What's in *Your* Water Bottle?

Case Study #1

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References and Further Reading:

Cornell University, 'Drinking Water Alternatives: Bottled Water' by Ariz R. Mehta
http://hosts.cce.cornell.edu/wq-fact-sheets/Fspdf/Factsheet11_RS.pdf

Natural Resources Defense Council, 'The Truth About Tap', by Andrew Postman,
https://www.nrdc.org/stories/truth-about-tap
accessed 9/12/2016

E-Magazine, 'Message in a Bottle – Neither Cleaner or Greener than Tap Water' by Brian C. Howard, http://www.emagazine.com/view/?1125
accessed 09/13/06

Science News Online, Vol. 156, No. 9, August 28, 1999, 'What's Coming Out of Baby's Bottle?', at www.sciencenews.org/sn_arc99/8_28_99/food.htm

Study Warns of plastic peril in baby bottles', Meagan Fitzpatrick, The Vancouver Sun, Feb. 8th, 2008 and 'Plastics pulled off shelves', Nanaimo Daily News, Robert Barron, April 17th, 2008

'The Bisphenol-A Debate: A Suspect Chemical in Plastic Bottles and Cans, The Green Guide', National Geographic, June, 2006, Catherine Zandonella, http://www.thegreenguide.com/doc/114/bpa accessed 09/10/08

Health Canada, 'Drinking Water'
http://www.hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/index_e.html, accessed 9/14/2016

Tapped Out: The True Cost of Bottled Water, The Green Guide, National Geographic, August 2007, Solvie Karlstrom, http://www.thegreenguide.com/doc/121/bottle, accessed 9/14/2016

Bottled Waters of the World
http://www.finewaters.com/Bottled_Water/Index.asp, accessed 9/15/2016

The Globe and Mail 'Bottled water has high level of bacteria, researchers find', by Carly Weeks, May 25, 2010.

Drinkable Water Book, WaterisLife.com

Bottled Water Brand: _____

Source: _____

Treatment: _____

	Conc (mg/L)	**Conc (mM)**	**Conc (meq/L)**	
Cations				
Anions				

Charge Balance = (Σ –'ve – Σ +'ve)/((Σ –'ve + Σ +'ve) * 100%

Ionic Strength (M) = 0.5 Σ c_i Z_i^2 , where c_i = molar conc and Z_i = charge

Total Hardness (ppm $CaCO_3$) = Σ $[M^{2+}]$ x 100,000 mg/mol

Total Alkalinity (ppm $CaCO_3$) = Σ [bases] x 50,000 mg/equiv