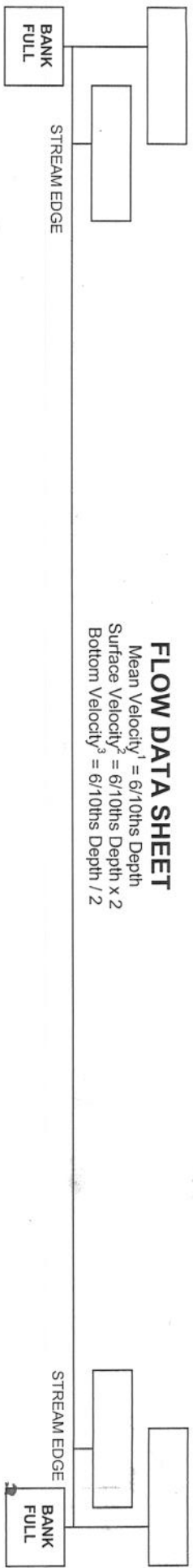


Below Lāhakea Division

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2



Stream Edge Width (feet)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	9.4	5 inches
Stream Edge Depth (feet)	0	0.8	1.9	1.4	1.4	2.1	1.6	1.4	1.0	1.4	0	
Flow Rate Width (ft/sec)												
Flow Rate Depth (ft/sec)												
Substrate/ % Vegetation												
% Plant Coverage												
Mean Velocity ¹ (ft/sec)		-0.04	-0.20	-0.20	-0.12	-0.13	0.13	0.26	0.17	-0.38		
Surface Velocity ² (ft/sec)		0.16	0.36	0.17	-0.20	0.06	0.77	0.87	0.21	-0.26		
Bottom Velocity ³ (ft/sec)	✓	-0.05	-0.13	-0.21	-0.10	-0.09	-0.31	0.06	-0.38	-0.36	N	

DATE	Jan 4, 2008	HYDROLAB		Stream depth (feet)		Transsect Line		Stream width (feet)	
TIME	13448	WIDTH (feet)							
OBSERVER	KEIDP	TEMPERATURE (°C)							
REACH		DISSOLVED OXYGEN (mg/L)							
TRANSECT#		CONDUCTIVITY (mS/cm)							
DAR_CODE		pH							
STREAM	Lāhakea - Just below	TURBIDITY (NTU)							
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)							

Stream depth (feet)

Transsect Line

Stream width (feet)

Below Division

Gage Hk. = 1.15 ft.

Page Held 11. ~~50~~ 4.

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2

FLOW DATA SHEET	
Mean Velocity ¹ = 6/10ths Depth	
Surface Velocity ² = 6/10ths Depth x 2	
Bottom Velocity ³ = 6/10ths Depth / 2	
BANK FULL	
STREAM EDGE	
STREAM EDGE	
BANK FULL	

Stream Edge Width (feet)	Stream Edge Depth (feet)	Flow Rate Width (ft/sec)	Flow Rate Depth (ft/sec)	Substrate/ % Vegetation	% Plant Coverage	Mean Velocity ¹ (ft/sec)	Surface Velocity ² (ft/sec)	Bottom Velocity ³ (ft/sec)
6.74	0	1.5	1.1			0.35	0.35	-0.04
7.0	1.5	1.1	1.1			-0.07	0.50	0.09
8.0	1.1	1.1	1.1			-0.19	0.95	-0.29
9.0	1.1	1.1	1.1			-0.32	1.31	-0.39
10	1.4	1.6	1.9			0.11	0.60	0.75
11	1.6	1.9	2.1			0.32	0.50	-0.58
12	1.9	2.1	1.3			0.62	1.73	-0.11
13	2.1	1.3	1.1			-0.09	1.58	-0.26
14	1.3	1.1	0			-0.25	0.09	0.06
15	1.1	0						
15.7	0							

DATE		HYDROLAB			
TIME	RE/10P	WIDTH (feet)			
OBSERVER	1225 hrs.	TEMPERATURE (°C)			
REACH		DISSOLVED OXYGEN (mg/L)			
TRANSECT#		CONDUCTIVITY (mS/cm)			
DAR_CODE		pH			
STREAM	Alaska - Belov Div	TURBIDITY (NTU)			
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)			

Stream depth (feet)

Stream width (feet)

Gage Height = 1.14 ft

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

BANK FULL

STREAM EDGE

BANK FULL

STREAM EDGE

Stream Edge Width (feet)	24.2	22	20	18	16	14	12	10	9	8	7	6	5	4	2.5				
Stream Edge Depth (feet)	0	0.4	0.9	0.8	1.5	1.9	2.2	2.1	2.0	2.0	1.8	1.7	1.6	1.5	0				
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)		0.06	0.05	0.01	0.04	0.32	0.33	0.40	0.63	0.60	0.63	0.29	0.13	0.07					
Surface Velocity ² (ft/sec)		0.05	0.06	0.18	0.09	0.18	0.60	0.83	0.71	0.87	0.58	0.42	0.04	0.04					
Bottom Velocity ³ (ft/sec)		0.08	0.07	0.09	0.03	0.01	0.07	0.13	0.16	0.02	0.31	0.29	0.12	0.11					

DATE January 1, 2006

TIME 2:52 PM

OBSERVER CJ, R.B, R.C

REACH

TRANSECT#

DAR_CODE

STREAM #11101010

TRIBUTARY

WIDTH (feet) 801

TEMPERATURE (°C) 26.31

DISSOLVED OXYGEN (mg/L) 8.97

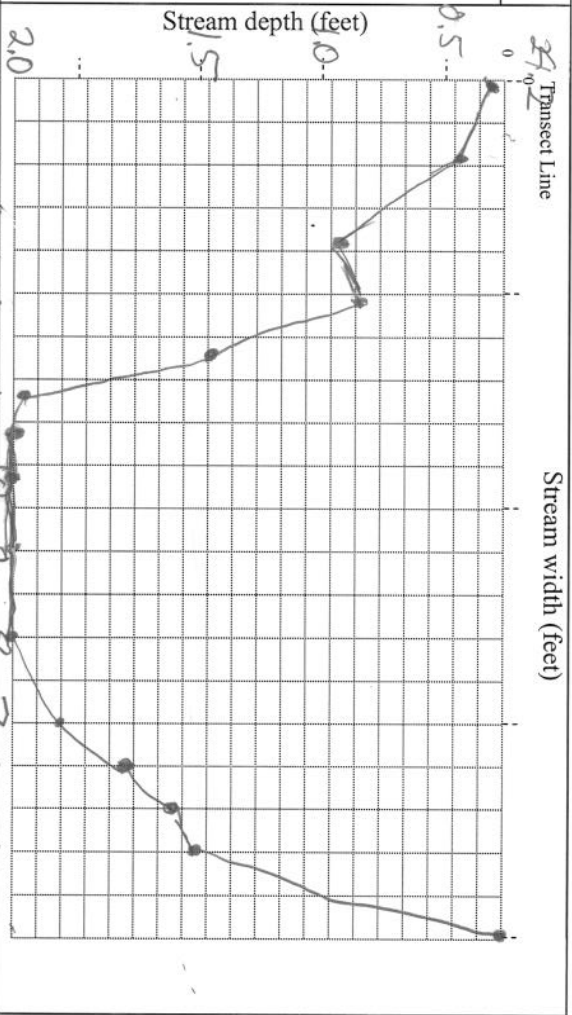
CONDUCTIVITY (mS/cm) 0.121

pH 7.97

TURBIDITY (NTU) 0.1

TOTAL SUSPENDED SOLIDS (mg/L) 2.0

HYDROLAB



Kamehameha Schools

BANK
FULL

STREAM EDGE

STREAM EDGE	BANK FULL
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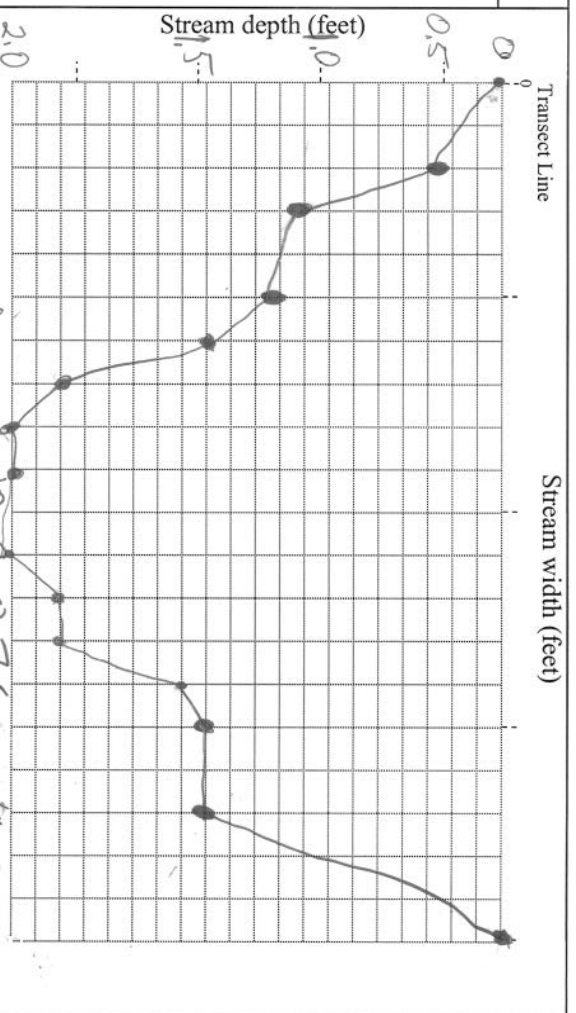
STREAM EDGE

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2

Stream Edge Width (feet)	24.3	22	20	18	16	14	12	10	9	8	7	6	5	4	2.3
Stream Edge Depth (feet)	0	0.5	0.9	0.8	1.5	1.9	2.0	2.1	2	1.8	1.8	1.6	1.5	1.5	0
Flow Rate Width (ft/sec)															
Flow Rate Depth (ft/sec)															
Substrate/ % Vegetation															
% Plant Coverage															
Mean Velocity ¹ (ft/sec)	0.06	-0.06	0.00	0.00	0.06	0.13	0.67	0.48	0.71	0.93	0.63	0.45	0.03	-0.10	
Surface Velocity ² (ft/sec)	-0.06	0.01	0.01	0.23	0.32	0.47	0.77	0.62	0.67	0.58	0.33	0.20	0.02		
Bottom Velocity ³ (ft/sec)	-0.09	-0.07	-0.05	-0.06	-0.05	-0.10	0.30	0.03	0.35	0.26	0.07	-0.10	-0.12		

DATE		HYDROLAB	
TIME	1:40 PM	WIDTH (feet)	Pool
OBSERVER	JN, MS, AL	TEMPERATURE (°C)	20.25
REACH		DISSOLVED OXYGEN (mg/L)	8.70
TRANSECT#		CONDUCTIVITY (mS/cm)	0.122
DAR_CODE		pH	7.98
STREAM	hillcove	TURBIDITY (NTU)	0.4
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)	0.6



Kamenamenia Schools

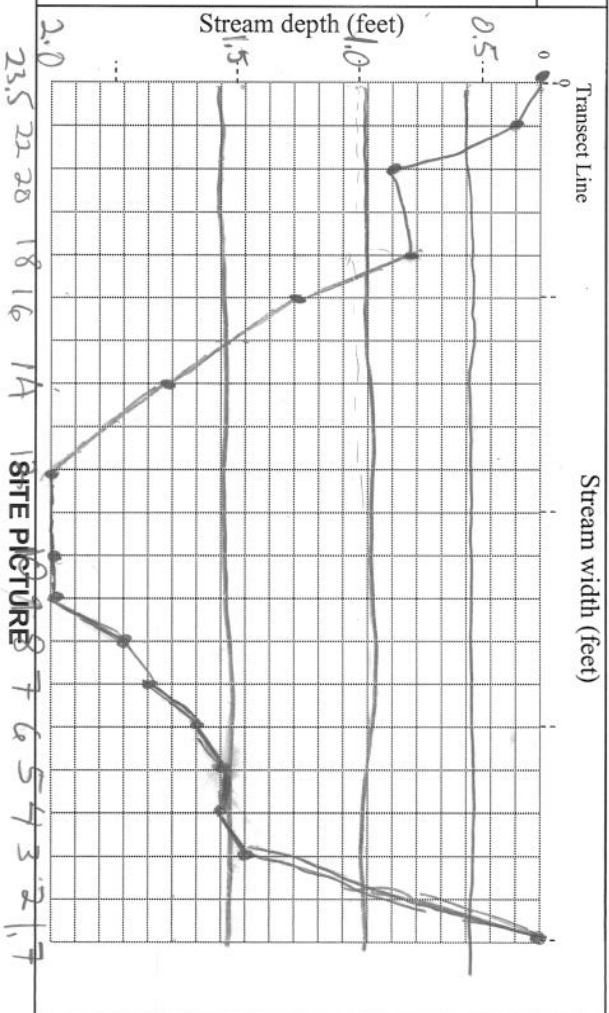
FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

BANK FULL	STREAM EDGE	STREAM EDGE	BANK FULL
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Stream Edge Width (feet)	23.5	22 ft	20 ft	18 ft	16 ft	14 ft	12 ft	11 ft	10 ft	9 ft	8 ft	7 ft	6 ft	5 ft	4 ft	3 ft	1.7 ft	
Stream Edge Depth (feet)	0	0.2 ft	0.8 ft	0.7 ft	1.3 ft	1.8 ft	2.0 ft	1.8 ft	2.1 ft	2.1 ft	1.9 ft	1.8 ft	1.6 ft	1.5 ft	1.5 ft	1.4 ft	0	
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)		-0.08	-0.07	-0.03	-0.02	0.13	0.35	0.50	0.41	0.49	0.81	0.71	0.38	0.17	-0.07	-0.04	-	
Surface Velocity ² (ft/sec)		-0.08	-0.08	-0.09	0.05	0.26	0.34	0.53	0.74	0.68	0.84	0.41	0.37	0.15	0.15	-0.04	-	
Bottom Velocity ³ (ft/sec)		-0.07	-0.07	-0.07	-0.05	-0.09	0.08	0.06	-0.05	0.06	-0.02	0.22	0.40	0.12	-0.05	-0.13	-	

DATE	1-19-06	HYDROLAB	
TIME	11:54am	WIDTH (feet)	KHLE POOL
OBSERVER	A.K., L.K., K.P.	TEMPERATURE (°C)	20.07 20.06
REACH		DISSOLVED OXYGEN (mg/L)	9.56 9.35
TRANSECT#		CONDUCTIVITY (mS/cm)	0.126 0.121
DAR_CODE		pH	8.22 8.24
STREAM	Hillane Stream	TURBIDITY (NTU)	4.8 0.7
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)	



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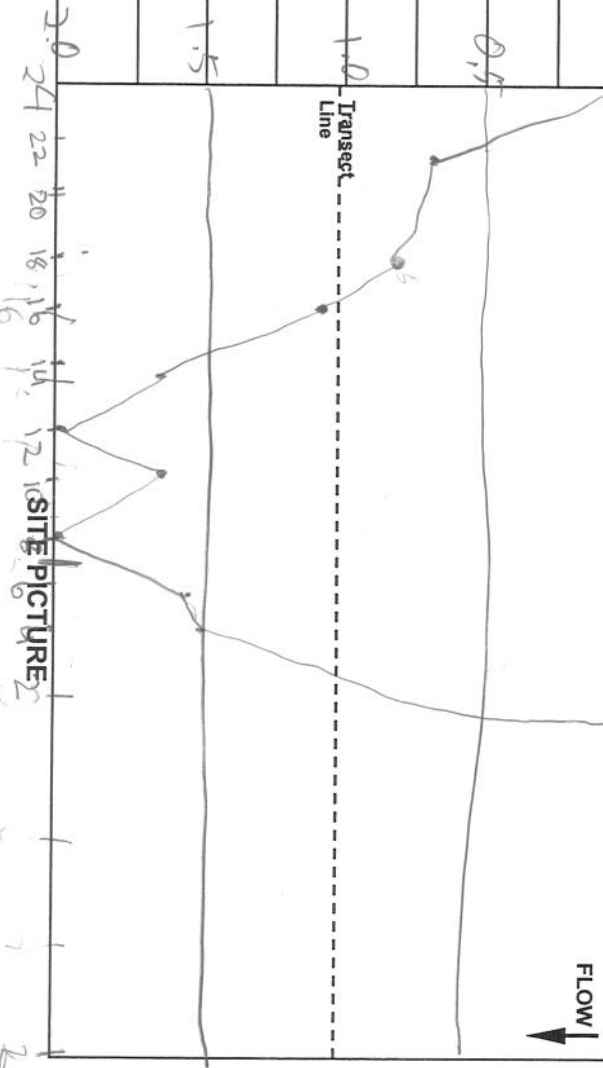
FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2

[illegible]

Stream Edge Width (feet)	22	20	18	16	14	12	10	8	6	4	2
Stream Edge Depth (feet)	0.5	0.7	0.8	1.1	1.6	2.0	1.8	2.0	1.6	1.5	0
Flow Rate Width (ft/sec)											
Flow Rate Depth (ft/sec)	0.5	0.7									
Substrate/ % Vegetation											
% Plant Coverage											
Mean Velocity ¹ (ft/sec)	-0.07	-0.06	0.04	0.19	0.25	0.41	0.41	0.77	0.42	-0.12	
Surface Velocity ² (ft/sec)	-0.05	-0.06	0.03	0.17	0.30	0.60	0.68	0.78	0.67	0.19	
Bottom Velocity ³ (ft/sec)	-0.10	-0.07	-0.11	-0.12	-0.04	0.39	0.30	0.30	0.21	-0.10	

DATE 1/23/2006		HYDROLAB		
TIME 3:30	WIDTH (feet)	Pool	Rifle	
OBSERVER MJP/LS	TEMPERATURE (°C)	20.44	20.48	0.5
REACH	DISSOLVED OXYGEN (mg/L)	7.85	9.00	1.0
TRANSECT# 1	CONDUCTIVITY (mS/cm)	0.111	0.111	
DAR_CODE	pH	7.99	7.99	
STREAM Hilsene	TURBIDITY (NTU)	0.0	620	1.5
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)			20





FLOW DATA SHEET
Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2



BANK
FULL

STREAM EDGE

BANK
FULL

STREAM EDGE

Stream Edge Width (feet)	22.7	21ft	19ft	17ft	15ft	13ft	12ft	11ft	10ft	9ft	8ft	7ft	6ft	5ft	4ft	3ft	2
Stream Edge Depth (feet)	0	0.4	0.8	0.1	0.6	2.9	2.1	1.9	2.0	2.1	2.2	2.0	1.9	1.6	1.6	1.6	0
Flow Rate Width (ft/sec)																	
Flow Rate Depth (ft/sec)																	
Substrate/ % Vegetation																	
% Plant Coverage																	
Mean Velocity ¹ (ft/sec)		-0.11	-0.05	-0.13	0.06	0.09	0.33	0.44	0.53	0.29	0.53	0.92	0.90	0.48	0.20	0.08	
Surface Velocity ² (ft/sec)		-0.09	-0.06	-0.13	0.13	0.29	0.64	0.60	0.76	0.78	0.85	0.95	0.52	0.56	0.27	0.07	
Bottom Velocity ³ (ft/sec)		-0.13	-0.11	-0.10	0.02	0.02	0.17	0.27	-0.02	0.01	0.09	0.44	0.33	0.01	0.11	0.18	



DATE	Jan 23 / 2006	HYDROLAB										FLOW						
TIME	2:14pm	WIDTH (feet)																
OBSERVER	KANU O. KAC. PAINA	TEMPERATURE (°C)																
REACH		DISSOLVED OXYGEN (mg/L)																
TRANSECT#		CONDUCTIVITY (mS/cm)																
DAR_CODE		pH																
STREAM	11-1 lane	TURBIDITY (NTU)																
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)																

Transsect
Line



FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2



BANK
FULL

STREAM EDGE

STREAM EDGE

BANK
FULL

Stream Edge Width (feet)	22.5ft	21ft	19ft	17ft	15ft	13ft	11ft	9ft	7ft	5ft	3ft	0.5ft							
Stream Edge Depth (feet)	0.5ft	0.5ft	0.8ft	0.1ft	0.8ft	1.4ft	2.1ft	2.2ft	2.0ft	1.7ft	1.7ft	0.5ft							
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)	-0.05	0.07	0.05	0.01	0.02	0.45	0.69	0.49	0.69	0.69	0.03								
Surface Velocity ² (ft/sec)	-0.08	0.09	0.06	0.24	0.28	0.64	0.72	0.43	0.37	0.04									
Bottom Velocity ³ (ft/sec)	-0.08	0.03	0.06	0.06		0.18	0.04	0.22	0.36	0.06									

HYDROLAB

DATE	1/23/66	WIDTH (feet)	POOL	RIFFLE	
TIME	2:11pm	TEMPERATURE (°C)	20.44	20.39	
OBSERVER	W. J. G. S. C.	DISSOLVED OXYGEN (mg/L)	8.64	9.11	
REACH		CONDUCTIVITY (ms/cm)	0.110	0.822	
TRANSECT#		pH	8.09	8.03	
DAR_CODE		TURBIDITY (NTU)	0.4	2.09	
STREAM	hillswe	TOTAL SUSPENDED SOLIDS (mg/L)			
TRIBUTARY					

Transsect Line

FLOW



Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2

[illegible]

DIVISION OF AQUATIC RESOURCES GRH 2/02

SITE PICTURE

Kanu

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

STREAM EDGE

STREAM EDGE

BANK FULL

BANK FULL

Stream Edge Width (feet)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Stream Edge Depth (feet)	0	0	0.5	0.9	1.4	1.6	1.3	1.4	1.9	2.1	2.05	1.77	1.9	1.8	1.3	1.1	0.2	
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)	0	0	0.02	0.09	0.02	0.21	0.21	0.31	0.8	0.10	0.27	0.31	0.27	0.19	0.25	0.15	0.4	0.02
Surface Velocity ² (ft/sec)																		
Bottom Velocity ³ (ft/sec)																		

DATE		HYDROLAB		FLOW
TIME	WIDTH (feet)	17 Ft		
OBSERVER	TEMPERATURE (°C)	22.47		
REACH	DISSOLVED OXYGEN (mg/L)	9.43		
TRANSECT#	CONDUCTIVITY (ms/cm)	0.152		
DAR_CODE	pH	7.95		
STREAM	TURBIDITY (NTU)			
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)			

Transsect Line

Width (Feet)

SITE PICTURE