EPA Registered Biocides

We Have What You Need!

- **Industry's most extensive biocide offering**
  - Cooling, Dec. Fountains, Air Washers, Metal Working Fluids, Paper and Food Processing, Potable Water, and O&G field applications
- **Non-oxidizers**
  - Glutaraldehyde 4/15/45% & Glut./Quat 14/42%, DBNPA 5/20% & 40% Tablets, **THPS/BD**, Isothiazolin, **Iso/Bronopol, DGH , Perquat**, WSCP 15/30/60%, **Bronopol solids**
  - Ask us about our bronopol solid products.
- **Oxidizers**
  - Stabilized Bromine (**STABROM 909/PLUS and Maxxis**)
  - DBDMH (XtraBrom 111 & XtraBrom T)
  - BCDMH, Dichlor, Trichlor, Trichlor/NaBr
  - $NaClO_2$, NaOCl, NaBr

✓*These products are proven against biofilm*

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EPA Registered Biocides

We Have What You Need!

- **THPS/BD – THPS + biodispersant blend**
  - Especially effective against pseudomonas
- **Iso/Bronopol – isothiazolin/bronopol blend**
  - Very effective broad-spectrum biocide for open and closed loops
- **DGH - dodecylguanidine hydrochloride**
  - Very effective broad-spectrum biocide for bacteria, fungi and algae in open loops. Low actives dose rate.
- **Perquat – catalyzed hydroperoxide**
  - Quaternary compounds helps peroxygen component penetrate and destroy biofilm. Excellent for maintenance and remediation.
- **Bronopol – soild products**
  - Lots of application uses including O&G.

✓*These products are proven against biofilm*

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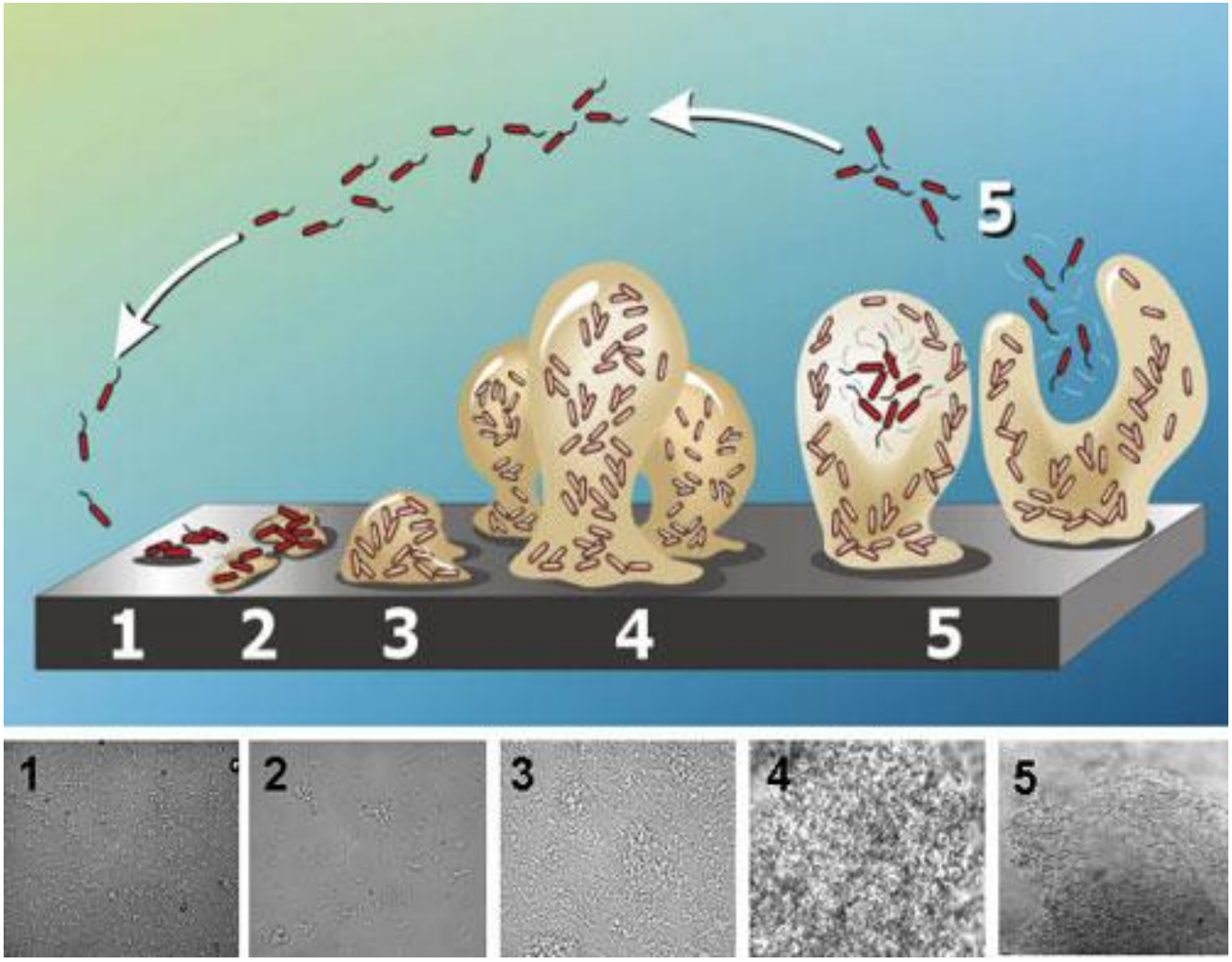
Biofilm Life-Cycle



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Biofilm Measuring Apparatus

Cost: $999 per Unit

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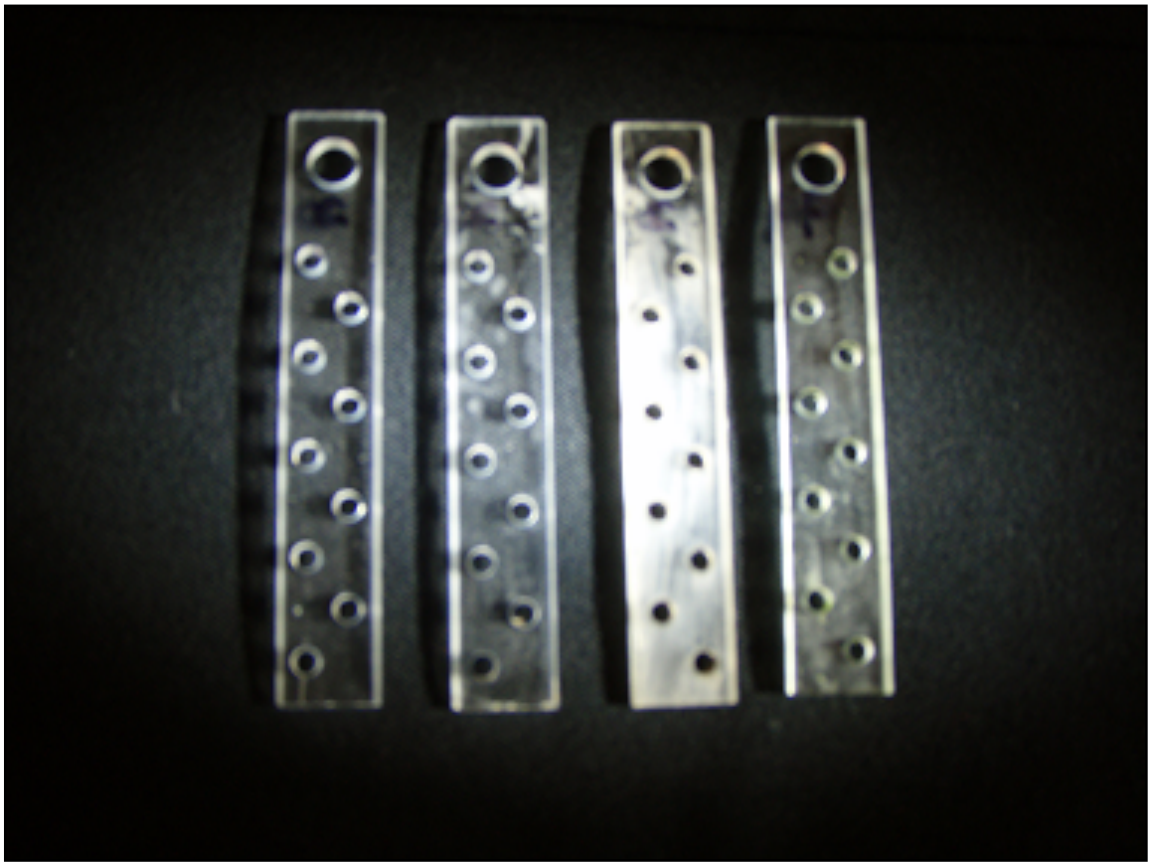
Non-Metallic Coupons



Cost: $60 for 5-Pack or $12 each

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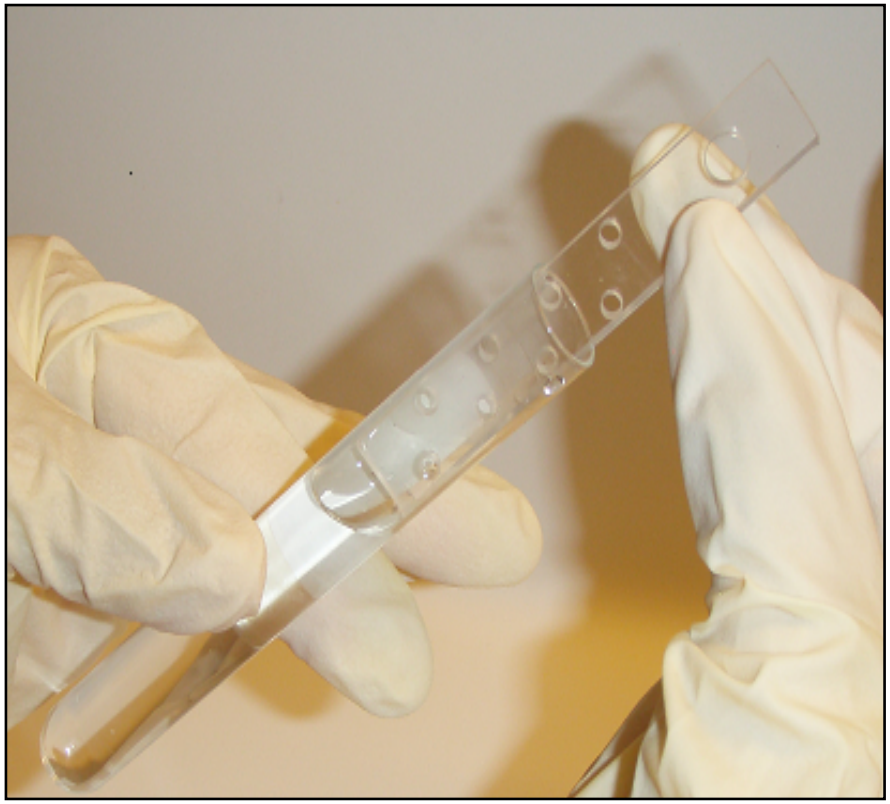
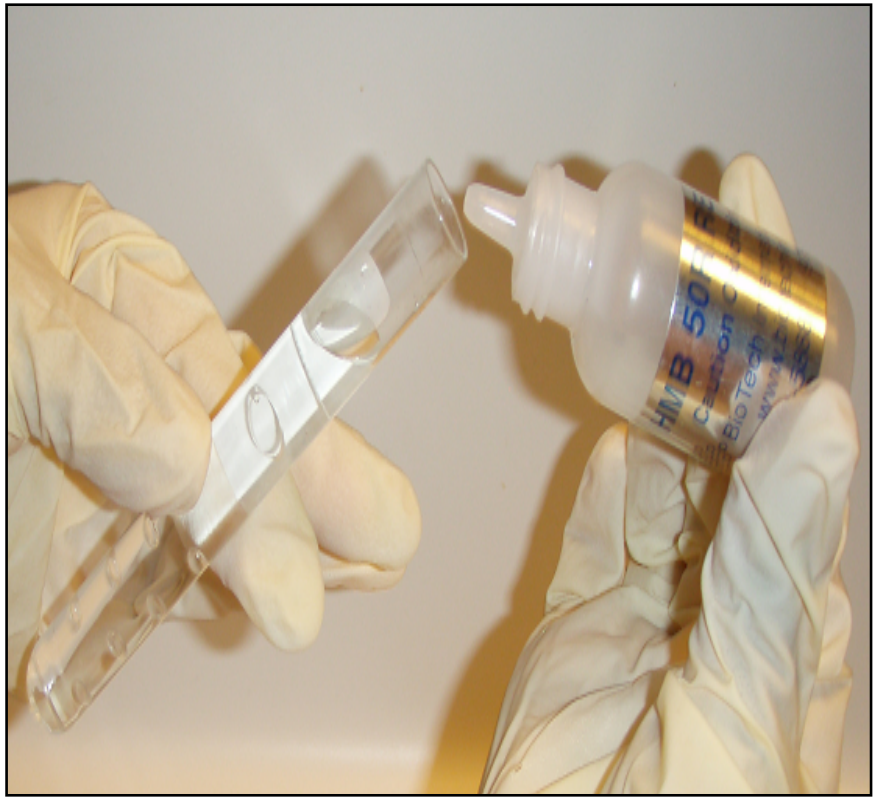
Test Solution & Reagents





Cost: ≈$1.80 to $3.50 per Test

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15 Minutes

Peroxide Reacts With Catalase

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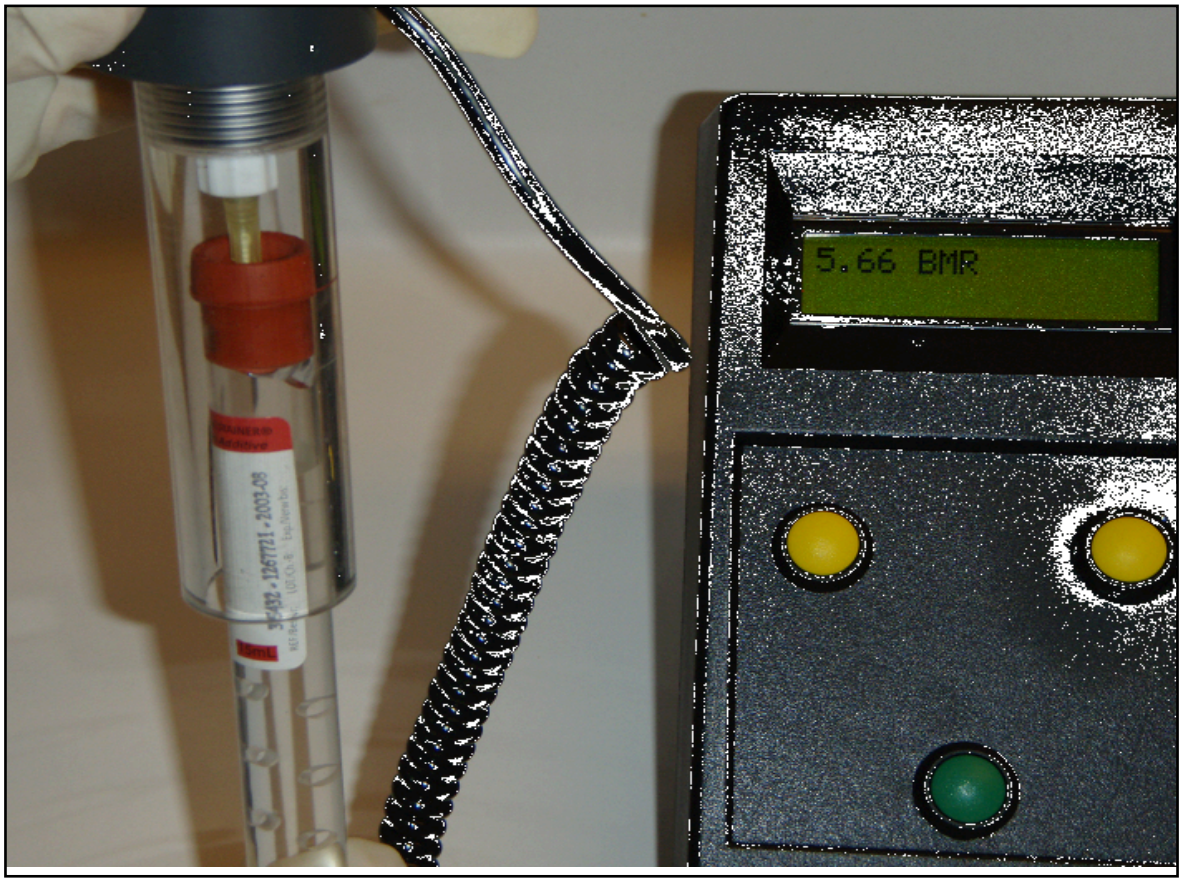
Result



Correlates with Presence of Biofilm

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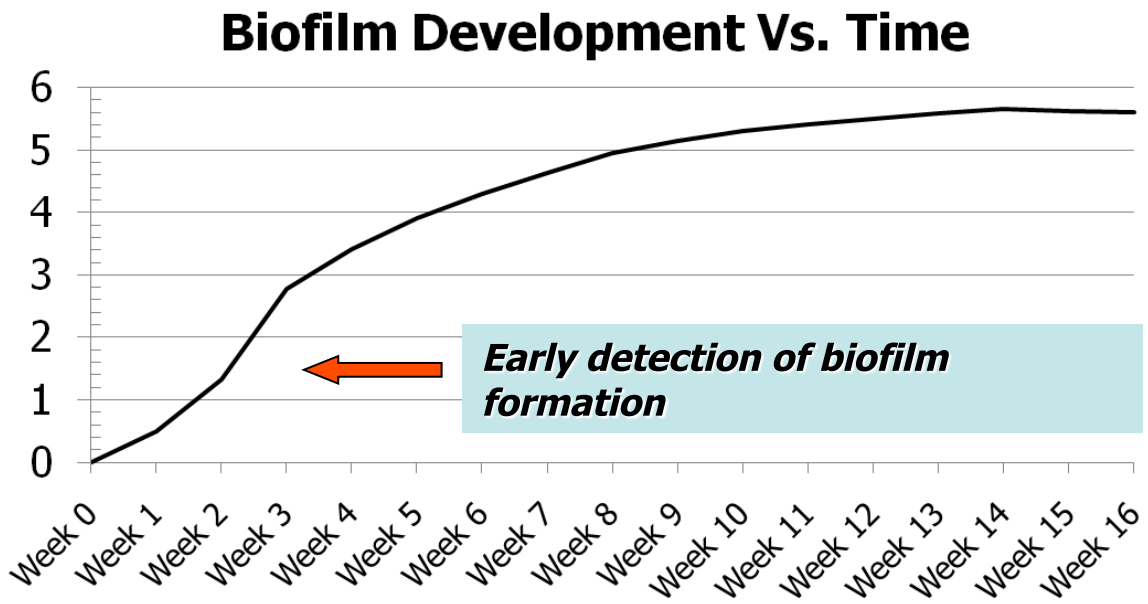
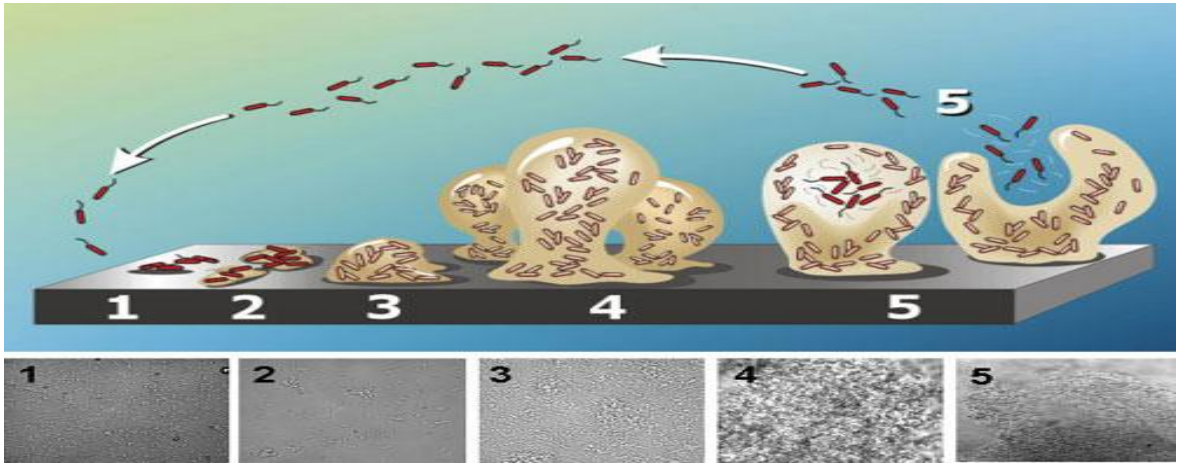
Optimize Results with Less Risk

Weeks	BMR
0	0
1	0.49
2	1.33
3	2.78
4	3.42
5	3.9
6	4.3
7	4.63
8	4.95
9	5.15
10	5.3
11	5.41
12	5.5
13	5.58
14	5.66
15	5.63
16	5.6





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Interpretation of Result

Because this is a 15 minute test there can be action or conclusion to take no action while on site.

Interpreting Results:

<0.27 BMR = no biofilm; no action or possible reduction in biocide feed (especially if feed was turned up in response to a previous high reading).

>0.27 BMR and <2.0 BMR = minor concern; no action or possible slight adjustment to biocide program (depends on exposure time of coupon) and trend of previous results.

>2.0 BMR = biofilm concern; need to adjust biocide program with increase feedrate, frequency or new biocide. *Note, if the rubber stopper pops off (prior to reading) the system is likely biofouled.*

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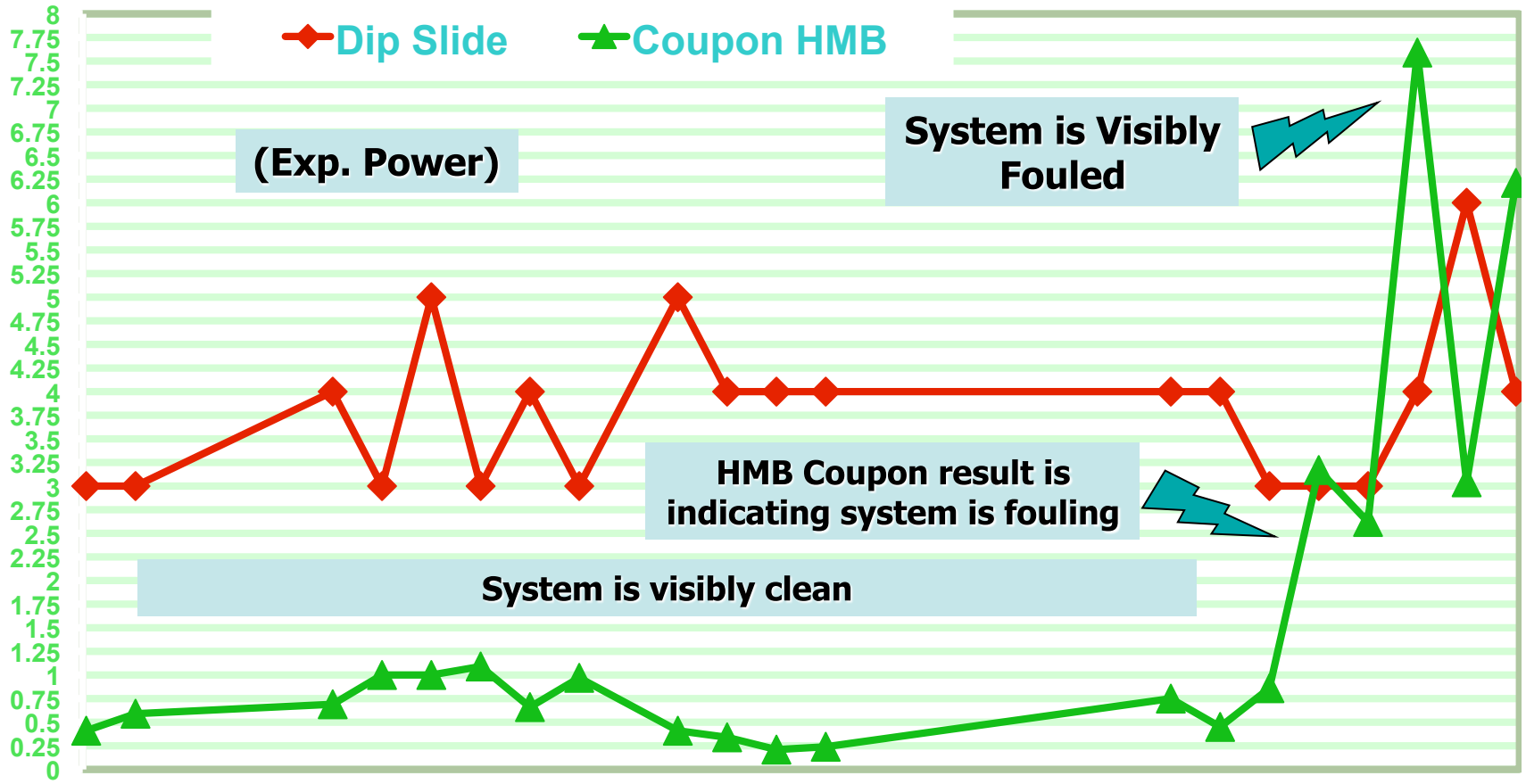
MB Testing

HMB Testing Shows Good Correlation to System



<0.3 BMR = clean; 0.3-3.0 BMR = caution; >3.0 BMR = fouled

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