Process to Reduce DBPs through Optimization

Note: in-plant optimization efforts can be effective for both HAAS and TTHM reduction while distribution system (DS) optimization efforts will generally only reduce TTHM levels.

System is not in compliance with DBP Rule.

Conduct DS influent hold study (duration = system’s MRT).

Does the DS influent hold study indicate the bulk water is very reactive?

YES

DS TTHM Optimization

Prioritize, then evaluate DS control strategy.

Are TTHMs < MCL?

YES

Are TTHMs < plant effluent goal?

YES

Are there any remaining DS control strategies?

YES

Continue monitoring at EP and compliance locations to assess performance.

NO

Are there any remaining plant-based control strategies?

YES

Optimization is probably not the solution; consider capital improvements for DBP control.

NO

In-Plant DBP Optimization

Prioritize, then evaluate in-plant control strategy.

Are TTHMs < MCL?

YES

Are TTHMs < plant effluent goal?

YES

Are there any remaining plant-based control strategies?

YES

Optimization is probably not the solution; consider capital improvements for DBP control.

NO

Begin diagnostic monitoring at DS entry point and MRT locations.

Are plant effluent TTHMs > 30 ppb?

YES

(Start in the DS)

NO

(Start in the plant)

Are TTHMs > 30 ppb?

YES

Begin diagnostic monitoring at DS entry point and MRT locations.

NO

In-plant DBP Optimization

Prioritize, then evaluate in-plant control strategy.

Are TTHMs < plant effluent goal?

YES

Are there any remaining plant-based control strategies?

YES

Optimization is probably not the solution; consider capital improvements for DBP control.

NO

Are TTHMs < MCL?

YES

Are there any remaining DS control strategies?

YES

Continue monitoring at EP and compliance locations to assess performance.

NO

Are there any remaining DS control strategies?

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Optimization is probably not the solution; consider capital improvements for DBP control.

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Are TTHMs < plant effluent goal?

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Are there any remaining plant-based control strategies?

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Are there any remaining DS control strategies?

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NO

Are there any remaining DS control strategies?

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Optimization is probably not the solution; consider capital improvements for DBP control.

NO

Are TTHMs > 30 ppb?

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Begin diagnostic monitoring at DS entry point and MRT locations.

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In-plant DBP Optimization

Prioritize, then evaluate in-plant control strategy.

Are TTHMs < MCL?

YES

Are TTHMs < plant effluent goal?

YES

Are there any remaining plant-based control strategies?

YES

Optimization is probably not the solution; consider capital improvements for DBP control.

NO

Are TTHMs < MCL?

YES

Are there any remaining DS control strategies?

YES

Continue monitoring at EP and compliance locations to assess performance.

NO

Are there any remaining DS control strategies?

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Optimization is probably not the solution; consider capital improvements for DBP control.

NO

Are TTHMs > 30 ppb?

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Prioritize, then evaluate in-plant control strategy.

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Are there any remaining plant-based control strategies?

YES

Optimization is probably not the solution; consider capital improvements for DBP control.

NO

Are TTHMs < MCL?

YES

Are there any remaining DS control strategies?

YES

Continue monitoring at EP and compliance locations to assess performance.

NO

Are there any remaining DS control strategies?

YES

Optimization is probably not the solution; consider capital improvements for DBP control.

NO

Are TTHMs > 30 ppb?

YES

Begin diagnostic monitoring at DS entry point and MRT locations.
Note: in-plant optimization efforts can be effective for both HAA5 and TTHM reduction while distribution system (DS) optimization efforts will generally only reduce TTHM levels.

System is not in compliance with DBP Rule.

Conduct DS influent hold study (duration = system’s MRT).

Does the DS influent hold study indicate the bulk water is very reactive?

- YES (start in the DS)
- NO (start in the plant)

In-Plant DBP Optimization

Begin diagnostic monitoring at DS entry point and MRT locations.

Are plant effluent TTHMs > 30 ppb?

- YES (start in the plant)
- NO

DS TTHM Optimization

Updated 5/13/19
Prioritize, then evaluate in-plant control strategy.

Are TTHMs < plant effluent goal?

Are TTHMs < MCL?

Are there any remaining DS control strategies?

Optimization is probably not the solution; consider capital improvements for DBP control.

Are there any remaining plant-based control strategies?

Continue monitoring at EP and compliance locations to assess performance.

Are there any remaining DS control strategies?

Are TTHMs < MCL?

Updated 5/13/19