Change of Sampling Site for Disinfection Byproducts

Public Water System Name:_____

PWSID:_____

Typical Characteristics of Selected Sites

High TTHM sites are at the maximum residence time and are often located:

- Hydraulically downstream of storage facilities and booster disinfection,
- In hydraulic dead-ends, where flow of water is low or stagnant, or
- Near the end of the distribution system, at or before the last group of customers.

High HAA5 sites are often located:

- In average residence time locations,
- After booster disinfection with chlorine, or
- Low but detectable chlorine residual.

Sample sites should **not be** located:

- At a dead-end where there are no customers,
- Before booster disinfection with chlorine,
- After the last hydrant or blow-off point, or
- In areas with significant biofilms or high heterotrophic bacteria plate count.

Targeting criteria for original site (check both if needed): ☐ **High TTHM** / ☐ **High HAA5**

Sample Point ID (chose one): ☐ **DBP1** ☐ **DBP2** ☐ **DBP3** ☐ **DBP4** **Other:**_____

Original sample site address: _____

New sample site address:_____

Approximate distance between the two sites: _____

Reason for changing the site: _____

Name:_____Title: _____

Signature: _____ Date:_____

Reserved for DEQ use only		
Received by	Date	Approval Signature

DEQ
Montana Department
of Environmental Quality

Typical TTHM and HAA5 Sampling Site Characteristics

High TTHM Sites:

- In general, higher water temperatures and increased water age lead to higher TTHM Concentrations.

- If your system has booster disinfection, you should locate candidate high TTHM sites after booster disinfection has been applied (additional disinfectant may have increased DBP formation).

- If your system has storage tanks or reservoirs, you should locate candidate high TTHM sites hydraulically downstream of those tanks or reservoirs.

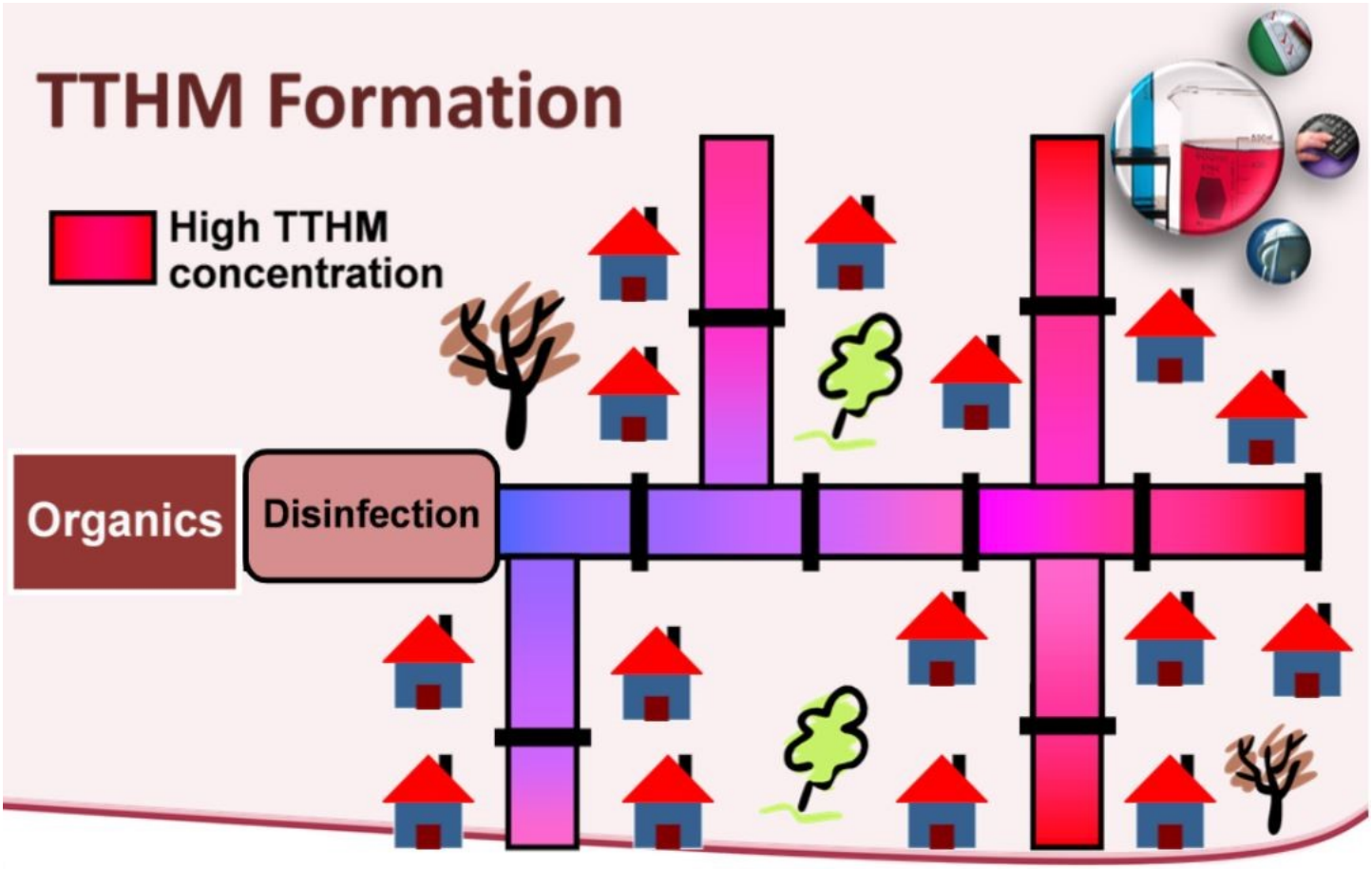
- You should locate candidate sites near dead ends, particularly those that are on smaller lines, far from major transmission lines. Sparsely populated residential areas can be good candidate sites for high TTHM. **However, be sure to locate the candidate sites before or at the last group of customers on a dead-end line.** Samples taken at the very end of a dead-end line are not representative of the water received by customers.

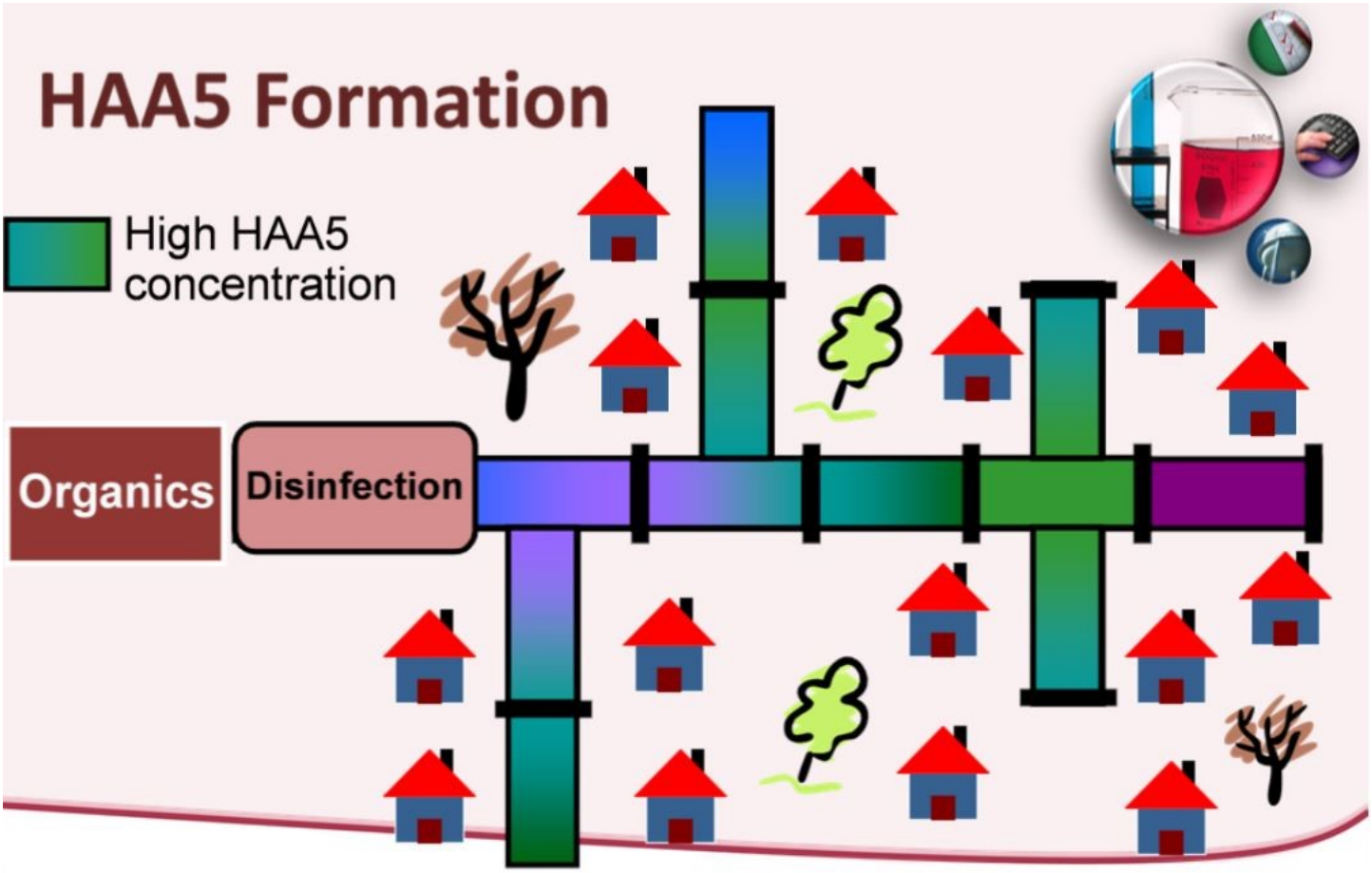
High HAA5 Sites:

- Higher temperatures and increased residence time can lead to higher HAA5 concentrations. However, microorganisms can consume HAA5, causing levels to decrease. This is known as biodegradation. Biodegradation is more likely to occur when disinfectant residual levels are low or non-existent, particularly in warmer months. Therefore, a high HAA5 site will not necessarily be the site with the longest residence time.

- You should not select high HAA5 sites in locations that regularly or in the summer months have free chlorine residuals less than 0.2 mg/L or with chloramine residuals less than 0.5 mg/L.

- When booster disinfection is applied, the disinfectant residual will increase despite advanced water age. HAA5 levels are likely to increase after a booster disinfectant is applied due to the greater concentration of disinfectant available to react with DBP precursors and the lack of biological activity in these areas. Therefore, if your system practices booster disinfection, you should locate high HAA5 sites after booster disinfection is applied.


TTHM Formation
High TTHM concentration
Organics
Disinfection


HAA5 Formation
High HAA5 concentration
Organics
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