APPENDIX B

Burgess Stream, Blessington.
Stream Discharge Calculations - 23/04/03

DRAFT

Instrument - OTT C2 Small Current Meter

Location SF1
Propellor No. 3

Stream Column 1		
T (seconds)=	60	
	Revs	Revs/sec. (n)
Measurement 1	82	1.37
Measurement 2	90	1.50
Measurement 3	81	1.35
Average Rev	84.3	1.41
Measurement Depth (m)	0.07	
Depth (m)	0.35	
Width (m)	0.15	
Total Channel Width (m)	2.06	

Area of Stream Column 1 (X) = 0.0525 m²

Flow Velocity (V)
If 0.54<n<9.89, V=0.2535 x n + 0.001

V (Stream Column 1)= 0.357 m/s

Discharge (Q)
Q = Cross Section Area (X) x Flow Velocity (V)

Location SF1 Q= 0.0188 m³/s
18.76 l/s

Note: Stream is dominated by weed growth (see Photographs 1 and 2), therefore measurement was only possible for one cross sectional area (X) of the channel at this location. The discharge reading at this location is conservative.

Location SF2
Propellor No. 5

Stream Column 1			Stream Column 2		
T (seconds)=	60		T (seconds)=	60	
	Revs	Revs/sec. (n)		Revs	Revs/sec. (n)
Measurement 1	63	1.05		168	2.80
Measurement 2	77	1.28		164	2.73
Measurement 3	83	1.38		172	2.87
Average Rev	74.3	1.24		168.0	2.80
Measurement Depth (m)	0.03			0.06	
Depth (m)	0.06			0.11	
Width (m)	0.33			0.66	
Total Channel Width (m)	199			199	

Area of Stream Column 1 (X) = 0.0198 m²
Area of Stream Column 2 (X) = 0.0726 m²

Flow Velocity (V)
If n<7.74, V=0.0566 x n + 0.028

V (Stream Column 1)= 0.098 m/s
V (Stream Column 2)= 0.186 m/s

Discharge (Q)
Q = Cross Section Area (X) x Flow Velocity (V)

Q (Stream Column 1)= 0.0019 m³/s
Q (Stream Column 2)= 0.0135 m³/s

Total Q (Location SF2)= 0.0155 m³/s
15.48 l/s

Note: Stream has recently been excavated at this cross section, see Photographs 3 and 4, no aquatic plantswere present at this location

Refer to Figure 1 for location of Burgess Stream, channel profile, channel cross sections and flow measurement locations.

Burgess Stream, Blessington
Stream Discharge Calculations - 08/05/03

Instrument - OTT C2 Small Current Meter

Location SF1
Propellor No.3/No.5

Stream Column 1		
T (seconds)=		60
	Revs	Revs/sec. (n)
Measurement 1	NA.	NA.
Measurement 2	NA.	NA.
Measurement 3	NA.	NA.
Average Rev	0.0	0.00
Measurement Depth (m)	0	
Depth (m)	0	
Width (m)	0	
Total Channel Width (m)	2.06	

NB: NO FLOW MEASUREMENT POSSIBLE AT LOCATION SF1 DUE TO LOW FLOW IN STREAM

Area of Stream Column 1 (X) = 0. m^2

Flow Velocity (V)
if $0.54 < n < 9.89$, $V = 0.2535 \times n + 0.001$

V (Stream Column 1)= NA. m/s.

Discharge (Q)
Q = Cross Section Area (X) x Flow Velocity (V)

Location SF1 Q= NA. m^3/s
NA. l/s

Note: Stream is dominated by weed growth (see Photographs 1 and 2), therefore measurement was only possible for one cross sectional area (X) of the channel at this location. The discharge reading at this location is conservative.

Location SF2
Propellor No. 5

Stream Column 1.		
T (seconds)=		60
	Revs	Revs/sec. (n)
Measurement 1	204.	3.40
Measurement 2	209	3.48
Measurement 3	181	3.02
Average Rev	198.0	3.30
Measurement Depth (m)	0.05	
Depth (m)	0.14	
Width (m)	0.4	
Total Channel Width (m)	199	

Area of Stream Column 1 (X) = 0.056 m^2

Flow Velocity (V)
if $n < 7.74$, $V = 0.0566 \times n + 0.028$

V (Stream Column 1)= 0.215 m/s

Discharge (Q)
Q = Cross Section Area (X) x Flow Velocity (V)

Total Q (Location SF2)= 0.0120 m^3/s
12.03 l/s

Note: Stream has recently been excavated at this cross section, see Photographs 3 and 4, no aquatic plants were present at this location

Refer to Figure 1 for location of Burgess Stream, channel profile, channel cross sections and flow measurement locations.