Closed & Open Loop Water Treatment
Lab Results and Recommendations

To:
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Initial Lab Result Summary and Recommendations

MD-013 -- 1 each Hot Water Loop

Lab Results

Hot Water Loop – pH is low for superior corrosion protection. No filming corrosion inhibitor is present in the system. Iron residual is extremely high in the system this may be from corrosion and corrosion bi-products in the system.

Recommendations

- Add and maintain sufficient corrosion inhibitor protection. This is highly recommended to slow down increased iron residual in the system and alleviate excessive corrosion on all copper and steel piping.
- Add a cartridge filtration housing and change filters on a quarterly basis. This will extract iron, improve system efficiency and continue to decrease corrosion on a continual basis.
- No chemical bypass feeder exists in order to properly add corrosion inhibitor, this is recommended to be piped in by a licensed plumber.

MD-021 -- 1 each Dual Temperature Loop

Lab Results

Dual Temperature Loop – pH is low for superior corrosion protection. Low amount of filming corrosion inhibitor is present in the system. Iron residual is high in the system this may be from corrosion and corrosion bi-products in the system.

(System was being drained at the time of testing, it was refilled after with fresh glycol)

Recommendations

- Add and maintain sufficient corrosion inhibitor protection. This is highly recommended to slow down increased iron residual in the system and alleviate excessive corrosion on all copper and steel piping.
- Add a cartridge filtration housing and change filters on a quarterly basis. This will extract iron, improve system efficiency and continue to decrease corrosion on a continual basis.
- No chemical bypass feeder exists in order to properly add corrosion inhibitor, this is recommended to be piped in by a licensed plumber if possible.
- Continue to monitor Propylene glycol reserve alkalinity and orthophosphate levels to ensure glycol does not break down.

VA-002 -- 1 each Dual Temperature Loop

Lab Results

Dual Temperature Loop – Detected 15% Propylene glycol in system. pH is low for superior corrosion protection. No filming corrosion inhibitor is present in the system. Iron residual is slightly high in the system this may be from corrosion and corrosion bi-products in the system.

Recommendations

- Add and maintain sufficient corrosion inhibitor protection. This is highly recommended to slow down increased iron residual in the system and alleviate excessive corrosion on all copper and steel piping.
- Add a cartridge filtration housing and change filters on a quarterly basis. This will extract iron, improve system efficiency and continue to decrease corrosion on a continual basis.
- A chemical bypass feeder exists on each loop in order to properly add corrosion inhibitor to each loop.
- Continue to monitor Propylene glycol reserve alkalinity and orthophosphate levels to ensure glycol does not break down.

MD-066 -- 1 each Evaporative Condenser Cooling Tower, 1 each Hot Water Loop

Lab Results

Open Loop – Levels all seem to be lower, probably due to lower system loads at time of testing. No immediate concerns are present.

Hot Water Loop – Detected 19% Propylene glycol in system. Excellent levels of filming corrosion inhibitor is present in the system. Iron residual is high in the system this may be from corrosion and corrosion bi-products in the system.

Recommendations

- Add and maintain sufficient corrosion inhibitor protection. This is highly recommended to slow down increased iron residuals in the system and alleviate excessive corrosion on all copper and steel piping.
- Add a cartridge filtration housing and change filters on a quarterly basis. This will extract iron and copper, improve system efficiency and continue to decrease corrosion on a continual basis.
- A chemical bypass feeder exists on each loop in order to properly add corrosion inhibitor to each loop.
- Evaporative Condenser Cooling tower loop will need ongoing monthly testing and chemical monitoring to ensure excellent heat transfer and water efficiency.
- Legionella will be tested 1x per year to ensure the system is free of this harmful bacteria.
- Continue to monitor Propylene glycol reserve alkalinity and orthophosphate levels to ensure glycol does not break down.