



Shop, Polyelectrolyte Room, Activated Carbon Room, and Chlorine Cylinder Room

- For improved efficiency, upgrade lighting fixtures in all rooms and basement of chemical building to T8 type, 32-watt lamps with electronic ballasts.

Basement

- Replace covers on open and abandoned control switches on the east side, south wall of basement. Tag and cover all spare/unused wires inside wireways to prevent accidental touch hazard.
- Provide protection of wires for fire alarm system in accordance with NEC.
- Replace the conduit stub-ups and control stations for domestic water pumps. Pump M-18 may need to be replaced in near future.
- Replace the disconnect switch for the rotodip motor.

7.18 Residuals Handling

It is recommended that the existing sludge ponds be cleaned and upgraded to allow for better sludge storage and ultimate disposal.

7.19 Chemical Feed Systems

Existing chemical feed systems will be modified for the WTP upgrade. No new chemicals, except chlorine dioxide and possibly ferric chloride, will be required in the WTP upgrade. The following chemical systems will be retained:

- Alum - Potential coagulant.
- Sodium Hypochlorite in place of chlorine - Primary and residual disinfection.
- Potassium permanganate for taste and odor control as needed.
- Ammonia.

All chemical areas should be provided with applicable code compliance including curbs and holding capacity around each tank, upgrade of each pumping system for redundancy, and all other safety features like eye wash, showers, etc.

7.20 Recommended WTP Staffing

Based on a WTP staff survey, the total number of staff at a 6 mgd capacity WTP was estimated to be one supervisor and between 5 and 10 staff persons including laboratory staff as shown below. The number of operators should be about 2 to 3. The WTP staffing survey data suggest that the current staffing level for the District is appropriate provided the people are dedicated full time to the WTP.

- WTP Supervisor



- Dedicated operators (at least 2-3)
- 24 hour operation
- Dedicated maintenance staff (1-3)
- Dedicated electrical/instrumentation technician (1-2)
- Dedicated laboratory staff (1-2)

DHS has provided information leading Black & Veatch to the conclusion that the upgrades recommended within this Report will not affect the classification ratings of either the WTP or its distribution system. (Based on discussion with DHS, the WTP will remain at a classification of T4 and the distribution system will remain at a classification of D3.) As such, pursuant to Title 22, Division 4, Chapter 13 of the DHS regulations, the chief operator will be required to maintain a minimum Grade IV certification (T4) and the shift operator will be required to maintain a Grade III certification (T3).

The County should be able to comply with the staffing requirements from DHS. Additional training will need to be included with the design and construction of the recommended facilities. The new facilities will include a higher level of process automation, so reliance on programmable logic controllers (PLCs) will require special training in maintenance and troubleshooting.

7.21 Summary

Black & Veatch anticipates that the District will produce a request for proposal (RFP) for consulting services for the design of the upgraded WTP, as described in this chapter. Black & Veatch recommends that the District initiate some improvements while the design process is ongoing.

7.22 Five-Year Capital Improvement Plan

A schedule and approximate cost for a proposed 5-year capital improvement plan (CIP) are provided at the end of this chapter. These encompass the improvements recommended in this Audit Report. Improvements were prioritized based on input gained from workshops conducted with the District.