



## More Info. on Hot Water Use In Canada

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With Support from the OERD and the OEE

**ACEEE Hot Water Forum 2010**

## Background

**In 1985 M.Pearlman & B.E.Mills, of Ontario Hydro Research, presented a study of residential hot water use patterns (ASHRAE Transactions Vol. 91, Part 2A).**

**The DOE used the above study as the basis for Title 10, CFR, Part 430, Appendix E to Subpart B- Uniform Test Procedure for Measuring the Energy Consumption of Water Heaters.**

**In 2007 / 2008 NRCan conducted a field study of Hot Water Use in ~ 37 homes in the Greater Ottawa Area, which indicated that hot water use had changed significantly over the last 25 years.**

**In 2009, this hot water use study was extended to cover another 37 homes from Hamilton, London, & Sudbury in Ontario, with the help of Union Gas Ltd. and Caneta Research Inc.**

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# Were the Results Similar ?

We looked at the key parameters of:

- **Average Daily Hot Water Volume Used per Household**
- **Average Number of Hot Water Draws Made per Day**
- **Average Volume of Hot water Used per Draw, and**
- **Average Hot Water Draw Volume Flow Rate**

**Each of which has the potential to affect the efficiency of a water heater.**

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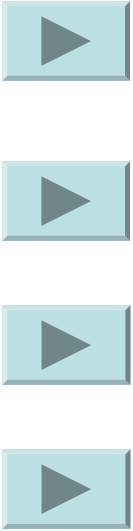
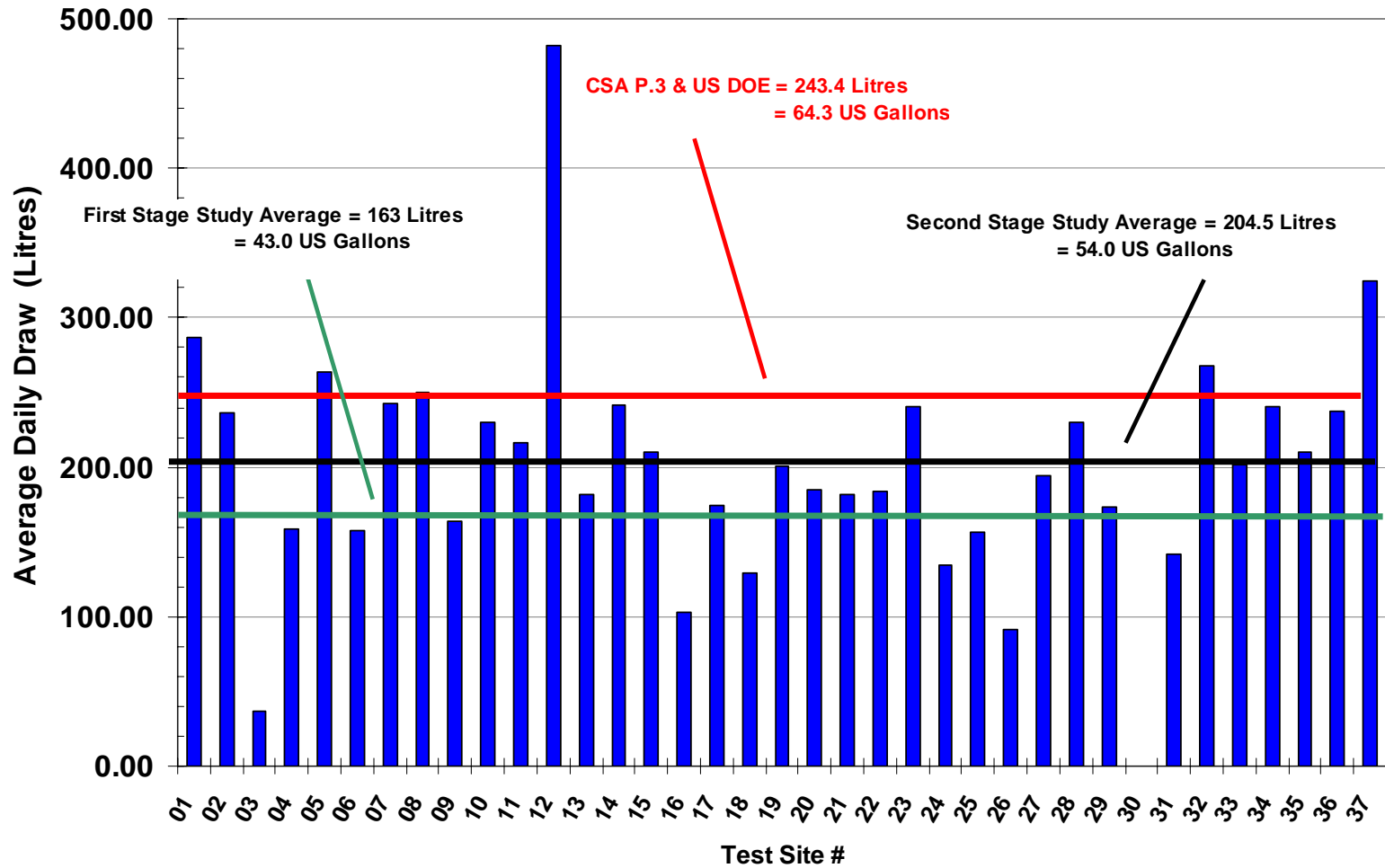


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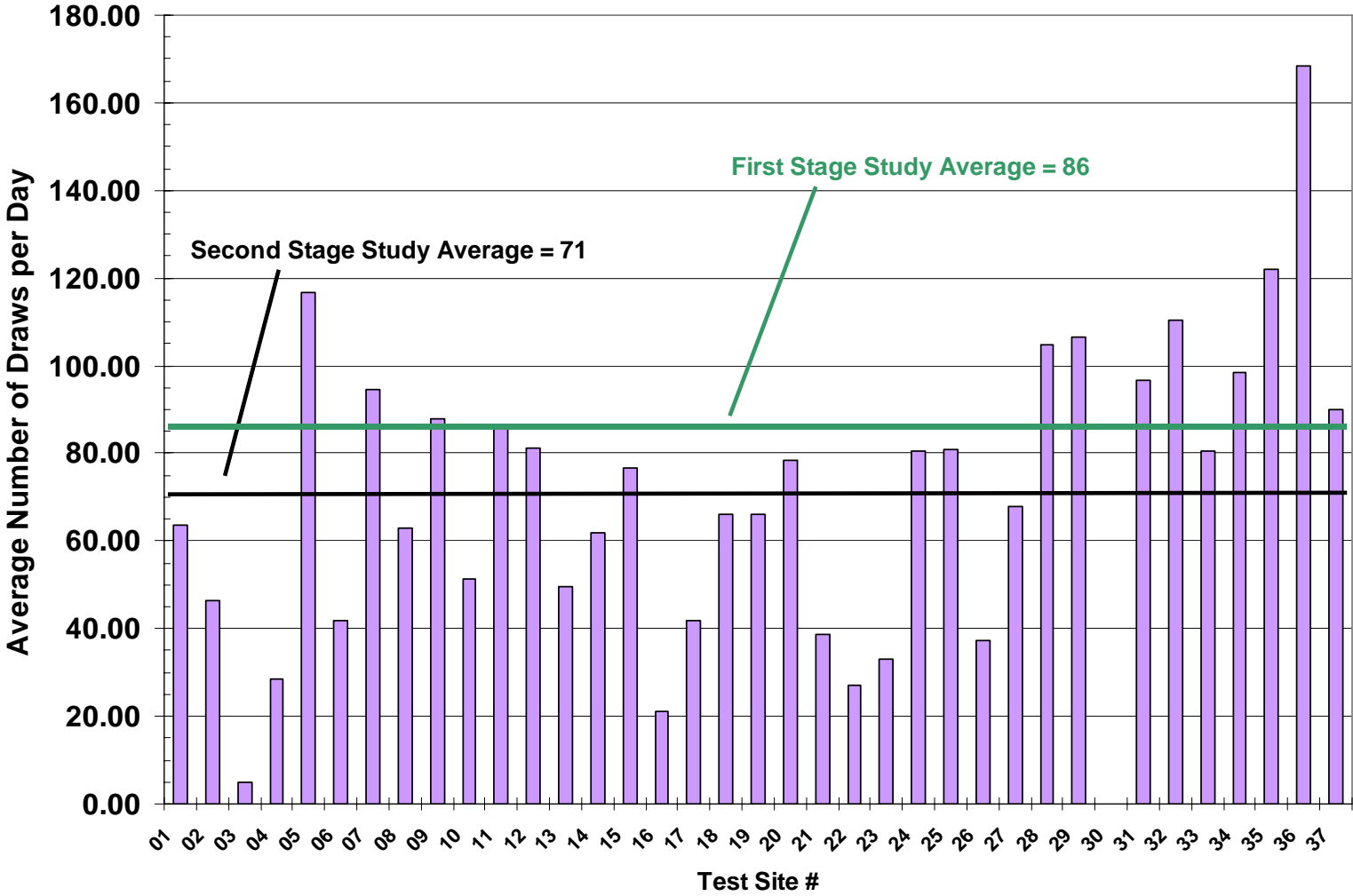
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# Average Daily Hot Water Use per Household



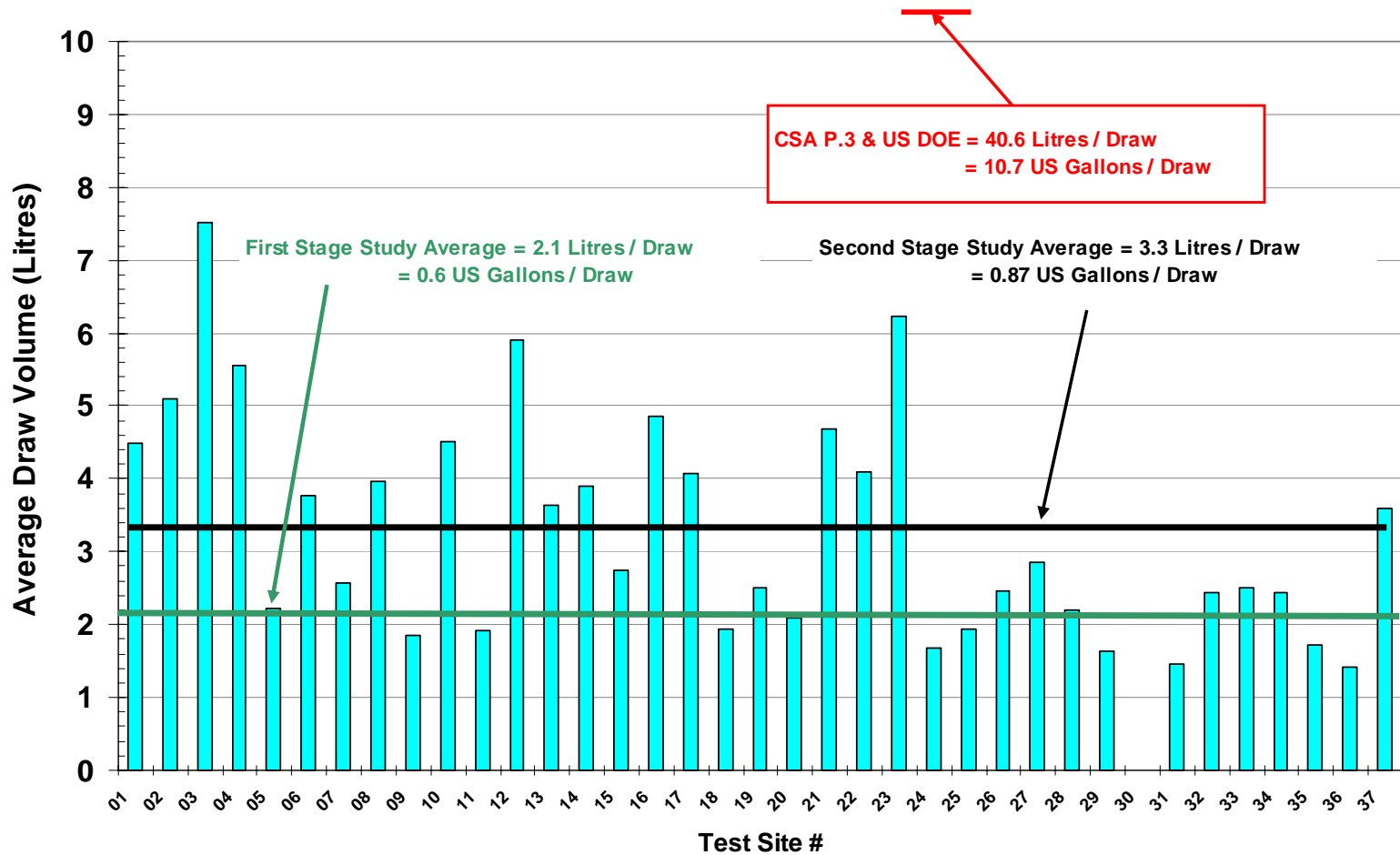
# Number of Daily Hot Water Draws



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# Average Volume of Hot Water per Drawn



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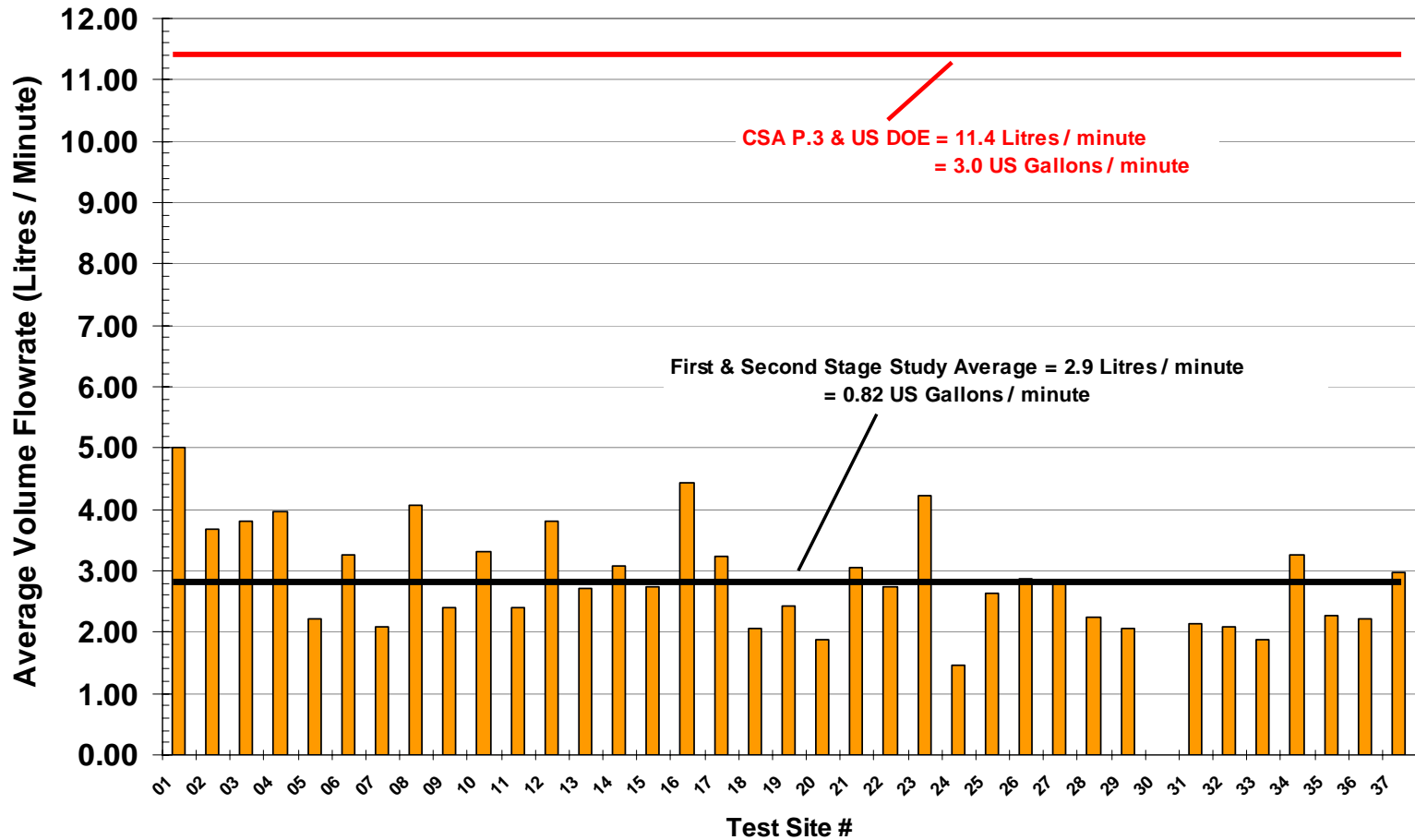


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# Average Hot Water Draw Volume Flowrate



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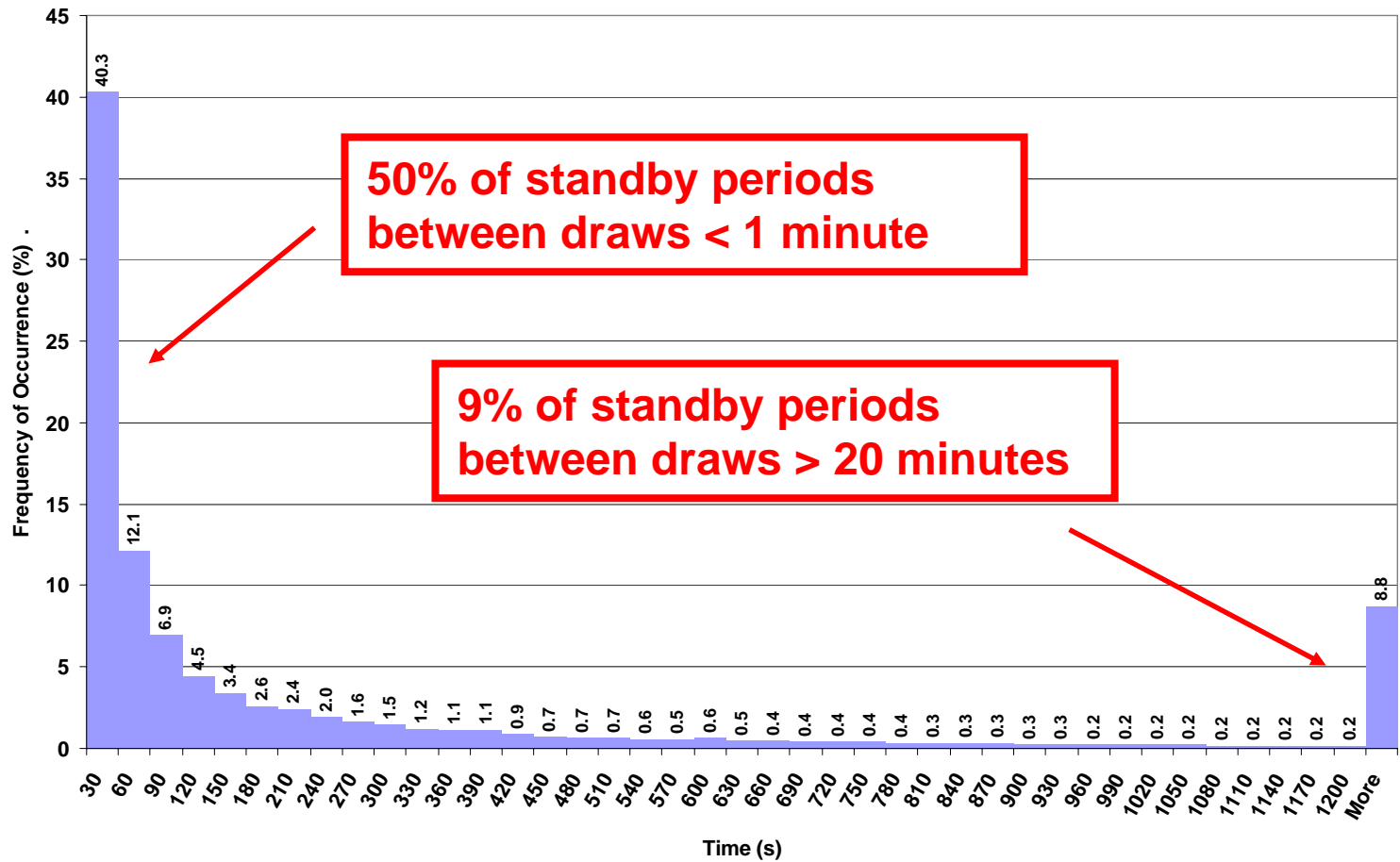
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# Daily Standby Period Breakdown



Delays Between Water Draws



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## Conclusions:

- The average family hot water use has dropped over the last 25 years.
- The number of hot water draws per day is significantly higher than that assumed by the current test standards
- The volume of hot water used per draw is lower than assumed in the current test standards.
- The average volume flow rate is lower than assumed in the current test standards.

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# Recommendations

- This hot water use study should be extended to cover other regions of Canada and possibly the US, to establish a truly comprehensive data set.
- The results of this study should be considered as the basis for making revisions to the current water heater performance test Standards in Canada and/or the US.

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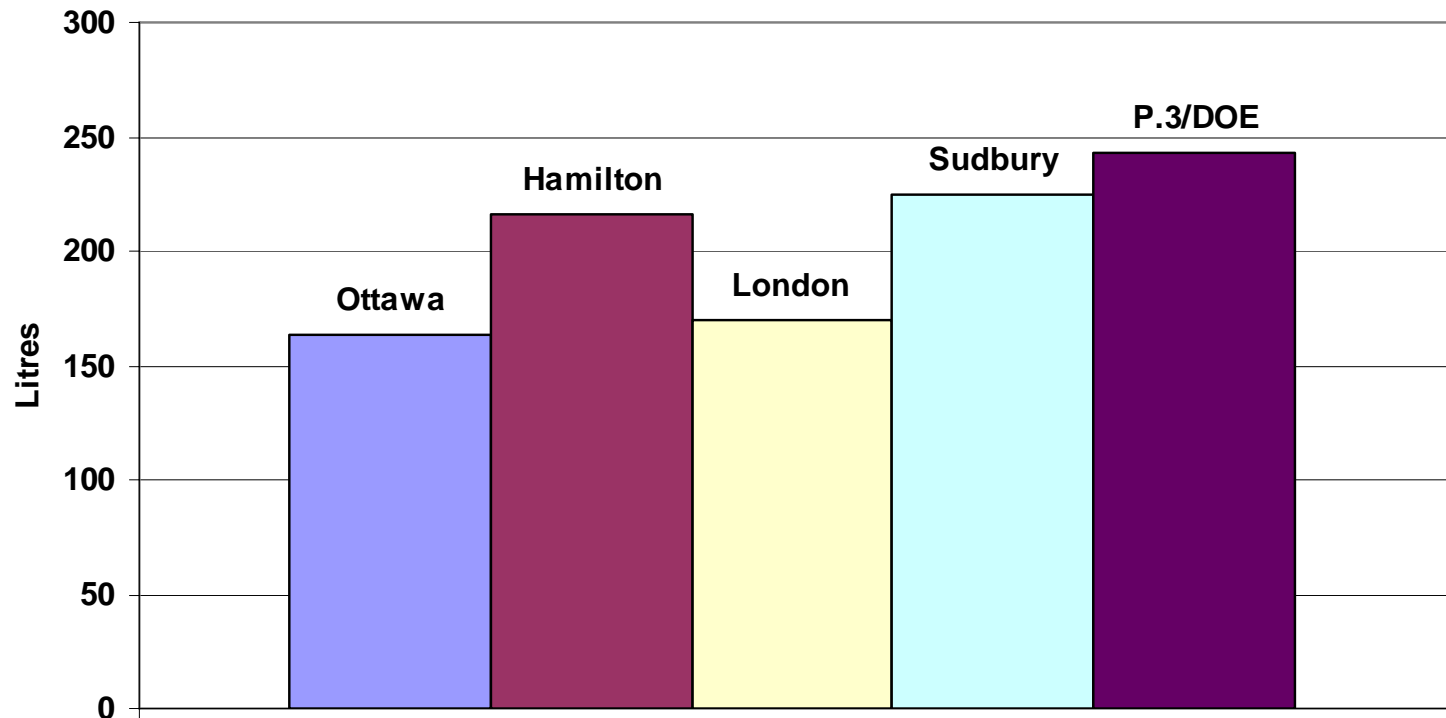
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# Average Daily Hot Water Use per Household



## Daily Hot Water Volume By Region



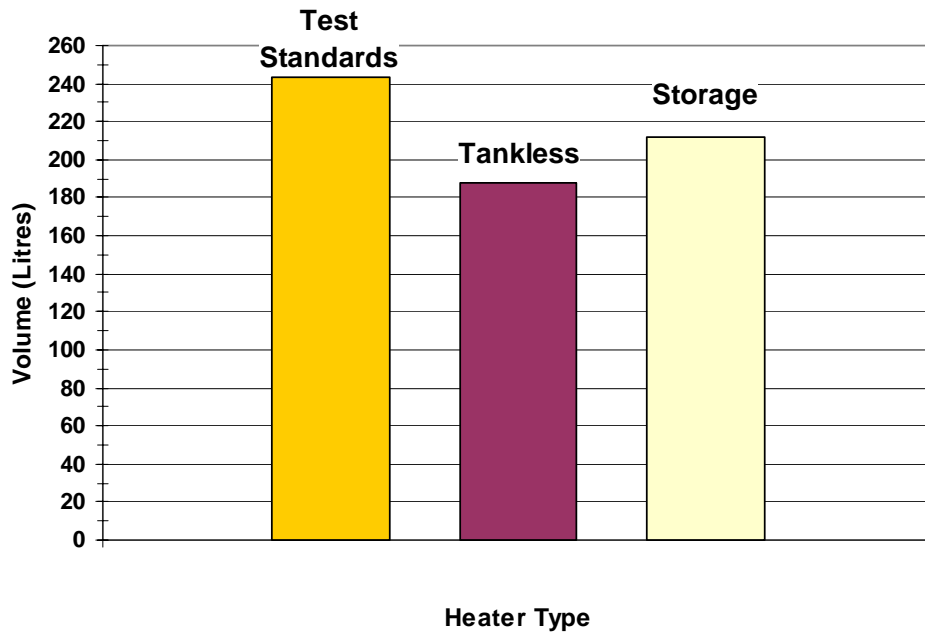
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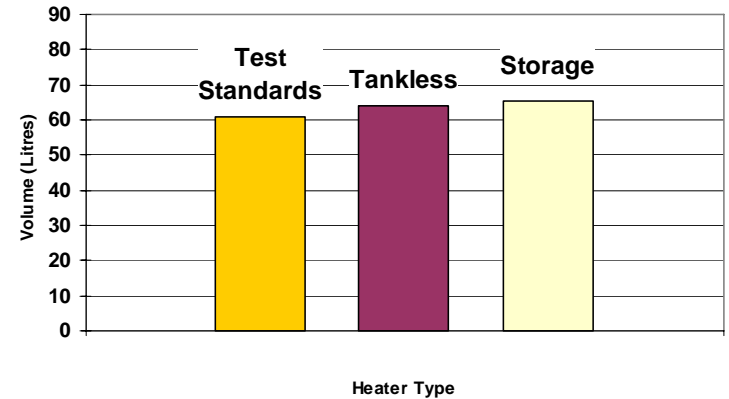
# Average Daily Hot Water Use per Household



Average Daily Volume By Household & Heater Type



Average Daily Hot Water Draw Volume per Person by Heater Type

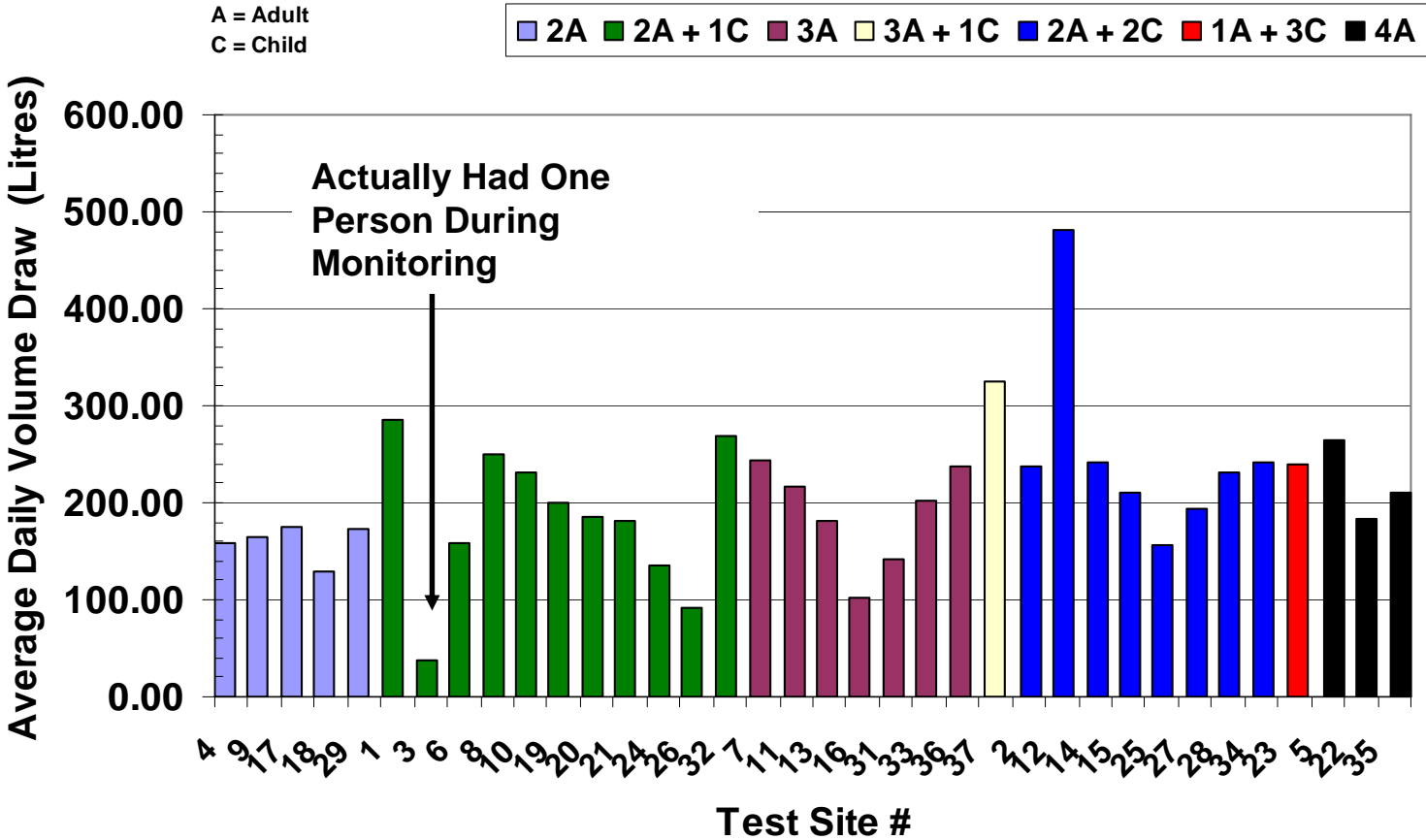


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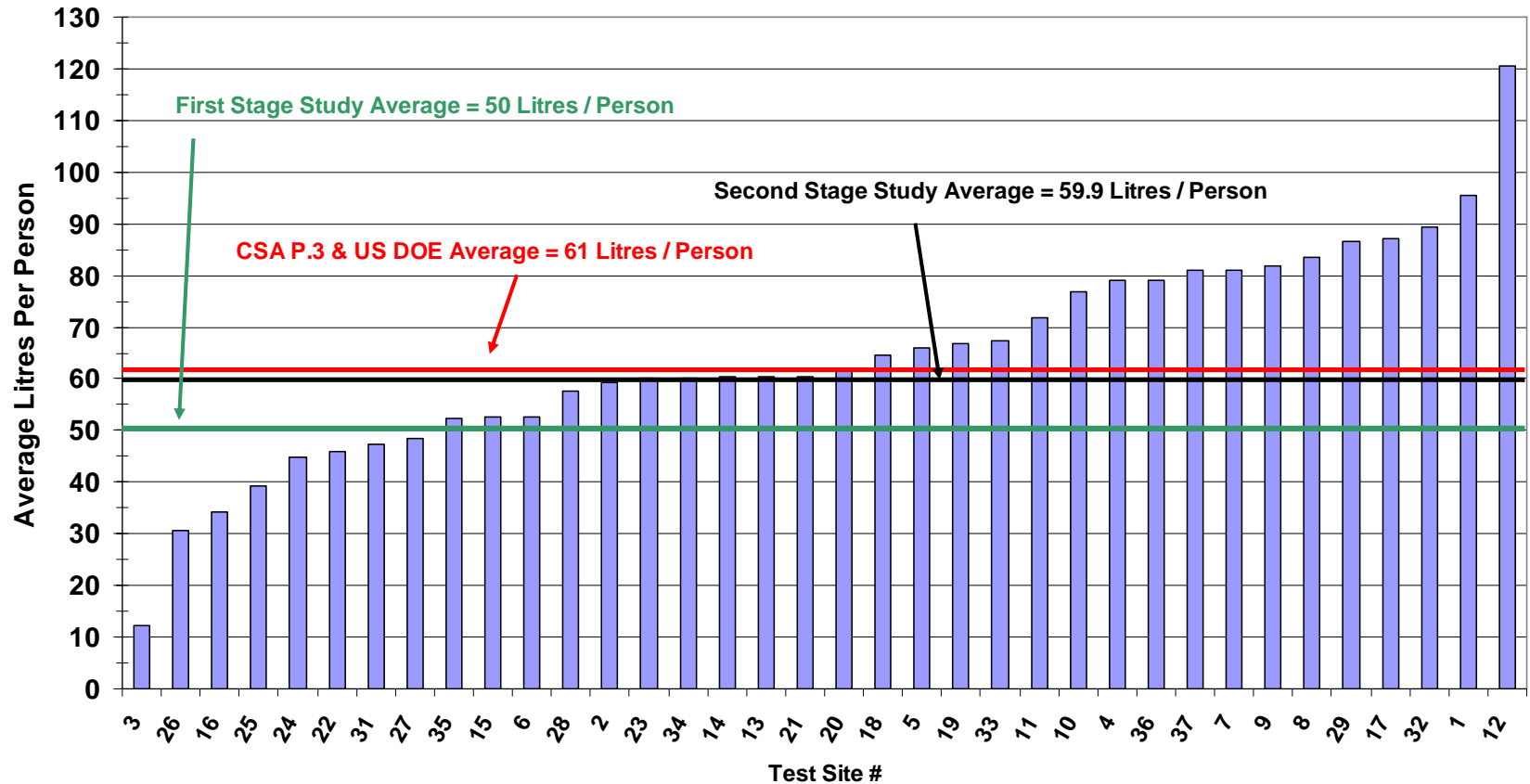
# Average Daily Hot Water Use per Household



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# Average Daily Hot Water Use per Person



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# Average Number of Draws

