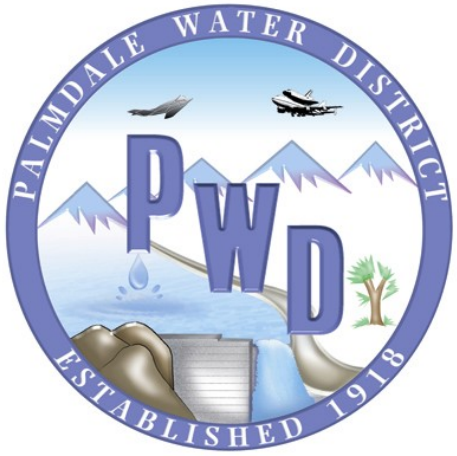
Leslie O. Carter
Water Treatment Plant



State Water Project (Calif. Aqueduct)

- Calif.Dept. of Water Resources (DWR) turnout



Lake Palmdale

- Capacity 2812.5 ft





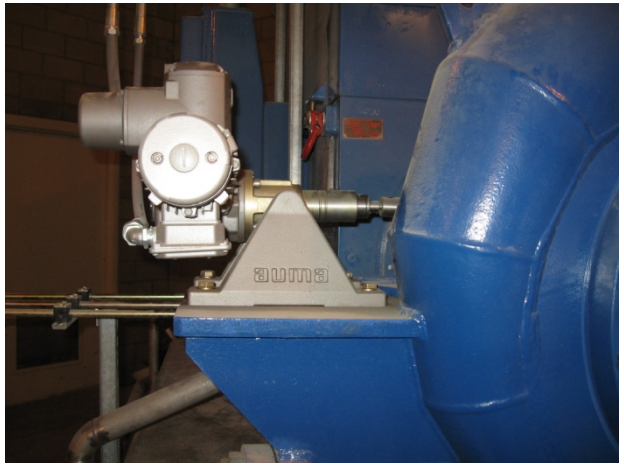


Figure 3.2
Lake Palmdale Facilities Map
LOCWTP O&M MANUAL
PALMDALE WATER DISTRICT

Lake Inlet







Littlerock Reservoir



- Capacity 3270 ft.

From Dam to Lake Palmdale







- Raw water travels through an earthen channel called Palmdale Ditch

Lake Palmdale outlet

- All raw water entering the LOCWTP comes from Lake Palmdale through this structure





Lake Outlet into treatment plant





Headworks and Flash Mix







Flash Mix Pump

- Stream of raw water is pumped in opposite direction at high pressure to create zone of turbulence for mixing chemicals



Chemical Building





Sodium Hypochlorite, 0.8% solution



Flocculation Basins

- The Flocculation process mixes the water and the coagulant chemicals to gather particles together to form larger heavier floc particles.



Chemical Feed lines



Chemicals are added to aid in the formation of settleable particles

Sedimentation

- Purpose – remove flocculated particles and other impurities from water by gravitational settling
- 5 rectangular basins are extensions of their respective flocculation basins
- Each basin approx. volume – 257,000 gallons



drain valve control ↓





- A look inside a basin
- Plate Settlers

Filtration



- Filters provide the final step in particulate removal
- 12 dual media gravity filters
- Media – 36 inches of anthracite on top of a 12” sand layer

Filter Influent Pipeline

- Water from the settled water channel moves to the filter influent channel through a 42-inch pipeline



Proper operation and maintenance of the filters is critical in maintaining acceptable overall finished water quality.

- Filter Control Booth



Water flows down through the media; each filter is 13’ wide by 26.5’ long



- When in operation, the water depth above the media is 9 feet, which provides 13 feet of headloss across filters for solids accumulation



- Filters get backwashed and scrubbed clean







Backwash Tank, 2.6 MG



Intermediate Pump Station (IPS)



GAC Contactors



Granular Activated Carbon (GAC)

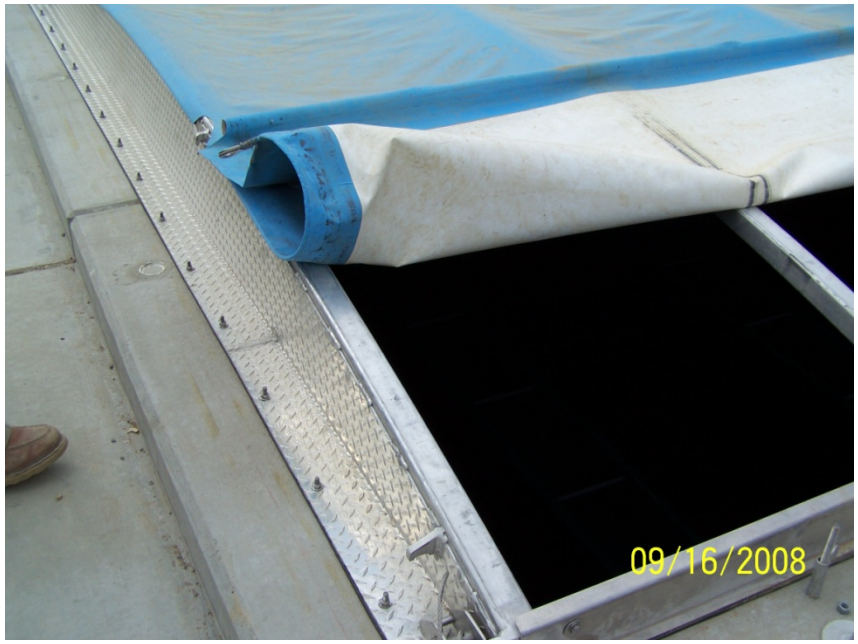




Nozzle underdrain



8’ of GAC media sits on top of nozzle underdrain





Contactors get backwashed too

- Contactor-to-waste Valve Actuator →
- Contactor Waste Wash water Valve Actuator ↓





Pilot Plant

Study of various GAC media performance



Clearwell, 6 MG



- Provides contact time necessary to achieve disinfection requirements
- Has hydraulic baffles

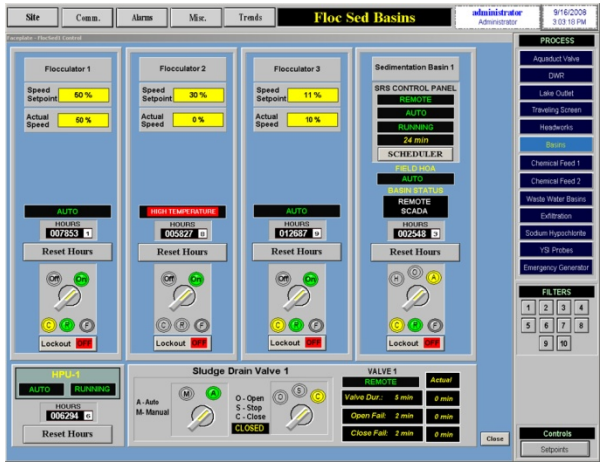
Sediment

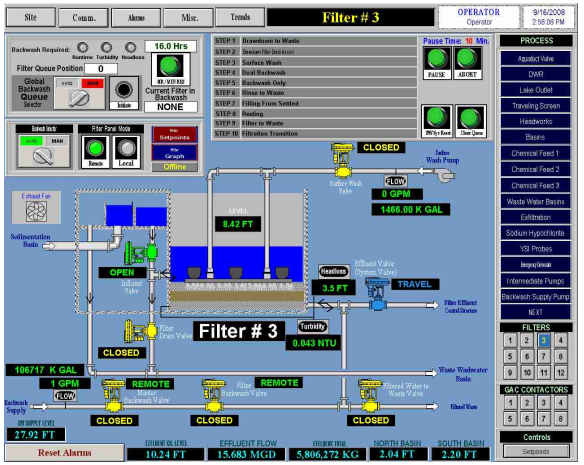


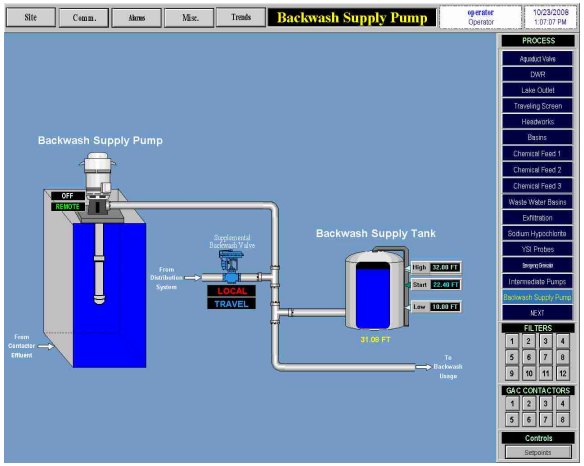


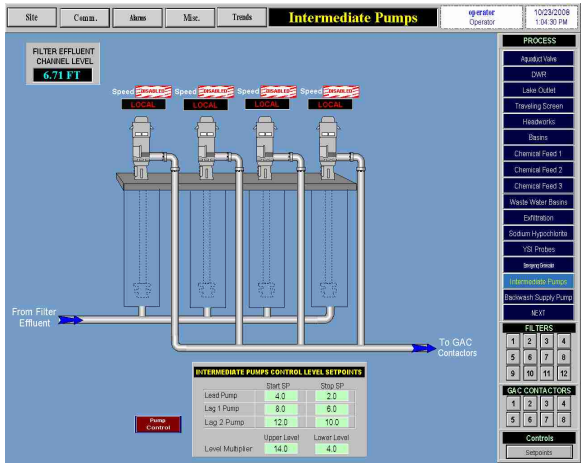
SCADA

provides automatic monitoring and control of processes









Water Quality Lab





Leslie O. Carter
Water Treatment Plant

Thank you