggests it isn't about to go away.

In the developing world you usually buy bottled water because it's clean, or because it doesn't taste of chlorine. In the west, it's a "lifestyle choice".

Most consumers in developed countries would accept that the water that comes out of their taps is clean enough and quite serviceable for cooking, washing or even drinking.

But just as a pair of supermarket own-brand running shoes will do the job, Nike, Reebok and Adidas can all charge top dollar for the kudos, the street cred, the style statement they make.

This is the essence of brand equity, and it's why consumers are happy to pay over the odds for Welsh TyNant water in Cyprus, or French Evian in the Peruvian Andes. It's also why the "water sommelier" has become a feature of upmarket U.S. restaurants.

"Branding does matter, even for a mundane product like water," Frits van Dijk, chief executive of Nestle Waters, said last year.

"We produce value-added waters. Marketing and R&D all have to be financed somehow and that's why you'll never see Nestle in the very low price market. It's not our territory."

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You May find the additional website helpful.

http://www.nrdc.org/water/drinking/nbw.asp
http://www.gem.msu.edu/gw/btl_wtr.html

Given the following information why do you buy bottled water?
Part III: Your Water Bill

Locate a Water bill from your utility company. (If you don’t have one available or you have your water drawn from a private well, you may use the following technique. Using “Google” search for images of a “water bill”. Just go to “Google Images” and type “water bill” into the text search box. You should be rewarding with numerous sample bills to look at. Pick one that is appropriate and complete the exercise.)

Answer the following questions.

How much do you pay for Water?

Is the water charge separate from the sewage charge?

How much do you pay for sewage service?

Do you pay a separate amount for storm water removal?

Look at your water usage for last month. How is the usage measured: gallons, CCF (hundreds of cubic feet), CF (cubic feet), or liters? If you bill does not record the water usage in gallons you will need to convert your value to gallons. One CCF is 100 cubic feet of water, which is equal to 748 gallons. So 3 CCF would be 2244 gallons of water. One cubic foot of water is 7.48 gallons. One liter is 0.264 gallons.

How many gallons of water did you use last month?

Take the number of gallon of water and divide it by the number of people in your household. What is that value?

Take the previous value and divided it by the number of day in last month. How much water did each person per day in the household use?
How does this number compare with the national average of 80 – 100 gallon per person per day?

Often your water bill might include charges for Refuse (trash pickup) and recycling. Are these charges on your bill? If so, how much do you pay for each service?