

MEMORANDUM

July 5, 2019

TO: Historical Memo

FM: Pete Carter / Steven Yee

RE: Vashon Wastewater Treatment Plant – June 2019

The Vashon Plant performed well in June 2019. Effluent Biochemical Oxygen Demand (BOD₅) averaged 3.0-mg/l and Total Suspended Solids (TSS) averaged 4.6-mg/L. BOD₅ and TSS removals were 99.5% and 98.9% respectively. All required analytical testing was completed.

Influent flow averaged 0.089 million gallons per day (MGD). A total of 0.5-inches of precipitation fell in June as measured at the North Vashon rain gauge. The max-day precipitation was 0.20-inches on June 7 which resulted in a flow of 0.102 MGD. The max-day flow, due to pumping down flow that had been stored during maintenance on June 26, was 0.103 MGD on June 27.

The oxidation ditch was operated at an average sludge retention time of 15-days. The MLSS concentration was in the range of 3060 to 4100 mg/L. The sludge volume index (SVI), which measures the MLSS's settling characteristics, averaged 91 mL/g. An estimated 4800 dry pounds of waste activated sludge were hauled to South Plant for further treatment in June.

One set of samples was collected this month (June 17) for nutrient and alkalinity analysis. Total-N removal was 96%, with an effluent total inorganic nitrogen (N) level of 1.5-mg/L (0.3-mg/L NH₃-N and 1.2-mg/L NO₂+NO₃ as N). Effluent phosphorus was 6.2-mg/L, resulting in a Total-P removal of 50%. No soda ash was added to the ditch in June for pH adjustment; the lowest effluent pH of the month was pH 6.9.

One of two clarifiers (clarifier 2) was in service in June. Two clarifiers are not needed during the dry season so one is removed from service for maintenance and energy savings. The UV system operated with both stages in AUTO.

Maintenance in June included programming of RAS pump 4 VFD to allow it to be operated in flow-paced mode. Also the influent screen and auger were inspected and the spray nozzles were cleaned. All City Fence was on site in June to begin installing a safety fence around the old oxidation ditch.

Vashon – June 2019
Process Summary

Table 1. Summary of Monthly Flow & Rain

	Monthly Average Flow, MGD	Minimum Daily Flow, MGD	Maximum Daily Flow, MGD	Total Rainfall, Inches
2.665	0.0885	0.0743	0.1027	0.5

Table 2. Summary of Monthly Compliance/Exceptions

Biochemical Oxygen Demand 5-day			Total Suspended Solids			Fecal Coliform (no./100 mL)	
Permit mg/L	Actual mg/L	Rem %	Permit mg/L	Actual mg/L	Rem %	Permit	Actual
30	3.0	99.5	30	4.6	98.9	200	E2

Table 3. Summary of Weekly Compliance/Exceptions

	Biochemical Oxygen Demand (mg/L)		Total Suspended Solids (mg/L)		Fecal Coliforms (Organisms/100 mL)	
	Permit	Actual	Permit	Actual	Permit	Actual
Week 1	45	2.8	45	3.9	400	E1.0
Week 2	45	3.3	45	4.7	400	E2.4
Week 3	45	2.9	45	4.2	400	E2.0
Week 4	45	3.2	45	5.6	400	E1.6