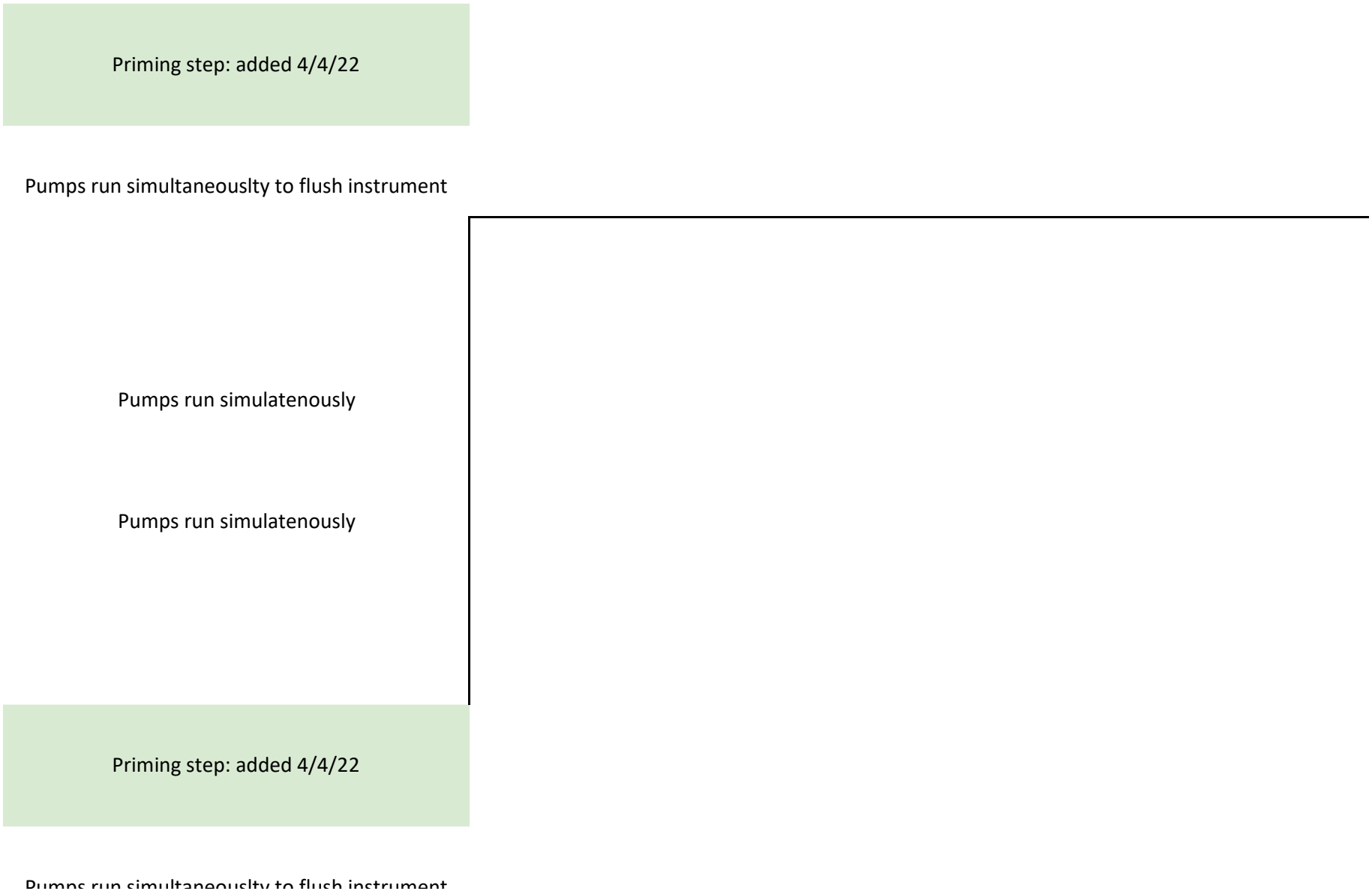
	Sequence steps	Volumes/flowrates
Activate instrument	Turn on analyzer	
	Turn light off	
	Get dark scan (see seabreeze code)	
	Turn lamp on	
	Wait 3 minutes for lamp to warm up	
Run Blank (2x)	Get reference scan (sea seabreeze code)	
	Pump 1 dispense	volume (µL), flow rate (µL/s), hold all (0/1 600,60,1
	COV-6 go to port 3 (Molybdate reagent)	
	Pump 2 aspirate	volume (µL), flow rate (µL/s), hold all (0/1 400,40,0
	Pump 1 dispense	volume (µL), flow rate (µL/s), hold all (0/1 320,32,1
	Wait 2 seconds	
	COV-6 go to port 5 (Ascorbic acid reagent)	
	Pump 1 aspirate	volume (µL), flow rate (µL/s), hold all (0/1 400,40,0
	Pump 2 dispense	volume (µL), flow rate (µL/s), hold all (0/1 320,32,1
	Wait 2 seconds	
	Go to port 2 (flow cell)	
	Pump 1 dispense	volume (µL), flow rate (µL/s), hold all (0/1 400,25,1
	Wait 5 minutes	
	Get absorbance value of blank sample (see seabreeze code)	
	Pump 1 dispense	volume (µL), flow rate (µL/s), hold all (0/1 1000,150,0
	Pump 2 dispense	volume (µL), flow rate (µL/s), hold all (0/1 1000,150,1
Run PO4	Get reference scan (sea seabreeze code)	
	COV-6 go to port 6 (PO4 standard)	
	Pump 1 aspirate	volume (µL), flow rate (µL/s), hold all (0/1 600,60,1
	COV-6 go to port 3 (Molybdate reagent)	
	Pump 2 aspirate	volume (µL), flow rate (µL/s), hold all (0/1 400,40,0
	Pump 1 dispense	volume (µL), flow rate (µL/s), hold all (0/1 320,32,1
	Wait 2 seconds	
	COV-6 go to port 5 (Ascorbic acid reagent)	
	Pump 1 aspirate	volume (µL), flow rate (µL/s), hold all (0/1 400,40,0
	Pump 2 dispense	volume (µL), flow rate (µL/s), hold all (0/1 320,32,1
	Wait 2 seconds	

standards (2x)	Go to port 2 (flow cell)	
	Pump 1 dispense	volume (µL), flow rate (µL/s), hold all (0/1 400,25,1
	Wait 5 minutes	
	Get absorbance value of PO4 standard (see seabreeze code)	
	COV-6 go to port 3 (Molybdate reagent)	
	Pump 1 aspirate	volume (µL), flow rate (µL/s), hold all (0/1 150,50,1
	COV-6 go to port 6 (PO4 standard)	
	Pump 1 aspirate	volume (µL), flow rate (µL/s), hold all (0/1 150,50,1
	Go to port 2 (flow cell)	
	Pump 1 dispense	volume (µL), flow rate (µL/s), hold all (0/1 1000,150,0
	Pump 2 dispense	volume (µL), flow rate (µL/s), hold all (0/1 1000,150,1
	Get reference scan (sea seabreeze code)	
	Run auxiliary pump for 60 seconds	
	COV-6 go to port 4 (PO4 sample)	
	Pump 1 aspirate	volume (µL), flow rate (µL/s), hold all (0/1 600,60,1
	COV-6 go to port 3 (Molybdate reagent)	
	Pump 2 aspirate	volume (µL), flow rate (µL/s), hold all (0/1 400,40,0
	Pump 1 dispense	volume (µL), flow rate (µL/s), hold all (0/1 320,32,1
	Wait 2 seconds	
	COV-6 go to port 5 (Ascorbic acid reagent)	
	Pump 1 aspirate	volume (µL), flow rate (µL/s), hold all (0/1 400,40,0
Run PO4 seawater sample (1x)	Pump 2 dispense	volume (µL), flow rate (µL/s), hold all (0/1 320,32,1
	Wait 2 seconds	
	Go to port 2 (flow cell)	
	Pump 1 dispense	volume (µL), flow rate (µL/s), hold all (0/1 400,25,1
	Wait 5 minutes	
	Get absorbance value of PO4 sample (see seabreeze code)	
	COV-6 go to port 3 (Molybdate reagent)	
	Pump 1 aspirate	volume (µL), flow rate (µL/s), hold all (0/1 150,50,1
	COV-6 go to port 4 (PO4 sample)	
	Pump 1 aspirate	volume (µL), flow rate (µL/s), hold all (0/1 150,50,1
	Go to port 2 (flow cell)	
	Pump 1 dispense	volume (µL), flow rate (µL/s), hold all (0/1 1000,150,0

	Pump 2 dispense	volume (µL), flow rate (µL/s), hold all (0/1 1000,150,1
post-processing	Calculate PO4 concentration: [PO4] = (Abs_sample - mean_Abs_blank) x [concentration of po4 standard] / (mean_Abs_standard-mean_Abs_blank) Store sample time stamp + sample concentration, send to server Sleep until next sample (~40 min if wanting hourly measurements)	

	Notes
Dispensing blank sample (carrier)	
Pumps run simulatenously	
Pumps run simulatenously	
***depends on flow cell length (used 300 with 10cm FC) **Could be shortened given no PO4 in blank	
Pumps run simultaneouslty to flush instrument	
Pumps run simulatenously	
Pumps run simulatenously	

***depends on flow cell length (used 300 with 10cm FC)



Pumps run simultaneously to flush instrument

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