Treatment Process Narrative

The Sacramento Regional County Sanitary District owns and operates the Sacramento Regional Wastewater Treatment Plant (treatment plant). The current treatment plant is staffed and operated 24 hours per day and consists of influent pumps, a septage receiving station, a fats/oils/grease receiving station and storage tanks, mechanical bar screens, aerated grit removal, grit classifiers that wash and dewater grit, covered primary sedimentation tanks, pure oxygen activated sludge aeration, secondary clarification (sedimentation), disinfection using chlorine gas, and dechlorination with sulfur dioxide. Treated effluent is discharged to the Sacramento River at Freeport using a diffuser, or diverted to lined and unlined emergency storage basins as needed to meet effluent flow, dilution, thermal, and disinfection requirements. Odors are controlled through stripping towers and carbon treatment.

The current treatment plant has an average dry weather flow of 119 mgd and a design capacity of 181 mgd. Up to 5.0 MGD of treated wastewater is sent to the Water Recycling Facility for unrestricted use, with a provision for expansion to 10 MGD. The Water Recycling Facility is regulated under the Master Reclamation Permit No. 97-146 and provides recycled water for landscape irrigation and wastewater treatment plant process water. See the Current Schematic Flow Diagram (SRWTP Current) for a water balance.

Future Wastewater Treatment

Staffing and operating hours of the future treatment plant will be unchanged, and the plant will maintain a 181 mgd average dry weather flow design capacity. The treatment plant operation will differ seasonally. Modifications to the treatment process will include replacement of the existing pure oxygen biological treatment facilities with biological nutrient removal (BNR) air activated treatment facilities capable of removing ammonia and nitrate nitrogen, addition of tertiary treatment in the form of filtration with granular media filters, sidestream ammonia treatment, and an increase in lined emergency storage basin facilities.

The influent pumps will remain unchanged, as will the septage and fats/oils/grease receiving stations and storage tanks, mechanical bar screens, aerated grit removal, grit classifiers that wash and dewater grit, and covered primary sedimentation tanks. At this point in the treatment process, the improvements include primary effluent peak-shaving facilities, BNR air activated sludge treatment, a nitrifying sequencing batch reactor for treating high ammonia concentration waste streams from solids storage basins and the biosolids reclamation facility, secondary clarification (sedimentation), granular media filtration, disinfection using chlorine liquid, and dechlorination with sodium bisulfite.

Treated, compliant effluent will still be discharged to the Sacramento River at Freeport using a diffuser. Compliant or non-compliant effluent, primary influent or effluent, and raw wastewater can be diverted to lined emergency storage basins as needed for any reason including process

upsets, or diversions of excess flows, and returned for additional treatment to the influent of the treatment plant. Odors will be controlled using biological fixed media scrubbers, scrubbing tower, chemical oxidizing tower and carbon treatment towers. See the Future Schematic Flow Diagram (EchoWater 181 ADWF) for a water balance.

The BNR activated sludge treatment facilities will be designed to process up to 330 mgd. Flows in excess of 330 mgd will be stored in peak-shaving storage facilities and returned for processing through the activated sludge treatment facilities when capacity is available. All wastewater will receive secondary treatment through the BNRs. The tertiary filters will be designed to process flows up to 217 mgd. The future SRWTP will be operated differently according to season, as follows:

May 1 – October 31: Operations during this season will be filtered to meet Title 22 or equivalent disinfection criteria;

November 1 – April 30 (commences November 1, 2023):

In the descriptions below, "treated effluent discharge" means discharge to the river or storage basins, and "filtered" means tertiary filtration of BNR effluent under filter operations consistent with the design hydraulic loading rate necessary to comply with the Title 22, or equivalent, disinfection criteria.

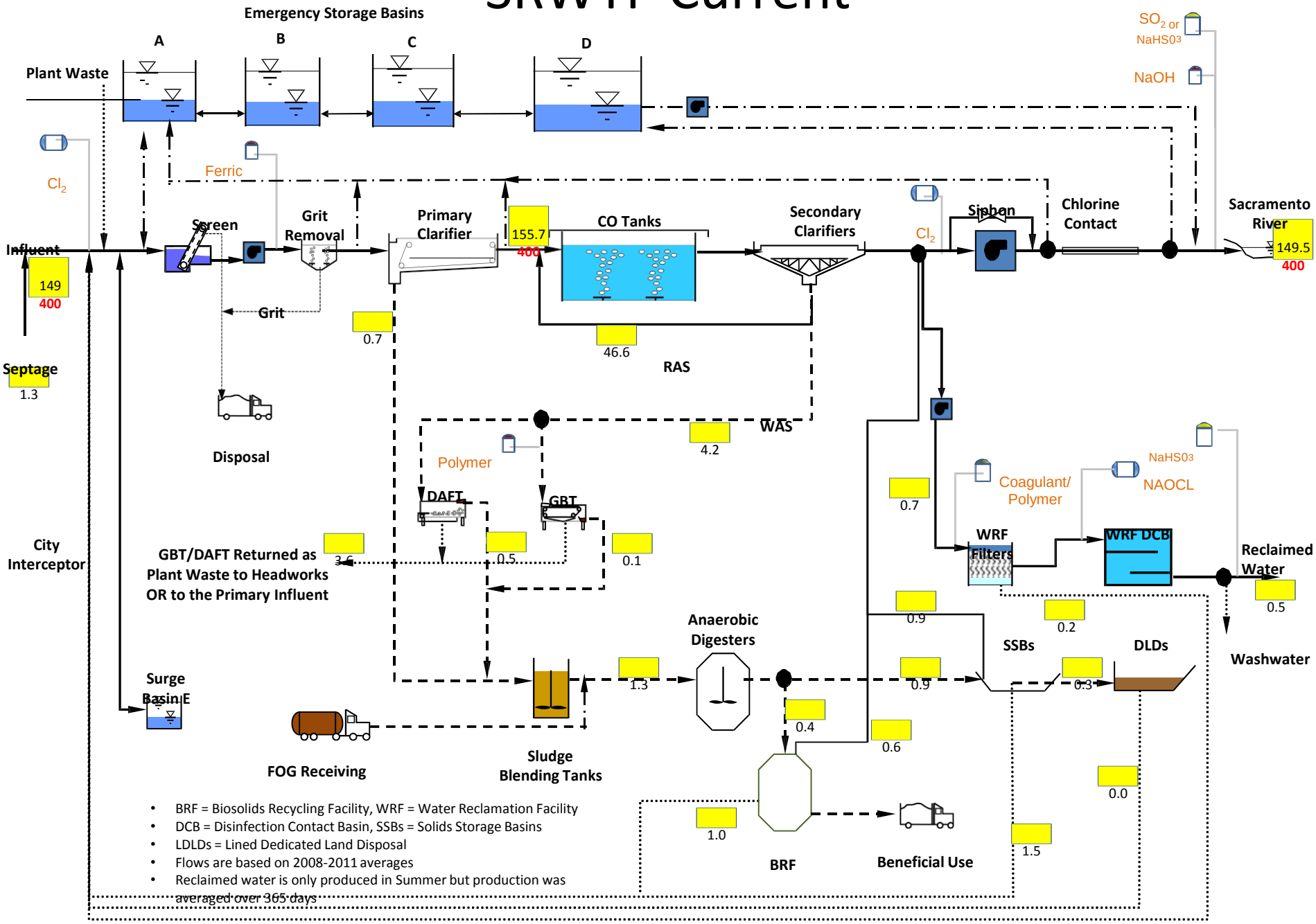
i. When treated effluent discharge is 217 mgd or less, the entire treated effluent discharge will be filtered.
ii. When treated effluent discharge exceeds 217 mgd, treated effluent discharge flows up to 217 mgd will be filtered and remaining wastewater will not be filtered. Filtered and non-filtered wastewater will be combined prior to disinfection by the chlorination/de-chlorination facilities.

Biosolids Treatment

Solids are currently thickened by dissolved air flotation and gravity belt thickeners. Primary and secondary sludge is mixed and sent to anaerobic digesters for approximately fifteen days or more, stored at the solids storage basins for three to five years then harvested and injected into lined dedicated land disposal sites. Biosolids are recycled by the Synagro Organic Fertilizer Company but can also be disposed of at the Keifer Landfill as an emergency option. When the treatment plant upgrades are complete, biosolids treatment and disposal will remain unchanged.

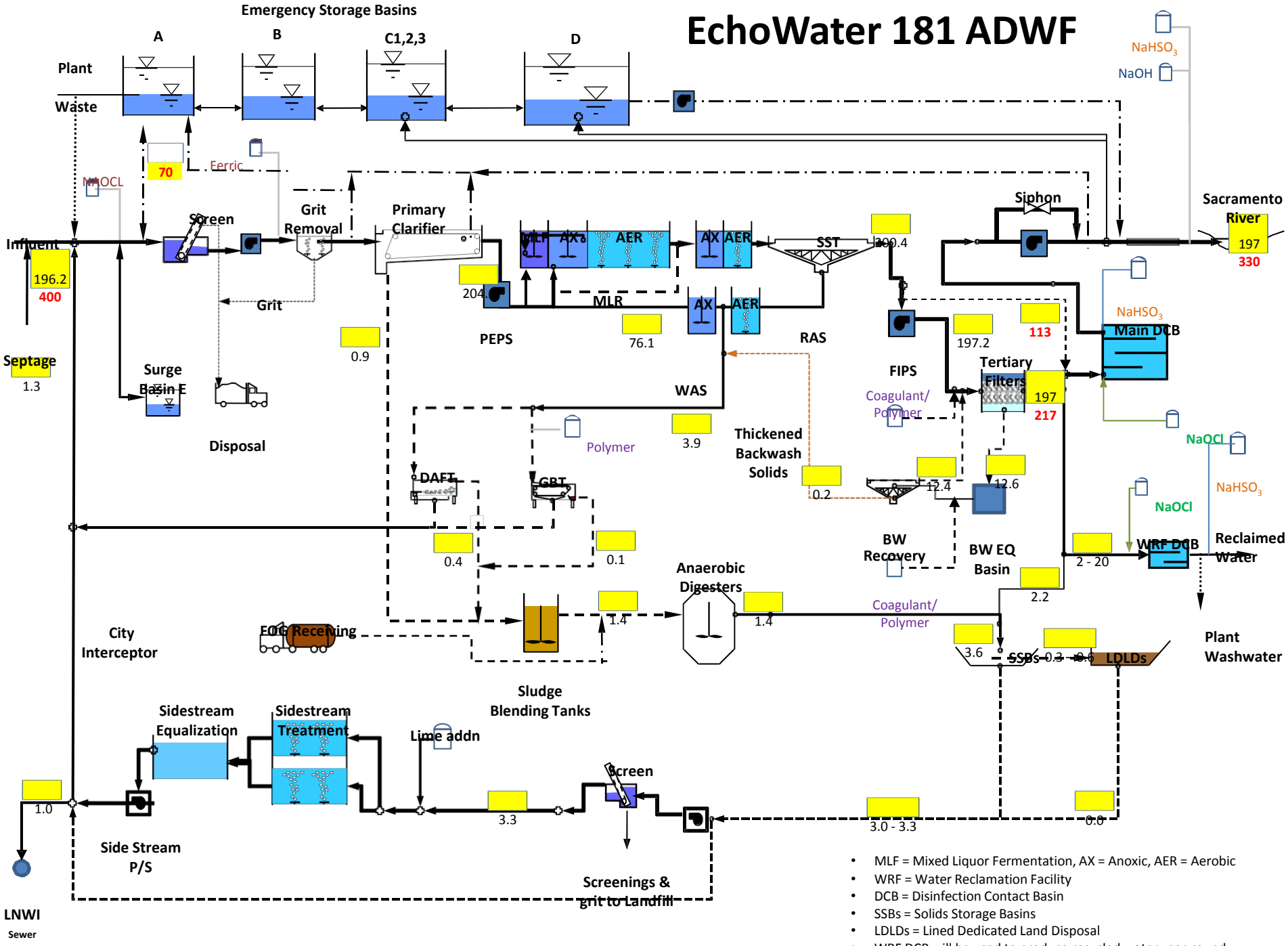
Separate waste discharge requirements in conformance with Title 27, California Code of Regulations, Division 2, Subdivision 1 regulate the biosolids and solids storage and disposal facilities.

SRWTP Current



- BRF = Biosolids Recycling Facility, WRF = Water Reclamation Facility
- DCB = Disinfection Contact Basin, SSBs = Solids Storage Basins
- LDLDs = Lined Dedicated Land Disposal
- Flows are based on 2008-2011 averages
- Reclaimed water is only produced in Summer but production was averaged over 365 days

EchoWater 181 ADWF



- MLF = Mixed Liquor Fermentation, AX = Anoxic, AER = Aerobic
- WRF = Water Reclamation Facility
- DCB = Disinfection Contact Basin
- SSBs = Solids Storage Basins
- LDLDs = Lined Dedicated Land Disposal
- WRF DCB will be used to produce recycled water year-round.
- Biosolids Recycling facility (BRF) is not in service