

A PRESENTATION ON THE

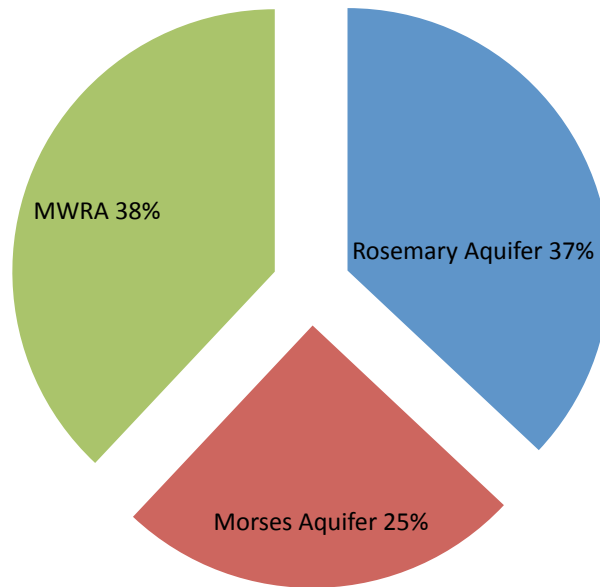


WELLESLEY WATER SYSTEM

Wellesley's Water System

	<u>Local</u>	<u>MWRA</u>
Water Type	Ground (Wells)	Surface (Reservoirs)
Source Locations:	Morses Pond (3) Rosemary Valley (6)	Quabbin Wachusett
Disinfection:	Chlorination	Ozonation & Chloramination
Distribution:	138 miles of main	MetroWest Tunnel
Storage:	Maugus & Peirce (passive recirculation)	Various within System

2010 Proportionate Contribution of Wellesley Water Sources



Wellesley's Water Sources

Typical New England Type Aquifers

Municipal Wells in Unconfined Alluvium Geology

- **Unconfined** meaning there tends not to be an impervious 'capping layer' above the porous aquifer layer/s.
- **Alluvium** meaning deposits created from glacial melt waters from 20-to-12 thousand years ago. Eskers are the melt water rivers through the glacial crevasses. Typically the melting conditions were near constant and thereby deposits correspondingly consistent in the densities and size of grains deposited, hence this made for very uniform sized materials and hence larger void spaces between grains. Hence these alluvial deposits tend to layer in sands, gravels, and cobbles. Wellesley's wells are from 40 to 56 feet in depth with best water bearing deposits typically 5 to 10 feet in thickness. These melt water river beds are typically limited in width as well as thickness.

Household Wells in Bedrock Geology

- **Bedrock** in New England is typically igneous and or conglomerated rocks of a granite or basalt formation. The water bearing nature of these formations are the cracks created in the hundreds of millions of years of plate tectonic pressures. Hence bedrock wells tend to be well in excess of 100 feet and dependent upon the extent of indices (cracks) encountered in drilling the borehole. They tend to be small yielding wells suitable for individual households.







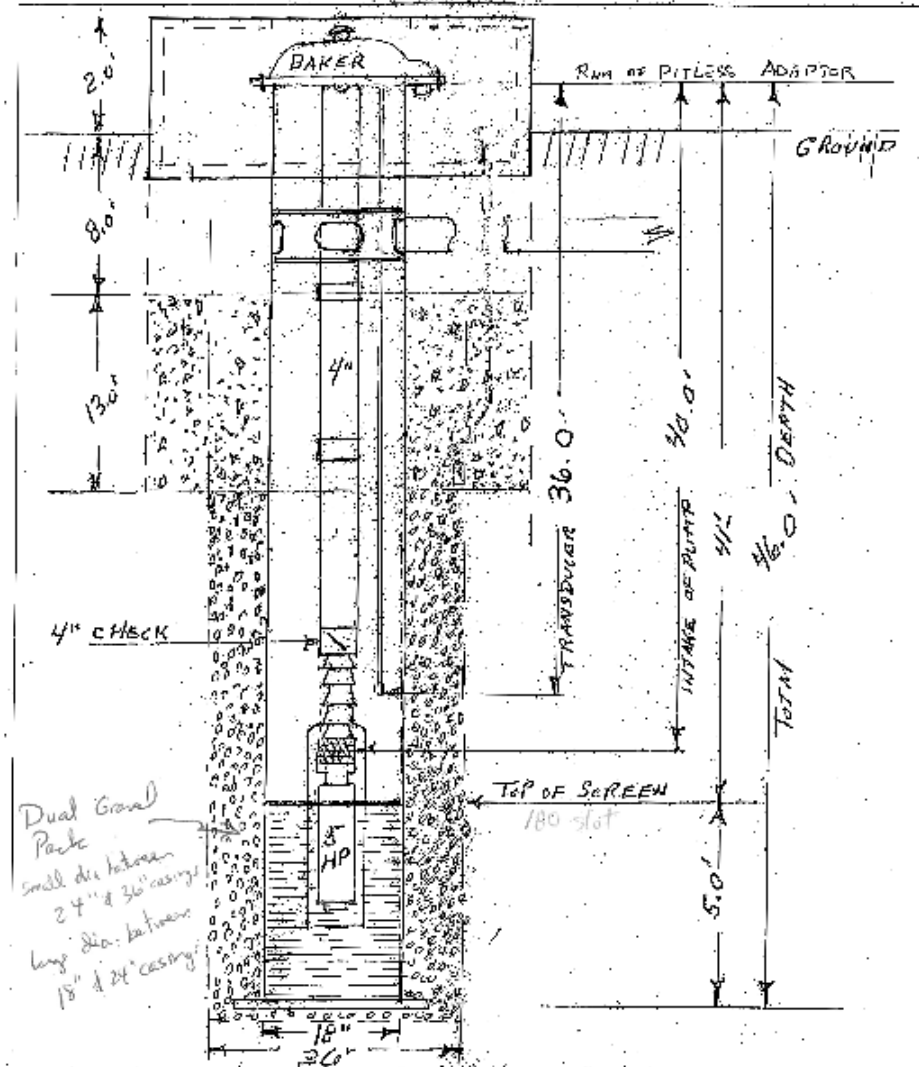






F. C. SULLIVAN DRILLING CO., INC.
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CUSTOMER	WELLESLEY, D.P.W. WATER DIV.		DATE	9-7-09	
STREET	WELLESLEY AVE	TOWN	WELLESLEY	STATE	MASS
	18" X 24" X 36" GRAVEL PACKED WELL				
LOCATION	T.J. COUGHLIN SUPPLEMENTAL WELL SITE		WELL NO.	SW-1	





Wellesley Water Quality Monitoring

<u>Parameter/s</u>	<u>Frequency</u>	<u>Type</u>	<u>Locations</u>
Chlorine	Continuous	In-house	Entries
pH	Continuous	In-house	Entries
Fluoride	Continuous	In-house	Entries
Color	Continuous	In-house	Entries
Iron	Daily	In-house	Entries
Manganese	Daily	In-house	Entries
Fluoride	Daily	In-house	Entries
Chlorine	Daily	In-house	Entries
Bacteria (Total & E. Coli)	Weekly	Independent	Distribution
Chlorine Residual	Weekly	In-house	Distribution
THM's (Chlorination Byproducts)	Quarterly ¹	Independent	Distribution
HAA's (Chlorination Byproducts)	Quarterly ¹	Independent	Distribution
VOC's	Quarterly ¹	Independent	Entries
Secondaries (Various Characteristics)	Annual	Independent	Entries
Sodium	Annual ²	Independent	Entries
Perchlorates	Annual	Independent	Entries
Nitrates	Annual	Independent	Entries
SDWA Synthetic Organics	3-Years ³	Independent	Entries
SDWA Inorganics	3-Years	Independent	Entries
Lead & Copper	3-years	Independent	Distribution
pH & Alkalinity	3-years	In-house	Distribution
SDWA UCMR(Research Compounds)	5-years ³	Independent	Entries
Radionuclides	Intermittent	Independent	Entries

¹ Stage 1 Rule, but will convert to bi-monthly under Stage 2 Rule

² Wellesley tends to do more than required in order to better understand sodium content.

³ Every third year, but done for two quarters of that year.

Words for Thought

Gardyloo : is the Anglicized phrase from the French, “gardez l’eau”, meaning ‘look out for the water’. Prior to indoor plumbing in cities the word gardyloo was used throughout Europe to call out as a warning to passers-by that the contents of chamber-pots were about to be thrown out of windows into the nearby street gutter.

Hence we should look out for any illicit dumping into our environment.

Schmutzdecke : from German, meaning ‘dirt cover’. The complex biological layer formed on the surface of a slow sand filter, which provides effective purification in potable water treatment, the underlying sand being the support medium for this biological treatment layer. The composition of any particular schmutzdecke varies, but will typically consist of a gelatinous biofilm matrix of bacteria, fungi, protozoa, rotifer and a range of aquatic insect larvae.

Hence sometimes ‘muck’ can do good things.

**Thank you for the opportunity
to give this presentation!**



Now are there any questions?