



WASTEWATER TREATMENT FACILITIES

Fact Sheet 34 Morrison Wastewater Treatment 2013 Upgrade

July 3, 2014

Morrison's Wastewater Reclamation Facility 2013 Upgrade

The Bear Creek Watershed Association protects and restores water and environmental quality within the Bear Creek Watershed from the effects of land use.

Clear Creek County
 Jefferson County
 City of Lakewood
 Town of Morrison
 Aspen Park Metropolitan District
 Brook Forest Inn
 Conifer Sanitation Association
 Conifer Metropolitan District
 Denver Water Department
 Evergreen Metropolitan District
 Forrest Hills Metropolitan District
 Genesee Sanitation & Water District
 Geneva Glen
 Jefferson County School District
 Kittredge Water & Sanitation District
 Tiny Town Foundation, Inc.
 West Jefferson County Metropolitan District
 Evergreen Trout Unlimited
 U.S. Army Corps of Engineers

Phase 1 The Town of Morrison completed a new state of the art wastewater reclamation facility in September 2013. The new Morrison's treatment works is a Sanitaire "Sequencing Batch Reactor" system (System features are found at this website):

<http://www.xylemwatersolutions.com/scs/sanitaire/en-us/product-overview/sanitaire-iceas-sbr/Pages/default.aspx>.

The new wastewater plant upgrade can treat 350,000 gallons/day. In future phasing, this pre-engineered wastewater facility can expand to 1,400,000 gallons per day. The existing facility is classified as a minor treatment works, but the future expansion would make this a major treatment works.

The plant employs "Biological Nutrient Removal" to remove Phosphorus and Ammonia/Nitrogen, both of which (if not adequately removed) lead to unacceptable levels of plant and algae growth in Bear Creek and Bear Creek Reservoir. The discharge from the new plant exceeds all EPA and Colorado Department of Public Health and Environment water quality regulations. The Phase 1 improvements includes tertiary treatment filtration to provide additional assurance that the plant can meet an effluent concentration of 0.55 mg/l TP. The total phosphorus permit limit is 1.0 mg/l; at current flows, the new plant discharges TP at 0.10 to 0.20 mg/l.

Phase 2 was completed on 12/4/2013 when Morrison sent settled sludge from the new Sequencing Batch Reactors to the old aeration basin, which was converted to serve as a sludge digester. After the sludge digestion process the sludge is applied to agricultural land as a soil enhancement.

