

MEMORANDUM

September 10, 2019

TO: Historical Memo

FM: Pete Carter / Steven Yee

RE: Vashon Wastewater Treatment Plant – August 2019

The Vashon Plant performed well in August 2019. Effluent Biochemical Oxygen Demand (BOD₅) averaged 3.9-mg/l and Total Suspended Solids (TSS) averaged 3.7-mg/L. BOD₅ and TSS removals were 99.2% and 99.0% respectively. All required analytical testing was completed.

Influent flow averaged 0.101 million gallons per day (MGD). A total of 1.20-inches of precipitation fell in August as measured at the North Vashon rain gauge. The max-day precipitation was 0.40-inches on August 10 which resulted in a flow of 0.104 MGD. The max day flow of 0.116 was on August 21. Rainfall on that day was 0.39 inches.

The oxidation ditch was operated at an average sludge retention time of 15-days. The MLSS concentration was in the range of 3100 to 3680 mg/L. The sludge volume index (SVI), which measures the MLSS's settling characteristics, averaged 127 mL/g. An estimated 6500 dry pounds of waste activated sludge were hauled to South Plant for further treatment in August.

One set of samples was collected this month (August 5) for nutrient and alkalinity analysis. Total-N removal was 97%, with an effluent total inorganic nitrogen (N) level of 0.5-mg/L (0.2-mg/L NH₃-N and 0.3-mg/L NO₂+NO₃ as N). Effluent phosphorus was 2.9-mg/L, resulting in a Total-P removal of 74%. No soda ash was added to the ditch in August for pH adjustment; the lowest effluent pH of the month was pH 6.8.

One of two clarifiers (clarifier 2) was in service in August. 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.

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
3.238	0.1009	0.092	0.1157	1.20

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	3.9	99.2	30	3.7	99.0	200	E1

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	4.2	45	4.3	400	E0.8
Week 2	45	4.7	45	3.9	400	E1.2
Week 3	45	3.3	45	3.3	400	E0.8
Week 4	45	3.4	45	3.0	400	E1.3