Phosphorus reduction opportunities walk-through checklist

Wastewater treatment facility (WWTF) operators may want to conduct walk-through site visits of their businesses and water treatment plant to identify opportunities to reduce phosphorus. Phosphorus can be reduced at the source by eliminating or minimizing it through substitution or other means.

All Business Users: Commercial, Industrial and Institutional Operations

Cleanup Methods
Use dry cleanup methods as much as possible before using wet cleanup methods.

- Ask about staff training or written procedures for facility and floor cleanup.
- Interview workers about common practices.
- Observe standard cleanup procedures.

Cleaning and Sanitizing
Use low- or non-phosphorus products for cleaning and sanitizing.

- Check Material Safety Data Sheets (MSDSs) or product labels for phosphorus content.
- Have the company check with vendors to see if alternative cleaners are available.
- Ask about purchasing criteria for cleaning products with low- or non-phosphorus content.
- Ask if the facility or vendor provides staff training on proper use and mixing of cleaning chemicals.
- Check if an automatic clean-in-place (CIP) system is appropriate.

Material Handling
Keep materials off the floor and away from drains.

- Ask about staff training for waste materials management.

- Check for catch basins or collection trays to collect waste materials that may reach the floor.
- Ask if collected materials are returned to the process.

Inefficient Equipment
Update old equipment to more-efficient equipment for production.

- Ask about upcoming opportunities to purchase more-efficient equipment.
- Check if existing equipment can be retrofit to increase efficiency.

Industrial Operations

Spills and Leaks
Establish a preventative maintenance program to prevent spills and leaks and to maintain the plant at maximum efficiency.

- Ask if the facility has a preventive maintenance program in place.
- If not, ask how often spills, leaks, and operational efficiency are evaluated.

Process Controls
Install mechanical and automatic process controls to make processes more efficient and reduce waste.

- See if the facility has process controls in place such as solenoid valves for water shut off or tank level indicators to prevent overflows.
- Ensure that all process controls are properly set, calibrated, and maintained.

Process Chemicals
Maximize the use of process chemicals.

- Determine if the facility uses proper operating concentrations of all process chemicals.
- Ask if the facility or vendor provides staff training on proper use of process chemicals.

Review the suggestions on this checklist with your business users to identify strategies to reduce effluent phosphorus from their operations.
training on proper use and mixing of process chemicals.
__ Ask if process chemicals are reused.
__ Look for opportunities to reuse solutions and rinses from phosphatizing lines and CIP systems.

**Start-up and Shut-down**
Use designated equipment for different products to minimize waste due to start-up and shut-down.

__ Inquire about opportunities to dedicate a product to one process line (i.e., potato salad on one line and coleslaw on another).
Check for standard operating procedures for start-up and shut-down of equipment.

**Drinking Water Treatment Plant**

**Phosphorus**
Optimize phosphorus addition at the water treatment plant.

__ Work with water treatment plant staff to review additions of phosphorus used to prevent corrosion in water distribution lines.

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**For More Information**
MnTAP has a variety of technical assistance services available to help Minnesota businesses implement industry-tailored solutions that maximize resource efficiency, prevent pollution, increase energy efficiency and reduce costs. Our information resources are available online at <mntap.umn.edu>. For personal assistance call MnTAP at 612.624.1300 or 800.247.0015.