Fluoride System Upgrades

Jeff Marrs
City Of Anacortes Water Treatment Plant
360-428-1598

Brief Overview of Operations

- Plant Serves 56,000 People from Several Communities
- Plant Staffed 24/7
- Located on the Skagit River in Mount Vernon
- Plant Staff responsible for off-site booster stations and reservoirs in the City Of Anacortes

Overview

- History of the fluoride feed system
- Reasons for upgrade
- Design of a new fluoride feed system
- Construction
- Start-up
- Operations
- Maintenance
- Trouble-shooting tips for fluoride feed.
- Questions

History Of The Fluoride Feed System

- City has been Fluoridating for several years.
- Fluoride System located in the City of Anacortes.
- Recent Sanitary Survey found that the current fluoride feed system needed to be upgraded.

Reasons for Upgrades

- Current system was outdated.
- System did not meet peak flow requirements.
- System monitoring and controls was limited.
- System was not reliable.

City of Anacortes 3mg Reservoir

Old Fluoride Feed System

Old Laboratory

Old Analyzers

Pump Room

Design Considerations

- Laboratory needed to be upgraded.
- Upgrade Fluoride system to meet system demands.
- Upgrade Access for Semi Trailers.
- Install safety shower and eye wash.
- Maintain operation of fluoride feed system during construction as much as possible.

The Issues Encountered

- Walls were asbestos.
- Electrical wiring was in need of upgrade.
- Ventilation system needed to be upgraded.

BUDA
1
2
3

MAXIMUM -
MINIMUM -
Zep

WARNING

Start-Up

Start-up

- Performance testing of system prior to adding chemicals to the system.
- Coordination with Control Engineer is a must.
- Coordination with Vendors to Assist in Start-up is a must.

Operations

Operations

- Target set point controls through the plc.
- Grab Sample input by the operator.
- Analyzers provide remote monitoring
- Daily lab testing at site to ensure correct dosing.
- Routine Fluoride Additions.

New Analyzers

New Lab

New Lab

Maintenance

- Routine Maintenance is a must.
- Fluoride pumps required little maintenance
- Saturation tanks are drained and cleaned 1-2 times per year.
- Always make sure you have spare parts on hand.

Trouble Shooting

- Common Problems with Saturation.
  - Make Sure you are operating within the minimum and maximum operating parameters of your tank.
  - Research the Fluoride purchased
  - Test the saturation levels of your tanks.
  - Ensure your pump system is working correctly.
  - I can’t emphasize enough about QA/QC in your lab.

Questions ???

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jeffm@cityofanacortes.org