

# MEMORANDUM

May 14, 2019

TO: Historical Memo

FM: Pete Carter / Steven Yee

RE: Vashon Wastewater Treatment Plant – April 2019

The Vashon Plant performed well in April 2019. Effluent Biochemical Oxygen Demand (BOD<sub>5</sub>) averaged 2.1-mg/l and Total Suspended Solids (TSS) averaged <2.6-mg/L. BOD<sub>5</sub> and TSS removals were both >99%. All required analytical testing was completed.

Influent flow averaged 0.144 million gallons per day (MGD). A total of 3.34-inches of precipitation fell in April as measured at the North Vashon rain gauge. The max-day precipitation was 0.76-inches on Apr. 12 which resulted in the max-day flow of 0.195 MGD and a max-hour flow of 0.325-MGD

The oxidation ditch was operated at an average sludge retention time of 22-days. The MLSS concentration was in the range of 4200-5500 mg/L. The sludge volume index (SVI), which measures the MLSS's settling characteristics, averaged 163 mL/g. An estimated 5900 dry pounds of waste activated sludge were hauled to South Plant for further treatment in April.

One set of samples was collected this month (Apr. 15) for nutrient and alkalinity analysis. Total-N removal was 86%, with an effluent total inorganic nitrogen (N) level of <4.0-mg/L (<0.1-mg/L NH<sub>3</sub>-N and 3.9-mg/L NO<sub>2</sub>+NO<sub>3</sub> as N). Effluent phosphorus was 2.9-mg/L, resulting in a Total-P removal of 60%. No soda ash was added to the ditch in April for pH adjustment; the lowest effluent pH of the month was pH 6.9.

Both clarifiers were in service in April. The UV system operated with both stages in AUTO.

There were no exceptional operating conditions in April, e.g., power outages, loss of equipment, etc.

Vashon – March 2019  
 Process Summary

Table 1. Summary of Monthly Flow & Rain

Total Wastewater Treated, MG	Monthly Average Flow, MGD	Minimum Daily Flow, MGD	Maximum Daily Flow, MGD	Total Rainfall, Inches
4.325	0.144	0.113	0.195	3.34

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	2.1	99.4	30	<2.6	>99.2	200	<1.0

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	2.0	45	2.6	400	<1
Week 2	45	2.4	45	<2.0	400	<1
Week 3	45	1.9	45	<2.0	400	<1
Week 4	45	1.8	45	<2.6	400	<1