

5. DISCUSSION OF RESULTS

The following table and graphs summarize the results obtained for the various CanadianPond.ca Products Ltd. tests. Individual computer printouts of the data analysis including time versus D.O. plots for each test run using the specified data analysis method are contained in Appendix.

Table 5-1 Summary of 1/2” Bubble Tubing™ Test Results

DATE: RUN:	20-Jun-11 1	20-Jun-11 2	20-Jun-11 3	22-Jun-11 4	23-Jun-11 5	23-Jun-11 6	24-Jun-11 7	27-Jun-11 8	27-Jun-11 9
Barometric Pres. (PSIA)	14.36	14.36	14.37	14.36	14.34	14.33	14.36	14.41	14.41
Ambient Temperature (°F)	86.5	83.9	76.4	76.9	78.8	76.7	79.2	78.9	78.0
Relative Humidity (%)	0.68	0.62	0.80	0.66	0.64	0.64	0.54	0.63	0.70
Line Pressure (PSIG)	7.72	6.79	6.62	4.43	5.63	4.71	2.59	4.90	3.40
Line Temperature (°F)	111	93	87	85	106	91	88	110	93
Water Temp. (°C)	23.48	23.91	24.09	23.82	23.78	24.13	24.27	23.42	23.80
Number Of Aeration Devices	100	100	100	100	100	100	100	100	100
Air Release Depth (ft)	15.00	15.00	15.00	10.00	10.00	10.00	5.00	5.00	5.00
Blower HPwire	0.58	0.27	0.13	0.09	0.42	0.19	0.05	0.38	0.14
Average Air Flow (SCFM)	10.23	5.33	2.57	2.50	9.77	5.29	2.62	10.09	5.14
Average Air Flow (SCFM/ft)	0.10	0.05	0.03	0.03	0.10	0.05	0.03	0.10	0.05
C*20 Standard Conditions	10.74	10.69	10.78	10.14	10.17	10.16	9.62	9.61	9.59
Tank Volume (Ft³)	5,195	5,195	5,195	3,464	3,464	3,464	1,905	1,905	1,905
TDS (mg/L)	315	395	472	551	639	726	807	878	954
KLa20 (hr⁻¹)	0.86	0.50	0.26	0.31	0.96	0.60	0.44	1.26	0.73
TDS Corrected Results									
KLa20 (hr⁻¹)	0.92	0.53	0.27	0.32	0.99	0.61	0.44	1.27	0.73
SOTR (Lb O₂/Hr)	3.2	1.9	1.0	0.7	2.2	1.3	0.5	1.5	0.8
SOTE OBSERVED (%)	30.3%	33.5%	35.7%	27.1%	21.6%	24.6%	18.8%	14.0%	15.7%
SOTE (%/Ft)	2.02%	2.24%	2.38%	2.71%	2.16%	2.46%	3.76%	2.79%	3.14%
SAE (Lb O₂/Hr/HP)	5.49	6.83	7.40	8.16	5.20	6.98	9.40	3.84	6.07
Metric Results (TDS Corrected)									
Air Flow (Nm³/h)	16.07	8.37	4.04	3.93	15.35	8.31	4.11	15.84	8.08
SOTR (g/Hr)	1456.4	839.9	431.5	319.0	990.5	611.5	231.0	661.8	380.0
SOTE - %/m	6.63%	7.34%	7.80%	8.90%	7.08%	8.07%	12.32%	9.16%	10.31%

Figure 5-1 is a plot of air flow rate (SCFM/100' of tubing) versus the Mass Transfer Coefficient ($K_{La_{20}}$ – hr^{-1}).

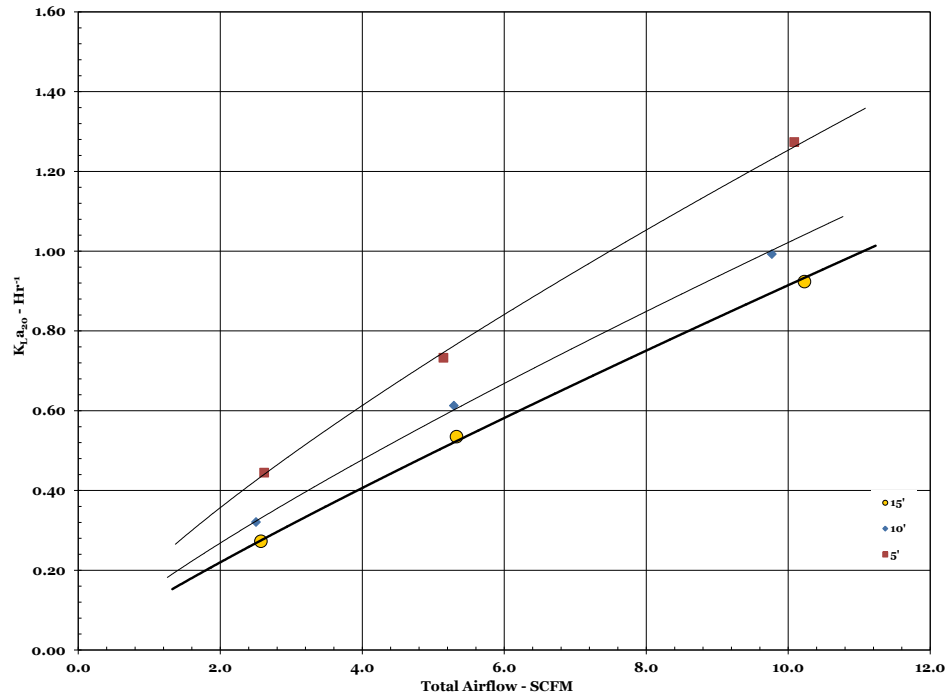


Figure 5-1 SCFM/100' of tubing v. $K_{La_{20}}$ - 1/2" Bubble Tubing™

Figure 5-2 is a plot of air flow rate (SCFM/100' of tubing) versus Standard Oxygen Transfer Rate (SOTR – Lb. O₂/Hr./100' of tubing).

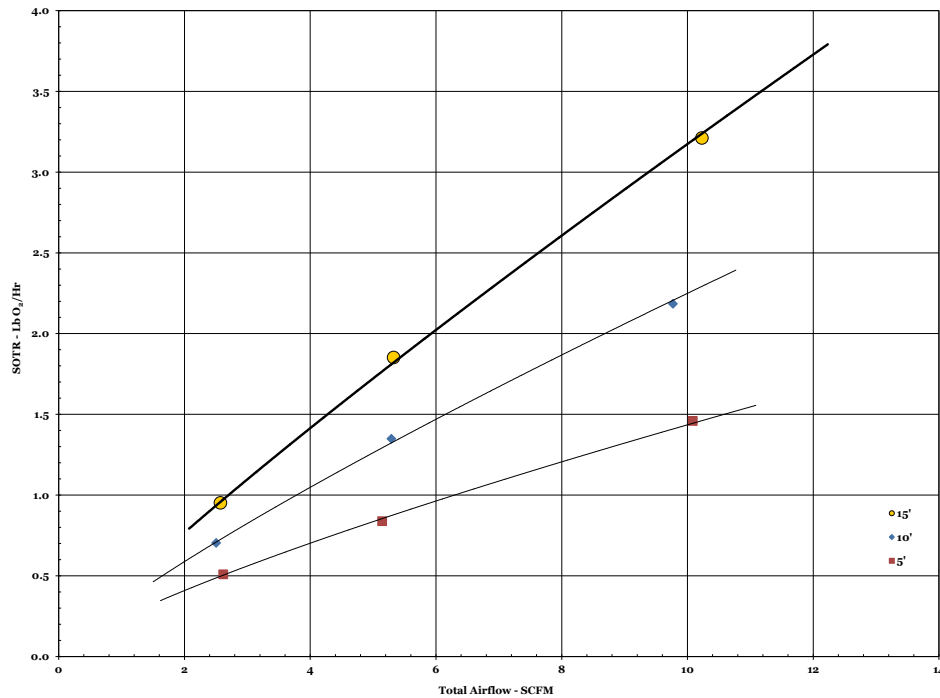


Figure 5-2 SCFM/100' of tubing v. SOTR/100' of tubing - 1/2" Bubble Tubing™

Figure 5-3 is a plot of air flow rate (SCFM/100' of tubing) versus Standard Oxygen Transfer Efficiency (SOTE - %).

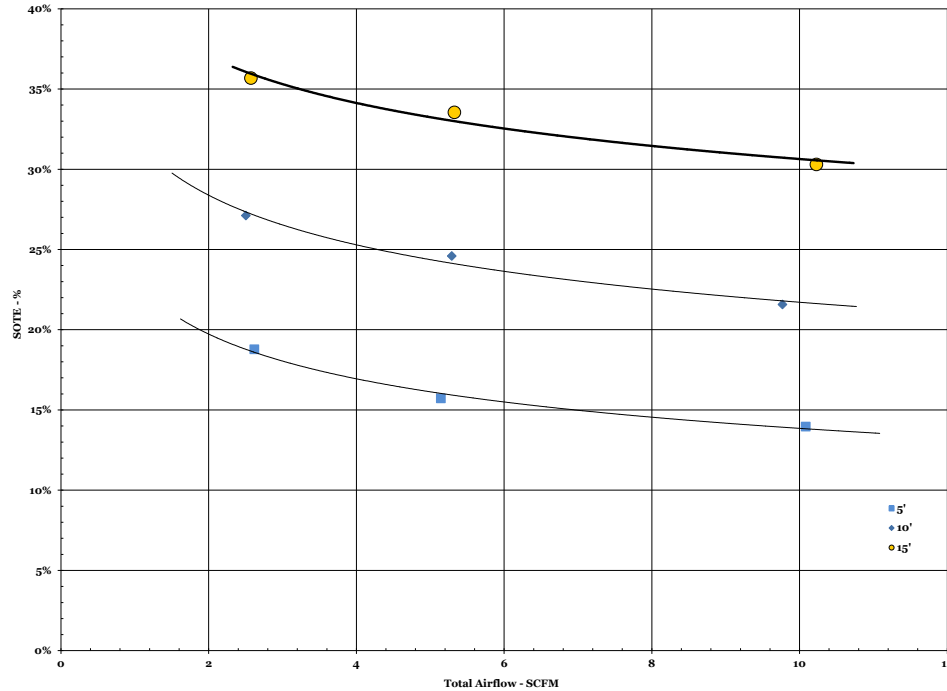


Figure 5-3 SCFM/100' of tubing v. SOTE - 1/2" Bubble Tubing™

Figure 5-4 is a plot of air flow rate (SCFM/100' of tubing) versus Standard Oxygen Transfer Efficiency (SOTE - %/Ft. of Submergence).

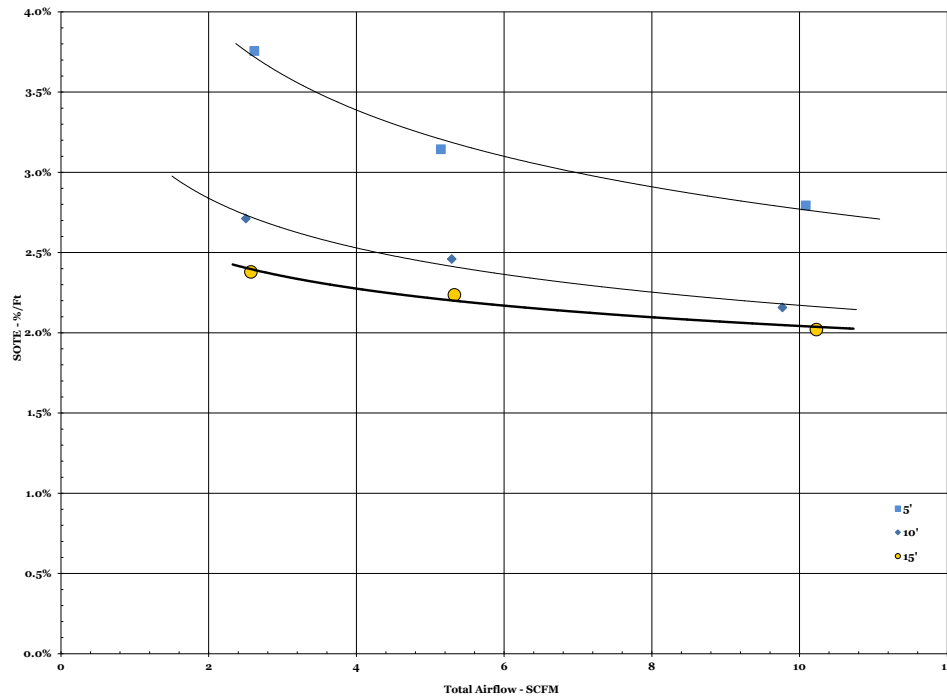


Figure 5-4 SCFM/100' of tubing v. SOTE/Ft. of Submergence - 1/2" Bubble Tubing™

Figure 5-5 is a plot of air flow rate (Nm³/h/100' of tubing) versus Standard Oxygen Transfer Efficiency (SOTE - %/m of Submergence).

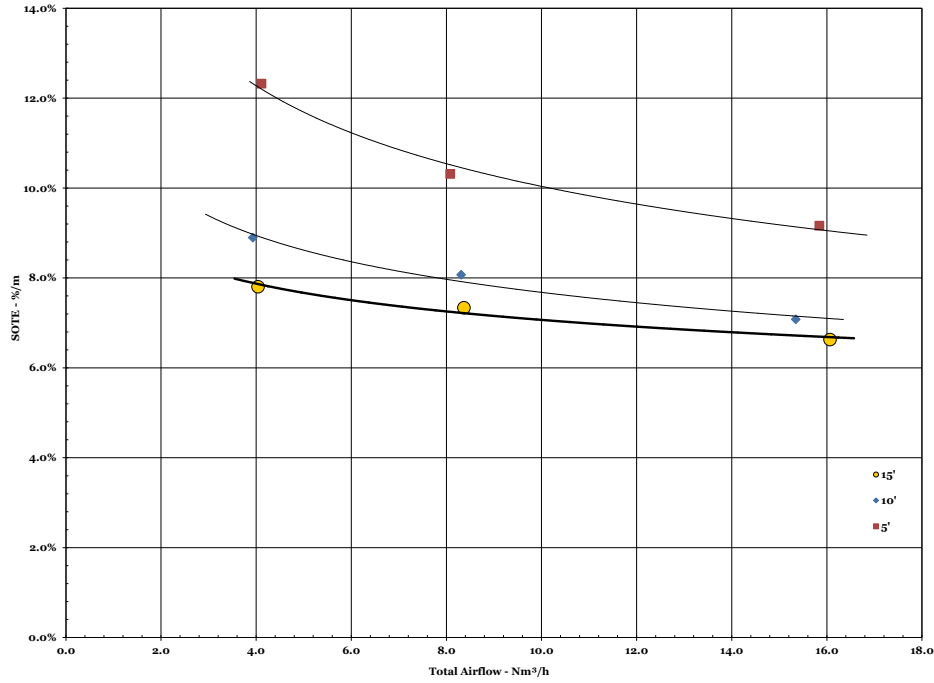


Figure 5-5 SCFM/100' of tubing v. SOTE - 1/2" Bubble Tubing™

Figure 5-6 is a plot of air flow rate (SCFM/100' of tubing) versus Standard Aerator Efficiency (SAE - Lb. O₂/Hr./HP_{wire}).

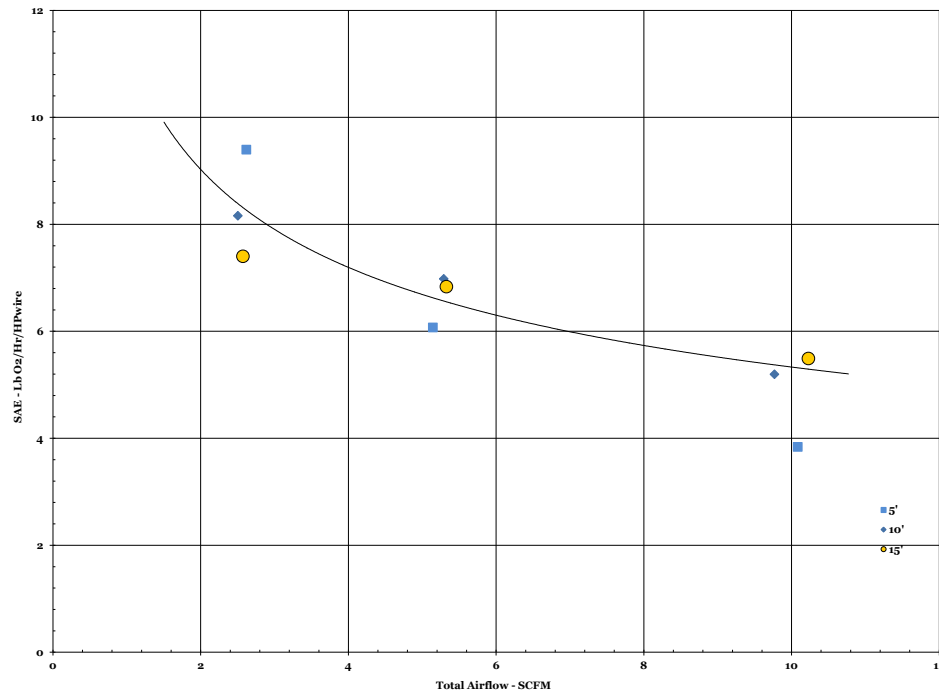


Figure 5-6 SCFM/100' of tubing v. SAE - 1/2" Bubble Tubing™