Welcome

Water & Wastewater Workshop

"Making Smart Decisions on Aging Water Meters"

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President / CEO

Agenda

Some of the items or topics we will cover…

- ✓ Water Meter Background
- ✓ Meter Parts & Accessories
- ✓ Repair or Replace Meters ?
- ✓Reading Registers
- ✓ Meter Installations
- ✓ Meter Readings
- ✓ Meter Calibration
- ✓ Register & Meter Security
- ✓ Meter Repairs
- ✓Meter Reading Technology & What's New…
- ✓ Final Rap Up and Questions

Water Meter Background:

Today, the complete metering of water systems is an accepted practice to measure and display the amount of water passing through them when Cites and towns started to follow AWWA in 1948 and only *Dartmouth*, *Digby, Dominion*, *Halifax*, *Kentville*, and *Louisburg* in Nova Scotia and *Fredericton*, *St Andrews*, *St Leonard* and *St Stephen* in New Brunswick were metering their water supply at this time.

In order to encourage metering, the AWWA issued policy statements in 1969 and again in 1971 urging metering to encourage conservation and provide greater fairness to the consumers. The first water meters manufactured in North America used positive displacement measuring chambers in contrast to early European meters, which used inferential chambers, which were basically an impeller spinning inside a chamber and attached to a gear, which in turn drove the gears in the register.

Canadian water supply operators have greatly favored the positive displacement systems, and are still around today, but technology has changed immensely for the better and should be considered in your decisions.

Why the Advancements in water meter technology?

- **Water Loss = Revenue Loss**
- **New material regulations / January 2014 Lead Free**
- **Inherent low flow limitations with mechanical meters**
- **Increase importance on leak detection**
- **Increased need for system data**
- **Improvement in measurement technolgy**

Top 3 Water Meter Technologies in Canada

#1 Ultrasonic Meters – Most widely produced; highest accuracy; preferred for smart metering

#2 Positive Displacement Meters – Long-standing residential standard; widely manufactured

#3 Electromagnetic Meters – High adoption in revenue share; strong for industrial/municipal uses


kamstrup


sensus


NEPTUNE


flowIQ® 2200
008724.083
GAL
0000
GPM
KWM2220
Type No: 02K0ZD1SB8U8
5/8" x ¾" 7¾"
25GPM
33°F ... 140°F
MAP 250PSI
SW: A1
IP68
NSF
kamstrup


sensus
00000.1000
Gal
IPERL
3/4"S
123456789

Repair or Replace Meters:

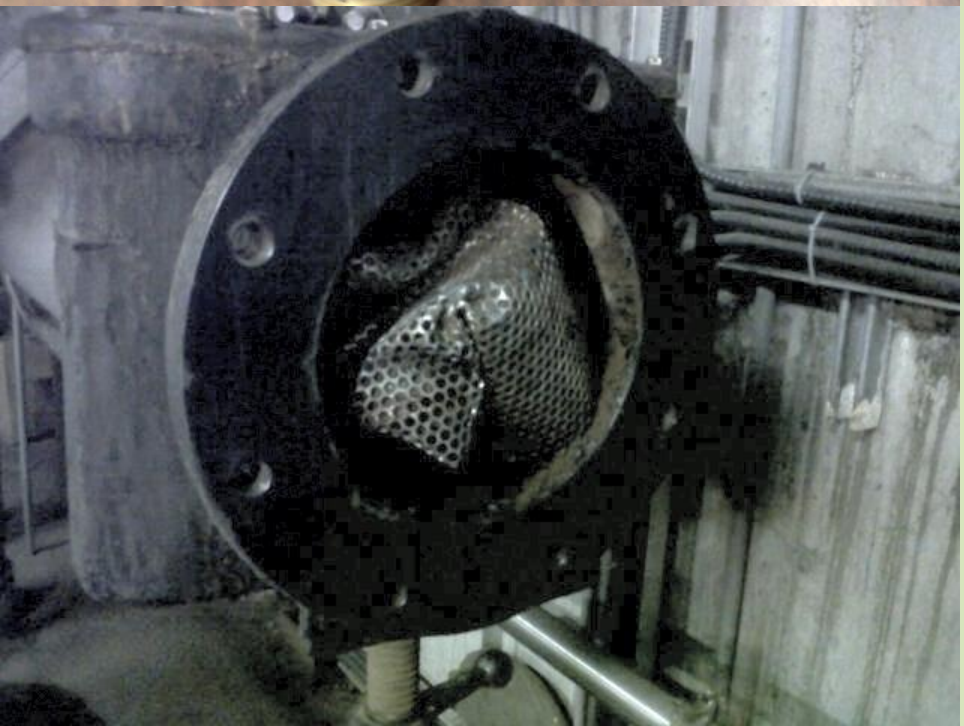
There will come a time when you must decide whether or not it is feasible to repair or replace your meters. The obvious thought would be, if the cost of parts and labor equal or come close to the price of a new, then it should be replaced.

A note with guarantees, *most manufactures* guarantee products and parts to be free from material and workmanship defects for one year from the date of shipment.

These meters (5/8” to 1”) are guaranteed to perform to new meter accuracy for a period of one year and to at least repair meter accuracy standards for an additional 14 years, or for the water volumes stated in their guarantees. Meters 1.5”-2” are one year and to at least repair meter accuracy standards for an additional 9 years. All other large meters normally carry a one-year warranty.

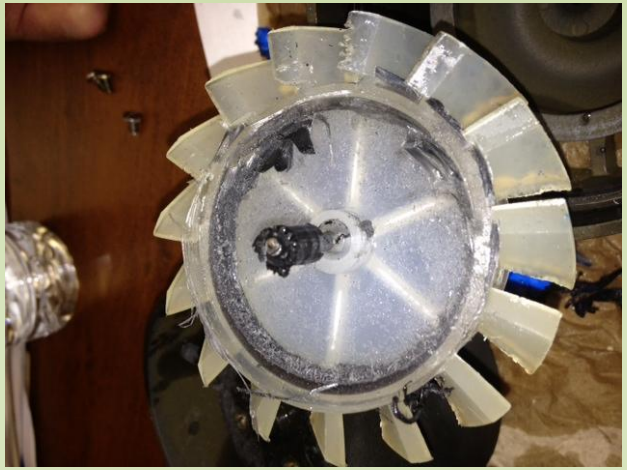
Some of the newer 5/8 – 1in ones which are electronic carry a 20-year guarantee.

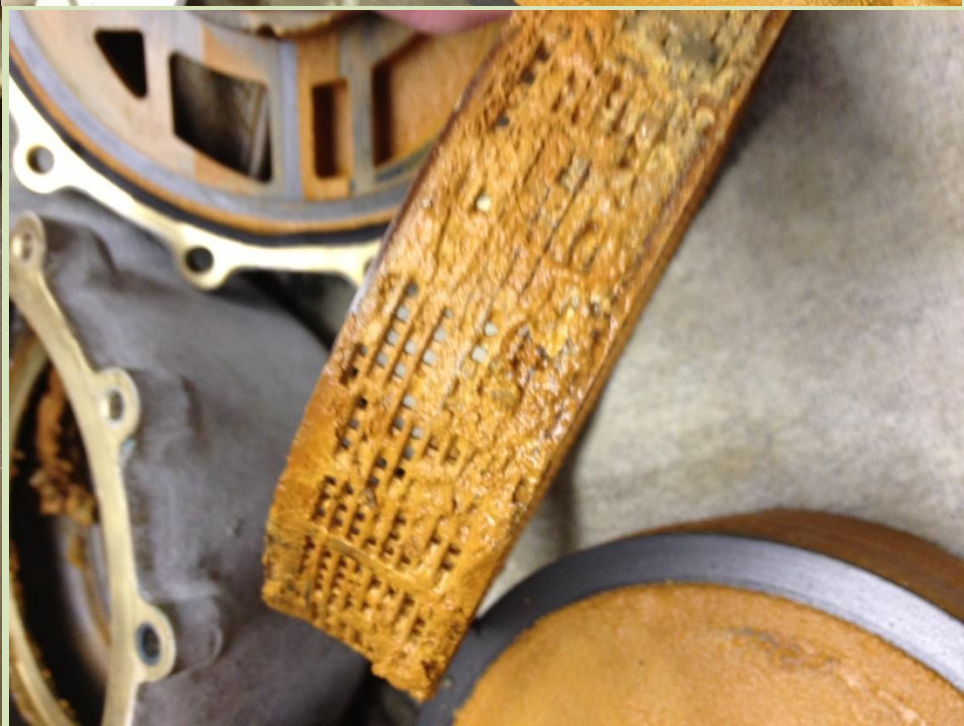
Let's have a look at some meters and parts that have issues or what to look for…











The following data is based on “typical” metering situations for Sensus meters. Most meters on the market should fall under similar data. Local conditions would override these values, but these should be rare and isolated. Most water systems have a few meter applications, which are the exception to the rule; these should be evaluated to determine why they are more typical.

Meter Size	Typical Registration	Time Period
5/8” SR & SR II	1.5 million gallons*	15 years
3/3” SR & SR II	2.25 million gallons*	15 years
1” SR & SR II	3.0 million gallons*	15 years
1-1/2” SR	5 to 7.5 million gallons	10 years
2” SR	10 to 12.5 million gallons	10 years
5/8” -1” iPerl Meter	No Limit	20 years
2” Compound	20 million gallons	10 years
3” Compound	40 million gallons	7 years
4” Compound	150 million gallons	5 years
6” Compound	300 million gallons	3 years
1-1/2” (W-120) Turbo	30 million gallons	10 years
2” (W-160) Turbo	30 million gallons	10 years
3” (W-350) Turbo	75 million gallons	8 years
4” (W-1000) Turbo	250 million gallons	7 years
6” (W-2000) Turbo	500 million gallons	5 years
8” (W-3500) Turbo	1 billion gallons	3 years
10” (W-5500) Turbo	1 billion gallons	3 years
16 (W-10, 000) Turbo	2 billion gallons	3 years

Conclusion…

- Mechanical Meters are still a viable solution but are being fazed out…
- They have served the industry well for over 100 years
- New technologies available today offer compelling financial and ecological benefits
- They compliment AMR/AMI system deployments
- Utilities should explore and understand the potential of these new meter technologies

Thank you and hope you enjoyed the presentation… Enjoy the rest of your workshop