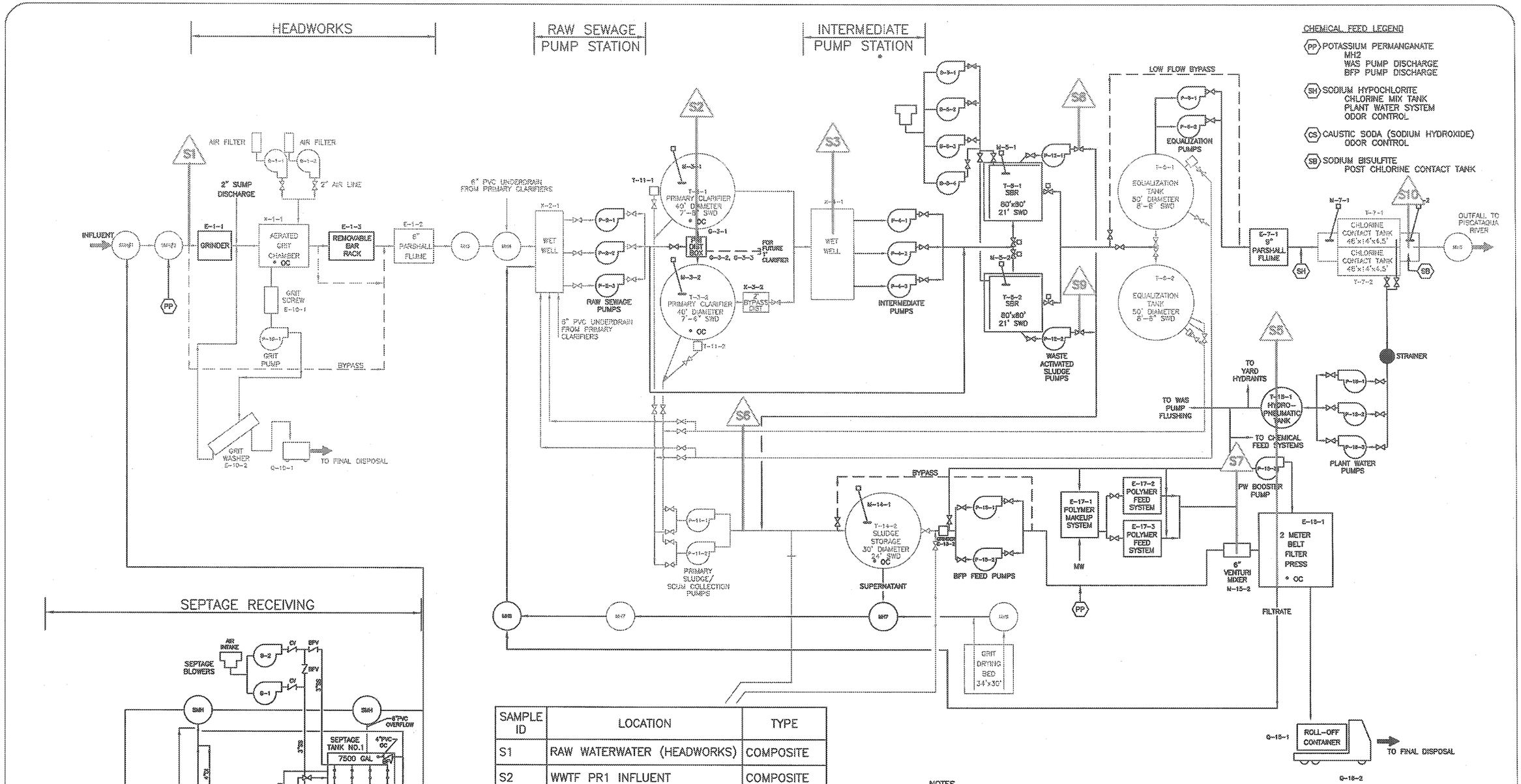

SAMPLE ID	LOCATION	TYPE
S1	RAW WATERWATER (HEADWORKS)	COMPOSITE
S2	WWTF PR1 INFLUENT	COMPOSITE
S3	WWTF PR1 EFFLUENT	COMPOSITE
S4	SEPTAGE RECIEVING	GRAB
S5	BFP FILTRATE	GRAB
S6	PR1 SLUDGE	GRAB
S7	BELT FILTER PRESS FEED	GRAB
S8	SBR#1 WAS	GRAB
S9	SBR#2 WAS	GRAB
S10	WWTF FINAL EFFLUENT	COMPOSITE

NOTES

1. VALVE SYMBOL (▷◁) IS GENERIC AND DOES NOT FOLLOW CONVENTIONS OF SYMBOL LEGENDS SHOWN ELSEWHERE IN THESE DRAWINGS.
2. PROCESS PIPING LINES ARE SCHEMATIC ONLY AND ARE NOT INTENDED TO ACCURATLY REPRESENT PHYSICAL LOCATION OR RELATIVE LOCATION OF PROCESS UNITS, EQUIPMENT, OR PIPES.
3. FOR CLARITY, SLIDE GATES IN DISTRIBUTION BOXES AND TANK CHANNELS ARE ENUMERATED BUT NOT SHOWN.
4. CHEMICAL FEED SYSTEMS ARE NOT SHOWN (REFER TO P&I DIAGRAMS) EXCEPT FOR POLYMER SYSTEM. FEED POINTS ARE SHOWN SCHEMATICALLY ((SH)) AND IDENTIFIED IN THE CHEMICAL FEED LEGEND.

DATE	Underwood Engineers, Inc.	SAMPLE LOCATIONS 2018 INFLUENT SAMPLING CAMPAIGN PEASE DELOPMENT AUTHORITY PORSMOUTH, NH	FIGURE
2/15/18			2
PROJECT 2105			

H:\Real Numbers\Portsmouth\2105 Pease Evaluation\Workplan\2105 FIG 2.dwg, Layout1, 3/27/2018 11:17:03 AM, mah

Week 1

Sample ID	Location	Type	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday
S1	Raw Wastewater (Headworks) - S1	composite	8 am Tue to 8 am Wed	8 am Wed to 8 am Thu	8 am Thu to 8 am Fri	8 am Fri to 8 am Sat	8 am Sat to 8 am Sun	8 am Sun to 8 am Mon	8 am Mon to 8 am Tue
S2	WWTF Primary Influent - S2	composite	8 am Tue to 8 am Wed	8 am Wed to 8 am Thu	8 am Thu to 8 am Fri	8 am Fri to 8 am Sat	8 am Sat to 8 am Sun	8 am Sun to 8 am Mon	8 am Mon to 8 am Tue
S3	WWTF Primary Effluent - S3	composite	8 am Tue to 8 am Wed	8 am Wed to 8 am Thu	8 am Thu to 8 am Fri	8 am Fri to 8 am Sat	8 am Sat to 8 am Sun	8 am Sun to 8 am Mon	8 am Mon to 8 am Tue
S4	Septage Receiving	grab	One grab per hauler. Mix together daily.						
S5	BFP Filtrate	grab	Hourly grabs when dewatering. Mix together daily.						
S6	Primary Sludge	grab	Two grabs per day. Blend daily	Two grabs per day. Blend daily	Two grabs per day. Blend daily	Two grabs per day. Blend daily	Two grabs per day. Blend daily	Two grabs per day. Blend daily	Two grabs per day. Blend daily
S7	Belt Filter Press Feed	grab	One grab when dewatering. Grab additional sample if sludge quality changes and mix together daily.						
S8	SBR #1 WAS	grab	One grab per day	One grab per day	One grab per day	One grab per day	One grab per day	One grab per day	One grab per day
S9	SBR #2 WAS	grab	One grab per day	One grab per day	One grab per day	One grab per day	One grab per day	One grab per day	One grab per day
S10	WWTF Final Effluent	composite	8 am Tue to 8 am Wed	8 am Wed to 8 am Thu	8 am Thu to 8 am Fri	8 am Fri to 8 am Sat	8 am Sat to 8 am Sun	8 am Sun to 8 am Mon	8 am Mon to 8 am Tue

Note: SBR #1 and SBR #2 to be mixed together daily.

Week 2

Sample ID	Location	Type	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday
S1	Raw Wastewater (Headworks) - S1	composite	8 am Tue to 8 am Wed	8 am Wed to 8 am Thu	8 am Thu to 8 am Fri	8 am Fri to 8 am Sat	8 am Sat to 8 am Sun	8 am Sun to 8 am Mon	8 am Mon to 8 am Tue

Note: SBR #1 and SBR #2 to be mixed together daily.

Pease Sample Plan - DRAFT

Week 1

24-hour composite samples — Sample (24 hrs) starting at 8 am on Tuesday - Monday

	TSS	VSS	TDS	BOD_5	Blend	COD	COD_{GF}	COD_{FF}	TKN	NH_3-N	TP	PO_4-P	Sulfate	Sulfite	Sulfide	Sodium	Potassium	Magnesium	Calcium	ALK	pH	TEMP	Volume Needed Per Day (ml)
																					By City		
Raw Wastewater (Headworks) - S1																							
Expected Value	650	500		400		1400	1000	1000	60	20	70	50	<1	3	0.05			15	80	240	8	35	
Volume Needed (ml)	125	125	125	10		25	25	25	100	100	100	25	250	250	250	125	125	125	125	250	250		2535
XX	X	X	X	X	X	X			X		X		X	X	X	X	X	X	X	X	X	X	
XG							X																
XM										X		X											
XF								X															
WWTF Primary Influent - S2																							
Expected Value	650	500		400		1400			60		70										8	35	
Volume Needed (ml)	125	125		10		25			100		100										250		735
XX	X	X		X	X	X			X		X										X	X	
XG																							
XM																							
XF																							
WWTF Primary Effluent - S3																							
Expected Value																					8	35	
Volume Needed (ml)	125	125		10		25	25		100	100	100	25									250		885
XX	X	X		X	X	X			X		X										X	X	
XG							X																
XM										X		X											
XF																							
WWTF Final Effluent - S10																							
Expected Value																							
Volume Needed (ml)								25															25
XX																							
XG																							
XM																							
XF								X															
Number of Events per Week	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
Number of Weeks	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Tests per day	3	3	1	3	3	3	2	2	3	2	3	2	1	1	1	1	1	1	1	1	3	3	
Total Number of Tests per Week	21	21	7	21	21	21	14	14	21	14	21	14	7	7	7	7	7	7	7	7	21	21	
Total Number of Tests	21	21	7	21	21	21	14	14	21	14	21	14	7	7	7	7	7	7	7	7			
Unit Cost	$ 10	$ 10	$ 10	$ 27	$ 30	$ 17	$ 27	$ 27	$ 27	$ 17	$ 17	$ 10	$ 10	$ 14	$ 14	$ 10	$ 10	$ 10	$ 10	$ 17	$ 3		
Total Cost (Outside Lab)	$ 213	$ 213	$ 71	$ 567	$ 630	$ 354	$ 378	$ 378	$ 567	$ 236	$ 354	$ 142	$ 71	$ 95	$ 95	$ 71	$ 71	$ 71	$ 71	$ 118	$ -	$ -	
						Lab =	$ 4,765.18														By City		

Week 2

24-hour composite samples — Sample (24 hrs) starting at 8 am on Tuesday - Monday

	TSS	VSS	TDS	BOD_5	Blend	COD	COD_{GF}	COD_{FF}	TKN	NH_3-N	TP	PO_4-P	Sulfate	Sulfite	Sulfide	Sodium	Potassium	Magnesium	Calcium	ALK	pH	TEMP	Volume Needed Per Day (ml)
																					By City		
Raw Wastewater (Headworks) - S1																							
Expected Value	650			400																	8	35	
Volume Needed (ml)	125			10																	250		385
XX	X			X																	X	X	
XG																							
XM																							
Number of Events per Week	7			7																	7	7	
Number of Weeks	1			1																	1	1	
Number of Tests per day	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
Total Number of Tests per Week	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	
Total Number of Tests	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Unit Cost	$ 10	$ 10	$ 10	$ 27	$ 30	$ 17	$ 27	$ 27	$ 27	$ 17	$ 17	$ 10	$ 10	$ 14	$ 14	$ 10	$ 10	$ 10	$ 10	$ 17	$ 3		
Total Cost (Outside Lab)	$ 71	$ -	$ -	$ 189	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
						Lab =	$ 259.91														By City		

XX = Not Filtered/ Standard Methods preparation
XG = Filtered with glass fiber filter (1.2 mm)
XM = Filtered with 0.45 mm membrane filter
XF = Flocculated and filtered with glass fiber filter (1.2 mm)

pH and Temp in field

24-hour Composite Samples
Blend first when testing for total COD, BOD5, TKN and TP for the samples not filtered
Note: Sample Volumes are estimates to be confirmed by laboratory

Grabs

Pease WWTF Sampling Plan

Sample Times: See Sample Calendar

Grab Samples

	TSS	VSS		BOD5	Blend	COD (Not Filtered)	COD_{GF}	COD_{FF}	TKN	NH_3-N	TP	PO_4-P	Sulfate	Sulfite	Sulfide	TDS	ALK	pH (By City)	TEMP (By City)	Volume Needed Per Day (ml)
Septage Receiving - S4																				
Expected Value	15000	10000		7500		15000	10000	7000	150	100	50	40					300	6.5		
Volume Needed (ml)	125	125		300		25	100	100	250	250	100	25	250	250	250		250	250		2,650
XX	X	X		X	X	X			X		X		X	X	X		X	X	X	
XG							X													
XM										X		X								
XF								X												
BFP Filtrate - S5																				
Expected Value	500	400		500		1200	1000		100	80	60	50					200			
Volume Needed (ml)	125	125		300		25	100		250	250	100	25					250	250		1,800
XX	X	X		X	X	X			X		X						X	X	X	
XG							X													
XM										X		X								
XF																				
WWTF Primary Sludge - S6																				
Expected Value	5000	40000				64000														
Volume Needed (ml)	125	125				25												250		525
XX	X	X			X	X												X	X	
XG																				
XM																				
XF																				
Belt Filter Press Feed - S7																				
Expected Value	40000	30000																		
Volume Needed (ml)	125	125																250		500
XX	X	X																X	X	
XG																				
XM																				
XF																				
SBR WAS #1 and #2 - S8 & S9 (mixed)																				
Expected Value	40000	30000																		
Volume Needed (ml)	125	125				25	100											250		625
XX	X	X			X	X												X	X	
XG							X													
XM																				
XF																				
Number of Events per Week	7	7		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
Number of Weeks	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Tests per day	5	5		2	4	4	3	1	2	2	2	2	1	1	1	0	2	5	5	
Total Number of Tests per Week	35	35		14	28	28	21	7	14	14	14	14	7	7	7	0	14	35	35	
Total Number of Tests (outside lab)	35	35		14	28	28	21	7	14	14	14	14	7	7	7	0	14			
Unit Cost	$ 10.13	$ 10.13		$ 27.00	$ 30.00	$ 16.88	$ 27.00	$ 27.00	$ 27.00	$ 16.88	$ 16.88	$ 10.13	$ 10.13	$ 13.50	$ 13.50	$ 10.13	$ 16.88	$ 3.38		
Total Cost (Outside Lab)	$ 354.55	$ 354.55		$ 378.00	$ 840.00	$ 472.64	$ 567.00	$ 189.00	$ 378.00	$ 236.32	$ 236.32	$ 141.82	$ 70.91	$ 94.50	$ 94.50	$ -	$ 236.32			
				Lab =		$ 4,644.43														

XX = Not Filtered/ Standard Methods preparation
XG = Filtered with glass fiber filter (1.2 mm)
XM = Filtered with 0.45 mm membrane filter
XF = Flocculated and filtered with glass fiber filter (1.2 mm)

Use Blender for total COD/BOD/TKN/TP tests
Rinse TSS with 3 aliquots of 10 ml DI after filtering
Note Sample Volumes to be confirmed by lab

Test	Method	Description	Estimated Volume(Composite)	Estimated Volume(Grab)	Hold Time	Preservative
		SM 19th Edition				
COD	Hach 8000	Reactor digestion method, low range 3 - 150 mg/L, high range 20 - 1500 mg/L	25 mLs	100 mLs	28 days	Sulfuric Acid
sCOD	Hach 8000		25 mLs	100 mLs	28 days	Sulfuric Acid
TKN	SM4500-NorgC/NH3D	Preliminary distillation followed by titration with sulfuric acid ?	100 mLs	250 mLs	28 days	Sulfuric Acid
NH3-N	TM NH3-001	Preliminary distillation followed by titration with sulfuric acid ?	100 mLs	250 mLs	28 days	Sulfuric Acid
TP	EPA 365.1	Ascorbic Acid Method. Look into method 4500-PC (vanadomoly….) for 1 to 20 mg/L range	100 mLs	250 mLs	28 days	Sulfuric Acid
PO4-P	EPA 365.1	Ascorbic Acid Method. Look into method C (vanadomoly….) for 1 to 20 mg/L range	25 mLs	25 mLs	48 Hours	None
ALKALINITY	SM2320B	Titration to pH 4.3 endpoint	250 mLs	250 mLs	14 days	None
TSS	SM2540D		125 mLs	125 mLs	7 days	None
VSS	SM2540E	ignited to 550 deg C	125 mLs	125 mLs	7 days	None
TDS	SM 2540C					
pH	SM4500	electrode method	25 mLs	25 mLs	Immediate	None
sBOD5	SM5210B		*	*	48 Hours	None
BOD5	SM5210B	should be SM5210-B	*	*	48 Hours	None
Sulfide	SM4500-S2-				14 days	Zinc Acetate
Sulfite	SM4500-SO3(2-)				Immediate	EDTA
Sulfate	SM4500-SO4(2-)					None
Sodium	SM 3500-NA					None

Note: TKN, NH3-N can be taken collected in one 250mL container

Requires filtration within 15 minutes of sample collection; analyze within 48 hours

Analyze within 15 minutes of collection

Range dependant upon WWTP history; 125mLs upto 1 Liter

Lonza Sample Plan - DRAFT

Week 1

Sample ID	Location	Type	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday
L1	End-of-pipe	composite	8 am Tue to 8 am Wed	8 am Wed to 8 am Thu	8 am Thu to 8 am Fri	8 am Fri to 8 am Sat	8 am Sat to 8 am Sun	8 am Sun to 8 am Mon	8 am Mon to 8 am Tue
L2	End-of-pipe	composite	8 am Tue to 8 am Wed	8 am Wed to 8 am Thu	8 am Thu to 8 am Fri	8 am Fri to 8 am Sat	8 am Sat to 8 am Sun	8 am Sun to 8 am Mon	8 am Mon to 8 am Tue

Week 2

Sample ID	Location	Type	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday
L1	End-of-pipe	composite	8 am Tue to 8 am Wed	8 am Wed to 8 am Thu	8 am Thu to 8 am Fri	8 am Fri to 8 am Sat	8 am Sat to 8 am Sun	8 am Sun to 8 am Mon	8 am Mon to 8 am Tue
L2	End-of-pipe	composite	8 am Tue to 8 am Wed	8 am Wed to 8 am Thu	8 am Thu to 8 am Fri	8 am Fri to 8 am Sat	8 am Sat to 8 am Sun	8 am Sun to 8 am Mon	8 am Mon to 8 am Tue

Lonza Sample Plan - DRAFT

Week 1

24-hour composite samples — Sample (24 hrs) starting at 8 am on Tuesday - Monday

	TSS	VSS	TDS	BOD_5	Blend	COD	COD_{GF}	COD_{FF}	TKN	NH_3-N	TP	PO_4-P	Sulfate	Sulfite	Sulfide	Sodium	Potassium	Calcium	Magnesium	ALK	pH	TEMP	Volume Needed Per Day (ml)
																					By Lonza		
101B Pretreatment Effluent																							
Expected Value	80	50		522		900	800		180	80	50	50	-	-	-					240	8	35	
Volume Needed (ml)	125	125	125	10		25	25	25	100	100	100	25	250	250	250	125	125	125	125	250	250		2535
XX	X	X	X	X	X	X			X		X		X	X	X	X	X	X	X	X	X	X	
XG							X																
XM										X		X											
XF								X															
101C Pretreatment Effluent																							
Expected Value	80	50		522		900	800		180	80	50	50	-	-	-					240	8	35	
Volume Needed (ml)	125	125	125	10		25	25	25	100	100	100	25	250	250	250	125	125	125	125	250	250		2535
XX	X	X	X	X	X	X			X		X		X	X	X	X	X	X	X	X	X	X	
XG							X																
XM										X		X											
XF								X															
Number of Events per Week	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
Number of Weeks	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Tests per day	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Total Number of Tests per Week	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	
Total Number of Tests	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14			
Unit Cost	$ 10	$ 10	$ 10	$ 27	$ 30	$ 17	$ 27	$ 27	$ 27	$ 17	$ 17	$ 10	$ 10	$ 14	$ 14	$ 10	$ 11	$ 10	$ 10	$ 17	$ 3		
Total Cost (Outside Lab)	$ 142	$ 142	$ 142	$ 378	$ 420	$ 236	$ 378	$ 378	$ 378	$ 236	$ 236	$ 142	$ 142	$ 189	$ 189	$ 142	$ 156	$ 142	$ 142	$ 236	$ -	$ -	
					Lab =	$ 4,545.66															By Lonza		

Week 2

24-hour composite samples — Sample (24 hrs) starting at 8 am on Tuesday - Monday

	TSS	VSS	TDS	BOD_5	Blend	COD	COD_{GF}	COD_{FF}	TKN	NH_3-N	TP	PO_4-P	Sulfate	Sulfite	Sulfide	Sodium	Potassium	Calcium	Magnesium	ALK	pH	TEMP	Volume Needed Per Day (ml)
																					By Lonza		
101B Pretreatment Effluent																							
Expected Value	80			522																	8	35	
Volume Needed (ml)	125			10																	250		385
XX	X			X																	X	X	
XG																							
XM																							
XF																							
101C Pretreatment Effluent																							
Expected Value	80			522																	8	35	
Volume Needed (ml)	125			10																	250		385
XX	X			X																	X	X	
XG																							
XM																							
XF																							
Number of Events per Week	7			7																	7	7	
Number of Weeks	1			1																	1	1	
Number of Tests per day	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
Total Number of Tests per Week	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	
Total Number of Tests	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Unit Cost	$ 10	$ 10	$ 10	$ 27	$ 30	$ 17	$ 27	$ 27	$ 27	$ 17	$ 17	$ 10	$ 10	$ 14	$ 14	$ 10	$ 11	$ 10	$ 10	$ 17	$ 3		
Total Cost (Outside Lab)	$ 142	$ -	$ -	$ 378	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
					Lab =	$ 519.82															By Lonza		

XX = Not Filtered/ Standard Methods preparation
XG = Filtered with glass fiber filter (1.2 mm)
XM = Filtered with 0.45 mm membrane filter
XF = Flocculated and filtered with glass fiber filter (1.2 mm)

24-hour Composite Samples
Blend first when testing for total COD, BOD5, TKN and TP for the samples not filtered
Sample Volume to be confirmed by laboratory

pH and Temp in field

Redhook Sample Plan - DRAFT

Week 1

Sample ID	Location	Type	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday
R1	End-of-pipe	composite	8 am Tue to 8 am Wed	8 am Wed to 8 am Thu	8 am Thu to 8 am Fri	8 am Fri to 8 am Sat	8 am Sat to 8 am Sun	8 am Sun to 8 am Mon	8 am Mon to 8 am Tue

Week 2

Sample ID	Location	Type	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday
R1	End-of-pipe	composite	8 am Tue to 8 am Wed	8 am Wed to 8 am Thu	8 am Thu to 8 am Fri	8 am Fri to 8 am Sat	8 am Sat to 8 am Sun	8 am Sun to 8 am Mon	8 am Mon to 8 am Tue

Redhook Sample Plan - DRAFT

Week 1

24-hour composite samples — Sample (24 hrs) starting at 8 am on Tuesday - Monday

	TSS	VSS	TDS	BOD_5	Blend	COD	COD_{GF}	COD_{FF}	TKN	NH_3-N	TP	PO_4-P	Sulfate	Sulfite	Sulfide	Sodium	Sodium	Potassium	Calcium	Magnesium	ALK	pH	TEMP	Volume Needed Per Day (ml)
																						By Redhook		
Pretreatment Effluent (end-of-pipe)																								
Expected Value	500	450		400		1400	1000		60	20	70	50	<1	3	0.05						240	8	35	
Volume Needed (ml)	125	125	125	10		25	25	25	100	100	100	25	250	250	250	125	125	125	125	125	250	250		2660
XX	X	X	X	X	X	X			X		X		X	X	X	X	X	X	X	X	X	X	X	
XG							X																	
XM										X		X												
XF								X																
Number of Events per Week	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
Number of Weeks	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Tests per day	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Total Number of Tests per Week	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
Total Number of Tests	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7			
Unit Cost	$ 10	$ 10	$ 10	$ 27	$ 30	$ 17	$ 27	$ 27	$ 27	$ 17	$ 17	$ 10	$ 10	$ 14	$ 14	$ 10	$ 10	$ 10	$ 10	$ 10	$ 17	$ 3		
Total Cost (Outside Lab)	$ 71	$ 71	$ 71	$ 189	$ 210	$ 118	$ 189	$ 189	$ 189	$ 118	$ 118	$ 71	$ 71	$ 95	$ 95	$ 71	$ 71	$ 71	$ 71	$ 71	$ 118	$ -	$ -	
					Lab = $ 2,336.74																	By Redhook		

Week 2

24-hour composite samples — Sample (24 hrs) starting at 8 am on Tuesday - Monday

	TSS	VSS	TDS	BOD_5	Blend	COD	COD_{GF}	COD_{FF}	TKN	NH_3-N	TP	PO_4-P	Sulfate	Sulfite	Sulfide	Sodium	Sodium	Potassium	Calcium	Magnesium	ALK	pH	TEMP	Volume Needed Per Day (ml)
																						By Redhook		
Pretreatment Effluent (end-of-pipe)																								
Expected Value	500			400																		8	35	
Volume Needed (ml)	125			10																		250		385
XX	X			X																		X	X	
XG																								
XM																								
XF																								
Number of Events per Week	7			7																		7	7	
Number of Weeks	1			1																		1	1	
Number of Tests per day	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Total Number of Tests per Week	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	
Total Number of Tests	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Unit Cost	$ 10	$ 10	$ 10	$ 27	$ 30	$ 17	$ 27	$ 27	$ 27	$ 17	$ 17	$ 10	$ 10	$ 14	$ 14	$ 10	$ 10	$ 10	$ 10	$ 10	$ 17	$ 3		
Total Cost (Outside Lab)	$ 71	$ -	$ -	$ 189	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
					Lab = $ 259.91																	By Redhook		

XX = Not Filtered/ Standard Methods preparation
XG = Filtered with glass fiber filter (1.2 mm)
XM = Filtered with 0.45 mm membrane filter
XF = Flocculated and filtered with glass fiber filter (1.2 mm)

24-hour Composite Samples
Blend first when testing for total COD, BOD5, TKN and TP for the samples not filtered
Sample Volume to be confirmed by laboratory

pH and Temp in field