

Table J.10. PCP column day 233 normalized potassium values.

	Set A				
Loc	Average	s			
6	1.6	0.00866			
5	1.82	0.051962			
4	1.866667	0.012583			
3	1.63	0.021794			
2	1.606667	0.016073			
1	1.778333	0.017559			
	Set B		Normalized by Set A		
	Average	s		Kb/Ka	s of quot.
6	2.081667	0.020207		1.301042	0.011114
5	1.943333	0.016073		1.067766	0.029724
4	1.881667	0.007638		1.008036	0.007869
3	1.823333	0.020817		1.118609	0.017582
2	1.875	0.018028		1.167012	0.013875
1	1.418333	0.005774		0.797563	0.01068
	Set C		Normalized by Set A		
	Average	s		Kc/Ka	s of quot.
6	1.901667	0.020207		1.188542	0.011925
5	1.896667	0.025658		1.042125	0.031593
4	1.86	0.013229		0.996429	0.009799
3	1.611667	0.012583		0.988753	0.015483
2	1.888333	0.016073		1.175311	0.013135
1	1.71	0.015		0.961575	0.013208
	Set D		Normalized by Set A		
	Average	s		Kd/Ka	s of quot.
6	1.783333	0.005774		1.114583	0.006307
5	1.745	0.005		0.958791	0.028694
4	1.72	0.00866		0.921429	0.008414
3	1.678333	0.007638		1.029652	0.014124
2	1.676667	0.014434		1.043568	0.013198
1	1.565	0.015		0.880037	0.013761
	Set E		Normalized by Set A		
	Average	s		Ke/Ka	s of quot.
6	1.691667	0.010408		1.057292	0.008195
5	1.655	0.013229		0.909341	0.029648
4	1.651667	0.014434		0.884821	0.011037
3	1.565333	0.009504		0.960327	0.014685
2	1.77	0.00866		1.10166	0.011136
1	1.521667	0.002887		0.85567	0.010055

Appendix J

Table J.10. PCP column day 233 potassium concentrations: raw data.

Set A	PCP	Triplate Analysis			Account for 1:5 Dilution			Average	s
6	L6	0.318	0.321	0.321	1.59	1.605	1.605	1.6	0.00866
5	L5	0.358	0.358	0.376	1.79	1.79	1.88	1.82	0.051962
4	L4	0.371	0.373	0.376	1.855	1.865	1.88	1.866667	0.012583
3	L3	0.324	0.323	0.331	1.62	1.615	1.655	1.63	0.021794
2	L2	0.319	0.32	0.325	1.595	1.6	1.625	1.606667	0.016073
1	L1	0.352	0.356	0.359	1.76	1.78	1.795	1.778333	0.017559

Set B	PCP	Triplate Analysis			Account for 1:5 Dilution			Average	s
	L6	0.412	0.417	0.42	2.06	2.085	2.1	2.081667	0.020207
	L5	0.385	0.39	0.391	1.925	1.95	1.955	1.943333	0.016073
	L4	0.376	0.375	0.378	1.88	1.875	1.89	1.881667	0.007638
	L3	0.366	0.368	0.36	1.83	1.84	1.8	1.823333	0.020817
	L2	0.371	0.376	0.378	1.855	1.88	1.89	1.875	0.018028
	L1	0.283	0.283	0.285	1.415	1.415	1.425	1.418333	0.005774

Set C	PCP	Triplate Analysis			Account for 1:5 Dilution			Average	s
	L6	0.381	0.376	0.384	1.905	1.88	1.92	1.901667	0.020207
	L5	0.375	0.378	0.385	1.875	1.89	1.925	1.896667	0.025658
	L4	0.375	0.371	0.37	1.875	1.855	1.85	1.86	0.013229
	L3	0.32	0.325	0.322	1.6	1.625	1.61	1.611667	0.012583
	L2	0.374	0.38	0.379	1.87	1.9	1.895	1.888333	0.016073
	L1	0.342	0.345	0.339	1.71	1.725	1.695	1.71	0.015

Set D	PCP	Triplate Analysis			Account for 1:5 Dilution			Average	s
	L6	0.356	0.358	0.356	1.78	1.79	1.78	1.783333	0.005774
	L5	0.35	0.348	0.349	1.75	1.74	1.745	1.745	0.005
	L4	0.345	0.342	0.345	1.725	1.71	1.725	1.72	0.00866
	L3	0.334	0.336	0.337	1.67	1.68	1.685	1.678333	0.007638
	L2	0.337	0.332	0.337	1.685	1.66	1.685	1.676667	0.014434
	L1	0.31	0.313	0.316	1.55	1.565	1.58	1.565	0.015

Set E	PCP	Triplate Analysis			Account for 1:5 Dilution			Average	s
	L6	0.336	0.34	0.339	1.68	1.7	1.695	1.691667	0.010408
	L5	0.334	0.329	0.33	1.67	1.645	1.65	1.655	0.013229
	L4	0.332	0.327	0.332	1.66	1.635	1.66	1.651667	0.014434
	L3	0.313	0.3112	0.315	1.565	1.556	1.575	1.565333	0.009504
	L2	0.352	0.355	0.355	1.76	1.775	1.775	1.77	0.00866
	L1	0.304	0.304	0.305	1.52	1.52	1.525	1.521667	0.002887

Table J.11. PCP column HPC during day 233 PCP perturbation expt.

Location	A		B		C	
	cell conc (x10 ⁴)	Stdev	cell conc (x10 ⁴)	Stdev	cell conc (x10 ⁴)	Stdev
1	21	3.464102	11.36667	2.119748	12.3	0.34641
2	27	4.358899	30.33333	4.932883	23.66667	4.50925
3	35.66667	4.163332	23.33333	2.081666	36.66667	0.57735
4	31.33333	1.154701	21.66667	4.041452	39	6.557439
5	35	2	37.33333	9.237604	45	9.539392
6	32	5.291503	58	3.605551	51.33333	0.57735

Location	D		E	
	cell conc (x10 ⁴)	Stdev	cell conc (x10 ⁴)	Stdev
1	9.533333	0.665833	6.833333	1.289703
2	26	3	20.33333	1.154701
3	30.33333	4.041452	24	6
4	29.66667	2.516611	16.4	1.452584
5	34.33333	2.081666	25	3.605551
6	33.66667	3.21455	16.23333	2.020726

Table J.11a. PCP column HPC during day 233 PCP perturbation expt (raw data).

Location	Set A					
	Dilution	Count	Plate Count (CFU/mL)	cell conc	cell conc (x10 ⁴) (CFU/mL)	Stdev
6	0.001	26	260000	320000	32	5.291503
		36	360000			
		34	340000			
5	0.001	37	370000	350000	35	2
		33	330000			
		35	350000			
4	0.001	32	320000	313333.3	31.33333	1.154701
		32	320000			
		30	300000			
3	0.001	39	390000	356666.7	35.66667	4.163332
		37	370000			
		31	310000			
2	0.001	30	300000	270000	27	4.358899
		29	290000			
		22	220000			
1	0.001	19	190000	210000	21	3.464102
		25	250000			
		19	190000			

Table J.11b-c. PCP column HPC during day 233 PCP perturbation expt (raw data). (Con't)

Set B						
Location	Dilution	Count	Plate Count (CFU/mL)	cell conc	cell conc (x10 ⁴) (CFU/mL)	Stdev
6	0.001	54	540000	580000	58	3.605551
		61	610000			
		59	590000			
5	0.001	32	320000	373333.3	37.33333	9.237604
		32	320000			
		48	480000			
4	0.001	21	210000	216666.7	21.66667	4.041452
		26	260000			
		18	180000			
3	0.001	24	240000	233333.3	23.33333	2.081666
		25	250000			
		21	210000			
2	0.001	28	280000	303333.3	30.33333	4.932883
		27	270000			
		36	360000			
1	0.01	91	91000	113666.7	11.36667	2.119748
		117	117000			
		133	133000			

Set C

Location	Dilution	Count	Plate Count (CFU/mL)	cell conc	cell conc (x10 ⁴) (CFU/mL)	Stdev
6	0.001	51	510000	513333.3	51.33333	0.57735
		52	520000			
		51	510000			
5	0.001	51	510000	450000	45	9.539392
		50	500000			
		34	340000			
4	0.001	46	460000	390000	39	6.557439
		33	330000			
		38	380000			
3	0.001	37	370000	366666.7	36.66667	0.57735
		37	370000			
		36	360000			
2	0.001	24	240000	236666.7	23.66667	4.50925
		19	190000			
		28	280000			
1	0.01	125	125000	123000	12.3	0.34641
		119	119000			
		125	125000			

Table J.11d-e. PCP column HPC during day 233 PCP perturbation expt (raw data). (Con't)
Set D

Location	Dilution	Count	Plate Count (CFU/mL)	cell conc	cell conc (x10 ⁴) (CFU/mL)	Stdev
6	0.001	30	300000	336666.7	33.66667	3.21455
		36	360000			
		35	350000			
5	0.001	32	320000	343333.3	34.33333	2.081666
		36	360000			
		35	350000			
4	0.001	27	270000	296666.7	29.66667	2.516611
		32	320000			
		30	300000			
3	0.001	28	280000	303333.3	30.33333	4.041452
		35	350000			
		28	280000			
2	0.001	23	230000	260000	26	3
		26	260000			
		29	290000			
1	0.01	103	103000	95333.33	9.533333	0.665833
		92	92000			
		91	91000			

Set E

Location	Dilution	Count	Plate Count (CFU/mL)	cell conc	cell conc (x10 ⁴) (CFU/mL)	Stdev
6	0.01	174	174000	162333.3	16.23333	2.020726
		174	174000			
		139	139000			
5	0.001	22	220000	250000	25	3.605551
		24	240000			
		29	290000			
4	0.01	149	149000	164000	16.4	1.452584
		165	165000			
		178	178000			
3	0.001	24	240000	240000	24	6
		18	180000			
		30	300000			
2	0.001	21	210000	203333.3	20.33333	1.154701
		21	210000			
		19	190000			
1	0.01	72	72000	68333.33	6.833333	1.289703
		79	79000			
		54	54000			

Appendix J

Table J.12. PCP column day 233 perturbation experiment dK and dHPC data.

Location difference	dK (mg/L)	K Standard Dev of difference	dHPC (cell/mL)	dHPC (cell/mL) (x10 ⁴)	HPC Standard Dev of Difference
Set A					
L6-5	-0.22	0.052678		-30000	-3 5.656854
L5-4	-0.04667	0.053463		36666.67	3.666667 2.309401
L4-3	0.236667	0.025166		-43333.3	-4.33333 4.320494
L3-2	0.023333	0.02708		86666.67	8.666667 6.027714
L2-1	-0.17167	0.023805		60000	6 5.567764
Set B					
L6-5	0.138333	0.02582		206666.7	20.66667 9.916317
L5-4	0.061667	0.017795		156666.7	15.66667 10.08299
L4-3	0.058333	0.022174		-16666.7	-1.66667 4.546061
L3-2	-0.05167	0.027538		-70000	-7 5.354126
L2-1	0.456667	0.01893		189666.7	18.96667 5.369047
Set C					
L6-5	0.005	0.03266		63333.33	6.333333 9.556847
L5-4	0.036667	0.028868		60000	6 11.57584
L4-3	0.248333	0.018257		23333.33	2.333333 6.582806
L3-2	-0.27667	0.020412		130000	13 4.546061
L2-1	0.178333	0.021985		113666.7	11.36667 4.522536
Set D					
L6-5	0.038333	0.007638		-6666.67	-0.66667 3.829708
L5-4	0.025	0.01		46666.67	4.666667 3.265986
L4-3	0.041667	0.011547		-6666.67	-0.66667 4.760952
L3-2	0.001667	0.01633		43333.33	4.333333 5.033223
L2-1	0.111667	0.020817		164666.7	16.46667 3.073001
Set E					
L6-5	0.036667	0.016833		-87666.7	-8.76667 4.133199
L5-4	0.003333	0.019579		86000	8.6 3.887158
L4-3	0.086333	0.017282		-76000	-7.6 6.17333
L3-2	-0.20467	0.012858		36666.67	3.666667 6.110101
L2-1	0.248333	0.009129		135000	13.5 1.731088

Appendix J

Table J.13a. PCP column DOC data day 218 PCP perturb (not used in thesis).

Location	Set A	Average	s
6	1.296	1.2905	0.007778
	1.285		
5	1.082	1.0885	0.009192
	1.095		
4	1.074	1.1045	0.043134
	1.135		
3	1.843	1.857	0.019799
	1.871		
2	0.662	0.676	0.019799
	0.69		
1	1.133846	1.133846	#DIV/0!

Location	Set B	Ave	s
6	1.577	1.59	0.018385
	1.603		
5	1.735	1.727	0.011314
	1.719		
4	1.603	1.619	0.022627
	1.635		
3	1.449	1.4765	0.038891
	1.504		
2	1.468	1.491	0.032527
	1.514		
1	2.632	2.6865	0.077075
	2.741		

Location	Set C	Ave	s
6	1.775	1.802	0.038184
	1.829		
5	1.802	1.8115	0.013435
	1.821		
4	2.099	2.121	0.031113
	2.143		
3	1.722	1.716	0.008485
	1.71		
2	1.566	1.5695	0.00495
	1.573		
1	2.457	2.4835	0.037477
	2.51		

Location	Set D	Ave	s
6	1.52	1.5585	0.054447
	1.597		
5	1.854	1.831	0.032527
	1.808		
4	1.598	1.5885	0.013435
	1.579		
3	1.584	1.5695	0.020506
	1.555		
2	1.3	1.304	0.005657
	1.308		
1	1.734	1.757	0.032527
	1.78		

Appendix J

Table J.13b. PCP column DOC data day 233 PCP perturb (not used in thesis).

Location	Set A	Adjust	Average	s
6	1.888	1.408	1.424	0.022627
	1.92	1.44		
5	1.39	0.91	0.8865	0.033234
	1.343	0.863		
		-0.48		
4	0.905	0.425	0.4375	0.017678
	0.93	0.45		
3	1.084	0.604	0.6575	0.07566
	1.191	0.711		
2	0.912	0.432	0.535	0.145664
	1.118	0.638		
1	1.247	0.767	0.7705	0.00495
	1.254	0.774		

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Location	Set B	Adjust	Ave	s
6	2.23	1.75	1.7705	0.028991
	2.271	1.791		
5	1.395	0.915	0.941	0.03677
	1.447	0.967		
4	1.367	0.887	0.885	0.002828
	1.363	0.883		
3	1.515	1.035	1.0295	0.007778
	1.504	1.024		
2	1.044	0.564	0.5845	0.028991
	1.085	0.605		
1	1.876	1.396	1.3955	0.000707
	1.875	1.395		

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Location	Set C	Adjust	Ave	s
6	2.104	1.604	1.6045	0.000707
	2.105	1.605		
5	1.821	1.321	1.34	0.02687
	1.859	1.359		
4	1.969	1.469	1.484	0.021213
	1.999	1.499		
3	2.041	1.541	1.539	0.002828
	2.037	1.537		
2	2.652	2.152	2.1305	0.030406
	2.609	2.109		
1	2.915	2.415	2.427	0.016971
	2.939	2.439		

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2.342

Location	Set D	Adjust	Ave	s
6	1.926	1.156	1.1845	0.040305
	1.983	1.213		
5	2.192	1.422	1.4215	0.000707
	2.191	1.421		
4	1.895	1.125	1.0985	0.037477
	1.842	1.072		
3	1.59	0.82	0.8365	0.023335
	1.623	0.853		
2	2.313	1.543	1.5465	0.00495
	2.32	1.55		
1	2.007	1.237	1.2285	0.012021
	1.99	1.22		

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2.393

Appendix J

Table J.13b. PCP column DOC data day 233 PCP perturb (not used in thesis).

Location	Set E	Adjust	Ave	s
6	1.291	1.291	1.274	0.024042
	1.257	1.257		
5	1.056	1.056	1.0775	0.030406
	1.099	1.099		
4	1.121	1.121	1.1255	0.006364
	1.13	1.13		
3	1.089	1.089	1.0865	0.003536
	1.084	1.084		
2	1.308	1.308	1.3775	0.098288
	1.447	1.447		
1	1.539	1.539	1.529	0.014142
	1.519	1.519		

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2.225