

APPENDIX A

Land Use Watershed Survey

Appendix A does not contain any information.

APPENDIX B

Biological Community

Appendix B-1
GLOSSARY OF MACROINVERTEBRATES
COMMONLY MENTIONED IN THIS REPORT

Order	Common Name	Insect or Non-Insect
Chironomidae <i>(a family under the Diptera order)</i>	Midges	Insecta
Coleoptera	Beetles	Insect
Diptera	True Flies	Insect
Ephemeroptera	Mayflies	Insect
Odonata	Dragonflies & Damselflies	Insect
Oligochaeta <i>(class)</i>	Aquatic Earthworms	Non-Insect
Plecoptera	Stoneflies	Insect
Trichoptera	Caddisflies	Insect

Note: "EPT" refers to the combination of Ephemeroptera, Plecoptera, and Trichoptera insect orders.

Appendix B-2. Macroinvertebrate dominant taxa summary for the rockbag samples from the Long Creek and Red Brook watersheds. The list presents the genus of the taxa and in brackets (if available), order or class (etc.); functional feeding group; and Hilsenhoff Biotic Index score.

[E = Ephemeroptera; P = Plecoptera; T = Trichoptera; C = Coleoptera; D = Diptera]

Site:	RB- 3.961		RB- 1.474	
	<i>Above RWS</i>		<i>Lazyboy</i>	
Model:	B	Rel.	NA (B)	Rel.
Rank		Abund.		Abund.
1	<i>Sialis</i> [Meg.; Pred: 4]	12.6	<i>Dubiraphia</i> [C; C/G; 6]	15.1
2	<i>Tanytarsus</i> [D (Chir); C/G; 6]	11.5	<i>Nigronia</i>	12.1
3	<i>Microseetra</i> [D (Chir); C/G; 7]	7.5	<i>Paraleptophlebia</i>	10.1
4	<i>Psilotreta</i> [T; Scrap: 0]	7.4	<i>Microtendipes</i>	7.3
5	<i>Stempellinella</i> [D (Chir); C/G; 2]	7.2	<i>Calopteryx</i>	7.0
Site:	RB- 0.071			
	HQ			
Model:	B	Rel.		
Rank		Abund.		
1	<i>Paraleptophlebia</i>	28.6		
2	<i>Mystacides</i>	20.1		
3	<i>Tanytarsus</i> [D (Chir); C/G; 6]	15.0		
4	<i>Microtendipes</i>	4.5		
5	<i>Stempellinella</i> [D (Chir); C/G; 2]	3.5		
Site:	LC-S- 0.369		LC-N- 0.415	
	<i>Hoyts</i>		<i>VTECLW</i>	
Model:	C	Rel.	C	Rel.
Rank		Abund.		Abund.
1	<i>Hyalella</i> [Amphipoda; C/G; 8];	13.8	<i>Hyalella</i> [Amphipoda; C/G; 8]	20.2
2	<i>Caenis</i> [E; C/G; 7];	9.9	<i>Procladius</i> [D (Chir; Pred: 9)]	15.4
3	<i>Natarsia</i> [D (Chir); Pred: 8];	7.7	<i>Physella</i> [Basommatophora; Scrap: 9]	11.1
4	<i>Polypetlum</i> [D (Chir); Shred: 6]	7.0	<i>Ptilostomis</i> [T; Shred: 5]	7.4
5	<i>Sialis</i> [Meg.; Pred: 4]	6.7	<i>Limnephilus</i> [T; Shred: 3]	6.3
Site:	LC-M- 0.380		LC-M- 0.910	
	<i>VTECRW</i>		<i>Serv. Merch.</i>	
Model:	C	Rel.	C	Rel.
Rank		Abund.		Abund.
1	<i>Cranonyx</i> [Amphipoda; : 8]	17.0	<i>Tanytarsus</i> [D (Chir); C/G; 6]	20.9
2	<i>Caenis</i> [E; C/G; 7]	14.4	<i>Dubiraphia</i> [C; C/G; 6]	19.0
3	<i>Tanytarsus</i> [D (Chir); C/G; 6]	12.3	<i>Caenis</i> [E; C/G; 7]	11.5
4	<i>Dubiraphia</i> [C; C/G; 6]	7.4	<i>Hyalella</i> [Amphipoda; C/G; 8]	11.1
5	<i>Valvaia</i> [Basommatophora; Scrap: 1]	7.4	<i>Cranonyx</i> [Amphipoda; : 8]	8.9
Site:	LC-Mn- 2.274		LC-M- 2.270	
	<i>Goodyear</i>		<i>Sable Oakes</i>	
Model:	C	Rel.	C	Rel.
Rank		Abund.		Abund.
1	<i>Dubiraphia</i> [C; C/G; 6]	60.1	<i>Dubiraphia</i> [C; C/G; 6]	41.2
2	<i>Caenis</i> [E; C/G; 7]	8.9	<i>Caenis</i> [E; C/G; 7]	16.4
3	<i>Microtendipes</i> [D (Chir); C/G; 6]	7.5	<i>Clinotanytus</i>	8.9
4	<i>Procladius</i> [D (Chir; Pred: 9]	4.8	<i>Sphaerium</i>	5.0
5	<i>Limnephilus</i> [T; Shred: 3]	1.7	<i>Caecidotea</i>	4.4

APPENDIX C

Water Chemistry and Suspended Solids
Baseflow & Stormflow Conditions

Appendix C-1a. Water chemistry and suspended solid data for grab samples collected during the "rise to peak flow" of stormwater events in the Long Creek & Red Brook watersheds. Note: "nd" = not detected down to the reporting limit and "rl" = reporting limit and "j" = approximately. Although the author attempted to have the lab analyze NO₃ and NO₂ consistently from event to event, it was not achieved. During some events, NO₃ and NO₂ were analyzed separately, while during other events they were analyzed together. When NO₂ and NO₃ were analyzed concurrently, the test was able to detect lower concentrations (according to the HETL). An asterisk (*) indicates that the analysis of NO₂ and NO₃ at the same time was not in the original QAPP, so NO₃ QA requirements were used for these cases. "RPD" = Relative percent difference. If the measurement was reported as "nd", then the value was assumed to be "0" for purposes of the calculation of precision (relative percent difference). "# DIV/0!" indicates that there was an error calculating RPD because it entailed dividing a "0" or a "nd" by a "0" or a "nd". Large RPD values generally were associated with very low concentrations of a parameter.

STORM 1

Date: 3/28/2000

Time	Stream	Site	Site Code	Lead	Cadmium	Zinc	Copper	Nickel	Mercury	Total-Phos.	Ortho-Phos.	Total Kjeldahl Nitrogen	Nitrate	Nitrite	NO ₂ +NO ₃	Chloride	Susp. Solids
				rl = 0.003 ppm	rl = 0.0005 ppm	rl = 0.005 ppm	rl = 0.002 ppm	rl = 0.004 ppm	rl = 0.0002 ppm	rl = 0.001 ppm	rl = 0.001 ppm	rl = 0.1 ppm	rl = 0.2 ppm	rl = 0.01 ppm	rl = 0.2 ppm (?)	rl = 3 ppm	rl = 10 mg/l
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	mg/l
				Lead	Cadmium	Zinc	Copper	Nickel	Mercury	Total-P	Ortho-P	TKN	Nitrate	Nitrite	NO ₂ +NO ₃	Chloride	Susp.Solids
7:15	LC	Maine Mall	LC-S-0.186	nd	nd	0.020	nd	nd	nd	0.017	0.002	0.4	0.23	< 0.01	0.23	320	< 10
8:56	LC	Maine Mall	LC-S-0.186	0.090	nd	0.270	0.044	0.030	nd	0.690	< 0.001	1.9	0.26	< 0.01	0.26	125	563
11:05	LC	Maine Mall	LC-S-0.186	0.018	nd	0.085	0.010	0.008	nd	0.200	< 0.001	0.7	< 0.20	< 0.01	< 0.20	76	179
7:20	LC	DUP (Maine Mall)	LC-S-0.186-D	nd	nd	0.023	nd	nd	nd	0.017	0.002	0.4	0.24	< 0.01	0.24	320	< 10
9:00	LC	DUP (Maine Mall)	LC-S-0.186-D	0.078	nd	0.220	0.036	0.022	nd	0.580	< 0.001	1.7	0.22	< 0.01	0.22	105	441
11:08	LC	DUP (Maine Mall)	LC-S-0.186-D	0.020	nd	0.088	0.011	0.008	nd	0.210	< 0.001	0.7	< 0.20	< 0.01	< 0.20	73	154
8:06	LC	Mall Plaza	LC-M-0.595	0.052	nd	0.200	0.021	0.013	nd	0.310	0.002	1.3	0.34	0.01	0.35	135	189
9:52	LC	Mall Plaza	LC-M-0.595	0.021	nd	0.082	0.011	0.011	nd	0.260	nd	1.0	0.20	< 0.01	0.20	113	211
11:50	LC	Mall Plaza	LC-M-0.595	0.014	nd	0.075	0.012	0.015	nd	0.360	0.005	1.2	0.22	< 0.01	0.22	42	273
7:47	LC	Jetport	LC-N-0.585	0.026	nd	0.110	0.010	0.011	nd	0.160	0.001	0.9	0.28	0.01	0.29	296	96
9:22	LC	Jetport	LC-N-0.585	0.031	nd	0.140	0.018	0.013	nd	0.320	< 0.001	0.9	< 0.20	< 0.01	< 0.20	58	271
11:30	LC	Jetport	LC-N-0.585	0.012	nd	0.083	0.007	0.006	nd	0.150	0.001	0.9	< 0.20	< 0.01	< 0.20	90	84
8:25	RB	Fairfield Inn	RB-1.694	0.003	nd	0.024	nd	nd	nd	0.035	0.001	0.5	0.25	< 0.01	0.25	28	18
10:24	RB	Fairfield Inn	RB-1.694	nd	nd	0.018	nd	nd	nd	0.061	< 0.001	0.6	0.20	< 0.01	0.20	18	37
12:15	RB	Fairfield Inn	RB-1.694	0.003	nd	0.021	nd	nd	nd	0.074	< 0.001	0.7	< 0.20	< 0.01	< 0.20	17	118

Blanks

3/29/00	HETL H ₂ O	nd	j 0.000380	j 0.00025	< 0.1	< 0.2	< 0.01	< 0.20	< 3	< 2						
	HETL H ₂ O	nd	j 0.000150	j 0.00032	< 0.1	< 0.2	< 0.01	< 0.20	< 3	< 2						
	HETL H ₂ O	nd	j 0.000150	j 0.00035	< 0.1	< 0.2	< 0.01	< 0.20	< 3	< 2						
	HETL H ₂ O	nd	j 0.000000	j 0.00022	< 0.1	< 0.2	< 0.01	< 0.20	< 3	< 2						
	HETL H ₂ O	nd	j 0.000000	j 0.00025	< 0.1	< 0.2	< 0.01	< 0.20	< 3	< 2						

Report Limit:	0.003 ppm	0.0005 ppm	0.005 ppm	0.002 ppm	0.004 ppm	0.0002 ppm	0.001 ppm	0.001 ppm	0.1 ppm	0.2 ppm	0.01 ppm	0.2 ppm*	3 ppm	10 mg/L
Stated QAPP Accuracy Limits:	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±10%	±30%	±10%	±10%	±10%*	±10%	--
Accuracy Results	See Appendix C-4.													
Stated QAPP Field Duplicate Precision (RPD):	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%*	±30%	±30%
Field Duplicate Precision [FDP]	#DIV/0!	#DIV/0!	14	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	4	0	4	0	0
(Relative Percent Difference) Results	14	#DIV/0!	20	20	31	#DIV/0!	17	0	11	17	0	17	17	24
FDP 2	11	#DIV/0!	3	10	0	#DIV/0!	5	0	0	0	0	0	4	15
FDP 3														
Stated QAPP Lab Duplicate Precision (RPD):	±15%	±15%	±15%	±15%	±15%	±15%	±15%	±30%	±15%	±15%	±15%	±15%*	±15%	±15%
Lab Duplicate (RPD) Results:	See Appendix C-4.													

Appendix C-1b.

STORM 2

Date: 10/18/2000

Time	Stream	Site	Site Code	Lead	Cadmium	Zinc	Copper	Nickel	Mercury	Total-Phos.	Ortho-Phos.	Total Kjeldahl Nitrogen	Nitrate	Nitrite	NO2+NO3	Chloride	Susp. Solids
				rl = 0.003 ppm	rl = 0.0005 ppm	rl = 0.005 ppm	rl = 0.002 ppm	rl = 0.004 ppm	rl = 0.0002 ppm	rl = 0.001 ppm	rl = 0.001 ppm	rl = 0.1 ppm	rl = 0.2 ppm	rl = 0.01 ppm	rl = 0.2 ppm (?)	rl = 3 ppm	rl = 10 mg/l
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	mg/l
				Lead	Cadmium	Zinc	Copper	Nickel	Mercury	Total-P	Ortho-P	TKN	Nitrate	Nitrite	NO2+NO3	Chloride	Susp.Solids
2:05	LC	Maine Mall	LC-S-0.186	nd	nd	0.019	0.002	nd	nd	0.028	0.002	0.4	< 0.01		0.94	164	< 10
2:53	LC	Maine Mall	LC-S-0.186	0.006	nd	0.064	0.006	nd	nd	0.074	0.009	1.0	0.02		20.00	95	20
5:29	LC	Maine Mall	LC-S-0.186	0.004	nd	0.095	0.005	nd	nd	0.032	0.005	0.8	0.01		0.76	61	< 10
2:27	LC	Mall Plaza	LC-M-0.595	0.008	nd	0.093	0.007	nd	nd	0.078	0.014	0.9	0.02		0.56	62	22
3:07	LC	Mall Plaza	LC-M-0.595	0.006	nd	0.120	0.007	nd	nd	0.072	0.017	0.9	0.02		0.70	38	16
5:44	LC	Mall Plaza	LC-M-0.595	0.005	nd	0.093	0.006	nd	nd	0.044	0.010	0.8	0.02		0.67	55	< 10
2:06	LC	Jetport	LC-N-0.585	0.004	nd	0.041	0.002	nd	nd	0.059	0.015	0.5	0.01		0.36	135	< 10
2:54	LC	Jetport	LC-N-0.585	0.008	nd	0.110	0.006	nd	nd	0.097	0.008	0.9	0.02		0.69	59	35
5:30	LC	Jetport	LC-N-0.585	0.004	nd	0.110	0.006	nd	nd	0.044	0.010	0.8	0.01		0.82	34	10
2:06	LC	DUP-Jetport	LC-N-0.585-D	nd	0.0011	0.044	0.002	nd	nd	0.059	0.012	0.5	0.01		0.36	138	10
2:54	LC	DUP-Jetport	LC-N-0.585-D	0.008	nd	0.078	0.006	nd	nd	0.089	0.005	0.8	0.01		0.66	69	36
5:30	LC	DUP-Jetport	LC-N-0.585-D	0.003	nd	0.110	0.005	nd	nd	0.043	0.009	0.9	0.01		0.82	34	< 10
2:23	RB	Fairfield Inn	RB-1.694	nd	nd	0.010	nd	nd	nd	0.011	0.003	0.3	< 0.01		0.03	47	< 10
3:13	RB	Fairfield Inn	RB-1.694	nd	nd	0.011	nd	nd	nd	0.012	0.003	0.3	< 0.01		0.04	46	< 10
5:44	RB	Fairfield Inn	RB-1.694	nd	nd	0.010	nd	nd	nd	0.011	0.003	0.3	nd < 2		0.04	47	< 10
--	O	Field Blank	Field Blank	0.003	nd	nd	nd	nd	nd	< 0.001	< 0.001	nd 0.1	< 0.01		nd 0.01	< 3	nd < 2

Some of these values are < 0.01 because of how HETL reported the NO2 and/or NO3 results

Report Limit:	0.003 ppm	0.0005 ppm	0.005 ppm	0.002 ppm	0.004 ppm	0.0002 ppm	0.001 ppm	0.001 ppm	0.1 ppm	0.2 ppm	0.01 ppm	0.2 ppm*	3 ppm	10 mg/L	
Stated QAPP Accuracy Limits:	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±10%	±30%	±10%	±10%	±10%*	±10%	--	
Accuracy Results	See Appendix C-4.														
Stated QAPP Field Duplicate Precision (RPD):	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%*	±30%	±30%	
Field Duplicate Precision [FDP]	FDP 1	200	200	7	0	#DIV/0!	#DIV/0!	0	22	0	#DIV/0!	0	0	2	~ 0
(Relative Percent Difference) Results	FDP 2	0	#DIV/0!	34	0	#DIV/0!	#DIV/0!	9	46	12	#DIV/0!	67	4	16	3
	FDP 3	29	#DIV/0!	0	18	#DIV/0!	#DIV/0!	2	11	12	#DIV/0!	0	0	0	~ 0
Stated QAPP Lab Duplicate Precision (RPD):	±15%	±15%	±15%	±15%	±15%	±15%	±15%	±15%	±15%	±15%	±15%	±15%*	±15%	±15%	
Lab Duplicate (RPD) Results:	See Appendix C-4.														

Appendix C-1c.

STORM 3

Date: 9/25/2001

Time	Stream	Site	Site Code	Lead	Cadmium	Zinc	Copper	Nickel	Mercury	Total-Phos.	Ortho-Phos.	Total Kjeldahl Nitrogen	Nitrate	Nitrite	NO2+NO3	Chloride	Susp. Solids
				rl = 0.003 ppm	rl = 0.0005 ppm	rl = 0.005 ppm	rl = 0.002 ppm	rl = 0.004 ppm	rl = 0.0002 ppm	rl = 0.001 ppm	rl = 0.001 ppm	rl = 0.1 ppm	rl = 0.2 ppm	rl = 0.01 ppm	rl = 0.2 ppm (?)	rl = 3 ppm	rl = 10 mg/l
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	mg/l
				Lead	Cadmium	Zinc	Copper	Nickel	Mercury	Total-P	Ortho-P	TKN	Nitrate	Nitrite	NO2+NO3	Chloride	Susp.Solids
6:40 AM	LC	Maine Mall	LC-S-0.186	0.003	nd	0.025	0.003	nd	nd	0.038	0.002	0.4	0.25	0.01	0.26	150	17
3:55 PM	LC	Maine Mall	LC-S-0.186	0.007	nd	0.062	0.007	0.004	nd	0.100	0.002	0.6	0.30	0.01	0.31	84	70
5:14 PM	LC	Maine Mall	LC-S-0.186	0.005	nd	0.035	0.005	nd	nd	0.056	0.007	0.3	0.09	< 0.01	0.09	15	29
7:17 AM	LC	Mall Plaza	LC-M-0.595	0.004	nd	0.084	0.006	nd	nd	0.072	0.008	0.7	0.47	0.01	0.48	66	10
4:25 PM	LC	Mall Plaza	LC-M-0.595	0.025	0.0005	0.110	0.015	0.008	nd	0.250	0.012	0.9	0.11	0.01	0.12	13	160
5:55 PM	LC	Mall Plaza	LC-M-0.595	0.006	nd	0.047	0.005	nd	nd	0.096	0.015	0.4	0.12	< 0.01	0.12	15	43
7:17 AM	LC	DUP-Mall Plaza	LC-M-0.595-D	0.003	nd	0.083	0.006	nd	nd	0.077	0.007	0.8	0.48	0.02	0.50	66	11
4:25 PM	LC	DUP-Mall Plaza	LC-M-0.595-D	0.020	nd	0.100	0.013	0.007	nd	0.240	0.011	0.9	0.11	0.01	0.12	13	200
5:55 PM	LC	DUP-Mall Plaza	LC-M-0.595-D	0.006	nd	0.042	0.005	0.004	nd	0.100	0.010	0.5	0.18	0.01	0.19	49	47
6:59 AM	LC	Jetport	LC-N-0.585	0.004	nd	0.064	0.006	nd	nd	0.057	0.003	0.8	0.80	0.02	0.82	52	18
4:09 PM	LC	Jetport	LC-N-0.585	0.015	nd	0.120	0.013	0.007	nd	0.200	0.007	0.9	0.20	0.01	0.21	24	120
5:30 PM	LC	Jetport	LC-N-0.585	0.006	nd	0.047	0.005	nd	nd	0.096	0.015	0.4	0.12	< 0.01	0.12	15	43
7:33 AM	RB	Fairfield Inn	RB-1.694	nd	nd	0.008	nd	nd	nd	0.016	0.003	0.2	0.18	< 0.01	0.18	55	nd
4:51 PM	RB	Fairfield Inn	RB-1.694	0.004	nd	0.020	0.002	nd	nd	0.033	0.002	0.4	0.16	< 0.01	0.16	48	15
6:14 PM	RB	Fairfield Inn	RB-1.694	0.004	nd	0.023	0.003	nd	nd	0.047	0.005	0.4	0.12	< 0.01	0.12	57	13
--	O	Field Blank	Field Blank	nd	nd	nd	nd	nd	nd	0.001	< 0.001	0.1	< 0.01	< 0.01	< 0.02	< 3	nd

Some of these values are +/- 0.01 because of how HETL reported the NO2 and/or NO3 results

¹ Oil & grease samples not collected during this event because of budget.

Report Limit:	0.003 ppm	0.0005 ppm	0.005 ppm	0.002 ppm	0.004 ppm	0.0002 ppm	0.001 ppm	0.001 ppm	0.1 ppm	0.2 ppm	0.01 ppm	0.2 ppm*	3 ppm	10 mg/L	
Stated QAPP Accuracy Limits:	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±10%	±30%	±10%	±10%	±10%*	±10%	--	
Accuracy Results	See Appendix C-4.														
Stated QAPP Field Duplicate Precision (RPD):	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%*	±30%	±30%	
Field Duplicate Precision [FDP]	FDP 1	29	#DIV/0!	1	0	#DIV/0!	#DIV/0!	7	13	13	2	67	4	0	10
(Relative Percent Difference) Results	FDP 2	22	200	10	14	13	#DIV/0!	4	9	0	0	0	0	22	
	FDP 3	0	#DIV/0!	11	0	200	#DIV/0!	4	40	22	40	~ 0 - 100	45	106	9
Stated QAPP Lab Duplicate Precision (RPD):	±15%	±15%	±15%	±15%	±15%	±15%	±15%	±15%	±30%	±15%	±15%	±15%*	±15%	±15%	
Lab Duplicate (RPD) Results:	See Appendix C-4.														

Appendix C-2a. Water chemistry and suspended solid data for grab samples collected at low flow conditions in the Long Creek and Red Brook watersheds. Note: "nd" = not detected down to the reporting limit and "rl" = reporting limit and "j" = approximately. Although the author attempted to have the lab analyze NO₃ and NO₂ consistently from event to event, it was not achieved. During some events NO₃ and NO₂ were analyzed separately, while during other events they were analyzed together. When NO₂ and NO₃ were analyzed concurrently, the test was able to detect lower concentrations (according to the HETL). An asterisk indicates that the analysis of NO₂ and NO₃ at the same time was not in the original QAPP, so NO₃ QA requirements were used for these cases. "RPD" = Relative percent difference. If the measurement was reported as "nd", then the value was assumed to be "0" for purposes of the calculation of precision (relative percent difference). "# DIV/0!" indicates that there was an error calculating RPD because it entailed dividing a "0" or a "nd" by a "0" or a "nd". Large RPD values generally were associated with very low concentrations of a parameter. Baseflow samples were collected between 9 am and 5 pm.

BASEFLOW 1
Date: 8/6/2000

Stream	Site	Site Code	Lead	Cadmium	Zinc	Copper	Nickel	Mercury	Total-Phos.	Ortho-Phos.	Total Kjeldahl Nitrogen	Nitrate	Nitrite	NO ₂ +NO ₃	Chloride	Susp. Solids
			rl = 0.003 ppm	rl = 0.0005 ppm	rl = 0.005 ppm	rl = 0.002 ppm	rl = 0.004 ppm	rl = 0.0002 ppm	rl = 0.001 ppm	rl = 0.001 ppm	rl = 0.1 ppm	rl = 0.2 ppm	rl = 0.01 ppm	rl = 0.2 ppm (?)	rl = 3 ppm	rl = 10 mg/l
			ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	mg/l
			Lead	Cadmium	Zinc	Copper	Nickel	Mercury	Total-P	Ortho-P	TKN	Nitrate	Nitrite	NO ₂ +NO ₃	Chloride	Susp.Solids
LC	Hoyts	LC-S-0.186	nd	nd	0.007	0.002	nd	nd	0.014	0.002	0.4	--	--	0.12	245	< 10
LC	Mall Plaza	LC-M-0.595	nd	nd	nd	nd	nd	nd	0.031	0.004	0.6	--	--	0.08	109	< 10
LC	Service Merch.	LC-M-0.910	nd	nd	nd	nd	nd	nd	0.031	0.003	0.5	--	--	0.05	120	< 10
LC	Sable Oakes	LC-M-2.270~	nd	nd	nd	nd	nd	nd	0.025	0.008	0.5	--	--	0.02	89	< 10
LC	Goodyear	LC-Mn-2.274~	nd	nd	0.005	nd	nd	nd	0.036	0.006	0.5	--	--	0.04	67	< 10
LC	DUP (Goodyear)	LC-Mn-2.274~D	nd	nd	0.005	nd	nd	nd	0.034	0.006	0.5	--	--	0.04	66	< 10
LC	Jetport	LC-N-0.585	nd	nd	0.015	nd	nd	nd	0.043	0.006	0.3	--	--	0.32	141	< 10
RB	HQ	RB-0.071	nd	nd	0.006	nd	nd	nd	0.015	0.002	0.3	--	--	0.20	78	< 10
RB	Fairfield Inn	RB-1.694	nd	nd	0.008	nd	nd	nd	0.016	0.003	0.3	--	--	0.22	47	< 10
RB	Above RWS	RB-3.961	nd	nd	nd	nd	nd	0.0002	0.010	0.002	0.2	--	--	0.15	26	< 10

Report Limit:	0.003 ppm	0.0005 ppm	0.005 ppm	0.002 ppm	0.004 ppm	0.0002 ppm	0.001 ppm	0.001 ppm	0.1 ppm	0.2 ppm	0.01 ppm	0.2 ppm*	3 ppm	10 mg/L		
Stated QAPP Accuracy Limits:	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±10%	±30%	±10%	±10%	±10%*	±10%	--		
Accuracy Results	See Appendix C-4.															
Stated QAPP Field Duplicate Precision (RPD):	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%	±30%*	±30%	±30%		
Field Duplicate Precision [FDP]																
(Relative Percent Difference) Results	FDP 1	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	6	0	0	--	--	0	2	~ 0
Stated QAPP Lab Duplicate Precision (RPD):	±15%	±15%	±15%	±15%	±15%	±15%	±15%	±15%	±15%	±30%	±15%	±15%	±15%*	±15%	±15%	
Lab Duplicate (RPD) Results:	See Appendix C-4.															

Appendix C-2b.

BASEFLOW 2

Date: 8/23/00

Time	Stream	Site	Site Code	Lead	Cadmium	Zinc	Copper	Nickel	Mercury	Total-Phos.	Ortho-Phos.	Total Kjeldahl Nitrogen	Nitrate	Nitrite	NO2+NO3	Chloride	Susp. Solids
				rl = 0.003 ppm	rl = 0.0005 ppm	rl = 0.005 ppm	rl = 0.002 ppm	rl = 0.004 ppm	rl = 0.0002 ppm	rl = 0.001 ppm	rl = 0.001 ppm	rl = 0.1 ppm	rl = 0.2 ppm	rl = 0.01 ppm	rl = 0.2 ppm (?)	rl = 3 ppm	rl = 10 mg/l
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	mg/l
				Lead	Cadmium	Zinc	Copper	Nickel	Mercury	Total-P	Ortho-P	TKN	Nitrate	Nitrite	NO2+NO3	Chloride	Susp.Solids
	LC	Hoyts	LC-S-0.186	nd	nd	0.0070	0.002	nd	nd	0.01	0.00	0.30	0.32	< 0.01	0.32	243	4
	LC	Mall Plaza	LC-M-0.595	nd	nd	nd	nd	nd	nd	0.03	0.00	0.50	< 0.2	0.01	< 0.20	133	< 2
	LC	Service Merch.	LC-M-0.910	nd	nd	nd	nd	nd	nd	0.03	0.00	0.50	< 0.2	< 0.01	< 0.20	141	2
	LC	Sable Oakes	LC-M-2.270~	nd	nd	nd	nd	nd	nd	0.02	0.01	0.50	< 0.2	< 0.01	< 0.20	124	< 2
	LC	Goodyear	LC-Mn-2.274~	nd	nd	0.0050	0.002	nd	nd	0.03	0.00	0.40	< 0.2	0.01	< 0.20	73	4
	LC	Jetport	LC-N-0.585	nd	nd	0.0140	nd	nd	nd	0.04	0.00	0.30	0.3	0.01	0.31	133	3
	RB	HQ	RB-0.071	nd	nd	0.0050	nd	nd	nd	0.01	< 0.002	0.20	0.22	< 0.01	0.22	89	< 2
	RB	Fairfield Inn	RB-1.694	nd	nd	0.0080	nd	nd	nd	0.01	0.00	0.20	0.22	< 0.01	0.22	56	< 2
	RB	DUP - Fairfield	RB-1.694-D	nd	nd	0.0080	nd	nd	nd	0.01	0.00	0.20	0.22	< 0.01	0.22	55	< 2
	RB	Above RWS	RB-3.961	nd	nd	nd	nd	nd	nd	0.01	0.00	0.20	< 0.2	< 0.01	< 0.20	30	< 2
	BLANK	BLANK		nd	nd	nd	nd	nd	nd	< 0.001	< 0.001	< 0.1	< 0.2	< 0.01	< 0.20	< 3	< 2

Some of these values are +/- 0.01 because of how HETL reported the NO2 and/or NO3 results

Report Limit:	0.003 ppm	0.0005 ppm	0.005 ppm	0.002 ppm	0.004 ppm	0.0002 ppm	0.001 ppm	0.001 ppm	0.1 ppm	0.2 ppm	0.01 ppm	0.2 ppm*	3 ppm	10 mg/L	
Stated QAPP Accuracy Limits:	+30%	+30%	+30%	+30%	+30%	+30%	+30%	+10%	+30%	+10%	+10%	+10%*	+10%	--	
Accuracy Results	See Appendix C-4.														
Stated QAPP Field Duplicate Precision (RPD):	+30%	+30%	+30%	+30%	+30%	+30%	+30%	+30%	+30%	+30%	+30%	+30%*	+30%	+30%	
Field Duplicate Precision [FDP]															
(Relative Percent Difference) Results	FDP 1	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	0	~ 0	0	2	~ 0
Stated QAPP Lab Duplicate Precision (RPD):	+15%	+15%	+15%	+15%	+15%	+15%	+15%	+15%	+30%	+15%	+15%	+15%*	+15%	+15%	
Lab Duplicate (RPD) Results:	See Appendix C-4.														

Appendix C-2c.

BASEFLOW 3

Date: 9/19/00

Stream	Site	Site Code	Lead	Cadmium	Zinc	Copper	Nickel	Mercury	Total-Phos.	Ortho-Phos.	Total Kjeldahl Nitrogen	Nitrate	Nitrite	NO2+NO3	Chloride	Susp. Solids
			rl = 0.003 ppm	rl = 0.0005 ppm	rl = 0.005 ppm	rl = 0.002 ppm	rl = 0.004 ppm	rl = 0.0002 ppm	rl = 0.001 ppm	rl = 0.001 ppm	rl = 0.1 ppm	rl = 0.2 ppm	rl = 0.01 ppm	rl = 0.2 ppm (?)	rl = 3 ppm	rl = 10 mg/l
			ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	mg/l
			Lead	Cadmium	Zinc	Copper	Nickel	Mercury	Total-P	Ortho-P	TKN	Nitrate	Nitrite	NO2+NO3	Chloride	Susp.Solids
LC	Hoyts	LC-S-0.186	nd	nd	0.006	nd	nd	nd	0.012	0.004	0.3	0.16	< 0.01	0.16	221	nd
LC	Mall Plaza	LC-M-0.595	nd	nd	nd	nd	nd	nd	0.056	0.009	0.5	< 0.01	< 0.01	< 0.01	94	< 10
LC	DUP (Mall Plaza)	LC-M-0.595-D	nd	nd	nd	nd	nd	nd	0.055	0.010	0.5	< 0.01	< 0.01	< 0.01	94	< 10
LC	Service Merch.	LC-M-0.910	nd	nd	nd	nd	nd	nd	0.063	0.009	0.5	< 0.01	< 0.01	< 0.01	112	< 10
LC	Sable Oakes	LC-M-2.270~	nd	nd	nd	nd	nd	nd	0.028	0.010	0.4	0.02	< 0.01	0.02	83	nd
LC	Goodyear	LC-Mn-2.274~	nd	nd	nd	nd	nd	nd	0.024	0.007	0.3	0.03	< 0.01	0.03	58	nd
LC	Jetport	LC-N-0.585	nd	nd	0.013	nd	nd	nd	0.061	0.017	0.3	0.32	< 0.01	0.32	91	< 10
RB	HQ	RB-0.071	nd	nd	0.005	nd	nd	nd	0.010	0.004	0.2	0.17	< 0.01	0.17	96	nd
RB	Fairfield Inn	RB-1.694	nd	nd	0.009	nd	nd	nd	0.011	0.004	0.1	0.20	< 0.01	0.20	59	nd
RB	Above RWS	RB-3.961	nd	nd	nd	nd	nd	nd	0.008	0.004	0.1	0.18	< 0.01	0.18	30	nd
BLANK	BLANK		nd	nd	nd	nd	nd	nd	< 0.001	< 0.001	< 0.1	< 0.01	< 0.01	< 0.01	< 3	nd

Some of these values are +/- 0.01 because of how HETL reported the NO2 and/or NO3 results

Report Limit:	0.003 ppm	0.0005 ppm	0.005 ppm	0.002 ppm	0.004 ppm	0.0002 ppm	0.001 ppm	0.001 ppm	0.1 ppm	0.2 ppm	0.01 ppm	0.2 ppm*	3 ppm	10 mg/L
Stated QAPP Accuracy Limits:	+30%	+30%	+30%	+30%	+30%	+30%	+30%	+10%	+30%	+10%	+10%	+10%*	+10%	--
Accuracy Results	See Appendix C-4.													
Stated QAPP Field Duplicate Precision (RPD):	+30%	+30%	+30%	+30%	+30%	+30%	+30%	+30%	+30%	+30%	+30%	+30%*	+30%	+30%
Field Duplicate Precision [FDP]														
(Relative Percent Difference) Results	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	2	11	0	~ 0	~ 0	~ 0	0	~ 0
Stated QAPP Lab Duplicate Precision (RPD):	+15%	+15%	+15%	+15%	+15%	+15%	+15%	+30%	+15%	+15%	+15%	+15%*	+15%	+15%
Lab Duplicate (RPD) Results:	See Appendix C-4.													

Appendix C-3a. Water quality collected in the Long Creek and Red Brook watersheds using a YSI field meter (model 85).

A "~" indicates that the stream mileage value is approximate.

Date: 6/15/00

Site Code (# = stream mileage)	Site	Time (am)	Dissolved Oxygen (% Sat.)	Dissolved Oxygen (mg/L)	Temperature (oC)	Conductivity (uS/cm)	Specific Conductivity (uS/cm)	Salinity
LC-S-0.186	LC - Hoyts/MVP - Q site	5:10	61.9	6.13	15.5	801	978	0.5
LC-M-0.603	LC - (RW) Main Trib above Foden Rd	5:20	63.9	6.29	15.5	434	530	0.3
LC-M-0.910	LC - Service Merchandise							
LC-M-1.653	LC - Public Works	5:48	67.4	6.75	15.1	350	432	0.1
LC-M-2.270~	LC - Sable	6:11	48.0	4.50	16.8	416	494	0.2
LC-M-2.754	LC - Main trib - below RWS & impoundment	6:21	64.0	6.60	13.7	474	604	0.3
LC-Mn-2.274~	LC - Goodyear	6:08	60.2	5.98	15.4	306	376	0.2
LC-N-0.585	LC - (LW) Jetport trib above Foden Rd	5:28	56.1	5.63	14.6	638	796	0.4
RB-0.071	RB - HQ							
RB-1.694	RB - Fairfield Inn	6:54	80.3	8.21	14.5	190	238	0.1
RB-3.961	RB - RWS	6:39	84.0	8.65	14.0	62	79	0.0
<u>Stated QAPP Accuracy Limits:</u>			(± 0.4 mg/L compared to a Winkler test)	<i>not in QAPP</i>	(± 10% compared to a standard solution of 1001 uS)	<i>not in QAPP</i>		
<u>Accuracy Results:</u>			-acceptable- (meter lower than Winkler by 0.29 mg/L [3.4%])		-acceptable- (meter lower than std. sol. of 1001 uS by 1.5%)			
<u>Duplicate Precision (RPD):</u>			NA		NA			

Date: 9/1/00

Site Code (# = stream mileage)	Site	Time (am)	Dissolved Oxygen (% Sat.)	Dissolved Oxygen (mg/L)	Temperature (oC)	Conductivity (uS/cm)	Specific Conductivity (uS/cm)	Salinity
LC-S-0.186	LC - Hoyts/MVP - Q site	4:58	54.0	4.96	19.3	926	1042	0.5
LC-M-0.603	LC - (RW) Main Trib above Foden Rd	5:08	64.0	5.98	18.1	582	670	0.3
LC-M-0.910	LC - Service Merchandise							
LC-M-1.653	LC - Public Works	5:43	59.5	5.61	18.0	517	597	0.3
LC-M-2.270~	LC - Sable	5:59	43.4	4.07	18.6	431	491	0.2
LC-M-2.754	LC - Main trib - below RWS & impoundment	6:13	47.0	4.61	17.3	1140	1336	0.7
LC-Mn-2.274~	LC - Goodyear	6:02	45.9	4.44	16.7	414	492	0.2
LC-N-0.585	LC - (LW) Jetport trib above Foden Rd	5:18	58.0	5.32	19.4	696	780	0.4
RB-0.071	RB - HQ							
RB-1.694	RB - Fairfield Inn	6:41	79.4	7.51	18.2	236	271	0.1
RB-3.961	RB - RWS	6:29	82.5	7.99	17.1	132	155	0.1
<u>Stated QAPP Accuracy Limits:</u>			(± 0.4 mg/L compared to a Winkler test)	<i>not in QAPP</i>	(± 10% compared to a standard solution of 1001 uS)	<i>not in QAPP</i>		
<u>Accuracy Results:</u>			-acceptable- (meter lower than Winkler by 0.09 mg/L [1.1%])		-acceptable- (meter lower than std. sol. of 1001 uS by 1.6%)			
<u>Duplicate Precision (RPD):</u>			NA		NA			

Appendix C-3b. Water quality collected in the Long Creek and Red Brook watersheds using a YSI field meter (model 85). Note: At LC-M-2.896, 15 minutes prior to the specific conductivity reading listed here, the reading was 904 and at 8 minutes prior it was 681).

Date: 9/30/00

Site Code (# = stream mileage)	Site	Time (am)	Dissolved Oxygen (% Sat.)	Dissolved Oxygen (mg/L)	Temperature (oC)	Conductivity (uS/cm)	Specific Conductivity (uS/cm)	Salinity	pH
LC-S-0.186	LC - Hoyts/MVP - Q site	5:03	73.8	7.85	11.8	779	1040	0.5	7.10
LC-M-0.603	LC - (RW) Main Trib above Foden Rd	5:15	70.2	7.74	10.8	560	769	0.4	7.25
LC-M-0.910	LC - Service Merchandise	5:35	66.1	7.21	11.5	587	793	0.4	
LC-M-1.653	LC - Public Works	5:49	70.5	7.86	10.6	450	623	0.3	7.31
LC-M-2.270~	LC - Sable	6:07	67.1	7.36	11.0	526	718	0.4	7.39
LC-M-2.754	LC - Main trib - below RWS & impoundment								
LC-Mn-2.274~	LC - Goodyear	6:09	54.8	6.17	10.1	365	510	0.2	7.41
LC-N-0.585	LC - (LW) Jetport trib above Foden Rd	5:25	70.9	7.82	11.2	484	659	0.3	7.09
RB-0.071	RB - HQ	7:04	84.5	9.03	12.1	296	392	0.2	7.49
RB-1.694	RB - Fairfield Inn	6:53	84.6	9.12	12.0	220	291	0.2	
RB-3.961	RB - RWS	6:38	88.5	9.52	12.1	116	154	0.1	7.49
LC-Mn-3.224~	LC -below proposed Westbrook transfer stat.	7:19	61.5	7.11	9.0	61	89	0.0	

<u>Stated QAPP Accuracy Limits:</u>	(± 0.4 mg/L compared to a Winkler test)	<i>not in QAPP</i>	(± 10% compared to a standard solution of 1001 uS)	<i>not in QAPP</i>	± 4.2% from std. sol. of 4.0 & 7.0
<u>Accuracy Results:</u>	-acceptable- (meter lower than Winkler by 0.38 mg/L [3.8%])		NA		-acceptable-
<u>Duplicate Precision (RPD):</u>	NA		NA		NA

Date: 9/22/99 (plus 9/23/99*, 9/24/99**, 9/25/99***, 9/26/99****)

- Mid-Day Water Sampling -

> No rain occurred during this period

Site Code (# = stream mileage)	Site	Time	Dissolved Oxygen (% Sat.)	Dissolved Oxygen (mg/L)	Temperature (oC)	Conductivity (uS/cm)	Specific Conductivity (uS/cm)	Salinity (ppt)	pH
LC-S-0.186	LC- Hoyts	11:00 AM	69.0	6.65	17.0	688	809	0.4	6.87
LC-M-0.380	LC- V-Tec RW	1:30 PM	76.1	7.48	16.0	301	363	0.2	7.40
LC-M-0.910	LC- Service Merchandise*	11:00 AM	72.0	7.40	15.2	470	580	0.3	7.33
LC-M-2.270~	LC- Sable Oaks*	12:00 PM	75.2	7.58	15.1	466	573	0.3	7.54
LC-Mn-2.274~	LC- Goodyear*	12:30 PM	74.8	7.40	15.2	292	358	0.2	7.41
LC-N-0.415	LC- V-Tec LW	12:00 PM	78.8	7.71	16.3	549	655	0.3	7.31
RB-0.071	RB- HQ*	3:30 PM	83.5	8.40	15.5	301	366	0.2	7.03
RB-1.474	RB- La-z-boy**	12:30 PM	89.8	8.84	16.0	215	260	0.1	6.89
RB-3.961	RB- RWS*	4:30 PM	93.0	9.12	16.3	130	156	0.1	7.20
LC-S-0.016	LC- below HQ (on Maine Mall trib) ****	2:30 PM	81.8	8.25	14.8	805	1000	0.5	7.28
LC-S-0.496~	LC- above Maine Mall detention pond outlet ****	5:00 PM	98.1	9.27	18.6	891	1011	0.5	7.31
LC-M-0.533	LC- below Dunkin Donuts (by Foden Rd); (riffle)**	2:30 PM	109.2	10.47	17.2	552	651	0.3	7.31
LC-M-2.191~	LC- below Goodyear/Sable Oaks tribs confluence; (riffle)**	3:30 PM	94.2	9.10	16.7	416	492	0.2	7.32
LC-M-2.896	LC- below RWS landfill****	10:30 AM	81.0	8.13	14.8	381	492	0.2	7.20
LC-N-0.850~	LC- near Gold's Gym	2:00 PM	70.2	6.60	17.4	710	831	0.4	7.00
RB-1.500~	RB- below Maine Mall Rd culvert (riffle)***	4:00 PM	101.1	10.35	13.9	195	247	0.1	6.69

<u>Stated QAPP Accuracy Limits:</u>	<i>midday measurements not discussed in QAPP</i>	<i>not in QAPP</i>	<i>midday measurements not discussed in QAPP</i>	<i>not in QAPP</i>	<i>not in QAPP</i>
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Appendix C-4a. Additional quality control (QC) data from QC measurements performed during the same day that Long Creek and Red Brook samples were analyzed by the State of Maine Health & Environmental Testing Laboratory. ^aAccuracy was measured in terms of % recovery for spiked samples. An "rl" indicates that measurements were below the reporting limit value, thus preventing the generation of a lab duplicate precision value. "Acc" indicates acceptable.

- Notes: 1 - The unacceptable TKN QC sample was cited as having a poor matrix and being very non-homogenous.
2 - This unacceptable chloride QC sample was attributed to the fact that its concentration was near the reporting limit.

	Lead ppm	Cadmium ppm	Zinc ppm	Copper ppm	Nickel ppm	Mercury ppm	Total-Phos. ppm	Ortho-Phos. ppm	Total Kjeldahl Nitrogen (TKN) ppm	Nitrate ppm	Nitrite ppm	Chloride ppm	Susp. Solids mg/l
Report Limit:	0.003 ppm	0.0005 ppm	0.005 ppm	0.002 ppm	0.004 ppm	0.0002 ppm	0.001 ppm	0.001 ppm	0.1 ppm	0.2 ppm	0.01 ppm	3 ppm	10 mg/L
Stated QAPP Accuracy ^a Limits:	± 30%	± 30%	± 30%	± 30%	± 30%	± 30%	± 30%	± 10%	± 30%	± 10%	± 10%	± 10%	--
Stated QAPP Lab Duplicate Precision (RPD):	± 15%	± 15%	± 15%	± 15%	± 15%	± 15%	± 15%	± 30%	± 15%	± 15%	± 15%	± 15%	± 15%
3/28/00 Samples													
<i>Accuracy (%)</i> :	0.0	-2.0	5.0	-4.0	0.0	n/a	2.1	-0.9	-3.8	-1.0	0.0	3.0	
	-4.0	-4.0	-5.0	-1.0	-3.0	n/a	1.2	-1.3	-4.2	-1.0	0.0	4.0	
							-1.4		-3.8	-1.0	0.0	3.0	
							0.8		5.1	1.0	-4.0	-3.0	
							1.1		5.5	0.0	-4.0	-1.0	
							0.4		5.9				
							-3.1		8.3				
							-0.5		-3.8				
							-0.6		-4.7				
Range of Accuracy Measurements	-4.0 to 0.0 %	-4.0 to -2.0 %	-5.0 to 5.0 %	-4.0 to -1.0 %	-3.0 to 0.0 %	n/a	-3.1 to 2.1 %	-0.9 to -1.3 %	-4.7 to 8.3 %	-1.0 to 1.0 %	-4.0 to 0.0 %	-3.0 to 4.0 %	n/a
# of Accuracy Measurements	2	2	2	2	2	n/a	9	2	9	5	5	5	n/a
Number of Acceptable Measurements	2	2	2	2	2	n/a	9	2	9	5	5	5	n/a
Number of Unacceptable Measurements	0	0	0	0	0	n/a	0	0	0	0	0	0	n/a
% of QC Measurements Being Unacceptable	0	0	0	0	0	n/a	0	0	0	0	0	0	n/a
Notes													
<i>Precision (%)</i> :	rl	rl	7.4	rl	rl		1.15	1.27	0	1	8	1	25.5
	1.7	rl	0.4	1.4	1.4		1.06	14.49	0.22	0	0	1	9.3
							0.88	0.75	1.36	2	15	0	
							0.35	6.28	0.037	0		3	
							0.06	5.24	19.86	1		0	
							0.84	4.61	0.3	1		0	
							0.24	3.44		13		0	
							0.23	15.27				1	
							0.08	8.06				0	
							3.29	20				1	
							0.15						
Range of Lab Duplicate Measurements (RPD)	"rl" to 1.7 %	"rl"	0.4 to 7.4 %	"rl" to 1.4 %	"rl" to 1.4 %	n/a	0.1 to 3.3 %	0.8 to 20.0 %	0.0 to 19.7 %	0 to 13 %	0 to 15 %	0 to 3 %	9.3 to 25.5 %
# of Lab Duplicate Measurements	2	2	2	2	2	n/a	11	10	6	7	3	10	2
Number of Acceptable Measurements	1 acc; 1 rl	2 rl	2	1 acc; 1 rl	1 acc; 1 rl	n/a	11	10	5	7	3	10	1
Number of Unacceptable Measurements	0	0	0	0	0	n/a	0	0	1	0	0	0	1
% of QC Measurements Being Unacceptable	0	0	0	0	0	n/a	0	0	16.7%	0	0	0	50%
Notes									Note 1				

Appendix C-4b.

	Lead ppm	Cadmium ppm	Zinc ppm	Copper ppm	Nickel ppm	Mercury ppm	Total-Phos. ppm	Ortho-Phos. ppm	Total Kjeldahl Nitrogen (TKN) ppm	Nitrate ppm	Nitrite ppm	Chloride ppm	Susp. Solids mg/l
Report Limit:	0.003 ppm	0.0005 ppm	0.005 ppm	0.002 ppm	0.004 ppm	0.0002 ppm	0.001 ppm	0.001 ppm	0.1 ppm	0.2 ppm	0.01 ppm	3 ppm	10 mg/L
Stated QAPP Accuracy ^a Limits:	± 30%	± 30%	± 30%	± 30%	± 30%	± 30%	± 30%	± 10%	± 30%	± 10%	± 10%	± 10%	--
Stated QAPP Lab Duplicate Precision (RPD):	± 15%	± 15%	± 15%	± 15%	± 15%	± 15%	± 15%	± 30%	± 15%	± 15%	± 15%	± 15%	± 15%

8/22/00 Samples

Accuracy (%):

3.0	1.0	2.0	2.0	3.0	n/a	-0.2	4.7	-6.8	-1.0	0.0	2.0
3.0	4.0	8.0	7.0	8.0	n/a	-2.6	15.7	-11.0	-2.0	0.0	1.0
						0.9		-11.5	-2.0	0.0	1.0
						-2.5		-3.2	3.0	1.0	-1.0
						-0.9		-1.7	3.0	1.0	-1.0
						-2.8		-11.7	7.0	1.0	1.0
						-2.5		-16.4	7.0	1.0	1.0
						-1.6		-16.8		8.0	
						-1.6				8.0	

Range of Accuracy Measurements

3.0 %	1.0 to 4.0 %	2.0 to 8.0 %	2.0 to 7.0 %	3.0 to 8.0 %	n/a	-2.8 to 0.9 %	4.7 to 15.7 %	-16.8 to -1.7 %	-2.0 to 7.0 %	-0.0 to 8.0 %	-1.0 to 2.0 %	n/a
-------	--------------	--------------	--------------	--------------	-----	---------------	---------------	-----------------	---------------	---------------	---------------	-----

of Accuracy Measurements

2	2	2	2	2	n/a	9	2	8	7	9	7	n/a
---	---	---	---	---	-----	---	---	---	---	---	---	-----

Number of Acceptable Measurements

2	2	2	2	2	n/a	9	1	8	7	9	7	n/a
---	---	---	---	---	-----	---	---	---	---	---	---	-----

Number of Unacceptable Measurements

0	0	0	0	0	n/a	0	1	0	0	0	0	n/a
---	---	---	---	---	-----	---	---	---	---	---	---	-----

% of QC Measurements Being Unacceptable

0	0	0	0	0	n/a	0	50.0%	0.0%	0	0	0	n/a
---	---	---	---	---	-----	---	-------	------	---	---	---	-----

Notes

Precision (%):

rl	rl	rl	rl	rl	n/a	1.37	14.43	0.87	1	3	1	rl
rl	rl	3.6	rl	rl	n/a	1.42	0.21	2.48	0		1	rl
						0.97	5.5	1.16	0		6	
						0.09		1.09	1		1	
						1.23		3.24	1		0	
						0.76		2.52	0		2	
						1.27		0.41			0	
						0.29		8.64			1	
						0.47					3	
						0.56						
						0.67						
						0.53						
						0						
						0.03						

Range of Lab Duplicate Measurements (RPD)

"rl"	"rl"	"rl" to 3.6 %	"rl"	"rl"	n/a	0 to 1.4 %	0.2 to 14.4 %	0.4 to 8.6 %	0 to 1 %	3 %	0 to 6 %	"rl"
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of Lab Duplicate Measurements

2	2	2	2	2	n/a	14	3	8	6	1	9	2
---	---	---	---	---	-----	----	---	---	---	---	---	---

Number of Acceptable Measurements

2 rl	2 rl	1 acc; 1 rl	2 rl	2 rl	n/a	14	3	8	6	1	9	2 rl
------	------	-------------	------	------	-----	----	---	---	---	---	---	------

Number of Unacceptable Measurements

0	0	0	0	0	n/a	0	0	0	0	0	0	0
---	---	---	---	---	-----	---	---	---	---	---	---	---

% of QC Measurements Being Unacceptable

0	0	0	0	0	n/a	0	0	0	0	0	0	0
---	---	---	---	---	-----	---	---	---	---	---	---	---

Notes

Appendix C-4c.

	Lead ppm 0.003 ppm	Cadmium ppm 0.0005 ppm	Zinc ppm 0.005 ppm	Copper ppm 0.002 ppm	Nickel ppm 0.004 ppm	Mercury ppm 0.0002 ppm	Total-Phos. ppm 0.001 ppm	Ortho-Phos. ppm 0.001 ppm	Total Kjeldahl Nitrogen (TKN) ppm 0.1 ppm	Nitrate ppm 0.2 ppm	Nitrite ppm 0.01 ppm	Chloride ppm 3 ppm	Susp. Solids mg/l 10 mg/L
Report Limit:													
Stated QAPP Accuracy ^a Limits:	± 30%	± 30%	± 30%	± 30%	± 30%	± 30%	± 30%	± 10%	± 30%	± 10%	± 10%	± 10%	--
Stated QAPP Lab Duplicate Precision (RPD):	± 15%	± 15%	± 15%	± 15%	± 15%	± 15%	± 15%	± 30%	± 15%	± 15%	± 15%	± 15%	± 15%

9/19/00 Samples

	Lead	Cadmium	Zinc	Copper	Nickel	Mercury	Total-Phos.	Ortho-Phos.	Total Kjeldahl Nitrogen (TKN)	Nitrate	Nitrite	Chloride	Susp. Solids
<u>Accuracy (%)</u> :	2.0	1.0	3.0	2.0	4.0	n/a	-1.9	-0.4	0.9	-2.0	2.5	3.0	
	3.0	2.0	5.0	1.0	3.0	n/a	-0.5	-0.6	-1.0	-2.0	2.5	4.0	
							0.8	0.6	-15.1	-1.0	3.0	0.0	
							0.7	0.9	-5.9		3.0	0.0	
							-2.6	-1.7	0.8			-1.0	
							-2.2	-2.5	2.8				
							3.7		-1.7				
							-1.2		-2.2				
							-1.3						
							-1.8						
							-0.6						
							-0.9						
Range of Accuracy Measurements	2.0 to 3.0 %	1.0 to 2.0 %	3.0 to 5.0 %	1.0 to 2.0 %	3.0 to 4.0 %	n/a	-2.6 to 3.7 %	-2.5 to 0.9 %	-15.1 to 2.8 %	-1.0 to -2.0 %	2.5 to 3.0 %	-1.0 to 4.0 %	n/a
# of Accuracy Measurements	2	2	2	2	2	n/a	12	6	8	3	4	5	n/a
Number of Acceptable Measurements	2	2	2	2	2	n/a	12	6	8	3	4	5	n/a
Number of Unacceptable Measurements	0	0	0	0	0	n/a	0	0	0	0	0	0	n/a
% of QC Measurements Being Unacceptable	0	0	0	0	0	n/a	0	0	0	0	0	0	n/a
Notes													
<u>Precision (%)</u> :	rl	rl	0	rl	rl	n/a	0.61	0.81	9.35	0	0	1	rl
	rl	rl	rl	rl	rl	n/a	0.78	3.29	2.84	0		1	18.2
							0.93	0.23	3.99	1		26	
							1	0.01	0.47	2		1	
							0.63	0.95	8.8	0		0	
							1.15	0.27	3.86	1		0	
							0.3	0.2	2.32			1	
							0.49	0.44	0.67			1	
							0.34		1.3				
							1.13						
							0.23						
							0.032						
							0.21						
							0.5						
							2.7						
							0.17						
							0.2						
							0.33						
							0.03						
							0.03						
Range of Lab Duplicate Measurements (RPD)	"rl"	"rl"	"rl" to 0 %	"rl"	"rl"	n/a	0.03 to 2.70 %	0.01 to 3.29 %	0.47 to 9.35 %	0 to 2 %	0 %	0 to 26 %	"rl" to 18.2 %
# of Lab Duplicate Measurements	2	2	2	2	2	n/a	20	8	9	6	1	8	2
Number of Acceptable Measurements	2 rl	2 rl	1 acc; 1 rl	2 rl	2 rl	n/a	20	8	9	6	1	7	1 rl
Number of Unacceptable Measurements	0	0	0	0	0	n/a	0	0	0	0	0	1	1
% of QC Measurements Being Unacceptable	0	0	0	0	0	n/a	0	0	0	0	0	13%	50%
Notes												Note 2	

APPENDIX D

Temperature

Appendix D-1. Temperature data logger location, serial number (S/N), and quality assurance/quality control information. The temperature of the NSTI laboratory thermometer, after being immersed in the bucket for 30 minutes with the loggers, was 18.2°C. This data was collected in 1999.

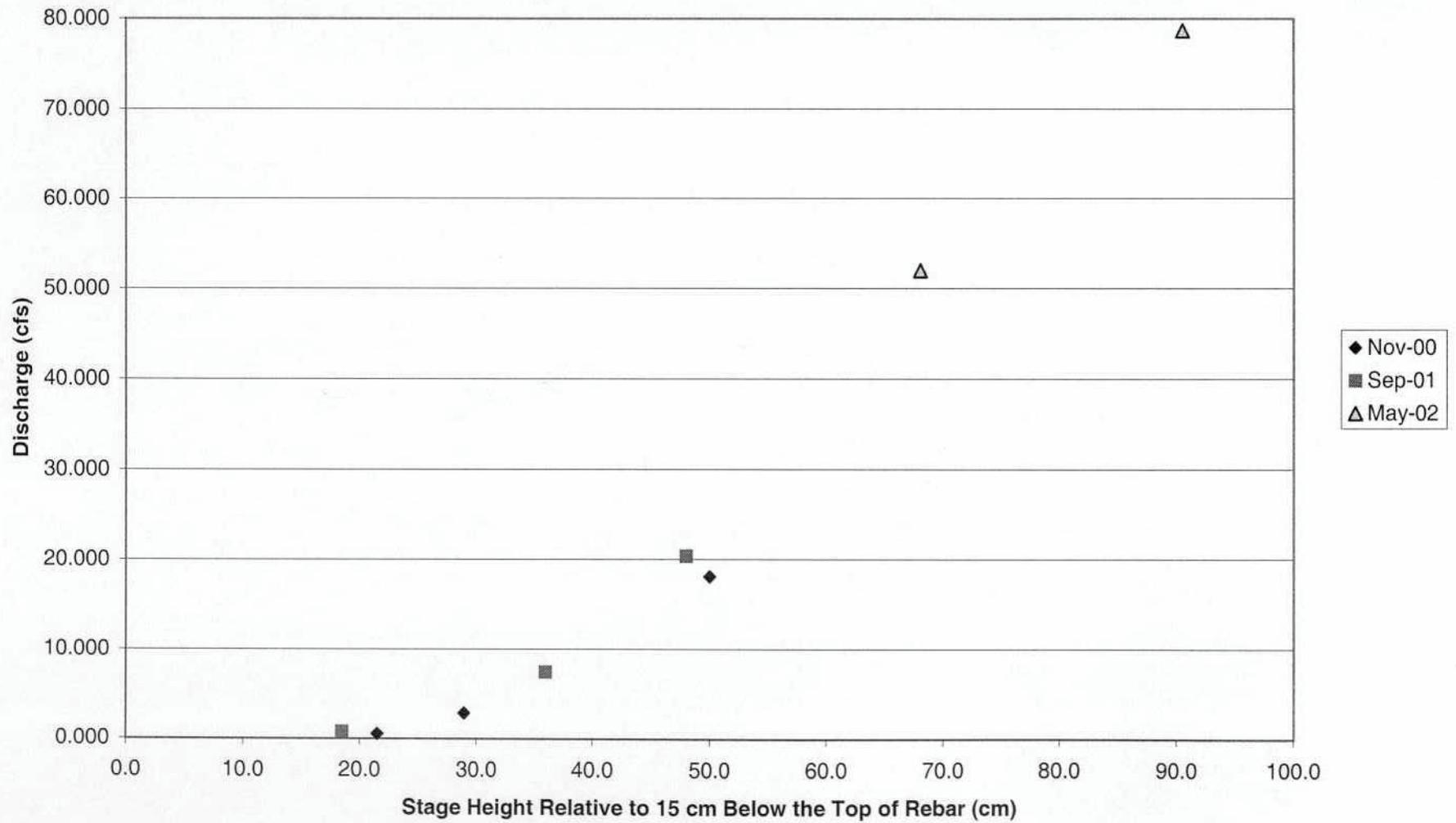
Stream Segment	Stream Mile	Stowaway Logger S/N	Temperature After Being Immersed In Bucket > 30 Minutes (°C)	Difference From NSTI- Certified Thermometer (°C)
LC-M-	0.432	270332	18.07	0.13
LC-M-	0.910	270320	18.20	0.00
LC-M-	2.270	270319	18.39	-0.19
LC-M-	0.800~	261248	18.21	-0.01
LC-M-	0.800~	261312	18.17	0.03 <i>lost/stolen?</i>
LC-Mn-	2.274	270335	18.03	0.17
LC-Mn-	2.714	1232	18.16	0.04
LC-Mn-	2.400~	261127	18.20	0.00
LC-N-	0.415	261265	18.06	0.14
LC-S-	0.369	265009	18.10	0.10
LC-S-	0.496	261372	18.10	0.10
LC-S-	0.400~	261366	18.21	-0.01
RB-	0.071	270333	18.03	0.17
RB-	1.474	270305	18.22	-0.02
RB-	3.961	261357	18.16	0.04

APPENDIX E

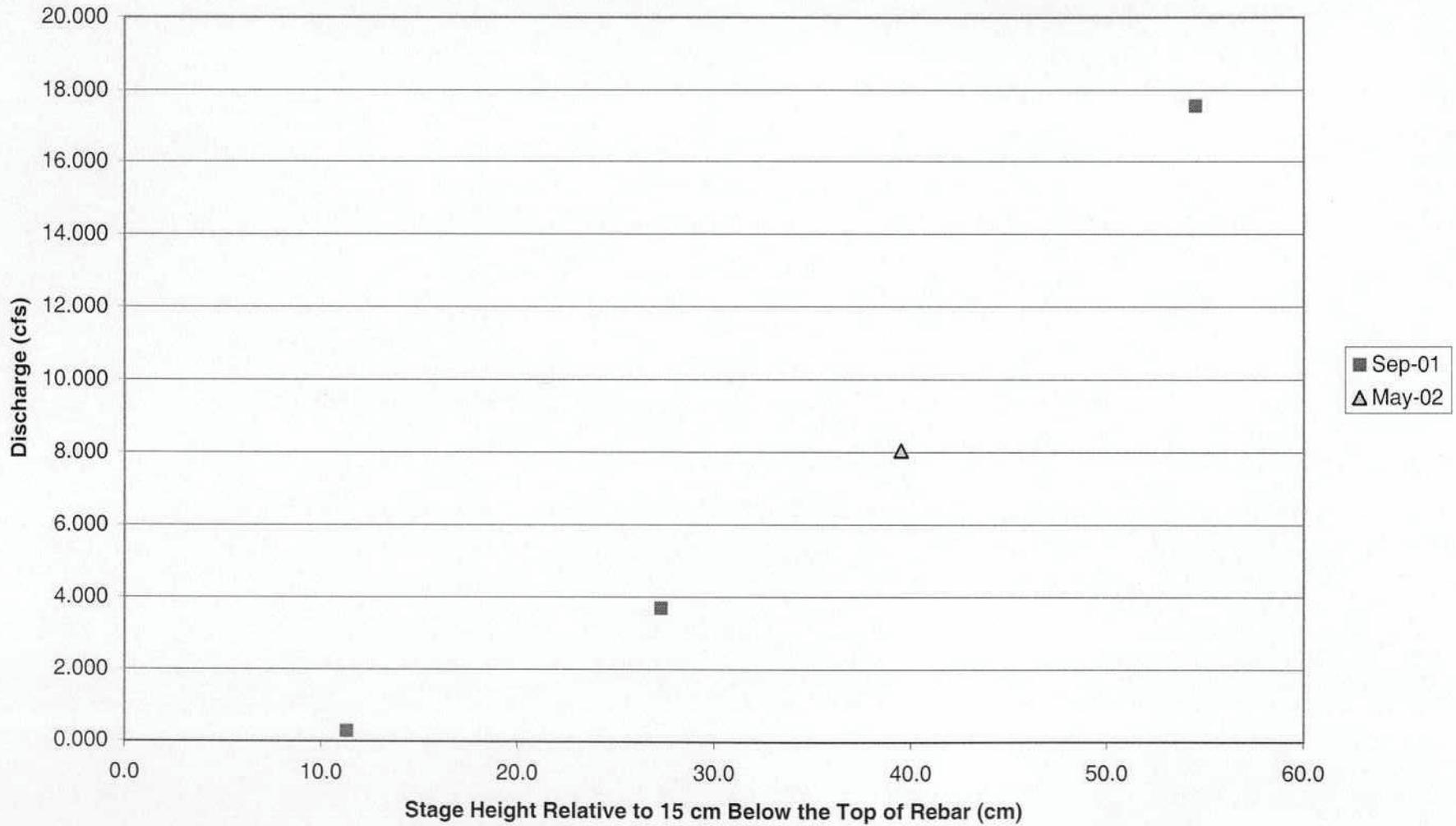
Hydrology & Climate

Appendix E-1. Plots and regressions of stream discharge (from field measurements using a Globe Flow Probe) versus stream stage (as measured via ISCO "bubbler" flow meters). Note: In general, discharge values below about 3 cfs appeared to be quite noisy in regression plots of discharge versus time and thus suggested that either the ISCO flow meter setup or the Globe Flow Probe (or both) may have not sensitive enough at very low discharges in this study. Plots comparing percent change in stage versus time were more noisy at very low discharges.

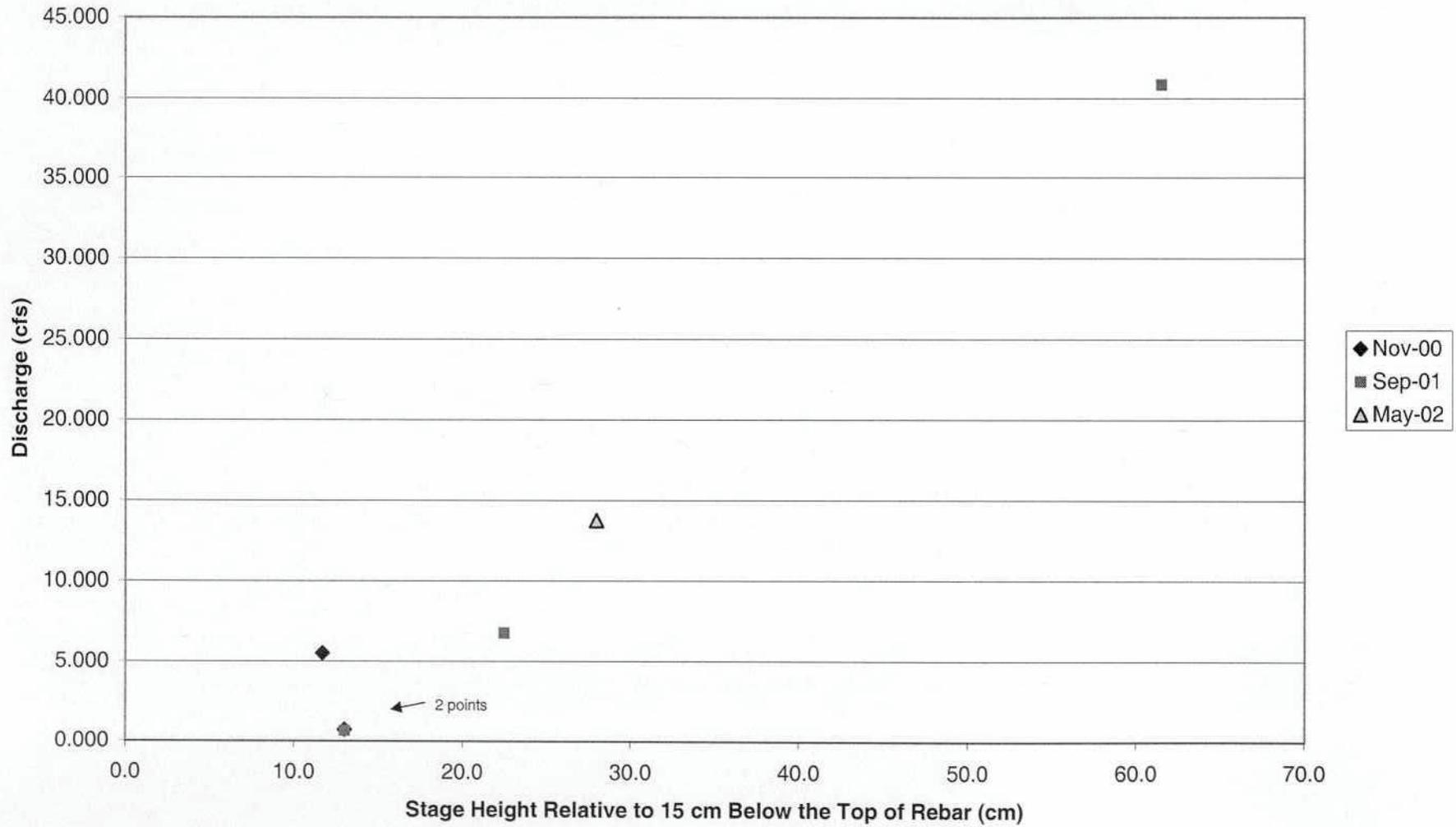
ISCO Flow Meter Calibration:
Long Creek - Main
LC-M



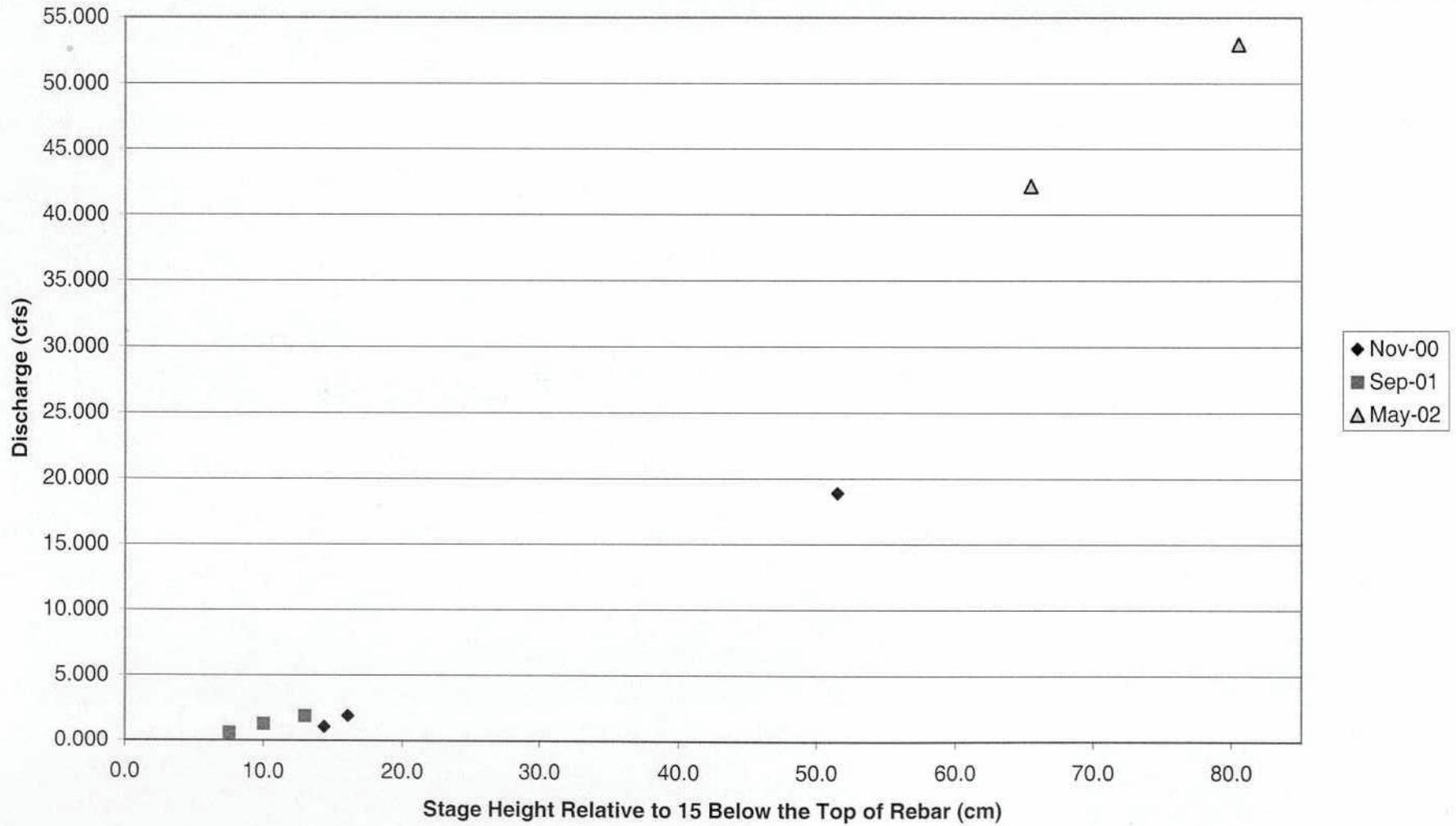
ISCO Flow Meter Calibration:
Long Creek - Northern Branch
LC-N



ISCO Flow Meter Calibration:
Long Creek - Southern Branch
LC-S

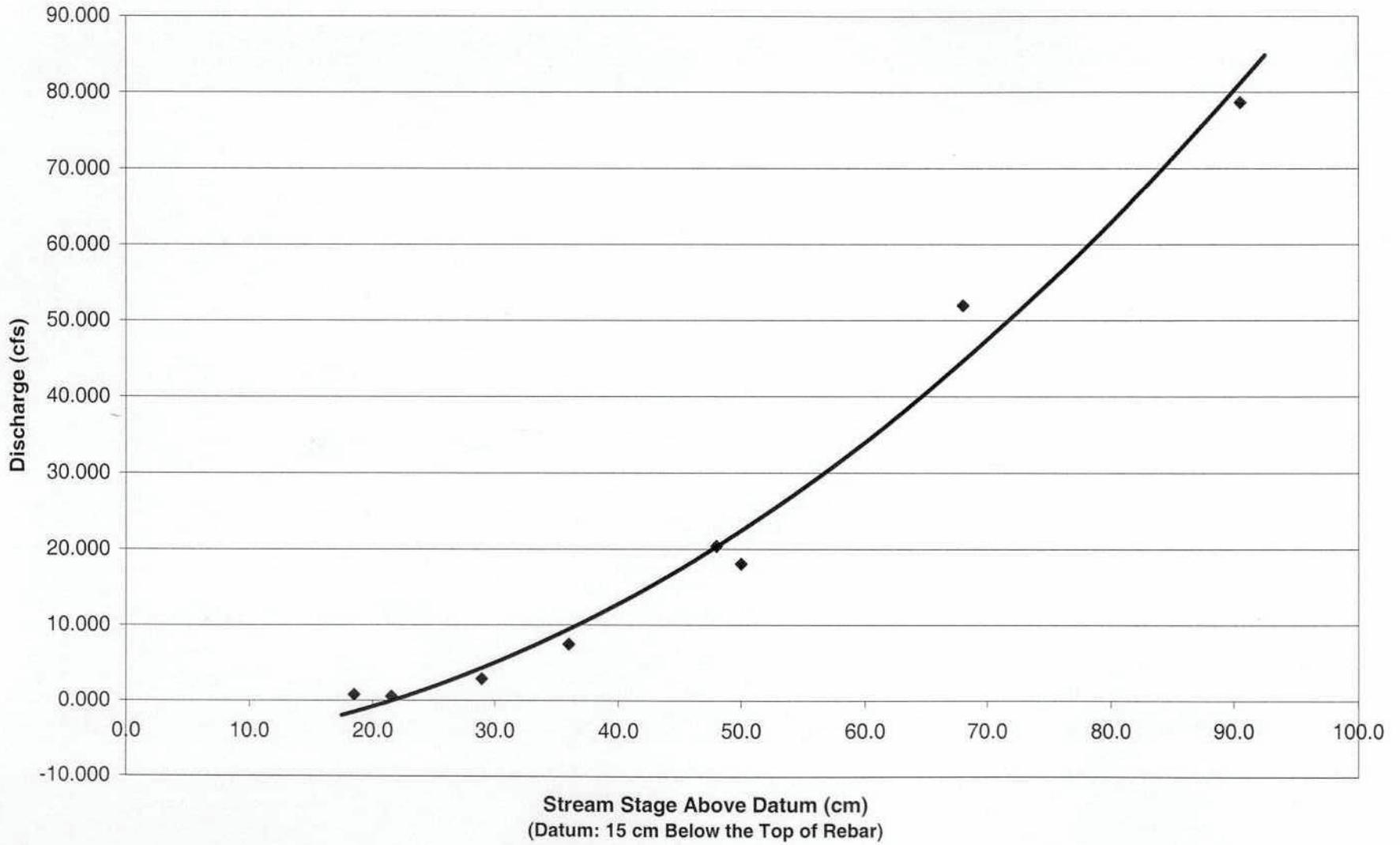


ISCO Flow Meter Calibration:
Red Brook
RB



**ISCO Flow Meter Calibration:
LC-M (Mall Plaza)**

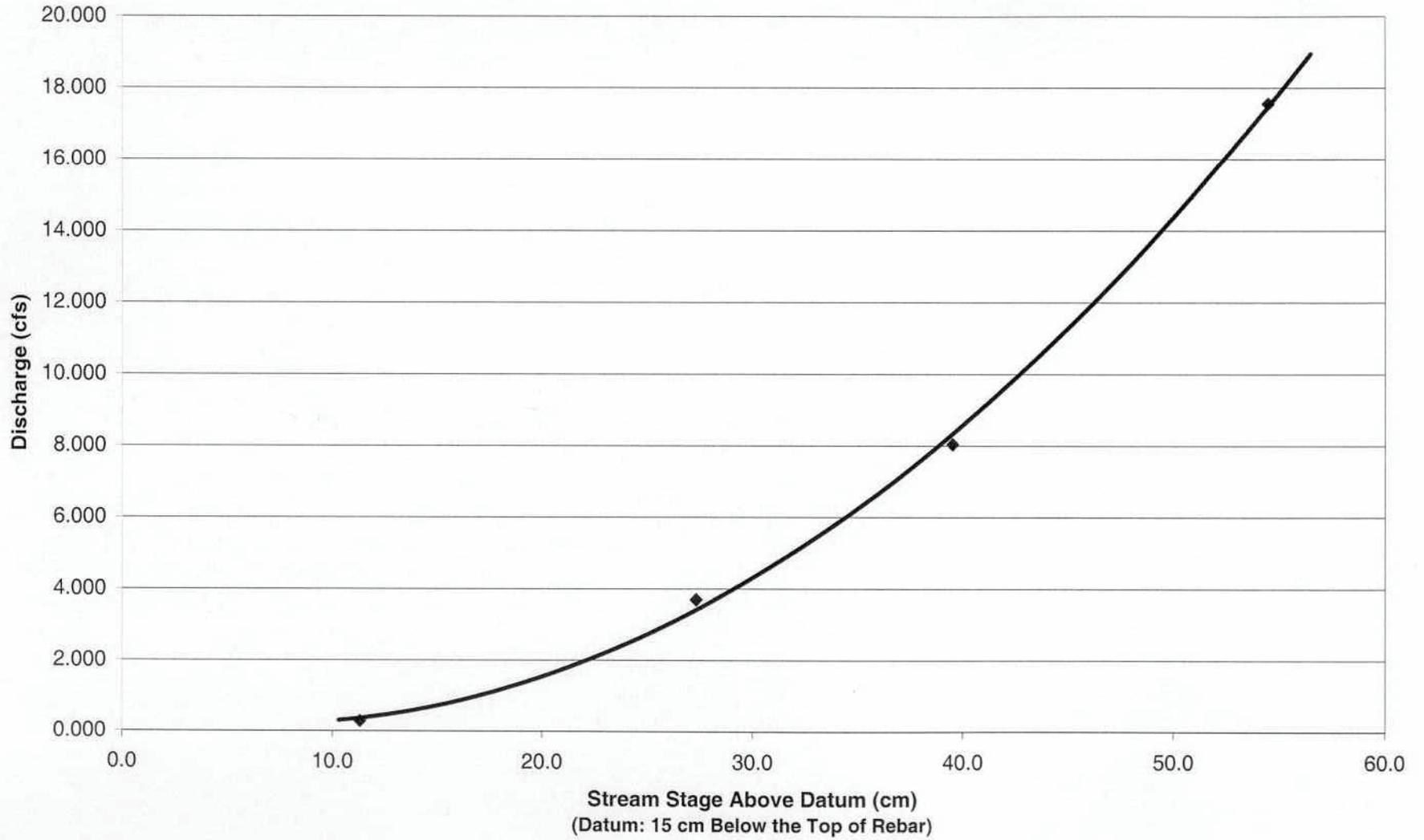
$y = 0.0096x^2 + 0.1031x - 6.7017$
 $R^2 = 0.984$
 $n = 8$



**ISCO Flow Meter Calibration:
LC-N (Jetport)**

$$y = 0.0076x^2 - 0.1016x + 0.5457$$

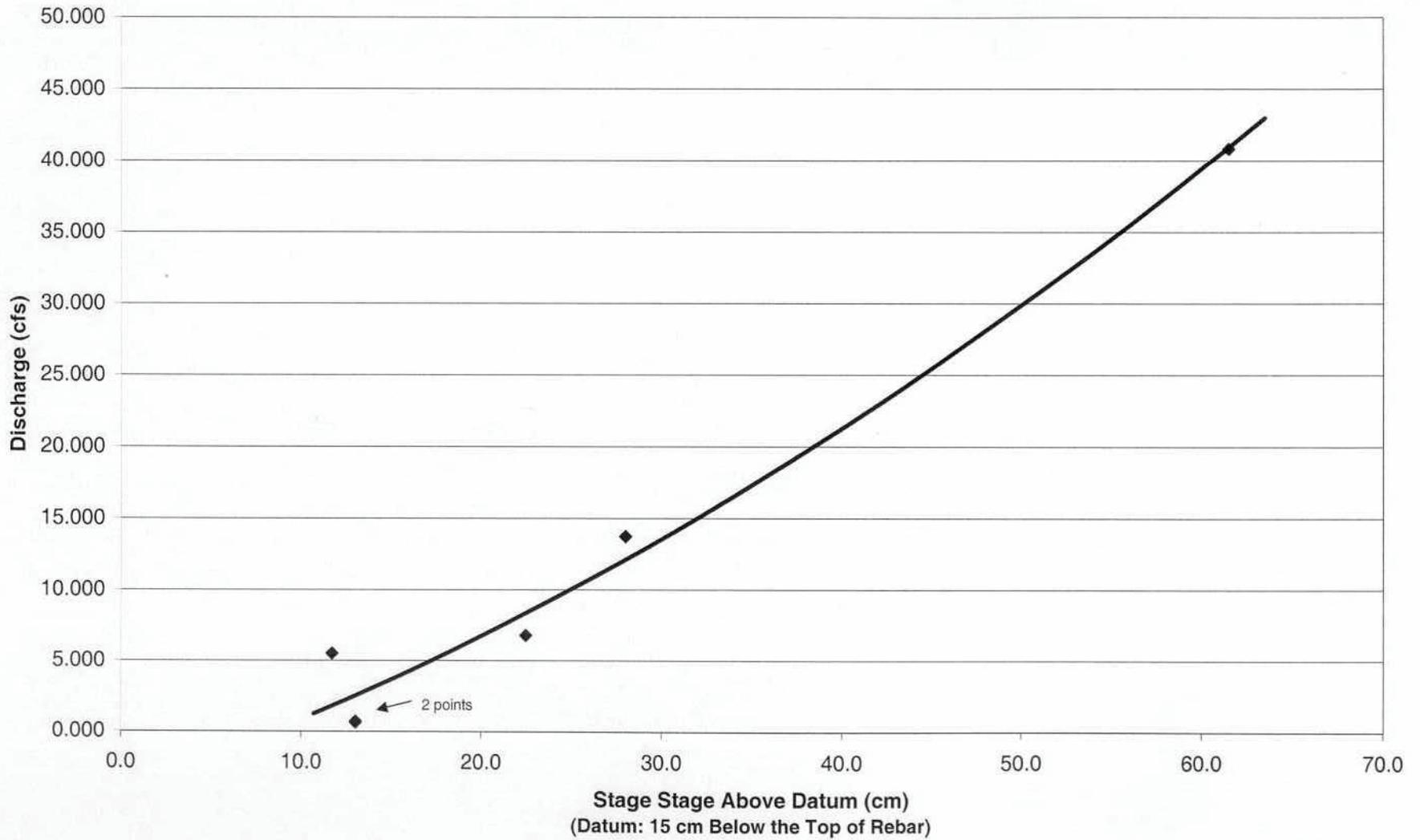
$R^2 = 0.9989$
 $n = 4$



**ISCO Flow Meter Calibration:
LC-S (Maine Mall)**

$$y = 0.0046x^2 + 0.4519x - 4.1232$$

$R^2 = 0.9776$
 $n = 6$

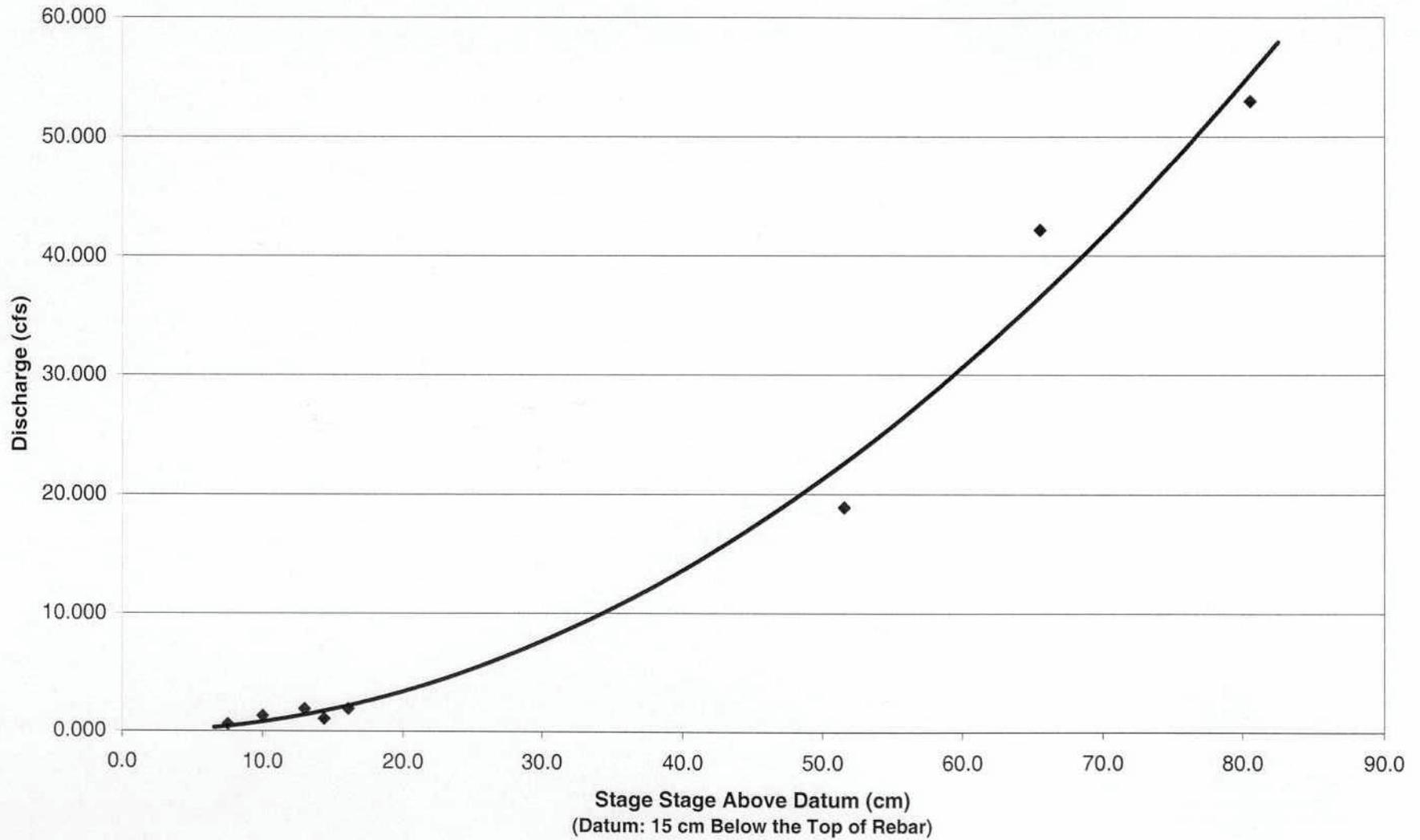


**ISCO Flow Meter Calibration:
RB**

$$y = 0.0085x^2 + 0.0045x - 0.1106$$

$$R^2 = 0.9836$$

n = 8



APPENDIX F

Habitat

The low-gradient stream habitat assessment sheets from the following reference were used in this study: Barbour, M.T., J. Gerritsen, B.D. Snyder, and J.B. Stribling. 1999. Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates and Fish, Second Edition. EPA 841-B-99-002. U.S. Environmental Protection Agency; Office of Water; Washington, D.C. They may be found at:
< http://www.epa.gov/owow/monitoring/rbp/app_a.html >.