

DOCUMENT MANAGEMENT SYSTEM

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Doc# NSCS-M-P-7091-02
 Title: Routine Inspection - North Final Treatment
 Issue Dt: 03/03/1999
 Revision Dt: 07/20/2018 Review Interval: 12
 Cat: Quality Doc Type: SOP
 Auth:
 Desc: Routine Inspection - North Final Treatment
 Loc: Midwest - Utilities-Midwest - Plant Maintenance-Midwest-Gary Works

STEPS

Routine Inspection

PROCEDURES

The Final Treatment Plant Operator makes rounds and fills out the daily report Form #7091-01 while inspecting the following equipment for proper operation:

Inside Chem Treat Building

1. Record the pH for outfall 104 twice per shift.
2. pH Control - note pH set point and adjust as needed.
3. pH Sample Baths (bird bath) - clean the four pH probes in the bird baths as needed and back flush bird bath. Be sure the acid and lime controls are in manual before cleaning and put back on auto after cleaning. Secure samples and run pH's as needed.
4. Roto-Dips - At beginning of each turn clean the roto-dip that is being taken out of service. Check operation of float. Note addition of air or water to influent and effluent roto-dip piping. Look for leaks, operation of valves and general operation of valves and general operation condition of equipment and flow integrator readings.
5. Lime mixers - check operation of lime mixers. Both should be operating.
6. Lime Tanks - note tank levels, record deliveries and usage, condition of mixers, valves, and piping.
7. Lime Pumps - check valves, piping, pump seals, and condition of hoses.
8. Acid Flow Control - at the beginning of each turn, check position of all valves, and look for leaks. At the end of each turn, record the acid integrator reading.
9. Sulfuric Acid Storage - check condition of the hoses, piping, valves, and record deliveries and usage.
10. Coagulant Aid (CA) Inventory - note level of CA bulk tank.
11. Coagulant Aid Pumps - blow down the CA lines with air. Switch the CA pump in service, note the percent setting on the pump scale, look for leaks and check flushing water. Check condition of air valves, valve position and pump lubrication.
12. Coagulant Aid Tanks – fill and mix coagulant aid as required. Note condition of tank, mixer, water piping, air piping, and valves.
13. Air to mix tank gauge - note amp reading, air C.F.M. Setting and condition of piping valves.
14. Sludge Pumps – check condition of pumps, valves and inspect for leaks.

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Reporting

15. All Air Diaphragm Pumps - check condition of pump, piping bases, valves and strainers for the scum and oil, sump pump, and oil loading and on all air diaphragm pumps.
16. Cooling water temperature - at the end of each turn, record the cooling water digital readout temperature on the Final Treatment Plant Daily Operating Report.
17. Final Effluent Integrator - At the end of each turn, record integrator on Daily Operating Report Chem Treat and reset on first turn between 6:00 a.m. - 6:15 a.m.

See NSCS-M-P-7091-13 on how to read meter.

If any problems occur, notify the Shift Manager.

Routine Inspection

The Final Treatment Plant Operator should inspect the following equipment for proper operation and record it on the Daily Operations Report.

Outside Chem Treat Building

1. Equalization Basins - note condition of wastewater and observe diffuser operation. Skim oil and adjust effluent valves to keep equalization basins, chimneys covered as required. Obtain and record pH twice per turn.
2. Subdrain and sludge buildings - check condition of pumps, heaters, valves, piping, and level of water in wet wells.
3. Waste oil tank - note tank level condition of tank and decant if necessary.
4. Lime tanks - check condition of outside of tanks and limes.
5. Pretreat Lift Pumps - check lubrication, level controls, return water flow, and condition of pipes and valves. Check for noise and presence of vibration. Between 0500 and 0700 daily the pumps should be checked for proper pump capacity. Turn one pump off and observe speed at which the pit fills. Turn both pumps on, pit should pump down. Turn second pump off and observe pit. If one of the pumps is not working properly the pit will either fill rapidly or no change in pit level will be observed.
 - level does not change; pump shut off -- was not pumping
 - level slowly rises; nothing wrong with either pump
 - level rapidly rises; pump running not working very well -- report it to MRT's
6. Spence Blower - check for presence of noise and vibration. Observe condition of air filter.

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7. Return sludge flow - note rate and condition of return sludge flow.
8. Gates and Channels - note condition of all gates and channels.
9. Mix tanks - check condition of mixers, mixer lubrication, presence of air bubbles in the tank, and color of wastewater. Obtain and record pH twice per turn.
10. Lime and Acid Addition - Check condition of lime and acid addition. If not flowing freely, notify Turn Supervisor.
11. Coagulant Aid Addition - check condition of CA Addition. If not flowing freely, blow down lines with air and water.
12. Flocculation Section - Check operation of floc air diffusers. Check condition of the wastewater. Look for medium bubbles and observe floc formation.
13. Cross Collector - note operation and condition of cross collector drives, sprockets and guard.
14. Water piping - observe condition of piping, valves, and look for leaks. If cold weather, verify that all exposed water piping is drained or hoses left "on" to prevent freeze-ups.
15. Sedimentation basins - observe condition of flights and wastewater.
16. Skimmer tubes - Check position of tubes and skim and backskim as needed.
17. Effluent weirs and channel - observe condition of wastewater, presence of oil, floc, or solids carrying over. Add antifoam if foaming is observed.
18. Parshall Flume - observe condition of wastewater and check for presence of oil, floc, or solids carrying over. Add antifoam if foaming is observed. Check temperature gauge and flow meter.
19. 104, 004, and automatic sampler buildings - check heater, sampler, and overall condition of the building.
20. Antifoam mix tank - note tank level and condition of mixer, valves and piping. Fill tank as necessary.
21. Antifoam Storage tank - check tank and piping condition.

Testing and Reporting

22. Outfall 004 pH - Once per turn, secure an outfall 004 sample, conduct a pH test and record the results in the Daily Operating Report Chem Treat.

Outfall 104/004

23. Outfall 104 - Test for pH and Iron four (4) times per turn. Test for Hex Chrome twice per turn. Record all readings.

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Corrective Action

If any problems, notify Shift Manager. Also, see detailed SOPs as required.