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APPENDIX A: SAMPLE LOCATION GEOGRAPHIC COORDINATES

Appendix A: Phase I Sample Location Geographic Coordinates Herrington Lake Phase I Field Sampling Technical Memorandum Mercer County, Kentucky

Sampling Focus Regions	Sampling Location	Longitude (decimal degrees)	Latitude (decimal degrees)
Curds Inlet (Sorted by distance from The Plant)	CURDSNB CURDS1	-84.71462 -84.71445	37.78562 37.78569
	CI-1A	-84.71433	37.78569
	CI-1A	-84.71433	37.78566
	CI-1C	-84.71433	37.78563
	CURDS2A	-84.71391	37.78553
	CURDS2B	-84.71394	37.78548
	CURDS2C	-84.71397	37.78544
	CI-2A	-84.71370	37.78544
	CI-2B	-84.71374	37.78539
	CI-2C	-84.71376	37.78536
	CI-3A	-84.71226	37.78485
	CI-3B	-84.71237	37.78475
	CI-3C	-84.71245	37.78468
	CI-4A	-84.71138	37.78398
	CI-4B	-84.71118	37.78410
	CI-4C	-84.71165	37.78378
HO Inlet	HQ-1A	-84.71240	37.78261
	HQ-1B	-84.71244	37.78250
	HQ-1C	-84.71248	37.78243
Rocky Run	LHL-1B	-84.69889	37.78059
	LHL-1C	-84.69993	37.77954
Dix	LHL-2B	-84.70643	37.78484
	LHL-2C	-84.70507	37.78223
Dix River	DR1	-84.70772	37.79344
Hardin Inlet	HI-1A	-84.71675	37.77282
	HI-1B	-84.71662	37.77281
	HI-1C	-84.71673	37.77274
ake	LHL-3B	-84.71208	37.77990
	LHL-3C	-84.70977	37.77934
on L	LHL-4B	-84.71289	37.77481
Lower Herrington Lake Main Channel	LHL-4C	-84.71059	37.77312
	LHL-5B	-84.72281	37.76313
	LHL-5C	-84.71982	37.76253
	LHL-6B	-84.69286	37.75907
	LHL-6C	-84.69515	37.75930

Appendix A: Phase I Sample Location Geographic Coordinates Herrington Lake Phase I Field Sampling Technical Memorandum Mercer County, Kentucky

Herrington .ake Region ntroids	MHL1	-84.71623	37.72514
Middle He La Fish F	MHL3	-84.68459	37.64962

Notes:

Surface Water Transect (lines) can be constructed by connecting the dots using the coordinates from each sample location (e.g. LHL5B to LHL5C forms the LHL5 transect).

For the fish-only locations MHL1 and MHL3, the reported coordinates represent the centroid of the approximately 14 acres fishing regions.

Coordinates are reported in NAD 1983 US Decimal Degrees.

CI Curds Inlet

HI Hardin Inlet

HQ HQ Inlet

LHL Lower Herrington Lake

MHL Middle Herrington Lake

DR Dix River

APPENDIX B: PHOTO LOGS

Appendix B1: Fishing Methods and Field-Catch Photo Log

Appendix B2: Fish Sample Photo Log

Appendix B3: Surface Water Collection Photo Log

Appendix B4: Sediment Pore Water Collection and Preparation Photo Log

Appendix B5: Sediment Sample Photo Log

Appendix B6: Aquatic Vegetation and Invertebrate Sample Photo Log

APPENDIX B: PHOTO LOGS

Appendix B1: Fishing Methods and Field-Catch Photo Log



Photo 1: Pennington and Associates at the Gwinn Island Fish Camp Boat Ramp assembling the electrofishing equipment for use in Middle Herrington Lake.

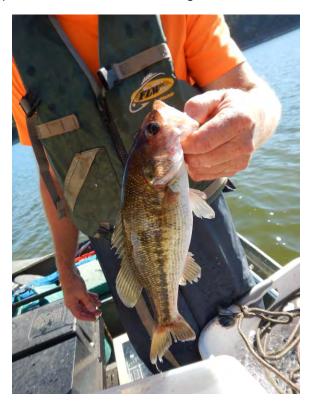


Photo 2: A medium-sized largemouth bass caught using a gill net.



Fishing Methods and Field-Catch Photo Log



Photo 3: Multiple bluegill netted during electrofishing in Lower Herrington Lake.



Photo 4: Crappie, which was released.



Fishing Methods and Field-Catch Photo Log



Photo 5: A freshwater drum, which was released.



Photo 6: Multiple largemouth bass caught using gillnets in Lower Herrington Lake.



Fishing Methods and Field-Catch Photo Log



Photo7: Gizzard shad used as cut-bait for the trotlines.



Photo 8: Baiting a trotline.



Fishing Methods and Field-Catch Photo Log



Photo 9: Deploying a trotline.



Photo 10: Deploying a trotline.



Fishing Methods and Field-Catch Photo Log



Photo 11: A medium-sized channel catfish caught using a trotline in Curds Inlet (CI).



Photo 12: A medium-sized channel catfish caught using a trotline.



Fishing Methods and Field-Catch Photo Log



Photo 13: A large female flathead catfish caught on a trotline at MHL1 (Middle Herrington Lake).



Photo 14: Large channel catfish caught on a trotline at LHL3 (Lower Herrington Lake).



Fishing Methods and Field-Catch Photo Log

APPENDIX B: PHOTO LOGS

Appendix B2: Fish Sample Photo Log



Photo 1: Bluegill composite sample (1 of 2) from Curds Inlet. Sample ID = FWB-001(BG)-CI-171004



Photo 2: Bluegill composite sample (2 of 2) from Curds Inlet. Sample ID = FWB-002(BG)-CI-171004





Photo 3: Largemouth bass composite sample (1 of 2) from Curds Inlet. Sample ID = FWB-001(LMB)-CI-171004



Photo 4: Ovary from largemouth bass composite sample (1 of 2) from Curds Inlet. Sample ID = FO-001(LMB)-CI-171004





Photo 5: Largemouth bass composite sample (2 of 2) from Curds Inlet. Sample ID = FWB-002(LMB)-CI-171004



Photo 6: Channel catfish composite sample (1 of 2) from Curds Inlet. Sample ID = FWB-001(CC)-CI-171013





Photo 7: Flathead catfish composite sample from Curds Inlet. Sample ID = FWB-001(FHC)-CI-171013



Photo 8: Bluegill composite sample (1 of 2) from HQ Inlet. Sample ID = FWB-001(BG)-HQ-171004





Photo 9: Bluegill composite sample (2 of 2) from HQ Inlet. Sample ID = FWB-002(BG)-HQ-171004



Photo 10: Bluegill composite sample (1 of 2) from LHL1 (Lower Herrington Lake). Sample ID = FWB-001(BG)-LHL1-171011





Photo 11: Bluegill composite sample (2 of 2) from LHL1 (Lower Herrington Lake). Sample ID = FWB-002(BG)-LHL1-171004



Photo 12: Largemouth bass composite sample (1 of 2) from LHL1 (Lower Herrington Lake). Sample ID = FWB-001(LMB)-LHL1-171005





Photo 13: Ovary from largemouth bass composite sample (1 of 2) from LHL1 (Lower Herrington Lake). Sample ID = FO-001(LMB)-LHL1-171005



Photo 14: Largemouth bass composite sample (2 of 2) from LHL1 (Lower Herrington Lake). Sample ID = FWB-002(LMB)-LHL1-171005





Photo 15: Channel catfish sample from LHL1 (Lower Herrington Lake). Sample ID = FWB-001(CC)-LHL1-171005



Photo 16: Flathead catfish sample from LHL1 (Lower Herrington Lake). Sample ID = FWB-001(FHC)-LHL1-171005





Photo 17: Bluegill composite samples (2 of 2) from LHL2 (Dix Dam, Lower Herrington Lake). Sample IDs = FWB-001(BG)-LHL2-171005 and FWB-002(BG)-LHL2-171005



Photo 18: Largemouth bass composite samples (1 of 1, left 3 fish only) from LHL2 (Dix Dam). Sample ID = FWB-001(LMB)-LHL2-171005





Photo 19: Ovary from Kentucky bass composite sample from LHL2 (Dix Dam, Lower Herrington Lake). Sample ID = FO-001(KB)-LHL2-171005



Photo 20: Channel catfish sample from LHL2 (Dix Dam, Lower Herrington Lake). Sample ID = FWB-001(CC)-LHL2-171005





Photo 21: Flathead catfish sample from LHL2 (Dix Dam, Lower Herrington Lake). Sample ID = FWB-001(FHC)-LHL2-171005



Photo 22: Bluegill composite samples (2 of 2) from LHL3 (Lower Herrington Lake). Sample IDs = FWB-001(BG)-LHL3-171005 and FWB-002(BG)-LHL3-171005





Photo 23: Kentucky bass composite sample (2 of 2) from LHL3 (Lower Herrington Lake). Sample ID = FWB-002(KB)-LHL3-171004



Photo 24: Ovary from Kentucky bass composite sample (2 of 2) from LHL3 (Lower Herrington Lake). Sample ID = FO-002(KB)-LHL3-171004





Photo 25: Channel catfish sample (1 of 2) from LHL3 (Lower Herrington Lake). Sample ID = FWB-001(CC)-LHL3-171005



Photo 26: Channel catfish sample (1 of 2) from LHL3 (Lower Herrington Lake). Sample ID = FWB-001(CC)-LHL3-171005





Photo 27: Channel catfish and ovary sample (2 of 2) from LHL3 (Lower Herrington Lake). Sample IDs = FWB-002(CC)-LHL3-171016 and FO-002(CC)-LHL3-171016



Photo 28: Largemouth bass composite sample from LHL4 (Lower Herrington Lake). Sample ID = FWB-001(LMB)-LHL4-171003





Photo 29: Channel catfish sample from LHL4 (Lower Herrington Lake). Sample ID = FWB-001(CC)-LHL4-171012



Photo 30: Flathead catfish sample from LHL4 (Lower Herrington Lake). Sample ID = FWB-001(FHC)-LHL4-171012





Photo 31: Bluegill composite sample (partial 1 of 2) from LHL5 (Lower Herrington Lake). Sample ID = FWB-001(BG)-LHL5-171011



Photo 32: Bluegill composite sample (partial 1 of 2) from LHL5 (Lower Herrington Lake). Sample ID = FWB-001(BG)-LHL5-171011





Photo 33: Bluegill composite sample (2 of 2) from LHL5 (Lower Herrington Lake). Sample ID = FWB-002(BG)-LHL5-171011



Photo 34: Largemouth bass composite sample (1 of 2) from LHL5 (Lower Herrington Lake). Sample ID = FWB-001(LMB)-LHL5-171007





Photo 35: Ovary from largemouth bass composite sample (1 of 2) from LHL5 (Lower Herrington Lake). Sample ID = FO-001(LMB)-LHL5-171007



Photo 36: Largemouth bass composite sample (2 of 2) from LHL5 (Lower Herrington Lake). Sample ID = FWB-002(LMB)-LHL5-171007





Photo 37: Channel catfish composite sample (1 of 2) from LHL5 (Lower Herrington Lake). Sample ID = FWB-001(CC)-LHL5-171007



Photo 38: Ovary from channel catfish composite sample (1 of 2) from LHL5 (Lower Herrington Lake). Sample ID = FO-001(CC)-LHL5-171007





Photo 39: Channel catfish composite sample (2 of 2) from LHL5 (Lower Herrington Lake). Sample ID = FWB-002(CC)-LHL5-171007



Photo 40: Bluegill composite sample (1 of 2) from LHL6 (Lower Herrington Lake). Sample ID = FWB-001(BG)-LHL6-171011





Photo 41: Bluegill composite sample (2 of 2) from LHL6 (Lower Herrington Lake). Sample ID = FWB-002(BG)-LHL6-171011



Photo 42: Kentucky bass and ovary composite sample (partial composite 1 of 1) from LHL6 (Lower Herrington Lake). Sample ID = FWB-001(KB)-LHL6-171007 and FO-001(KB)-LHL6-171007





Photo 43: Channel catfish and ovary composite sample (partial composite 1 of 2) from LHL6 (Lower Herrington Lake).

Sample ID = FWB-001(CC)-LHL6-171007 and FO-001(CC)-LHL6-171007



Photo 44: Channel catfish composite sample (partial composite 3 of 2) from LHL6 (Lower Herrington Lake). Sample ID = FWB-002(CC)-LHL6-17100





Photo 45: Bluegill composite samples (2 samples) from MHL1 (Middle Herrington Lake). Sample IDs = FWB-001(BG)-MHL1-171015 and FWB-002(BG)-MHL1-171015



Photo 46: Largemouth bass composite sample from MHL1 (Middle Herrington Lake). Sample ID = FWB-001(LMB)-MHL1-171015





Photo 47: Kentucky bass composite sample from MHL1 (Middle Herrington Lake). Sample ID = FWB-001(KB)-MHL1-171014



Photo 48: Flathead catfish composite sample (1 of 2) from MHL1 (Middle Herrington Lake). Sample ID = FWB-001(FHC)-MHL1-171014



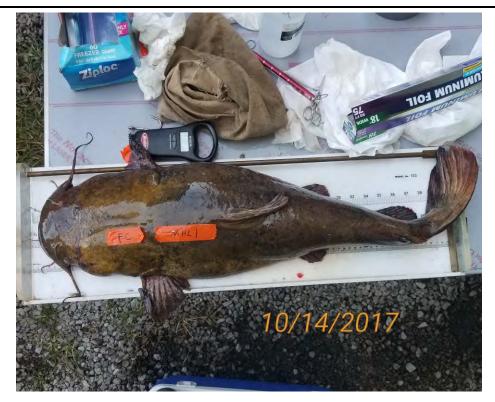


Photo 49: Flathead catfish sample (2 of 2) from MHL1 (Middle Herrington Lake). Sample ID = FWB-002(FHC)-MHL1-171014



Photo 50: Bluegill composite samples (2 samples) from MHL3 (Middle Herrington Lake). Sample IDs = FWB-001(BG)-MHL3-171014 and FWB-002(BG)-MHL3-171014





Photo 51: Largemouth bass composite sample (1 of 2) from MHL3 (Middle Herrington Lake). Sample ID = FWB-001(LMB)-MHL3-171014



Photo 52: Largemouth bass composite sample (2 of 2) from MHL3 (Middle Herrington Lake). Sample ID = FWB-002(LMB)-MHL3-171014





Photo 53: Channel catfish composite sample (1 of 2) from MHL3 (Middle Herrington Lake). Sample ID = FWB-001(CC)-MHL3-171014



Photo 54: Channel catfish composite sample (2 of 2) from MHL3 (Middle Herrington Lake). Sample ID = FWB-002(CC)-MHL3-171014





Photo 55: Bluegill composite sample (1 of 1) from Dix River (below Dix Dam). Sample ID = FWB-001(BG)-DR-171016



Photo 56: Green sunfish composite sample (1 of 2) from Dix River (below Dix Dam). Sample ID = FWB-001(GS)-DR-171014





Photo 57: Green sunfish composite sample (2 of 2, left 4 fish only) from Dix River (below Dix Dam). Sample ID = FWB-002(GS)-DR-171016



Photo 58: Largemouth bass sample from Dix River (below Dix Dam). Sample ID = FWB-001(LMB)-DR-171016





Photo 59: Brown trout sample from Dix River (below Dix Dam). Sample ID = FWB-001(BT)-DR-171016



Photo 60: Spotted sucker composite sample (top two fish only) from Dix River (below Dix Dam). Sample ID = FWB-001(SS)-DR-171016





Photo 61: Northern hog sucker composite sample from Dix River (below Dix Dam). Sample ID = FWB-001(HS)-DR-171016



APPENDIX B: PHOTO LOGS

Appendix B3: Surface Water Collection Photo Log



Photo 1: One of the samplers used to collect surface water samples.



Photo 2: Tubing to transfer surface water from the sampler to the sampling containers.



Appendix B3 Surface Water Collection Photo Log



Photo 3: Transferring surface water to sampling containers.



Appendix B3 Surface Water Collection Photo Log

APPENDIX B: PHOTO LOGS

Appendix B4: Sediment Pore Water Collection and Preparation Photo Log



Photo 1: A new passive diffusion pore water "peeper" ready for deployment on the dive boat.



Photo 2: An orange marker buoy for a peeper, suspended below the water surface, ready for retrieval. It sits in approximately 10ft shallow water depth compared to when it was deployed.





Photo 3: To ensure an anoxic environment, all peepers were contained within its associated native sediment, bagged in-place, and slowly brought to the surface by divers.



Photo 4: Multiple passive diffusion peeper pore water samples, retained in their native sediment prior to pore water extraction.





Photo 5: A retrieved peeper prior to pore water extraction.



Photo 6: Sterile (one-time use) 60ml hypodermic needle and 0.45um filter for extracting filtered pore water from a peeper.





Photo 7: Inert argon gas, unlike helium or nitrogen, is heavier than air and will fill up the bag, used to enclose the peeper for sample transfer, from the bottom first, including the containers.



Photo 8: Mobile laboratory argon-filled bag for transferring pore water into the containers.





Photo 9: Maintaining an anoxic environment while transferring the pore water from the hypodermic needle(s) into the appropriate containers.



Photo 10: Pore water sample containers.



APPENDIX B: PHOTO LOGS

Appendix B5: Sediment Sample Photo Log



Photo 1: Sediment sample collected from Curds1 (Upper Curds Inlet), Lower Herrington Lake. Sample ID = SD-001(12)-Curds1A-171011



Photo 2: Sediment sample collected from CI1A (Upper Curds Inlet), Lower Herrington Lake. Sample ID = SD-001(16)-CI1A-171011



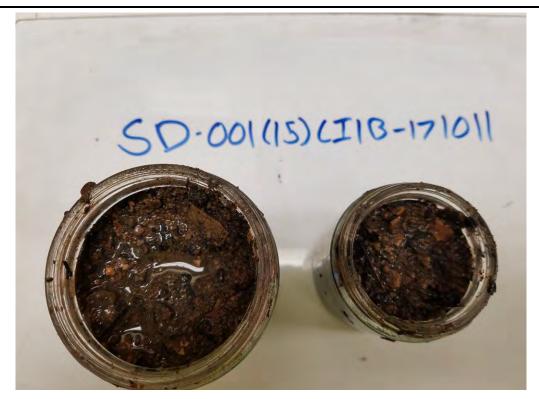


Photo 3: Sediment sample collected from CI1B (Upper Curds Inlet), Lower Herrington Lake. Sample ID = SD-001(15)-CI1B-171011

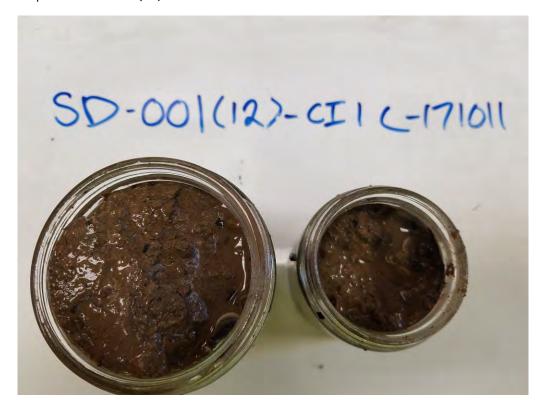


Photo 4: Sediment sample collected from CI1C (Upper Curds Inlet), Lower Herrington Lake. Sample ID = SD-001(12)-CI1C-171011





Photo 5: Sediment sample collected from CI2A (Upper Curds Inlet), Lower Herrington Lake. Sample ID = SD-001(20)-CI2A-171011



Photo 6: Sediment sample collected from CI2B (Curds Inlet), Lower Herrington Lake. Sample ID = SD-001(17)-CI2B-171011



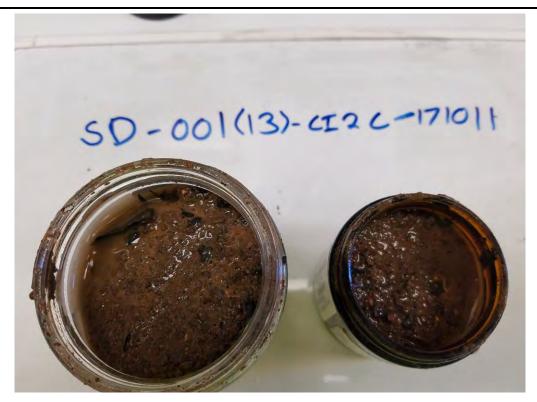


Photo 7: Sediment sample collected from CI2C (Curds Inlet), Lower Herrington Lake. Sample ID = SD-001(13)-CI2C-171011



Photo 8: Sediment sample collected from CI3A (Curds Inlet), Lower Herrington Lake. Sample ID = SD-001(31)-CI3A-171011





Photo 9: Sediment sample collected from CI3B (Curds Inlet), Lower Herrington Lake. Sample ID = SD- SD-001(21)-CI3B-171011



Photo 10: Sediment sample collected from CI3C (Curds Inlet), Lower Herrington Lake. Sample ID = SD- SD-001(12)-CI3C-171011





Photo 11: Sediment sample collected from CI4B (Mouth of Curds Inlet), Lower Herrington Lake. Sample ID = SD-001(20)-CI4B-171012

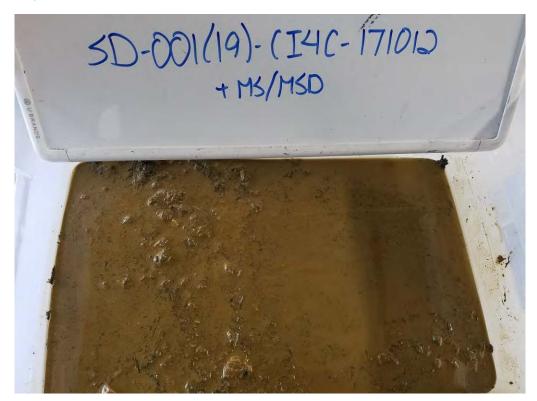


Photo 12: Sediment Sample Collected from CI4C (Mouth of Curds Inlet), Lower Herrington Lake. Sample ID = SD-001(19)-CI4C-171012, SD-001(19)-CI4C-171012-MS/MSD



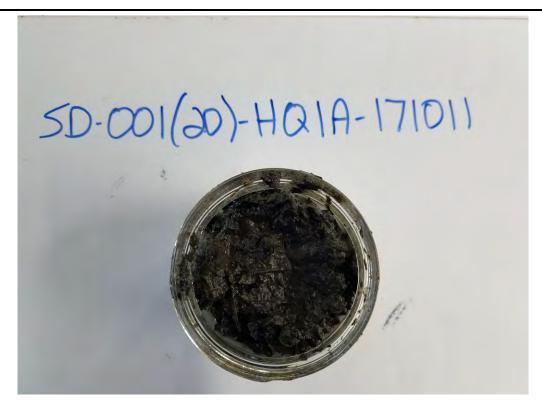


Photo 13: Sediment sample collected from HQ1A (HQ Inlet), Lower Herrington Lake. Sample ID = SD-001(20)-HQ1A-171011



Photo 14: Sediment sample collected from HQ1B (HQ Inlet), Lower Herrington Lake. Sample ID = SD-001(17)-HQ1B-171011





Photo 15: Sediment sample collected from HQ1C (HQ Inlet), Lower Herrington Lake. Sample ID = SD-001(13)-HQ1C-171011



Photo 16: Sediment sample collected from LHL1B (Lower Herrington Lake). Sample ID = SD-001(20)-LHL1B-171012



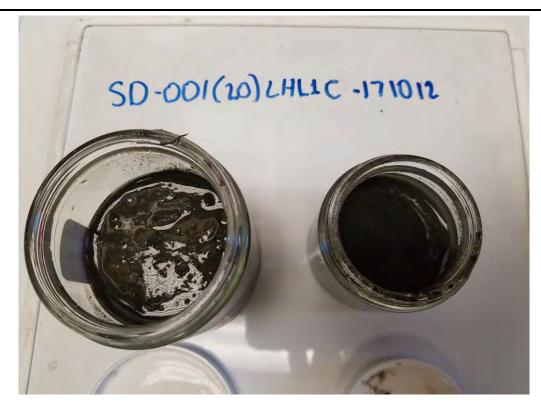


Photo 17: Sediment sample collected from LHL1C (Lower Herrington Lake). Sample ID = SD-001(20)-LHL1C-171012



Photo 18: Sediment sample collected from LHL2B (Lower Herrington Lake). Sample ID = SD-001(20)-LHL2B-171012



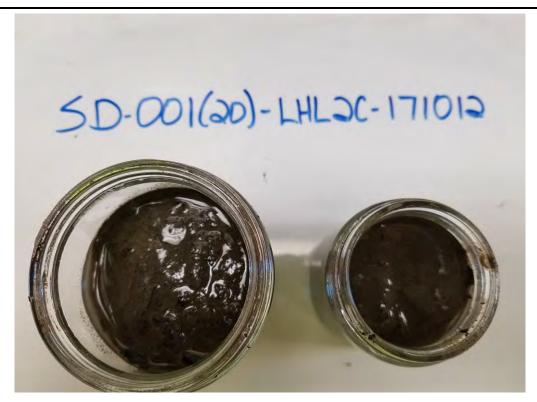


Photo 19: Sediment sample collected from LHL2C (Lower Herrington Lake). Sample ID = SD-001(20)-LHL2C-171012



Photo 20: Sediment sample collected from LHL3B (Lower Herrington Lake). Sample ID = SD-001(17)-LHL3B-171012





Photo 21: Sediment sample collected from LHL3C (Lower Herrington Lake). Sample ID = SD-001(24)-LHL3C-171012



Photo 22: Sediment sample collected from LHL4B (Lower Herrington Lake). Sample ID = SD-001(22)-LHL4B-171012



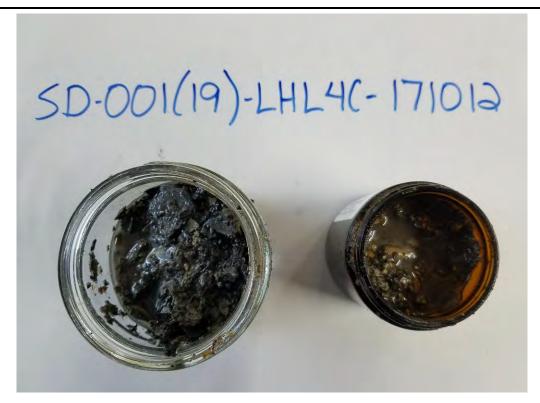


Photo 23: Sediment sample collected from LHL4C (Lower Herrington Lake). Sample ID = SD-001(19)-LHL4C-171012



Photo 24: Sediment sample collected from LHL5B (Lower Herrington Lake). Sample ID = SD-001(16)-LHL5B-171012





Photo 25: Sediment sample collected from LHL5C (Lower Herrington Lake). Sample ID = SD-001(21)-LHL5C-171012

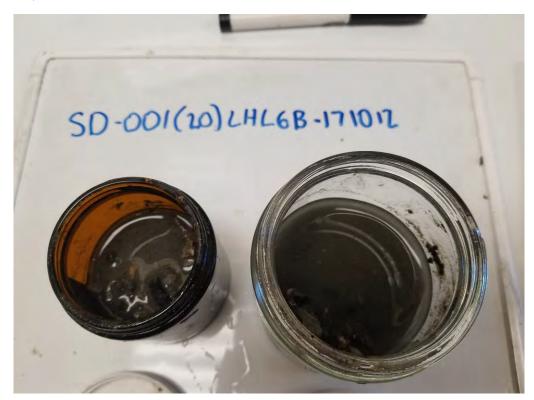


Photo 26: Sediment sample collected from LHL6B (Lower Herrington Lake). Sample ID = SD-001(20)-LHL6B-171012





Photo 27: Sediment sample collected from LHL6C (Lower Herrington Lake). Sample ID = SD-001(20)-LHL6C-171012



Photo 28: Sediment sample collected from Dix River (downstream of the dam). Sample ID = SD-001(1)-DR1-171016



APPENDIX B: PHOTO LOGS

Appendix B6: Aquatic Vegetation and Invertebrate Sample Photo Log



Photo 1: Crayfish sample collected From CI1 (Upper Curds Inlet), Lower Herrington Lake. Sample ID = AI-001-CI1-171004



Photo 2: Crayfish sample collected From CI2 (Curds Inlet), Lower Herrington Lake. Sample ID = AI-001-CI2-171005



Appendix B6

Aquatic Vegetation and Invertebrate Sample Photo Log



Photo 3: Aquatic invertebrates (Mayflies) collected from CI3 (Curds Inlet), Lower Herrington Lake. Sample ID = AI-001-CI3-171005



Photo 4: Crayfish and snails collected from CI3 (Curds Inlet), Lower Herrington Lake. Sample ID = AI-001-CI3-171005



Appendix B6

Aquatic Vegetation and Invertebrate Sample Photo Log
Herrington Lake Corrective Action Plan: Phase I Technical
Memorandum and Phase II Plan
Mercer County, Kentucky



Photo 5: Crayfish collected from CI3 (Curds Inlet), Lower Herrington Lake. Sample ID = AI-001-CI3-171005



Photo 6: Crayfish sample collected from CI4 (Curds Inlet), Lower Herrington Lake. Sample ID = AI-001-CI4-171005



Aquatic Vegetation and Invertebrate Sample Photo Log



Photo 7: Crayfish sample collected from Dix River (below Dix Dam). Sample ID = AI-001-DR-171007



Photo 8: Crayfish sample collected from LHL1 (Rocky Fork). Sample ID = AI-001-LHL1-171012



Aquatic Vegetation and Invertebrate Sample Photo Log



Photo 9: Crayfish sample collected from LHL2 (Dix Dam). Sample ID = AI-001-LHL2-171012



Photo 10: Invertebrate sample collected from LHL2 (Dix Dam). Sample ID = AI-001-LHL2-171012



Aquatic Vegetation and Invertebrate Sample Photo Log



Photo 11: Crayfish sample (1 of 2) collected from LHL3 (Lower Herrington Lake). Sample ID = AI-001-LHL3-171012



Photo 12: Crayfish sample (2 of 2) collected from LHL3 (Lower Herrington Lake). Sample ID = AI-001-LHL3-171012



Aquatic Vegetation and Invertebrate Sample Photo Log



Photo 13: Invertebrate sample (1 of 2) collected from LHL3 (Lower Herrington Lake). Sample ID = AI-001-LHL3-171012



Photo 14: Invertebrate sample (2 of 2) collected from LHL3 (Lower Herrington Lake). Sample ID = AI-001-LHL3-171012





Photo 15: Crayfish sample collected from LHL4 (Lower Herrington Lake). Sample ID = AI-001-LHL4-171012



Photo 16: Invertebrate sample collected from LHL4 (Lower Herrington Lake). Sample ID = AI-001-LHL4-171012





Photo 17: Crayfish sample (1 of 2) collected from LHL5 (Lower Herrington Lake). Sample ID = AI-001-LHL5-171012



Photo 18: Crayfish sample (2 of 2) collected from LHL5 (Lower Herrington Lake). Sample ID = AI-001-LHL5-171012





Photo 19: Invertebrate sample (1 of 2) collected from LHL5 (Lower Herrington Lake). Sample ID = AI-001-LHL5-171012



Photo 20: Invertebrate sample (2 of 2) collected from LHL5 (Lower Herrington Lake). Sample ID = AI-001-LHL5-171012





Photo 21: Crayfish sample (1 of 2) collected from LHL6 (Lower Herrington Lake). Sample ID = AI-001-LHL6-171012



Photo 22: Crayfish sample (2 of 2) collected from LHL6 (Lower Herrington Lake). Sample ID = AI-001-LHL6-171012



Aquatic Vegetation and Invertebrate Sample Photo Log



Photo 23: Invertebrate sample (1 of 3) collected from LHL6 (Lower Herrington Lake). Sample ID = AI-001-LHL6-171012



Photo 24: Invertebrate sample (2 of 3) collected from LHL6 (Lower Herrington Lake). Sample ID = AI-001-LHL6-171012





Photo 25: Invertebrate sample (3 of 3) collected from LHL6 (Lower Herrington Lake). Sample ID = AI-001-LHL6-171012



Photo 26: Crayfish sample collected from HQ Inlet (Lower Herrington Lake). Sample ID = AI-001-HQ-171006



Aquatic Vegetation and Invertebrate Sample Photo Log



Photo 27: Invertebrate Sample Collected from HQ Inlet (Lower Herrington Lake). Sample ID = AI-001-HQ-171006



Aquatic Vegetation and Invertebrate Sample Photo Log



Photo 28: Aquatic vegetation sample collected from CI1 (Upper Curds Inlet), Lower Herrington Lake. Sample ID = AV-001-CI1-171004

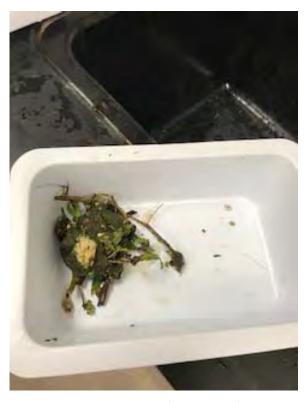


Photo 29: Aquatic vegetation sample collected from CI2 (Curds Inlet), Lower Herrington Lake. Sample ID = AV-001-CI2-171005





Photo 30: Aquatic vegetation sample collected from CI3 (Curds Inlet), Lower Herrington Lake. Sample ID = AV-001-CI3-171005



Photo 31: Aquatic vegetation sample collected from CI4 (Curds Inlet), Lower Herrington Lake. Sample ID = AV-001-CI4-171005



Aquatic Vegetation and Invertebrate Sample Photo Log
Herrington Lake Corrective Action Plan: Phase I Technical

Memorandum and Phase II Plan

Mercer County, Kentucky



Photo 32: Aquatic vegetation sample (1 of 2) collected from HQ Inlet, Lower Herrington Lake. Sample ID = AV-001-HQ-171006



Photo 33: Aquatic vegetation sample (2 of 2) collected from HQ Inlet, Lower Herrington Lake. Sample ID = AV-001-HQ-171006



Aquatic Vegetation and Invertebrate Sample Photo Log
Herrington Lake Corrective Action Plan: Phase I Technical

Memorandum and Phase II Plan Mercer County, Kentucky



Photo 34: Aquatic vegetation sample collected from LHL1 (Lower Herrington Lake). Sample ID = AV-001-LHL1-171012



Photo 35: Aquatic vegetation sample (1 of 2) collected from LHL2 (Lower Herrington Lake). Sample ID = AV-001-LHL2-171012



Aquatic Vegetation and Invertebrate Sample Photo Log



Photo 36: Aquatic vegetation sample (2 of 2) collected from LHL2 (Lower Herrington Lake). Sample ID = AV-001-LHL2-171012



Photo 37: Aquatic vegetation sample collected from LHL3 (Lower Herrington Lake). Sample ID = AV-001-LHL3-171012



Aquatic Vegetation and Invertebrate Sample Photo Log



Photo 38: Aquatic vegetation sample collected from LHL4 (Lower Herrington Lake). Sample ID = AV-001-LHL4-171012



Photo 39: Aquatic vegetation sample collected from LHL5 (Lower Herrington Lake). Sample ID = AV-001-LHL5-171012





Photo 40: Aquatic vegetation sample (1 of 2) collected from LHL6 (Lower Herrington Lake). Sample ID = AV-001-LHL6-171012



Photo 41: Aquatic vegetation sample (2 of 2) collected from LHL6 (Lower Herrington Lake). Sample ID = AV-001-LHL6-171012



Aquatic Vegetation and Invertebrate Sample Photo Log



Photo 42: Aquatic vegetation sample collected from Dix River (below Dix Dam). Sample ID = AV-001-DR-171007



Aquatic Vegetation and Invertebrate Sample Photo Log

APPENDIX C: FIELD MEASUREMENTS SUMMARY

Appendix C1: Lake Surface Water Profile Summary Table

Appendix C2: Fish Body Weight and Length Measurements

APPENDIX C: FIELD MEASUREMENTS SUMMARY

Appendix C1: Lake Surface Water Profile Summary Table

Appendix C-1: Surface Water Profiling Results Summary Table Herrington Lake Phase I Field Sampling Technical Memorandum Mercer County, Kentucky

						Stratif	fication										Overt	urn				
Sample Location	Sample Date	Sample Time (Start)	Water Depth (ft. bws)	Turbidity (Secchi Depth (ft. bws)	Water Quality Measurement Depth (ft. bws)	Dissolved Oxygen (DO)	Conductivity (mS/cm)	Water Temperature (c)	рН	Surface Water Sample Depth (ft. bws)	Surface Water Sample ID	Sample Date	Sample Time (Start)	Water Depth (ft. bws)	Turbidity (Secchi Depth (ft. bws)	Water Quality Measurement Depth (ft. bws)	Dissolved Oxygen (DO)	Conductivity (mS/cm)	Water Temperature (c)	pH s	Surface Water ample Depth (ft. bws)	Surface Water Sample ID
CI1 (Upper Curds Inlet)	October 14th, 2017	10:00 AM	10	6.5	5	4.03	0.038	21.83	7.4	5	SW-001(5)CI1-171014	December 11th, 2017	12:30 PM	4	3						2	SW=001(2)CI1-171211
CI2 (Central / Upper Curds Inlet)	October 14th, 2017	10:45 AM	17	6	10	4.38	0.365	21.76	7.98	10	SW-001(10)CI2-171014	December 11th, 2017	1:00 PM	8	3.5						4	SW=001(4)CI2-171211
CI3 (Central / Lower Curds Inlet)	October 14th, 2017	11:15 AM	27	6	10	4.49	0.348	21.79	8.14	10	SW-001(10)CI3-171014	December 11th, 2017	1:30 PM	18	6	9	7.03	0.408	13.51	8.04	25	SW=001(25)CI3-171211
CI4 (Lower/ Mouth of Curds	October 14th,	12:15 AM	75–90	7	20	3.50	0.339	21.74	8.11	20	SW-002(20)CI4-171014	December 12th,	9:15 AM								25	SW=001(25)CI4-171212
Inlet)	2017				70	1.28	0.300	20.1	7.82	70	SW-001(70)CI4-171014	2017										, ,
HQ (HQ Inlet)	October 4th, 2017	3:35 PM	16	5	10	3.33	0.368	22.33	8.24	10	SW-001(10)HQ1-171004	December 11th, 2017	1:45 PM	18	9						9	SW=001(9)HQ1-171211
LHL1 (Rocky Run)	October 6th, 2017	4:00 PM	75-110	6	20 60	2.85 0.70	0.314	22.1 19.23	8.07 7.74	20 60	SW-001(20)LHL1-171006 SW-002(60)LHL1-171006	December 11th, 2017	11:15 AM		8	25 	5.56	0.339	13.08	7.92	25	SW001(25)LHL1-171211
LHL2 (Dix Dam)	October 6th, 2017 October 6th,	11:21 AM	190	8	10 20 25 30 40 50 60 70 80 90 100 110 120 130 140 150 20 50 (overturn only)	5.65 4.11 3.83 3.55 2.32 1.94 3.04 1.77 1.72 1.63 1.65 1.40 2.84 2.95 2.57 3.08	0.313 0.313 0.316 0.319 0.333 0.295 0.283 0.279 0.272 0.262 0.245 0.246 0.249 0.221 0.230 0.0.228		8.56 7.86 7.89 7.92 7.56 7.6 7.6 7.47 7.47 7.46 7.48 7.5 7.56 7.62 7.67	25 50 100 20	SW-001(25)LHL2 SW-002(50)LHL2 SW-003(100)LHL2 SW-001(20)LHL3-171006	December 11th, 2017	9:15 AM	190	9	10 20 25 30 40 50 60 70 80 90 100 110 120 130 140 150 20	5.34 5.37 5.36 5.35 5.35 5.33 5.32 5.30 5.28 5.26 5.26 5.22 5.14 4.65 2.24 1.68 5.42	0.341 0.341 0.341 0.341 0.341 0.341 0.341 0.341 0.341 0.341 0.341 0.341 0.341 0.341 0.341 0.341 0.341 0.341	13.12 13.12 13.12 13.12 13.12 13.12 13.12 13.12 13.12 13.12 13.12 13.12 13.12 13.12 13.12 13.12 13.12 13.12 13.12 13.13 13.12 13.13 13.14 13.15 13.16 13.17 13.18 13.19 13.19 13.10 13	7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86	25	SW-001(25) LHL2 SW001(25)LHL3-171212
ETTEO	2017	0.00 T W	100		70 100	0.67	0.270	17.82	7.74	70 100	SW-002(70)LHL3-171006 SW-003(100)LHL3-171006	2017	12.4011	220	,	70 90	5.41 5.40	0.340	13.03	7.91	20	30001(20)21120 171212
LHL4	October 7th, 2017	3:00 PM	160	7	20 70 100	3.63 1.83 1.08	0.304 0.272 0.243	21.65 18.44 13.34	7.95 7.71 8	20 70 100	SW-001(20)LHL4-171007 SW-002(70)LHL4-171007 SW-003(100)LHL4-171007	December 12th, 2017	10:15 AM		9						25	SW001(25)LHL4-171212
HI (Hardins Inlet)	October 5th, 2017	3:56 PM	18	6	10	2.75	0.307	22.18	8.37	10	SW-001(10)HI1-171005	December 11th, 2017	2:35 PM	6	5						3	SW001(3)HI1-171211
LHL5 (NE of Mallard Cove / Cane Run)	October 7th, 2017	10:00 AM	158	8	20 70 100	3.95 1.18 0.90	0.304 0.274 0.258	21.95 17.83 13.12	7.73 7.22 7.32	20 70 100	SW-001(20)LHL5-171007 SW-002(70)LHL5-171007 SW-003(100)LHL5-171007	December 12th, 2017	10:45 AM		8						25	SW001(25)LHL5-171212
LHL6	October 7th, 2017	1:00 PM	130	8	20 50 (overturn only) 70	4.56 2.46 2.41	0.287 0.270 0.238	21.6 18.37 13.44	7.69 7.57 7.84	20 70 100	SW-001(20)LHL6-171007 SW-002(70)LHL6-171007 SW-003(100)LHL6-171007	December 12th, 2017	12:00 PM	200	7	20 50 70 90	5.05 5.05 5.00 4.98	0.330 0.330 0.330 0.329	13.08 13.08 13.08 13.08	7.87 7.87 7.87 7.87	25	SW001(25)LHL5-171212

Notes:

CI Curds HI Hardin

HQ HQ Inlet

LHL Lower Herrington Lake MHL Middle Herrington Lake DR Dix River

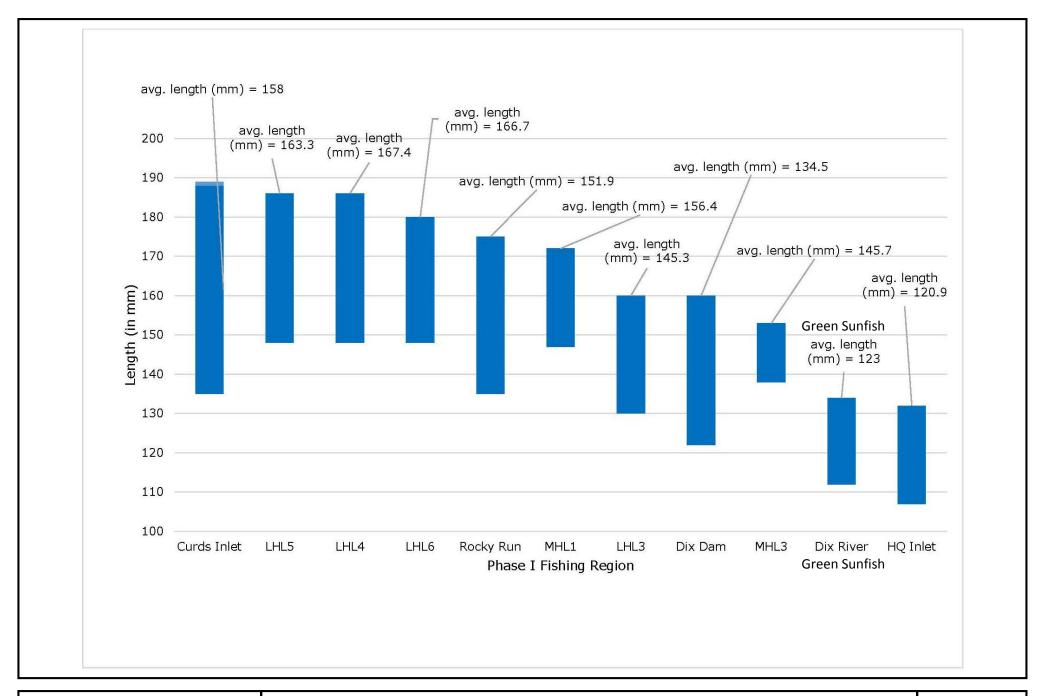
(mS/cm) microseimens per centimeter

ft. bws Feet below water surface SW Surface Water

-- no value
DO Dissolved Oxygen

APPENDIX C: FIELD MEASUREMENTS SUMMARY

Appendix C2: Fish Body Weight and Length Measurements

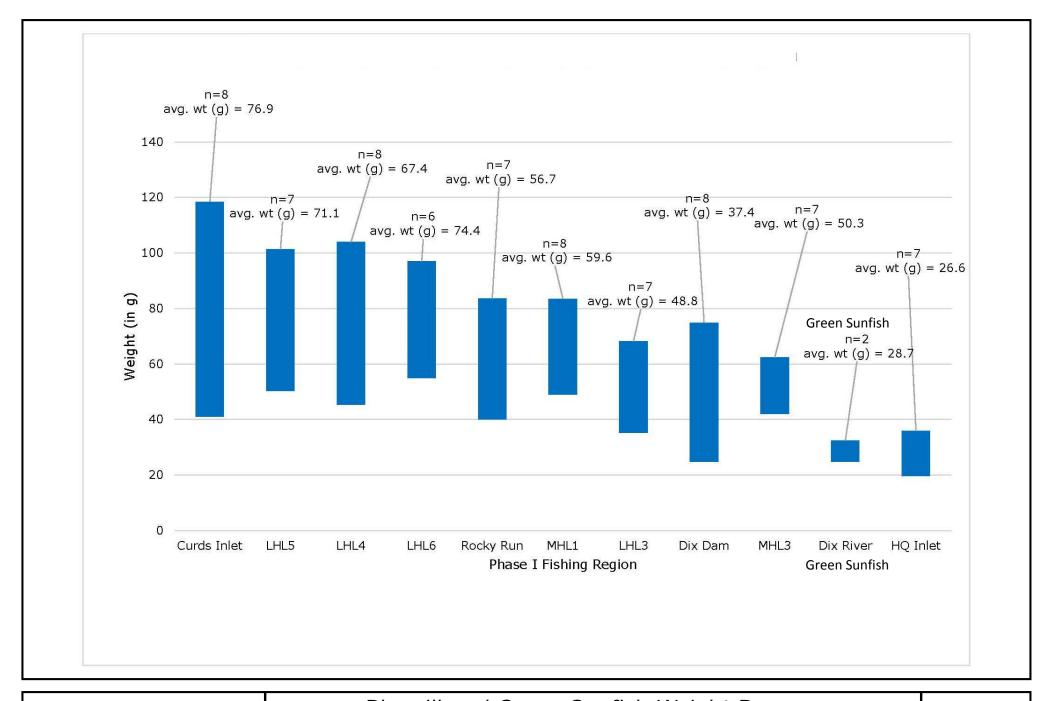




Bluegill and Green Sunfish Length Ranges (in millimeters) by Fishing Region

Herrington Lake CAP Phase 1 Technical Memorandum Mercer County, Kentucky Appendix C1-A

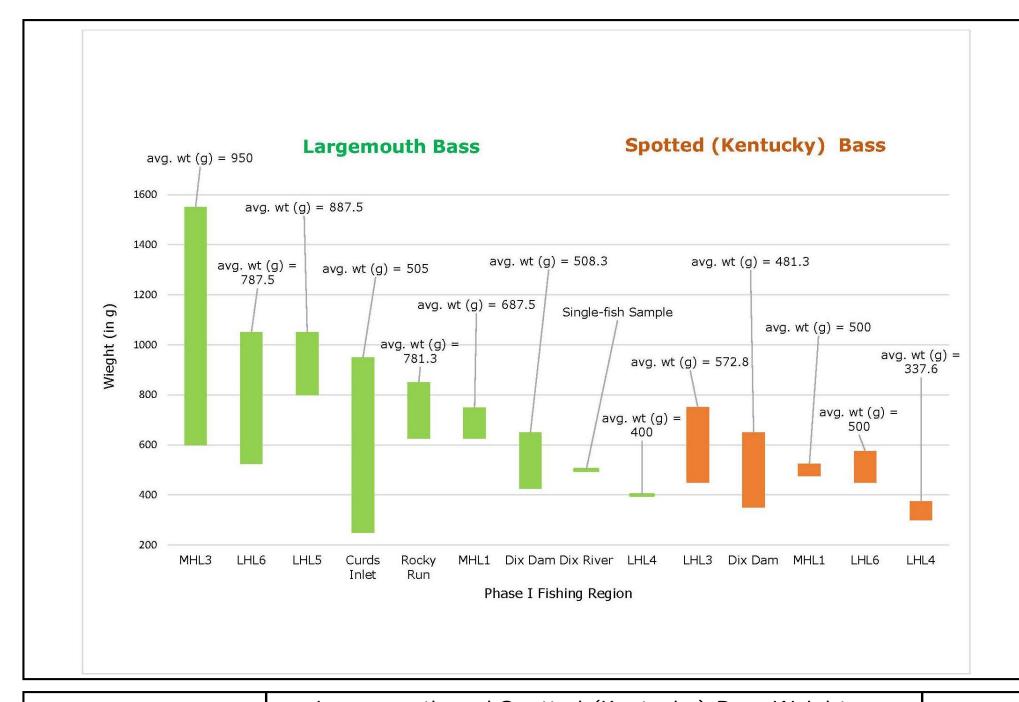
DRAFTED BY: AJS, April 17, 2018





Bluegill and Green Sunfish Weight Ranges (in grams) by Fishing Region

Herrington Lake CAP Phase 1 Technical Memorandum Mercer County, Kentucky Appendix C1-B

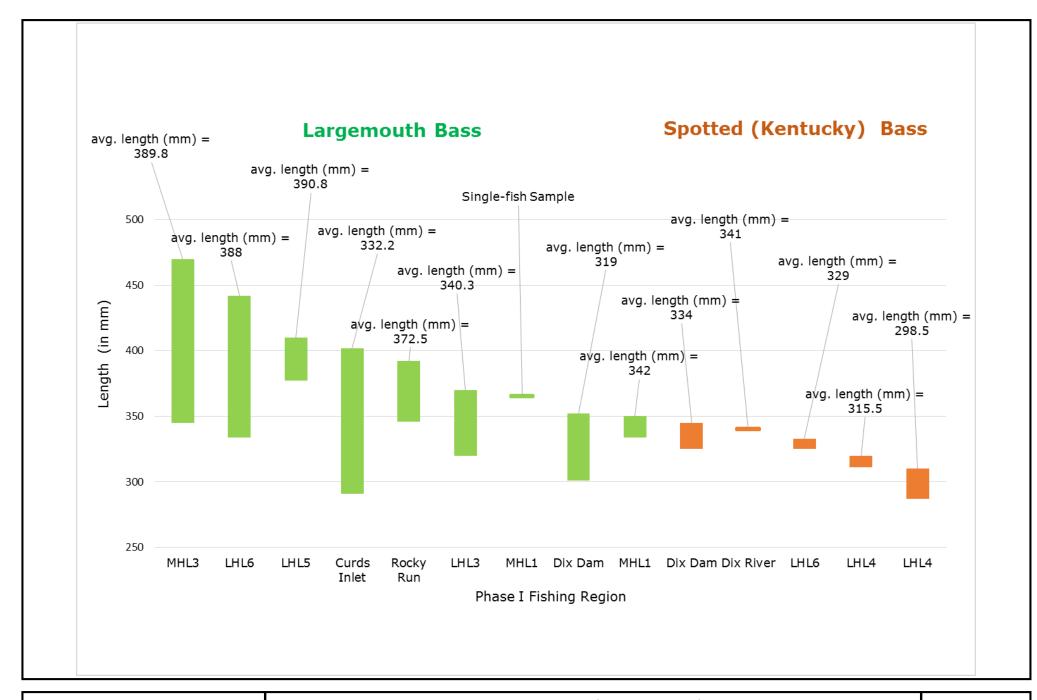




Largemouth and Spotted (Kentucky) Bass Weight Ranges (in grams) by Fish Sampling Region

> Herrington Lake CAP Phase 1 Technical Memorandum Mercer County, Kentucky

Appendix C1-C

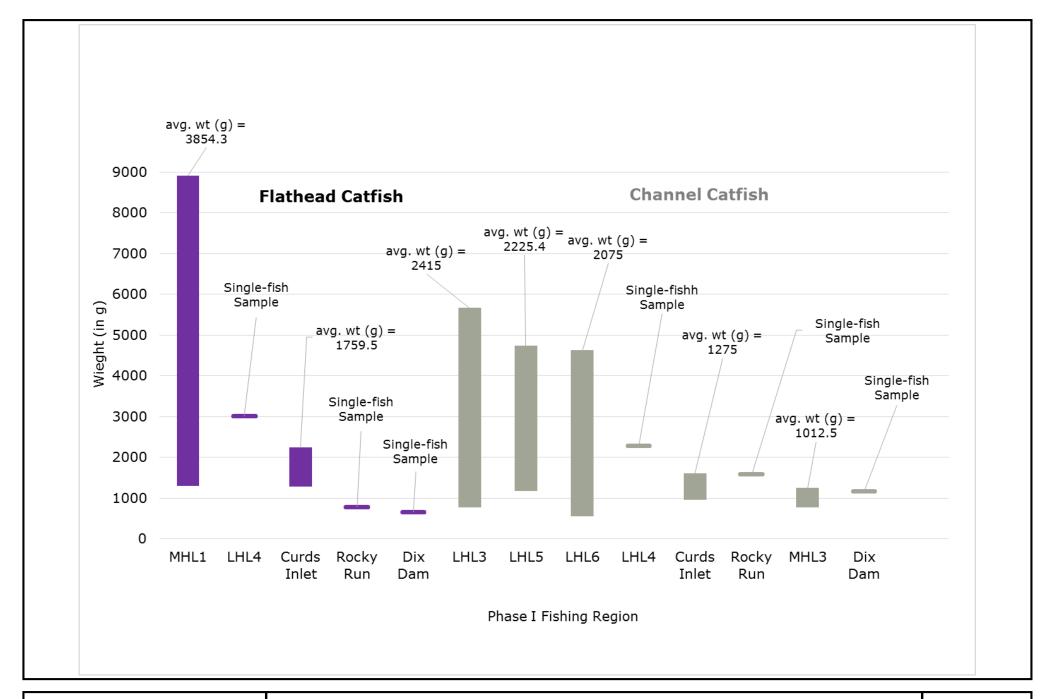




Largemouth and Spotted (Kentucky) Bass Length Ranges (in millimeters) by Fish Sampling Region

> Herrington Lake CAP Phase 1 Technical Memorandum Mercer County, Kentucky

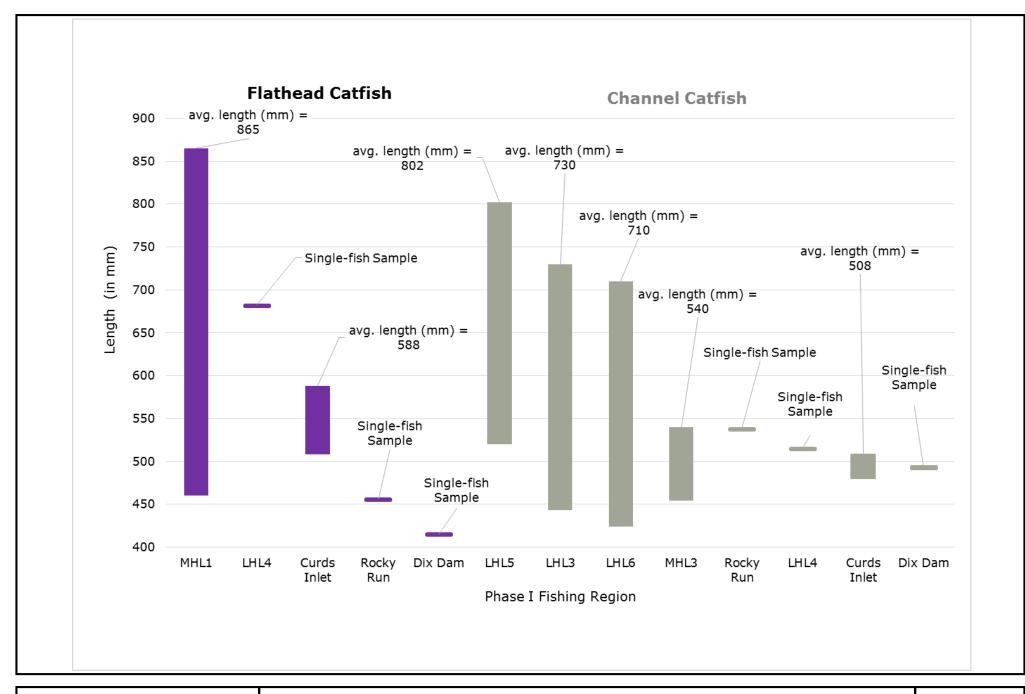
Appendix C1-D





Channel and Flathead Catfish Weight Ranges (in grams) by Fish Sampling Region

Herrington Lake CAP Phase 1 Technical Memorandum Mercer County, Kentucky Appendix C1-E





Channel and Flathead (Kentucky) Bass Length Ranges (in millimeters) by Fish Sampling Region

Herrington Lake CAP Phase 1 Technical Memorandum Mercer County, Kentucky Appendix C1-F

APPENDIX D: SAMPLE COLLECTION FIELD DATA SHEETS

Appendix D1: Fish Sample Data Sheets

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inty:	SC 1711	at/Long Upstre	am Reach:	
/Long Downst		w . m . w		
tfall #:	one): runoff event h		e (circle one): yes no low normal other	
w status (circa	one). Tunoze e, exe			Comments
Fish #	Genus	Species	Length (mm)	- Overs
001 51	LMB		402m /950m	F 7.87W
002 57	LMB		35-0/575	
003 52	LMB		291/325	
004 52	LMIS		323/425	
005 52	LINIB		295/250	
006 5/	Blockl		152/69.7	
007 57	B/034//		159/7411	
noth (mm) of	75%tile of Longest F	ish:	,	
otal # Fish Co	llected in Sample:		_	
ollected by:			Date: _	.Time:
The state of the s				Time

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			Time:	
		Lat/Long Upstr	eam Reach:	
Lat/Long Downstr				
Outfall #:	D	20 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	te (circle one): yes no	1
Flow status (circle	one): runoff event	high flow low	flow normal other	
Fish#	Genus	Species	Length (mm)	Comments
SI 001 008	Rloexill		135-/45.5	
C1 002 009	Rhost		138/41,1	
52 903 010	DI //			
	15/ Degi//		1	
52 004 011	Blogill		166/99,2	
52 005 012	Bloevill		168/90,0	
7 006	co to			~
007	Par 3			
7	75%tile of Longest	Fich.		
Total # Fish Col	lected in Sample:		=:-,-	
Collected by:			Date: _	.Tim
Control of			Date:	Tim

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tation#: tream / Location: CPDES Permit#: _	SC 17/1	30/ Lettle and Hestin	Time:		_
County:at/Long Downstr Outfall #: Flow status (circle	eam Reach:	Duplicate/Replicate	te (circle one): ye	s no	
Fish#	Genus	Species	Length (mm	Cor	nments
001013	ch cati	<u>t</u>	680/33	48 M	
002			1		
003	14-				
004			4.		
005					
006					
007					
Length (mm) of Fotal # Fish Col	75%tile of Longest lected in Sample:	Fish:			v.
Collected by:		×	Dar	te:	Time:
Relinquished by:			Da	te:	Time:
Received by:			Da	te:	Time:

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			eam Reach:	
tfall #:		uplicate/Replica	te (circle one); yes no	
Fish#	Genus	Species	Length (mm)	Comments
001014	FLATHEAD CA	TF15H	588 mm/2	HOG DUARY
002015	FLATHEAD		508 mu / 127	9
.003016	CHAUNELCATE	D1+	508 mm/1600	g
-004017	CHAUNEL		480 mmi/951	lg M
005				
006				
007				
ength (mm) of otal # Fish Co	75%tile of Longest	Fish:		.Time:
			Date:	Time:
				Time:

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Outfall #:	eam Reach:	Duplicate/Replicate	te (circle one): y	es no	verme logice of fire
Fish#	Genus	Species	Length (mr	n) Co	mments
001 St	Zantucke, Be	33	346	560N	F 574
	LMB		347	500	M
. 003	4				
004					火
005				*	1
006					
007					2
Length (mm) of '	75%tile of Longes ected in Sample:_	t Fish:			,
Collected by:		D	ate:	Time:	
Relinquished by:	7		D	ate:	Time:
			D	ate:	Time:

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Outfall #:		ouplicate/Replicat			
Fish.#	Genus	Species	Length		Comments
001	Bloogfill		132	36.0	×
0025/	Bluesill		132	26.1	
003	BluexIII		123	295	
004	Bluesill		119	. 265	
005	Blues/		115	22.6	1
006	Bluesi 11		107	19.7	-
007			18	26,1	
Length (mm) o	of 75%tile of Longest ollected in Sample:	Fish:	=		
Collected by:				Date:	Time:
Comotion of.					

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County:	SC17195	Lat/Long Upstro	eam Reach:		_
	tream Reach:	W 4 70 W			
	le one): runoff event		te (circle one): yes no low normal other		
Fish#	Genus	Species	Length (mm) 9	Com	ments
001	CH Cotfish	7	538/1575	M	
002	LMB		372/825	F	overs =
003	LMB		392 /850		
004 196	LMB		350 /825		
005/1/6	LMB		346/625		
-006		90			
-007					
Fotal # Fish Co	of 75% tile of Longest ollected in Sample:	Fish:			Timas
Collected by:	Duc / DES		Date: _		_ Time:
Relinquished by	y:		Date: _		Time:
Received by:	14		Date:		Time:

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		ream Reach:	Lat/Long Upstr	eam Reach:		
Out	ifall #:		Duplicate/Replica			
	Fish#	Genus	Species	Lengtl	ı (mm)	Comments
	- 001 00b	Blue gill		83.79	175 mm	
	-00 2 007	Blue gill			1 Somm	
	903 008	Blue gill		72.49	165mm	
	904 009	Bluegell		40.49	139inn	
	005010	Blue gill		2	154mm	
	006 oli	Bluegill		40.65	135mm	
	007 012	Bluegel		44.95	145mm	
То	tal # Fish Col	75%tile of Longes lected in Sample:_		_		- I
Co	llected by:		-		Date:	.Tin
Re	linquished by:				Date:	Tin
RA	ceived by:				Date:	Tin

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Stream / Location:			Tin	ne:		-
KPDES Permit#:						
County:		Lat/Long Upstr	eam Reach:			-
Outfall #:	one): runoff event	Duplicate/Replica				
Fish#	Genus	Species	Length (mm)		Comm	ents
-00T 043	FHC		7759	456mm		
002						
003						
004						
005						
006						
007						
	75%tile of Longes lected in Sample:_					*
Collected by:				_ Date:		.Time:
Relinquished by:				Date:		Time:
Received by:				Date:		Time:

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KPDES Permit#: SC 17	Lat/Long Upstr	eam Reach:		_
Lat/Long Downstream Reach: Dutfall #: Flow status (circle one): runof	Duplicate/Replica			
Eish# Genu	s Species	Length (mm)	Com	nents
ODY OF LMR		345/650	M	
51 902016 ILM B		375/425	M	
908017 LMR		332/450	M	
004 018 LM B		106/400	M	
2005 019 LM 13	>	290/325	M	
006		/		
007				
Length (mm) of 75%tile of l Total # Fish Collected in Sa	Longest Fish: mple:			1
Collected by:		Date: _		Time: _
Relinquished by:		Date: _		Time:
Received by:		Date:		Time: _

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Stream / Location:		Lat/Long Upstre	am Reach:		-
Outfall #: Flow status (circle o	Du	plicate/Replicat	e (circle one): yes 1 low normal othe		
Fish #	Genus	Species	Length (mm)	Comm	ients
12 001 cos_	- Bloox.11		27/31.1		
002 009 1	= H Colfosh	4	415-1650	Male	
903 010	It Cultable		193/1150	Mal	e
004'011	KY Bass		301/425		
005012	KY Buss		350		
906 013	KY Bus	1	21/500	Forer	4.00p
007 0/4	KY Rus		352/650		
Length (mm) of 7: Total # Fish Colle	5%tile of Longest F	ish:	_		T.
Collected by:			Date:		Time:
Relinquished by: _			Date:		Time:
Received by:			Date:		Time:

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status (circ		The state of the s	e (circle one): yes no low normal other	i.
Fish#	Genus	Species	Length (mm)	Comments
001	Bluesill		135/39.4	
002 5	Bluezill		145/47.1	
003	Blueall		166/74.8	
004	BluesIII		134/30.5	
005	Blogill		125/25.8	
006	Blogill		128/25.9	
007	Bluexill		122/24.9	
ngth (mm) tal # Fish C	of 75% tile of Longest I ollected in Sample:	Fish:	_	
11 atad by			Date:	Time:
llected by:	NY.*		Date:	Time:
andmanea r	oy:			Time:

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			eam Reach:	
fall #:		uplicate/Replica	te (circle one): yes no	
Fish#	Genus	Species	Length (mm)	Comments
001 5/	Hyprid		533	Dop M
002 5/	ity birk striper		54/ 21	30 F 26 29
003 52-	A halfripe		4/6 th	80 × M
004 5/	Kentaly		330 ' 53	7 F 219
005	ilents		320 45	O Supel
006 5/	Rentorch	Bood	332 s	w M
2001				
ngth (mm) of	75%tile of Longest llected in Sample:	Fish:		
tal # Fish Co		-	4.5	Time:
tal # Fish Co			Date:	

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County:		Lat/Long Upstre	am Reach:		_
Lat/Long Downstro Outfall #:		Duplicate/Replicat	e (circle one): yes	no	
	one): runoff event		low normal of		
Fish#	Genus	Species	Length (mm)	Com	ments
(5200T = 13)	Kentr. G	Bass	35"3	FORM	(F 4
S 2002 00 8	Kuty	Bus	370	750	
52003009	Kenly	Bas	337	STO	T
994010	Fluthead	Colfin	550	1700 m	FF
005					
006					
007					
Length (mm) of Total # Fish Coll	75%tile of Longest lected in Sample:_	t Fish:	=		
Collected by:			Date	e:	Time:
				e:	Time:

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	SCA1130		eam Reach:	
County:	tream Reach:	1000		
	Du		te (circle one): yes no	
	le one): runoff event			
***************************************			1	
Fish #	Genus	Species	Length (mm)/N	Comments
001	Bloegill		150/5/.1	
(002 51)	Bloegill		160/68.2	
003	Blogill		158/65.9	
004	Bluezill		144/45.0	
005	Bluesill		135/ 38.7	
006	Bloggell		140/ 37.4	
007	Bluesill		130/35.2	
Length (mm) o Total # Fish C	of 75%tile of Longest F	ish:		
Collected by:			Date:	Time:
		9	Date:	Time:

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Station #: [H[#3 樹	84.	Date: <u>108</u>	-/17	
Stream / Location:	- 1	37	Time:		
KPDES Permit#: _					
County:		Lat/Long Upsti	ream Reach:		
Outfall #:			nte (circle one): yes n flow normal other		
Fish#	Genus	Species	Length (mm) or	Comments	00
51 001 008	changelil-		485 /800	FNO ess -	
9020			/		
003					
004			To the l		
005					
006					
007					
	75%tile of Longest Fected in Sample:				
Collected by:			Date: _	Time:	
Relinquished by:			Date: _	Time:	
Received by:			Date: _	Time:	

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County:	1	Lat/Long Upstr	eam Reach:		
Outfall #:	tream Reach:Du	plicate/Replica			
Flow status (circ	le one): runoff event b	nigh flow low	flow normal othe	er	7
Fish#	Genus	Species	Length (mm)	Comments	-
(001)51	CH COTES!		443775	F many ?	0,9
002			1		
003	let				
004			r		
005					
006					
007					
	f 75%tile of Longest Fi illected in Sample:				
Collected by:			Date:	.Time:	
Relinquished by	7:	•	Date:	Time:	
Received by:			Date:	Time:	

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County:	HL3 lon: Hes ringto #:	at/Long Upst	ream Reach:			
Lat/Long Dowi Outfall #:	Duj	olicate/Replic	ate (circle one): yes	no		
Fish #	Genus	Species	Length (mm)		#L' mments	
001	Channel Catfig	CC	730mm		138.27	6
002					,	
003						
004						
005						
006						
007						
Cotal # Fish Co	of 75%tile of Longest Fis.	h:	_			
					Time:	_
telinquished by	y:		Date:		_ Time:	
Received by:			Date:		Time:	

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at/Long Downstr utfall #: ow status (circle		Ouplicate/Replicate			
Fish#	Genus	Species	Length (mm)	Comm	ents
001 SI	Lepomis	Mechadia	186	104gy	
002 5 1	Blue fill		182	88.8cm	- /
003 5 (Bluch 11		178	70.30	w \
004 5 /	Bluesell		168.	45,49	r
005 5 2	Bluxell		168	65.04	V
006 57	Bluesill		159	6429	V
007 52	Bluesill		150	53.3	-
Length (mm) of Fotal # Fish Co	75%tile of Longest llected in Sample:	Fish:	-		
Collected by:		*	Date	:	.Time:
Relinquished by			Date	:	Time:
			Date		Time:

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County:	SC 1711 301	at/Long Upstr	eam Reach:		
	eam Reach:				
			te (circle one): yes		
low status (circle	one): runoff event hi	igh flow low	flow normal oth	ier –	
Fish#	Genus	Species	Length (mm)	Com	ments
2 001 008	Bluexill		148/ 48.	+	
1 2001	KY Bass		287/300,2	Mal	e
1 903	KY Bass		310/375gr	For	my =30 4
2 /003	LM Bass		311/400'ew	F OU	ory = 2,7
005 KT	24 KY Bess		258 /200.6	5	
906 XT	R KY Buss		248/190.5	-	
-007			1		
Length (mm) of Fotal # Fish Col	75%tile of Longest Filected in Sample:	sh:			
Collected by:		•	Date		Time:
Relinguished by		A .	Date	:	Time:
remiquisited by.	-		Date		Time:

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CPDES Permit#: _					
County:		Lat/Long Upstre	am Reach:		
outfall #:	one): runoff event	Duplicate/Replicat			
Fish#	Genus	Species	Length (mn	1) Co	omments
6 001 52	LMB		370	400	
002					
003					
004			r =		
005					
006					
007					
Length (mm) of Total # Fish Col	75%tile of Longes lected in Sample:_	t Fish:	_		
Collected by:			Da	nte:	Time:
Relinquished by:		9	Da	ite:	Time: _
				ate:	Time:

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	£:		nom Donah			
	-177-1	Lat/Long Upstr	ream Keach:			
	stream Reach:					
		Duplicate/Replicate/				
low status (circ	cle one): runoff event	high flow low	flow norma	al other		
Fish#	Genus	Species	Length		Commen	ts
001	CC		22709	515mm		
002	FHC		30085	682mm		
003						
004				*		
005						
006						
007			40		-	
ength (mm)	of 75%tile of Longes	t Fish:				
Total # Fish C	ollected in Sample:_				1	
Collected by:				Date:	r	ime:
Relinquished b	y:			Date:]	ime:
				Date:	1	ime:

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Outfall #:Flow status (circle	one): runoff event		te (circle one): yes no	
Fish #	one): runoff event			
Pish#		mga non non	22011	
,)				
7 001	Genus	Species	Length (mm)	Comments
1 001	CHCF		802 /4737	Foray=82
(002	CHCatCash		645 /2440	4
2 003	CHCF		522/1175	
2 004	CHCF	50	1325	
2 005	LHCF		570 /1450	
006	Bluesal		172/90	
SI 007	LMB		377/825	Form = 600
Length (mm) of	75%tile of Longest	Fish:		
Total # Fish Col	lected in Sample:			
Collected by:			Date:	Time:
			Date:	Time:

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			eam Reach:	
Outfall #:		Duplicate/Replicat	te (circle one): yes no	
Fish#	Genus	Species	Length (mm)	Comments
1 901 008	LMB		37/900	
(002/05/	CMB		410/1050)
2 003 010	LINB	1	398/900	
3 004011	LMB		378 /800	
4 0050/7	LLMB		90/850	
006				
007				
Length (mm) of Fotal # Fish Co	75%tile of Longes llected in Sample:	st Fish:		
Collected by:		1	Date: _	.Time:
Relinguished by	:	4	Date: _	Time:
			Date:	Time:

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County: Lat/Long Downst		Lat/Long Upsta	eam Reach:		6
Outfall #:		Duplicate/Replicate/high flow low			
Fish#	Genus	Species	Length	(mm)	Comments
001 013	Bluegill		96.59	177mm	
002 014	Bliegill		101.49	186mm	
003 0(5	Blaegill		83.15	167mm	
004 ₀₁₆	Bluegell		56.05	issmu	
005 017	Bluegill Bluegill Bluegill			155 mm	
006 018	Bluegill			148 mm	
007019	Bluegil			152mm	
Length (mm) of Total # Fish Co	f 75%tile of Longes llected in Sample:_	t Fish:		Date:	Ti
	:			Date:	Ti
Received by:				Date:	Ti

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unty:	stream Reach:		am Reach:e (circle one): yes		
ow status (circ	cle one): runoff event	high flow low f	low normal other	er	
Fish#	Genus	Species	Length (mm)	Comn	ients
001	CH Latton		710/462	Fore	1=118 8
002	CH CF		soo/ira	0	
003	KY Bars		333/475	Fora	14 = ST
004	Hybrolstrip	e	503/1825	5 M	
005	Hybridstrip	0	450/1650	Fore	19 13.
006	typordstripe		495/1800		
007		4.	/		
ength (mm) Cotal # Fish C	of 75%tile of Longest Collected in Sample:	Fish:			
Collected by:			Date:		Time:
Relinquished l	by:		Date:		Time:
			Date:		Time:

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KPDES Permit#: County: Lat/Long Downstr Outfall #: Flow status (circle	ream Reach:	Lat/Long Upstx Duplicate/Replica high flow low	nte (circle on	e): yes no	
Fish#	Genus	Species	Lengtl	n (mm)	Comments
-001 007	BLUEGILL		76.69	171 mm	
1002008	Dlue sill		90 129		
003 009	Bluesill		97.09	173mm	
004 010	Blues://		559	148 mm	
005 011	Blues: 11		65.49	167 nm	
006	BlugII		62.29	161 mm	
007013	LMB		5259	334 mm	
Length (mm) of Total # Fish Col	75%tile of Longes lected in Sample:_	t Fish:			
Collected by:				Date:	Ti
Relinquished by:				Date:	Ti
Received by:				Date:	Ti

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Station #:				me:	
County:		Lat/Long Upstr	ream Reach		
Outfall #:	ream Reach:	Duplicate/Replica			
Fish #	Genus	Species	1	th (mm)	Comments
≥0010i4	KY Bass		4503	329mm	
002 _{OLS}	KY Basj		5759	325mm	
003	· S				
004				·	
005					
006					
007					
Length (mm) of Total # Fish Col	75%tile of Longest lected in Sample:_	t Fish:	_		
Collected by:				Date:	Time:
Relinquished by:		~		Date:	Time:
Received by:				Date:	Time:

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PDES Permit#:					
ounty:		Lat/Long Upstr	eam Reach:		
utfall #:	ream Reach: e one): runoff even	Duplicate/Replica			
Fish #	Genus	Species	Lengt	h (mm)	Comments
1001-016	LMB		10509	442mm	
002 017	CC		5509	424mm	
-003	2				
004				¢	
005					
006					
-007					
Length (mm) of Fotal # Fish Co	f 75%tile of Long llected in Sample	est Fish:		Detri	Time
Collected by:				Date:	
Relinquished by				Date:	Time
					Time

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Station #:	<u>L 6</u>			d 13, 2	
	1:		Time:		_
County:			ream Reach:		-
	ream Reach:		NAC - O Landau III		
Outfall #:			ate (circle one): yes		
Flow status (circl	e one): runoff event	high flow low	flow normal oth	ier	
Fish#	Genus	Species	Length (mm)	Com	ments
001 018	CC		1925 g 603 m	m	
002					
003					
004					
005					
006					
007					
	75%tile of Longest l llected in Sample:				
Collected by:			Date:		Time:
Relinquished by:			Date:		Time:
Received by:			Date:		Time:

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	ream Reach:	Lat/Long Upst	ream Reach:	-	-
fall #:	D	uplicate/Replicate	ite (circle one): yes	no	
w status (circle	e one): runoff event	high flow low	flow normal of	ther	
Fish #	Genus	Species	Length (mm)	Com	ments
001		BB	146 mm	48.98	
002	Sauple)	BG	153 mm	57.78	
003		BG	152mm	62.49	
004		BG	145mm	47.89	
005	Sample 3 Zof 2	BG	138:nm	42.09	
006	20f2 (135	Musman	49.33	
007		BG	141 mm	44.13	
	75%tile of Longest I lected in Sample:	Fish:	_		
llected by:			Date	0	Time:
linquished by:			Date	Y	Time:
ceived by:			Date		Time:

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unty:	1	Lat/Long Upst	ream Reach:		
ıtfall #:	tream Reach:Du		nte (circle one): y		
Fish #	Genus	Species	Length (m)	m) wt(g)	nments
00x 8	Sample	CC	505mm	11500	3,26.13
0029	10f2 (CC	540 mm	12500	
0.000/10	Sample 5	CC	454 mm	7753	
09411	20f Z.	CC	474mm	8759	
00512	Sample	LMB	470mm	1550	3,12,3g
09/8/13	10f2	LMB	385 mm	9000	
00714	Sample 2 of	LMB	385 mm	9000	3
	75%tile of Longest Fi llected in Sample:			G	his is
ollected by:			Da	nte:	_ Time: _
elinquished by			Da	nte:	Time:
eceived by:			De	ite:	Time:

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County:		Lat/Long Upstr	eam Reach:		-
			te (circle one): yes flow normal ot		
Fish #	Genus	Species	Length (mm)	Con	nments
0015	Sample	LMB 364	364 nm	8003	
0071-6	2092 (LMB 345mm		600	5	
00317	2135				
00418					
00\$19					
00670					
007					
	75%tile of Longes llected in Sample:_				
Collected by:			Date:		Time:
Relinquished by:			Date:		_ Time:
Received by:			Date:		Time:

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Station #: MIL-1

Stream / Location: Derrington Lake

County:		Lat/Long Upstr	eam Reach: _			
at/Long Down	nstream Reach:					
Outfall #:		Duplicate/Replica	te (circle one):	yes 1	no	
Flow status (ci	rcle one): runoff event	high flow low	flow norma	othe	er	
Fish #	Sa onplat	of 2 Species	Length (mm)	wilg) Com	ments
001	ACMORDAGOS -	LMB	366	nn	7509	male
002	Sample	KYB	334 mm		7509, male	
003	1 081	KYB	350 mm		52591	J
004	Sample	FC	511 mm		1350g, 11.55	
005	1062	FC	460 4	460 mm 13		
006	Sampl S	FC	620 mm		28653	
007	2052	FC	865 m	u	89133	
	of 75%tile of Longest Collected in Sample:_	Fish:				(4)
Collected by:	-1_			Date: _		Time: _
Relinquished b	oy:			Date:		Time: _
Received by:				Date:		Time:

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			eam Reach:		_
utfall #:	stream Reach: Du cle one): runoff event	plicate/Replica			
Fish #	Genus	Species	Length (mr	n) Wit (s) omments
00# 8	Yrof Sample toff	Be	160 mm	58,5	85
002	•				
003					
004					
005					
006					
007					
	of 75%tile of Longest F				
ollected by:	4,=====================================		Da	ite:	Time:
elinquished by	y:		Da	ite:	Time:
eceived by:			Da	ite:	Time:

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			eam Reach:			_
utfall #:	eam Reach: one): runoff event	Duplicate/Replica): yes		
Fish #	Genus	Species	Length	(mm)	Com	ments
0,9116		BB	147 m	и	51.5	5
00217	Sample }	B6	147 m	M	52.6	5
003.18	2 of 2	BG	147m	M	52.69	â
004						
005						
006						
007						
	5%tile of Longes ected in Sample:_					
collected by:				Date:		Time:
elinquished by: _				Date:		Time:
eceived by:				Date:		Time:

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County:		Lat/Long Upstr	eam Reach:			_
Lat/Long Downs Dutfall #: Flow status (circ	tream Reach:	uplicate/Replica	te (circle one):	yes n	0	
Fish#	Genus	Species	Length (n	nm)	Comn	nents
00/9	1 Sample 1 of	LMB	365 mm		6253	
09210	Sample 2 of 2	LMB	347 mm		5508	
003(1		LMB	345 mm		5255	
09412		BE	161 mm		55.65	
005/13	Sample 16F2)	BG	165 mm		73.78	
09/4/4		BG	172 mm		83.58	
097 15	Sample 20+2	BG	152 mm		51.78	
	f 75%tile of Longest I dlected in Sample:	Fish:				
Collected by:			I	Date: _		Time:
Relinquished by	*			Date: _		Time:
Received by:			1	Date:		Time:

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PR1 CHAIN-OF-CUSTODY DIX RIVER (Below Dam)

County:		Lat/Long Upstr	eam Reach:		_
Lat/Long Downstr Outfall #: Flow status (circle			te (circle one): yes flow normal ot		
Fish #	Genus	Species	Length (mm)	Com	ments
001	(Green Sunfish	(ESF)	159 mm,	81.112	3
Sample 1 of	} "	(GSF)	132 mm	39.85	
003	H		119 mm	24.58	
004	("		105mm	21.68	
Sample 2sf2) 11		94 mm	14.53	
006	/ "		96 mm	14.19	
007	"	V	92mm	12.19	
ength (mm) of 7	1 ★J = 3) So. 5%tile of Longest F ceted in Sample:	wple 2, N = ish:	8	V	
Collected by:			Date:		Time:
elinquished by: _			Date:		Time:
teceived by:			Date:		Time:

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Date: 10-16-17
Time: 1630

SELENIUM FISH TISSUE CHAIN-OF-CUSTODY

Dix River

Station#: Dill

Stream / Location: __

KPDES Permit#	f:					
County:	1	at/Long Upstro	eam Reach: _			
at/Long Downs	stream Reach:					
Outfall #:	Du	plicate/Replicat	te (circle one)	: yes n	10	
Flow status (circ	ele one): runoff event h	igh flow low i	flow norma	l othe	r	
Fish #	Genus	Species	Length	(mm)	Com	ments
8 100	Green Sunfish	(GSF)	96 mm		14.29	
0029 Contra	d) ii	()	87 mm		11.99	
003 10	7 35	iv	92 mm		10.35	
00411	11	tt.	79 mm		8.05	
00512 Sauges 1 of	& Blues, 11	136	134 mm		32.55	
00613		42	112 mm		24.85	
00714	Longear Sunfish	LE	109 mm		26.13	
	f 75%tile of Longest Fi ollected in Sample:	sh:				
Collected by:				Date: _		Time:
Relinquished by	v:			Date: _		Time:
Received by:				Date:		Time:

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County: Lat/Long Downs Outfall #:	tream Reach:		ream Reach:		-
	le one): runoff event		ate (circle one): yo flow normal	other	
Fish #	Genus	Species	Length (mm		nments
odn (5	Large would Boss	LMB	341mm	5005	Ovary= , 7.89
00216	Blowntract	BT	310 mm	2528	3516g
003/17	SpottedSuden	55	256 mm	1609	23.05
Savy 18 /	11	h	207mm	875	
00\$19	1.	55	350mm	5003	
00620	Hogsucker	145	287 mm	2855	9.92
007 21	И	45	259 mm	2053	9.929
	75%tile of Longest Fi lected in Sample:	sh:			
Collected by:			Date	e:	Time:
Relinquished by:			Date):	Time:

APPENDIX D: SAMPLE COLLECTION FIELD DATA SHEETS

Appendix D2: Lake Profiling and Surface Water Collection Data Sheets

Herrington Lake Transect Location CT-1		
GPS Coordinates (or where they can be found if collected electronically)	CURPS INLET	
Investigators: BG KL	Date: 10-14-17 Time: 10-06	
Temperature/Depth/Oxygen Probe Used		
Probe Calibration Date 16-14-17		
Secchi Disk Depth 65		

Depth (feet)	DO (mg/L) (Cond-		C(oC	or oF)	Stratification Layer (if known)	Was Surface Water Collected? (Y,N)	Sample ID (if collected)	Observer Notes, if any
>	4.03	0.382	21.83	1.40	MONE	У		3W-001(5)-CII-
						/		
_		-						
-	-	-	-					
		1.		-				
-	-							
								The state of the s
		-	-					
-		-						
_	-	1	4					
_		1						
_					,			
110					W			
					*			
		-						
-	-	1	-					
		1						

Notes DO Dissolved oxygen

Temp

°C

°F

Temperature
Degrees Celcius
Degrees Fahrenheit
milligrams per liter mg/L Y/N

Yes or No

	1	
Page	of	

Herrington Lake Transect Location CI - 2			
GPS Coordinates (or where they can be found if collected electronically)	CURPS INL	ET	
Investigators: BG KL		Date: 10-14-17	
BG, KL		Time: 1045	
Temperature/Depth/Oxygen Probe Used			
Probe Calibration Date 16-14-17			
Secchi Disk Depth 6 C+			

Depth (feet)	DO (mg/L) Cond. 4.38 0.365		1000	mp or oF) PH	Stratification Layer (if known)	Was Surface Water Collected? (Y,N)	Sample ID (if collected)	M	J
D	4.38	0.365	21.76	7.98	SNONE	У		36-00100)-022-	1/
)+(
				-					
		+							
		-		-					
		+		ern -					
		+							
	1								
				1					
			-						
							1		
ia.			1						
	2	-							
		1							
		-		-					1
				-		-			1
-		1		-	-				1
	-	+	-	1				-	1
	-	+		1					1
		-		1					1
-		-						N Comments	1
-		-		-					1
							7 - 1		1
		1							
		1							1

Notes

Dissolved oxygen DO

Temp

Temperature Degrees Celcius °C

°F

Degrees Fahrenheit milligrams per liter Yes or No

mg/L Y/N

Herrington Lake Transect Location			
GPS Coordinates (or where they can be found if collected electronically)	CURDS INLET		
Investigators: BG, KL		Date: 10-14-17	
1861, KL		Time: 11:15	
Temperature/Depth/Oxygen Probe Used			
Probe Calibration Date 10-14-17			
Secchi Disk Depth 64+			

Depth (feet)	DO (mg/L) 6 Cond.		DO (mg/L) Cond Temp (oC or oF)	Stratification Layer (if known)	Was Surface Water Collected? (Y,N)	Sample ID (if collected)	Observer Notes, if any	-10	
10	4.49	0.348	21.79	8.14	NONE	V		30-001(10)-013-1	711
13.77						/			
_	1								
	-	-							
	+								
	-								
				N.					
				1					
100			F						
				1					
_		-							
		+	-						
		-		1					
			-						
							4		
771				1					
-	1								

Notes DO Dissolved oxygen Temperature Degrees Celcius

Temp

°C

°F Degrees Fahrenheit

milligrams per liter Yes or No mg/L Y/N

1		
Page	of/	

Herrington Lake Transect Location CT4			
GPS Coordinates (or where they can be found if collected electronically)	CURPS INLET		
Investigators: R		Date: 10-14-17	
BG KL		Time: 1215	
Temperature/Depth/Oxygen Probe Used			
Probe Calibration Date 10-14-17			
Secchi Disk Depth 7 👫			

Depth (feet)	(feet)	DO (mg/L)		DO (mg/L)		DO (mg/L) Cond. Temp (oC or oF)	(oC or oF) (if		Was Surface Water Collected? (Y,N)	Sample ID (if collected)	Observer Notes, if any
20	3.50	0.339	21,74	8.11	NOVE	У		30-001/201-UM-17			
70	7.28	0.334	20.10	7.82	NONE	″ý		SD-001 (70)-029-171(
1											
-			į.								

Notes DO Dissolved oxygen

Temp Temperature

°C Degrees Celcius

°F Degrees Fahrenheit

milligrams per liter Yes or No mg/L Y/N

Herrington Lake Transect Location HO - 1	
GPS Coordinates (or where they can be found if collected electronically)	HQ Inlet
Investigators:	Date: 0.43, 2017
Temperature/Depth/Oxygen Probe Used	ST 650 MPS
Probe Calibration Date Oct 3, 2017	MATER DEPTH 16 FT
Secchi Disk Depth 5 ++	

Depth (feet)	DO (mg	g/L)	Tem (oC or	oF)PH	Stratification Layer (if known)	Was Surface Water Collected? (Y,N)	Sample ID (if-collected) OEPTH	Observer Notes, if any
10	3.33	0368	22.33	8,24	NONE	4(10/4)	10 ft	SW001(10)-HQ1-
	,							
					1			
-								
			1				7.02	
						1		
						1		
							-	
30								

Notes DO Dissolved oxygen

Temp

Temperature Degrees Celcius °C

°F Degrees Fahrenheit

milligrams per liter

mg/L Y/N Yes or No

	1
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Herrington Lake Transect Location HI - 1	
GPS Coordinates (or where they can be found if collected electronically)	Hardins Inlet
Investigators: A Smith, B	Date: 0(+3,2017) Time: 1556
Temperature/Depth/Oxygen Probe Used	USE 650 MPS
Probe Calibration Date 3, 2017	WATER TEM DEPTH: 18 FT
Secchi Disk Depth 6 C+	

Depth (feet)	DO (r	ng/L)	Tem (oC or	р oF) <i>Р</i> Ц	Stratification Layer (if known)	Was Surface Water Collected? (Y,N)	Sample ID (if-collected) DEPTH	SAMPLE 10 Observer Notes, If any	
10	2.73	0.307	22.18	18:37	NONE	9(10/5)	10F+	SW-001(10) HT1 -	17100
						100			
					-				
						C 47			-
		1							-
	7								1
									1
	91								
-		1							1
2			I.						
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		1			1				
							N .		
									-
									1
		1					**		1
									1

Notes DO

Temp

°C

°F

Dissolved oxygen Temperature Degrees Celcius Degrees Fahrenheit milligrams per liter Yes or No

mg/L Y/N

GPS Coordinates (or where they can be found if collected electronically) Trumble Verse	Rocky Fork / Rock Run
nvestigators: A. Smith B. Gaibe	Date: OC+. 6 2017 Time: 16:00
Temperature/Depth/Oxygen Probe Used	451 650 MDS
Probe Calibration Date OC+ 6, 2017	
Secchi Disk Depth (++ Wa-	ter Deoth! 75ft-110ft

Depth (feet)	DO ((mg/L)	Ter (oC c	np or oF)	Stratification Layer (if known)	Was Surface Water Collected? (Y,N)	SAMPLE Sample 1D (if collected) Depth	SAMPLE Observer Notes, if any 1.10. 4	
20	2.85	0.314	22.	8.09	Epilimnion Lake Botton	Y	2044	SW-001 (2084) LHL1	- i-
10	0.10	0.292	19.23	7.74	Lake Botton	Y	60ft	SW-001 (2084) LHUI SW-002 (60) LHUI	- 1-
-		+							
		-	-						
		+							
		-							
		+							
-		-							
						,			
					T.				
		1							
								*	

Notes DO Dissolved oxygen

Temp

Temperature
Degrees Celcius °C

Degrees Fahrenheit °F

milligrams per liter Yes or No

mg/L Y/N

Herringtor	Lake Transec	t Location	Lt	11-2	(Two)				-
GPS Coord	dinates (or who	ere they can	n be found if		K) ix	Dam		
Investigate	orei	mith	, R.	Gar	ba		Date: Oc	112 PAM	1
Temperatu	re/Depth/Oxyg	en Probe L	Jsed	0.	1 45	I 150	mos		1
Probe Cali	ibration Date	Och		17		0 10	_		
Secchi Dis	sk Depth	8 6+	1		WAT	EN DI	EPTH:	19564]
Depth (feet)	DO (m	Cond	Temp (oC or oF)		Stratification Layer (if known)	Was Surface Water Collected? (Y,N)	Sample ID (if collected) OEPTL	SAWPLE Observer Notes, if any	
10	\$ 5.65	10:313	22.47	1 8.56			0 = 01	C 121 (24) 1112	17100
20 30 40 50	4.16	0.313	22.64	7.96	Epillmnian	y	25 F4	SW-001 (25) CHLZ	-171001
30	3.55	0,319	21.69	7.92					+
40	2.32	0.333	20.24	7.86	Topof	y	506+	5W-002(50) CHLZ	-17100,
50	3,04	0,283	19.44	7.6	The modin	-0	30++	JW-001-1-101100	11100
70	1.17	6.274	17.71	15:47	THOMOCITY				
40	1.77	6.372	15.76	19.44					
90	1,63	6-262	14-16	7,41]
160	1.05	10.245	12.82	7,46	Hypolimaion	4	10017	SW-003(100) CHLZ	-17100
110	1.13	0.24/	12.06	7.48	11				-
120	01.90	0.244	11.35	7.5					4
130	2.84	0.24	10.64	7.56					-
140	2,93	0.23	9.81	7.62					-
150	2.57	0.228	9.5	7.70					-
160	1,00	0.206	1.04	1.76			-	***	1
		-							
]
	1/2			1					
									4
					14-1-5				4
									-
								-	-
		-		-					
						,			
			-						

Notes

Dissolved oxygen DO

Temp

Temperature Degrees Celcius °C

Degrees Fahrenheit °F

mg/L Y/N milligrams per liter

Yes or No

Herrington Lake Transect Location 2/12-3	
GPS Coordinates (or where they can be found if collected electronically)	LHL3-Mile Marker 1 (One)
Investigators: A Smith B Gaibe	Date: 0C+ 6 2017 Time: 17:60
Temperature/Depth/Oxygen Probe Used	451 (50 MOS
Probe Calibration Date OCT. 6 2617	
Secchi Disk Depth & P	water Vepth 160

Depth (feet)	DO ((mg/L)	(oC	or oF)	Stratification Layer (if known)	Was Surface Water Collected? (Y,N)	Sample ID (if collected)	SAMOLE Observer Notes, if any J. D.
20	3.08	0.315	22.06	7.97	Epilimnion	y	20 44	5W-001(20) LHL3 5W-007(70) CHL3 5W-003(100) CHL3
70	0.67	0.270	17.52	7.74	Thermocline	'y	704	SW-002(70) CHL3
100	V-68	0.248	13.28	7.98	Hypolinnian	, A	jostf	SW-003(100) CHL3
					-		-	
			-					
			ı					
						*		
		-				3		

Notes DO Dissolved oxygen

Temp

°C

Temperature
Degrees Celcius
Degrees Fahrenheit °F

milligrams per liter Yes or No

mg/L Y/N

	5	1
Page	of	

Herrington Lake Transect Location LHC- 4	
GPS Coordinates (or where they can be found if collected electronically) See Trunkle Unna	Mile 1/Mile 2 Marken
Investigators: AJS, BG	Date: 0 c + 7 , 2017 Time: 1500
Temperature/Depth/Oxygen Probe Used	USI 850 MOS
Probe Calibration Date Oct 7, 7017	
Secchi Disk Depth	Water Depth: 160 ft

Depth (feet)	6	DO (mg/L)		oF)	Stratification Layer (if known)	Was Surface Water Collected? (Y,N)	Sample ID (if collected)	Observer Notes, If any	
20	3.63 NH	36.384	21.65 NDA	1.95	Epilimnion	4	20	5W001(20) LHLY -	1
70	7.23	0.292	18.44 1	7,11	Metaliumion	7	70	SW002 (70) CHL4-	1-
00	1.08 0	0.213	13.31	8,00	Hypolimnion	55	100	SW003(100)CHL4-	rr
			L.					10	
					Y				
-									-
	1	-	1						1

Notes DO

Temp °C

Dissolved oxygen Temperature Degrees Celcius Degrees Fahrenheit milligrams per liter Yes or No °F

mg/L Y/N

Herrington Lake Transect Location LIL-5	
GPS Coordinates (or where they can be found if collected electronically)	NE of Mallard Cove / Cane Run
Investigators: A. Smith B. Gaibe	Date: 664. 7 2017 Time: 10100
Temperature/Depth/Oxygen Probe Used	4SI 850 MOS
Probe Calibration Date oct. 7 2017	
Secchi Disk Depth & F-	Water Depth: 138

식성 Depth (feet)	DO A	(mg/L)	(oC	emp or oF) PH	Stratification Layer (if known)	Was Surface Water Collected? (Y,N)	Sample ID (if collected) Depth	Sample Observer Notes, If any I.D.	
0	₹3.95	0.304	21.45	7.73	eailmrion	Y	20 41	SW001 (20) LHL5	-1
70	1.18	0.274	17.83	7.22	Ma ten lucen ma	y	70 84	5W002(70) CHL5	-1
66	0.90	0.258	13.12	7.32	HypoLimnion	У	100 Ft	SW003 (100) LH(5	-1
						£.			
						jų.			
			,						
					<i>"</i> "				
	-								

Notes DO Dissolved oxygen Temperature Degrees Celcius Degrees Fahrenheit milligrams per liter Yes or No Temp °C °F mg/L Y/N

Herrington Lake Transect Location LHL-6	
GPS Coordinates (or where they can be found if collected electronically) See Trimble Yuma	Mile 3/Mile 4 Marken
Investigators: AJS, BG	Date: 0 c+ 7. 7017 Time: 1300
Temperature/Depth/Oxygen Probe Used	NOVE
Probe Calibration Date	INATER DEPTH (130+4
Secchi Disk Depth 8 F+	

Depth (feet)	16	cond.	Ten (oC o	PH	Stratification Layer (if known)	Was Surface Water Collected? (Y,N)	Sample ID (if collected)	Observer Notes, if any	
20	456 NA	0270	21.6 NO	7.69	Epilimnion	4	10	SWOO1(20)(HL6-	1
0	246 1	0.270	18.37 1	7.57	TopThems	4	70	5W002(70)[HL6 -	1-
20	2.41 4	6.238	13.440	7.84	Hypolimniss	Ч	100	5w003(106) LHL6-	1-1-
		V	*						
-									
			0 = 4 ·						
			. t.						
						-1	1		
			-						
				10					
	e			100					
1									

Notes

Dissolved oxygen DO

Temp

Temperature Degrees Celcius .°C

Degrees Fahrenheit milligrams per liter Yes or No °F

mg/L Y/N

Herrington Lake Transect Location 02-1	
GPS Coordinates (or where they can be found if collected electronically)	Dix River Below Dam
Investigators: KL, 13 B	Date: 0 ct 7, 2017 Time: 1 x 15
Temperature/Depth/Oxygen Probe Used	451 650 MOS
Probe Calibration Date Oct 7, 2017	
Secchi Disk Depth	

epth feet)	00 (mg/L) Cond.	(oC c	or oF) PH	Stratification Layer (if known)	Was Surface Water Collected? (Y,N)	SAMPLE Sample ID (if collected) DEPTH	Observer Notes, If any
	5.78	10.271	18.79	7.76	NONE	4	184	SW001(1)0R1
							400	
								<u> </u>
								1
			3					
-		-	-					
					4			
								36
					70			
		-						-
-								
	-							

Notes

Dissolved oxygen DO

Temp

°C

Temperature
Degrees Celcius
Degrees Fahrenheit
milligrams per liter
Yes or No °F

mg/L Y/N

Herrington Lake Transect Location

Herrington Lake Surface Water Quality and Dissolved Oxygen Profile Data Collection Sheet

electronic	ally) Se	where they ca とーイィ (w			C	urds	Lulet.				
Investigat	ors:				Date: Mow Dec 1142. 2017 Time: 1315						
T	(D 41- 10	B11	1		1.7	- 100	Time: 13	15			
Denha Cal	ire/Depth/O	xygen Probe L			45	I 650	MOS		1		
Secchi Dis		5.5	6/17		1145.00	016674 =	IVC+ V	1, htusampe = 9	1		
Secon Dis	sk Deptil	3.5	1. +		WHIEL	Cieria.	1271		ļ		
USI Depth Heeri	DO (mg/L) NS/C Temp (OC or oF) PH		Stratification Layer (if known)	Was Surface Water Collected? (Y,N)	Sample ID (if collected) Sept. (4)	Sawk ID Observer Notes, If any					
9	7.03	0.468	13.51	18.04	NONT	Ч	9'74				
		-									
						1					
						011					

Notes

DO Dissolved oxygen
Temp Temperature

°C Degrees Celcius

°F Degrees Fahrenheit
mg/L milligrams per liter
Y/N Yes or No

Herringto	n Lake Trans	ect Location	LHUZ	(TWO)							
GPS Cool	rdinates (or w ally)	here they can	n be found if	collected 人いん	LHL	2 - D 1x	Dam	AIRTEMP = 5°C(F			
nvestigat	ors:	Smill	h,B	· 60v	Date: Dec 11 2017 Time: 315 AVM						
Temperat	ure/Depth/Ox					650 MDS	Time:	Is CANA.			
Probe Cal	ibration Date	ರಿಲ್ಲ	6+h = 201	7	Checked D	2011 1017	1.0	14th 5 401 0 25			
Secchi Di	sk Depth	9	F+)			/		inter Trupling 0 25			
	4				WAT	TEIL DEPT	1= 190 F				
Depth (feet)	€ DO (mg/L) ws/c	Ter	np roF)pH	Stratification Layer (if known)	Was Surface Water Collected? (Y,N)	Sample ID	Observer Notes, if any			
10	5.34	10.341	13.12	17.26	NONE						
20	5.31	10,341	13.12	17.86	1	3 402514	25Ft	3WOO! (25) CHLZ-171211			
30	5.35	0 341	13.12	17.86		3 700011		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
uo	5.34	0.341	13.12	7.86		117		h = 11			
60	5.33	0 341	13.12	7.86				\			
60	5.32	D 341	13,12	7.86							
20	5.30	15.341	13.12	7.76							
90	5.26	0.341	13.12	7.86				/			
00.	5.26	10.341	13.12	7.28							
.0	5.22	7.341	13,12	7.25							
120	5.14	0 341	13, 11	7.94							
130	4.65	10.310	12.78	7.80							
.40	2.24	0,339	12.42	7.62	V						
50	1.68	10.337	12.30	7.56							
		10									
				1							
-		1		-							
				1							
						3					
- 1											
100				1							

Notes

DO Dissolved oxygen Temperature
Degrees Celcius Temp

°C

Degrees Fahrenheit milligrams per liter °F

mg/L

Yes or No Y/N

Herringtor	Lake Transe	ct Location	LHUI							
electronica	ally) 5	here they car	n be found if co	ollected	LHL		ocky 12			
Investigate	W JAMA,	tl.	Vimble B.	504	Date: Man Dec 11 th, 10					
Temperatu	re/Depth/Oxy	gen Probe L	Isea		96	\$ 6501	MOS			
Probe Cali Secchi Dis	bration Date	8 6-	12/6	117	И		W.	ntersample & 15		
Decom Dia	k Deptii	6 6-								
USI Depth 	DO (n	Coad	(oC or	oF) pH	Stratification Layer (if known)	Was Surface Water Collected? (Y,N)	Sample ID (if collected) Oc. o+L 25 F+	Sayel 10 Observer-Notes, If any		
でいらられ	5.56	0.339	13.09	7.92	NONE	И	25 F+			
	-									
				-						
							-			
		1								

Notes

DO Dissolved oxygen Temp

Temperature Degrees Celcius °C

°F Degrees Fahrenheit milligrams per liter mg/L Yes or No Y/N

Herringto	n Lake Trans	sect Location	LHL	- 3						
electronic	ally) See	where they can ナバルり	e Yun	na		LH	L3			
Investigat	tors: ^	Smith xygen Probe L	n	C -= -			Date: Twee D	12-12-th 2017		
T	P1	Dmith	13.	G O D	Date: Two Dec 12th 2017 Time: 12 45 PM					
Probe Cal	libration Date	kygen Probe C	sea Oliver	1. 1 1911	USE	ER DEP	TH = 22	564		
Secchi Di	sk Depth	= 12/4	11 Chec	200 (2.11)	III WAT	EIC DEF	IH - LC	3 - 7		
							Winter	5w 5ample 2 25 F	1	
Depth (feet)	DO	(mg/L) ms/	Te (oC c	mp or oF) <i>р</i> Ц	Stratification Layer (if known)	Was Surface Water Collected? (Y,N)	Sample ID (if-collected)	Sample		
90	5.43	1 0 3 1 1 1	1 1 1 1 1 3		NONE					
50	5.41	0.340	13.03	7.91	P					
20	5.40	0.340	13.03	2.40	tt.	11	00-11			
20	15.612	0.340	13.07	7.90	- "	y	125 F+	5WOOI(25)-LHL3-17	1212	
								5		
		1								
								M		
								V		
			-							
								-		
				-						
		_								
					17					
						1		1		

Notes

DO Dissolved oxygen
Temp Temperature

°C Degrees Celcius
°F Degrees Fahrenheit
mg/L milligrams per liter
Y/N Yes or No

Herringto	n Lake Transe	ct Location	CHL	6						
GPS Coor	rdinates (or wh		be found if			LHL	- 6			
Investigal	tors: A.S	milh	, B.	Gar be	Date: Times Dec 12+4, 201 Time: 12,00					
Femperat	ure/Depth/Oxy	gen Probe U	sed		4	I 650 W	105			
Probe Cal	ibration Date	761	2 - Chad	12/	11/17	MATER	DEPTH :	200 FT		
Secchi Di	sk Depth	167					NINTER S	angle 25 Ct		
Depth (feet)	DO (mg/L) in S/C, Temp (oC or oF)				DO (mg/L) Temp Layer Layer	Was Surface Water Collected? (Y,N)	Sample ID (if collected)	Sample Observer Notes rifative		
90	4,98	10,329	13.08	7.87	NONE		-			
70	5,00	0.324	13.18	7.27	0					
50	5.05	0.330	13.08	7.87	- 11					
20	5.05	0-330	13.08	7.87		4	25F4	SUDDI(25) LHL6-1742		
		1								

Notes

DO Dissolved oxygen
Temp Temperature

°C Degrees Celcius

°F Degrees Fahrenheit
mg/L milligrams per liter
Y/N Yes or No

APPENDIX D: SAMPLE COLLECTION FIELD DATA SHEETS

Appendix D3: Aquatic Vegetation Field Data Sheets

WY

STREAM NAME

WATER QUALITY AND VEGETATION FIELD DATA SHEET FOR HERRINGTON LAKE

LOCATION

'STATION# R	VERMILE STREAM CLASS \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
LAT (SP) LO	ONG GPO RIVER BASIN HOW MGYON LOKE
STORET # AV	AGENCY
INVESTIGATORS	ill to
FORM COMPLETED BY	DATE TIME REASON FOR SURVEY
WEATHER CONDITIONS	Now Past 24 hours Past 25 Past 26 Past 2
SITE LOCATION/MAP	Draw a map of the site and indicate the areas sampled (or attach a photograph)
AV-001(At)-CI-1- 1130 MTS	Vegetation 1D AV-001-CII-171004
	Sample collected along wadable wadeable shoreline. Feriphyton abundant on vocles and duckwa abundant in water Collected by wading and Kayak
STREAM CHARACTERIZATION Vegetation Sample Weight	Stream Subsystem Perennial Intermittent Tidal Stream Ofigin Glacial Spring-fed Non-glacial montane Swamp and bog Stream Type Coldwater Wamnwater Catchment Area km² Whight 240, 719

CI-1 (Pg/06Z)

WATER QUALITY AND VEGETATION FIELD DATA SHEET

Predominant Surrounding Landuse
| Forest | Commercial
| Field/Pasture | Industrial
| Agricultural | Other Local Watershed NPS Pollution WATERSHED ☐ No evidence ☐ Some potential sources ☐ Obvious sources FEATURES Field/Pasture
Agricultural Residential Local Watershed Erosion

☐ None ☐ Moderate Adjacent ENBrown ☐ Heavy Indicate the dominant type add record the dominant species present Herbaceous RIPARIAN VEGETATION (18 meter buffer) dominant species present Canopy Cover
☐ Partly open ☐ Partly shaded ☐ Shaded Estimated Reach Length INSTREAM FEATURES **Estimated Stream Width** m High Water Mark Sampling Reach Area Proportion of Reach Represented by Stream Area in km² (m²x1000) _km² 🗆 Run Pool **Estimated Stream Depth** ☐ Yes □ No Channelized Surface Velocity (at thalweg) ☐ Yes □ No Dam Present LARGE WOODY DEBRIS Qualitative LWD m2/km2 (LWD/ reach area) Density of LWD Indicate the dominant type and record the dominant species present

Rooted submergent

Rooted floating AQUATIC VEGETATION Rooted emergent Free floating Rooted submergent Attached Algae dominant species present Portion of the reach with aquatic vegetation Water Odors
SNormal/None Scwage
Petroleum Chemical
Other 0 C WATER QUALITY Temperature_ Specific Conductance Dissolved Oxygen Water Surface Oils
Slick Sheen
None Other ☐ Globs ☐ Flecks **T**urbidity_ Turbidity (if not measured)
Glear Slightly turbid
Opaque Stained □ Turbid **WO Instrument Used** Other Deposits
Sludge Sawdust Srelict shells Other EDIMENT/ ☐ Sewage ☐ Anaerobic Normal Chemical ☐ Paper fiber □ Sand ☐ Petroleum SUBSTRATE ☐ None Other_ Looking at stones which are not deeply embedded, are the undersides black in color? Olls ☐ Absent ☐ Slight ☐ Moderate □ Profuse

INC	ORGANIC SUBSTRATE (should add up to 1	COMPONENTS 100%)	ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)					
Substrate Type	Diameter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area			
Bedrock		//	Detritus	sticks, wood, coarse plant materials (CPOM)				
Boulder	> 256 mm (10")		>	materials (Cr ON)				
Cobble	64-256 mm (2.5"-10")	V, /	Muck-Mud	black, very fine organic (FPOM)				
Gravel	2-64 mm (0.1"-2.5")	V,		(II OM)				
Sand	0.06-2mm (gritty)	V ₁	Marl	grey, shell fragments				
Silt	0.004-0.06 mm	V						
Clay	< 0.004 mm (slick)	= MT	3					

CI-1 (Pg292)

WATER QUALITY AND VEGETATION FIELD DATA SHEET FOR HERRINGTON LAKE

STREAM NAME N	ERRINGTON	LOCATION CI-2 (urds Infet
STATION#	RIVERMILE	STREAM CLASS
LAT See GPS 1	LONG 5 to GPS	RIVER BASIN
STORET#		AGENCY /CU. Ramboll Environ
NVESTIGATORS	KL. H.	7
ORM COMPLETED BY		DATE OF SURVEY TIME AM PM REASON FOR SURVEY
VEATHER CONDITIONS		Past 24 hours Yes ANO M (heavy rain) n (steady rain) Air Temperature 24/ C
	shows	ers (intermittent)
ITE LOCATION/MAP	Draw a map of the s	site and indicate the areas sampled (or attach a photograph)
CI-2	See C	700
	Vegetati AV -	1005-2.0)-CI2-171005 1001-CI2-171005
	Sample Shore	collected along undeable line at depths ~ 0-2ft.
CHARACTERIZATION Vegetation Sample	Stream Subsystem Perennial In Stream Origin Gladial Nor-glacial monta	Stream Type Goldwater GWarmwater Catchment Area km² O Mixture of origins O Offer We stream Type Goldwater GWarmwater Km²

WATER QUALITY AND VEGETATION FIELD DATA SHEET

CI	-2	V	47.		0.0	
WATERSH FEATURES		O Forest	asture 🔾 Industria	cial I	Local Watershed NPS I No evidence Some Obvious sources Local Watershed Erosi None Moderate	potential sources
RIPARIAN VEGETAT (18 meter b	ION	Indicate the dominant type and record the dominant species present Trees Grasses Herbaceous dominant species present				
INSTREAM FEATURES SUPC M	TREAM Estimated Reach Lengthr				Canopy Cover Partly open Partly High Water Mark Proportion of Reach Remorphology Types Riffle % Pool % Channelized Yes Dam Present Yes	m epresented by Stream
LARGE W DEBRIS	ARGE WOODY LWD m² Q Valitative LWD presentate Density of LWDm²/km² (LWD/reach area) Some flooting					1 1-100 11010
AQUATIC VEGETAT		Indicate the dominant type and record the dominant species present Rooted emergent Rooted submergent Rooted floating Free floating dominant species present Portion of the reach with aquatic vegetation Mattached Algae Available of the discount of the reach with aquatic vegetation The dominant species present Rooted floating Free floating Free floating Free floating Free floating Free floating				
WATER QUALITY Self Conductance Dissolved Oxygen pH Turbidity WQ Instrument Used			Conductance d Oxygen		Water Odors D Normal/None D Sew Petroleum Fishy Water Surface Oils Slick D Sheen Other Turbidity (if not meast Clear D Slightly tu	Globs GFlecks
SEDIMEN SUBSTRA	DIMENT/ BSTRATE Odors Normal Sewage Petroleum Chemical Anaerobic None Other Oils Absent Slight Moderate Profuse Deposits Sludge Sawdust Paper fiber Relict shells Other Looking at stones which are not deeply et are the undersides black in color?				ch are not deeply embedded,	
INC	RGANIC SUB (should a	STRATE (COMPONENTS 00%)		ORGANIC SUBSTRATE O	
Substrate Type	Diame	ter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock	> 256 mm (10"		1	Detritus	sticks, wood, coarse plant materials (CPOM)	
Boulder	64-256 mm (10"	_	1/	Muck-Mud	black, very fine organic	
Cobble	2-64 mm (0.1"-			TATRICK-IAIRG	(FPOM)	
Gravel		_	V	Marl	grey, shell fragments	
Sand	0.06-2mm (grit		7	TATOLI	Broj, mon magmonto	
Silt	0.004-0.06 mm < 0.004 mm (si	_	147	1		
LIAV	 UUU4 mm (s) 	HCK)	IV()-	1		

CI-2 (Pg20/2)

MB

-WATER QUALITY AND VEGETATION FIELD DATA SHEET FOR HERRINGTON LAKE

LAKE

STREAM NAME HEA	LRINGTON	LOCATION I -3 CHIVOS IN LES				
	IVERMILE	STREAM CLASS				
LAT SouGPS LO	ONG See GPS	RIVER BASIN				
STORET#		AGENCY KU, Ramboll Envilon				
INVESTIGATORS						
FORM COMPLETED BY	W75	DATE 10-5-17 REASON FOR SURVEY CAP				
WEATHER CONDITIONS	□ rain □ showe%□ %	Past 24 hours Yes No Yes No In (heavy rain) Cisteady rain) Air Temperature C Other Itelar/sunny Other C Other Itelar/sunny Other C Other Itelar/sunny Other Other Other Other Itelar/sunny Other Other Other Other Itelar/sunny Other Other Other Itelar/sunny Other Other Other Other Other Itelar/sunny Other Other Other Other Other Itelar/sunny Other Other Other Other Other Other Itelar/sunny Other Othe				
SITE LOCATION/MAP	See AV-00	te and indicate the areas sampled (or attach a photograph) Cap (OS-20) - CI3-171005 MTS 100 ID 01-CI3-171005				
	Sample at de wade	collected along shoreline plas NO-2ft-that were cable. Mosfly submerged agratic regetation.				
STREAM CHARACTERIZATION VEGETATION STREAM	Stream Subsystem	Stream Type Identificant D Tidal Catchment Area km²				

WATER QUALITY AND VEGETATION FIELD DATA SHEET

ATERSHED Predominant Surrounding Landus

WATERSH FEATURE SOL	S Forest Field/Pas		tural Other	cial l	Local Watershed NPS No evidence	e potential sources	
RIPARIAN VEGETAT (18 meter b	ION ouffer)	4.000	the dominant type and Shi t species present		minant species present	rbaceous	
INSTREAM FEATURE Section 1		Estimated Reach Lengthm					
LARGE WOODY LWDm² Qualitative LWb Orlsend Density of LWDm² Qualitative LWb Orlsend Density of LWDm² (LWD/reach area)						reline	
AQUATIC VEGETAT		Indicate the dominant type and record the dominant species present Rooted emergent Rooted submergent Rooted floating Rooted floating dominant species present Portion of the reach with aquatic vegetation **The dominant species present Rooted floating Rooted floating Rooted floating Rooted floating Rooted floating Rooted floating					
Se vi	DO TO	Specific of Dissolved pH	ture0 C Conductance d Oxygen y rument Used		Water Odors Normal/None Sewa Petroleum Fishy Water Surface Oils Slick Sheen Other Turbidity (if not meast Clear Slightly tu	ige Wegelatton Chemical 30 B	
SEDIMEN SUBSTRA		Oils	al Sewage cal Anaerobic	Petroleum None	Looking at stones which	□ Paper fiber □ Sand I Other Il are not deeply embedded, ck in color?	
INC	ORGANIC SUB	STRATE C	COMPONENTS 00%)		ORGANIC SUBSTRATE C		
Substrate Type			% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area	
Bedrock			/ (Detritus	sticks, wood, coarse plant materials (CPOM)		
Boulder	> 256 mm (10")		V	\leq	materials (of only		
Cobble	64-256 mm (2.5	5"-10")	V (Muck-Mud	black, very fine organic (FPOM)		
Gravel	2-64 mm (0.1"-	2.5")			F**42		
	0.06-2mm (gritty)			Marl grey, shell fragments			
Sand	0.06-2mm (grit	.ty)		1		17	
Sand Silt	0.06-2mm (grit 0.004-0.06 mm				7		

CI-3(Page 20/2)

WATER QUALITY AND VEGETATION FIELD DATA SHEET FOR HERRINGTON LAKE

1		OL , ()
STREAM NAME ()	-4	LOCATION Herring ton Lake
STATION # R	VERMILE	STREAM CLASS CUVOS IN LEX
LAT SU GPS LO	ING See GPS	RIVER BASIN
STORET#		AGENCY
INVESTIGATORS		
FORM COMPLETED BY		DATE 1015 TIME 4.40 AM PM REASON FOR SURVEY
WEATHER CONDITIONS	rain (showers %cl	Past 24 hours Yes No (heavy rain) steady rain) s (intermittent) loud cover ear/sunny Past 24 hours Yes No Air Temperature C C Other
SITE LOCATION/MAP	So. (e and indicate the areas sampled (or attach a photograph) 1 (0.5-2) - CI 4 - 171005 100 100 11 - CI 4 - 171005
	Sample of approx 2084	collected by divers at condition of all and condition of attached depth (peripheteon of attached agreetic vegetation (SAV)
CHARACTERIZATION Vegetation Sample Welght	Stream Subsystem Perennial Inter- Stream Origin Glacial Non-glacial montane Swampand bog	Stream Type Geoldwater Wannwater Catchment Area km² Mixture of origins Other Weight 65.89
CI-4	(Page 1	9(2)

Source: Rapid Bioassessment Protocols For Use in Streams and Wadeable Rivers: Periphyton,

Benthic Macroinvertebrates, and Fish, Second Edition - Form 1

WATER QUALITY AND VEGETATION FIELD DATA SHEET

Cal	-4					
WATERSE FEATURE Sec (☐ Forest ☐ Field/I ☐ Agrict	Pasture Industria	cial l	Local Watershed NPS P No evidence Some Obvious sources Local Watershed Erosic None Moderate	potential sources
RIPARIAN VEGETAT (18 meter b	ION ouffer)		the dominant type and Sh at species present		minant species present Grasses Her	baceous
INSTREAT FEATURE Sle		Estimate Samplin Area in Estimate Surface (at thalv	ed Reach Length ed Stream Width g Reach Area km² (m²x1000) ed Stream Depth Velocity veg)	m m² km² m	Canopy Cover Partly open Partly High Water Mark Proportion of Reach Re Morphology Types Riffle % Pool % Channelized Yes Dam Present Yes	m presented by Stream Run% □ No □ No
LARGE W DEBRIS	OODY	LWD Density	m² of LWDm	LWD/ ² /km² (LWD /	only in lim reach area)	horeline
AQUATIC VEGETAT		Indicate Roote Floatin	the dominant type and demergent Ro ng Algae Afa	record the do oted submerge tached Algae	minant species present Int Rooted floating Thick Thick The Subiner great	Free floating
WATER OF	WATER QUALITY Specific Conductance Dissolved Oxygen pH Turbidity WQ Instrument Used				Water Odors Normal/None Seware Petroleum Fishy Water Surface Oils Slick Sheen None Other Turbidity (if not measure Clear Slightly ture Opaque Stained	Chemical Other Globs D Flecks
SEDIMEN SUBSTRA		Odors Norm Chem Other	ical Anaerobic	□ Petroleum □ None te □ Profu	are the undersides blac	Other are not deeply embedded.
INC			COMPONENTS		ORGANIC SUBSTRATE C	OMPONENTS
Substrate Type			% Composition in Sampling Reach	Substrate Type	(does not necessarily add Characteristic	up to 100%) % Composition in Sampling Area
Bedrock Boulder	> 256 mm (10")	1 VM (2)	Detritus	sticks, wood, coarse plant materials (CPOM)	
Cobble Gravel	64-256 mm (2.5 2-64 mm (0.1"-	5"-10")	KON COST	Muck-Mud	black, very fine organic (FPOM)	
Sand Silt Clay	0.06-2mm (grit 0.004-0.06 mm < 0.004 mm (sl		18 yeles	Marl	grey, shell fragments	

CI-4 (Page 20/2)

WATER QUALITY AND VEGETATION FIELD DATA SHEET FOR HERRINGTON LAKE

	0	
STREAM NAME FIG	x In let	LOCATION Herrington Lake &
STATION# F	RIVERMILE	STREAM CLASS HO I BLEET
LAT_6D L	ONG 675	RIVER BASIN
STORET#		AGENCY
INVESTIGATORS		
FORM COMPLETED BY		DATE OG 177 REASON FOR SURVEY
MITSOren	Sh	TIME AM PM CAPO
WEATHER CONDITIONS	rain (s showers %0, %cl	Past 24 hours Yes No Yes No Air Temperature C 70's Formar/sunny
SITE LOCATION/MAP	Draw a map of the site	e and indicate the areas sampled (or attach a photograph)
	Samp	le ID
1-1	hil	110 1 001
	AV-DC	1-HQ-171000
	,	ected by divers)
	/ Coll	exted by aNers)
	(Corr	()
(1)		
U		
	S	
	. /	Con moriohuton
	Ve	attached to rocks
STREAM CHARACTERIZATION	Stream Subsystem Perennial Intern	mittent ☐ Tidal ☐ Coldwater ☐ Warmwater
		Catchment Aven 12
	Stream Origin Glacial Non-glacial montane Swamp and bog	Spring-feed Mixture of origins We Local + []
		10011111

Halnlet (Pg/052)

WATER QUALITY AND VEGETATION FIELD DATA SHEET

WATERSHED FEATURES Predominant Surrounding Landuse Local Watershed NPS Pollution
☐ No evidence ☐ Some potential sources
☐ Obvious sources ☐ Forest ☐ Field/Pasture ☐ Agricultural ☐ Residential Commercial Industrial Other Local Watershed Erosion ☐ Heavy □ None □ Moderate Indicate the dominant type and record the dominant species present ☐ Trees ☐ Grasses RIPARIAN VEGETATION (18 meter buffer) ☐ Herbaceous dominant species present Canopy Cover
☐ Partly open ☐ Partly shaded ☐ Shaded INSTREAM FEATURES **Estimated Reach Length** Estimated Stream Width High Water Mark Sampling Reach Area Proportion of Reach Represented by Stream Area in km2 (m2x1000) km² Run Run **Estimated Stream Depth** Channelized ☐ Yes □ No **Surface Velocity** m/sec (at thalweg) Dam Present ☐ Yes □ No LARGE WOODY DEBRIS m^2 LWD m²/km² (LWD/ reach area) Density of LWD Indicate the dominant type and record the dominant species present ☐ Rooted emergent ☐ Rooted submergent ☐ Rooted floating AQUATIC VEGETATION Rooted submergent
Attached Algae ☐ Rooted emergent
☐ Floating Algae ☐ Free floating dominant species present Portion of the reach with aquatic vegetation Water Odors
Normal/None Sewage
Petroleum Chemical
Fishy Other WATER QUALITY Temperature_ Specific Conductance_ Dissolved Oxygen Water Surface Oils
Slick Sheen Globs Flecks
None Other Turbidity Turbidity (if not measured)
Clear Slightly turbid
Opaque Stained □ Turbid **WQ Instrument Used** Other Deposits
Sludge Sawdust DRelict shells Other SEDIMENT/ SUBSTRATE Odors ☐ Paper fiber ☐ Sewage ☐ Anaerobic ☐ Petroleum ☐ Normal ☐ Chemical ☐ None Other_ Looking at stones which are not deeply embedded, are the undersides black in color? ☐ Profuse Absent Slight Moderate

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)			ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)		
Substrate Type	Diameter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock			Detritus	sticks, wood, coarse plant materials (CPOM)	
Boulder	> 256 mm (10")			materials (Cross)	
Cobble	64-256 mm (2.5"-10")		Muck-Mud	black, very fine organic (FPOM)	
Gravel	2-64 mm (0.1"-2.5")			(ITOM)	
Sand	0.06-2mm (gritty)		Marl	grey, shell fragments	
Silt	0.004-0.06 mm				
Clay	< 0.004 mm (slick)				

HQInlet (Pg 20/2)

WATER QUALITY AND VEGETATION FIELD DATA SHEET WIS FOR HERRINGTON LAKE

STREAM NAME	41	LOCATION Herrington Cake [HL-1
- 1	VERMILE	STREAM CLASS NA ROCK RUNEM
LAT COPS LO	ONG COP	_ RIVERBASIN Herrington Lake
STORET# A1		AGENCY
INVESTIGATORS		
FORM COMPLETED BY	Jade/MT	DATE 10/12/17 TIME 130 AM PM REASON FOR SURVEY
WEATHER CONDITIONS	rain show	Past 24 hours No No No No No No No N
SITE LOCATION/MAP	See AV-0	e site and indicate the areas sampled (or attach a photograph) CAP LHLI OTEO T-1710 MTS WTS Attom 1P OOI - LHLI -171012
	This loo had Side Veger Colle	a steep shelf on one with submerged agentic tation (algae & periphyton),
STREAM CHARACTERIZATION Vegetation Sampic Weight	Stream Subsystem Perennial	Intermittent Tidal Coldwater Warmwater Catchment Area km²

WATER QUALITY AND VEGETATION FIELD DATA SHEET

MIS WATERSHED Predominant Surrounding Landuse Local Watershed NPS Pollution

No evidence Some potential sources FEATURES Commercial Industrial ☐ Field/Pasture ☐ Obvious sources ☐ Agricultural Other | Local Watershed Erosion
☐ None ☐ Moderate ☐ Heavy Residential Indicate the dominant type and record the dominant species present RIPARIAN VEGETATION (18 meter buffer) dominant species present INSTREAM FEATURES Canopy Cover
☐ Partly open ☐ Partly shaded ☐ Shaded **Estimated Reach Length** Estimated Stream Width High Water Mark Sampling Reach Area Proportion of Reach Represented by Stream Morphology Types Riffle % Run____% Area in km^2 (m^2x1000) km² Estimated Stream Depth Channelized □ Yes □ No **Surface Velocity** m/sec (at thalweg) Dam Present ☐ Yes □ No LARGE WOODY DEBRIS LWD $_{\rm m^2}$ along shoreline m²/km² (LWD/ reach area) Density of LWD Indicate the dominant type and record the dominant species present ☐ Rooted emergent ☐ Rooted submergent ☐ Rooted floating AQUATIC VEGETATION ☐ Rooted emergent
☐ Floating Algae Rooted submergent
Attached Algae ☐ Free floating peripho dominant species present Portion of the reach with aquatic vegetation Water Odors
Normal/None Sewage
Petroleum Chemical
Other °C WATER QUALITY Temperature Specific Conductance_ Dissolved Oxygen_ Water Surface Oils
Slick Sheen
None Other ☐ Globs ☐ Flecks pH. Turbidity __ Typhidity (if not measured)
Clear Slightly turbid
Opaque Stained ☐ Turbid WQ Instrument Used O Other Odors
Normal
Chemical
Other Deposits
☐ Sludge ☐ Sawdust ☐ H
☐ Relict shells ☐ Other SEDIMENT/ □ Petroleum ☐ Paper fiber ☐ Sewage ☐ Anaerobic SUBSTRATE Looking at stones which are not deeply embedded, are the undersides black in color?

Yes SNo Oils
☐ Absent ☐ Slight ☐ Moderate ☐ Profuse ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%) INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) % Composition in Substrate Characteristic % Composition in Diameter Substrate Sampling Reach Sampling Area Type Type sticks, wood, coarse plant materials (CPOM) Detritus Bedrock Boulder > 256 mm (10") black, very fine organic (FPOM) Cobble 64-256 mm (2.5"-10") Muck-Mud sedment Gravel 2-64 mm (0.1"-2.5") Marl grey, shell fragments Sand 0.06-2mm (gritty) Silt 0.004-0.06 mm Clay < 0.004 mm (slick) (Pg Zof Z)

WATER QUALITY AND VEGETATION FIELD DATA SHEET FOR HERRINGTON LAKE

STREAM NAME	L-2	LOCATION LHL-2 (Near Dam)
STATION # RI	VERMILE	STREAM CLASS
LATSEGPS LO	ING See (15	RIVER BASIN HEVINGTON Calle
STORET #		AGENCY
INVESTIGATORS		
FORM COMPLETED BY	N	DATE 10/12 AM PM REASON FOR SURVEY
WEATHER CONDITIONS	Frain shower	Past 24 hours No
SITE LOCATION/MAP	Draw a man of the si	ite and indicate the areas sampled (or attach a photograph)
LHL-2	See C	AP
	vegetati AV-C	101 D 171012
	(1) V 1 mm (1)	le location near dam gifficult to access and in vegetation from waxing, is collected attacked algae ipheston from depths > 10ft,
STREAM CHARACTERIZATION VEGETATION Simple Weight	Stream Subsystem Perennial In In Stream Origin Glacial Non-glacial montar Swamp and bog	□ Spring-fed Catchment Area km²

LHL-2 (49 19 4)

WATER QUALITY AND VEGETATION FIELD DATA SHEET

LHL-2

WATERSF FEATURE SOL C					Local Watershed NPS No evidence Som Obvious sources Local Watershed Eros None Moderate	ne potential sources
RIPARIAN VEGETAT (18 meter b	TION	71,470	the dominant type and		minant species present Grasses	erbaceous
instream Feature Sol Mo		Estimate Sampling Area in l Estimate	d Reach Length d Stream Width g Reach Area cm² (m²x1000) d Stream Depth Velocity eg)	m m² km²m	Canopy Cover Partly open Part High Water Mark Proportion of Reach F Morphology Types Riffle % Pool % Channelized Pyes Dam Present	Represented by Stream Run%
LARGE W DEBRIS	OODY	LWD Density	m²	n²/km² (LWD / 1	reach area)	
AQUATIC VEGETAT	TION	□ Rooted □ Floatin dominan	emergent DRo	tached Algae	minant species present nt Rooted floating Hon 4 attached	algal an
WATER OF Clubbi Sheet Logi	QUALITY Temperature ° C Specific Conductance Dissolved Oxygen pH Turbidity WQ Instrument Used		Conductance d Oxygen y		Water Odors Normal/None Sew Petroleum Fishy Water Surface Oils Slick Sheen None Other Turbidity (if not meas Belear Slightly to	☐ Chemical ☐ Other ☐ Globs ☐ Flecks
SEDIMEN SUBSTRA	TE ZNormal □ Sewage □				Deposits Sludge Sawdust Relict shells Looking at stones whi	☐ Paper fiber ☐ Sand ☐ Other
INC	ORGANIC SUB	STRATE (COMPONENTS 00%)		ORGANIC SUBSTRATE (does not necessarily add	COMPONENTS d up to 100%)
Substrate Type	Diame	er	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock Boulder	> 256 mm (10")	Sel	Detritus	sticks, wood, coarse plant materials (CPOM)	at dom along
Cobble	64-256 mm (2.:		V Joseph	Muck-Mud	black, very fine organic (FPOM)	
Gravel	2-64 mm (0.1"-		V ()	Marl	grey, shell fragments	1
Sand	■ 0.00°∠IIIII (201	LYJ		TATULL	I grey, anon maginismo	

LHL-2(B292)

0.004-0.06 mm

< 0 004 mm (slick)

Silt

Clay

WATER QUALITY AND VEGETATION FIELD DATA SHEET FOR HERRINGTON LAKE

	LOCATION LHL-3
/ERMILE	STREAM CLASS
16 Sec 6/5	RIVER BASIN Herrmaton Lake
	AGENCY
	DATE 10/10 AM PM REASON FOR SURVEY
	THUE AND I'M
SO showe showe of the si	Past 24 hours No In (heavy rain) In (steady rain) In (st
Sample	collected by waders along I'me, Depth 20-2ft.
Stream Subsystem Perennial	Stream Type Coldwater Warmwater Spring-fed Mixture of origins Warmwater Warmwater Warmwater Catchment Area km²
	Sample Shove Stream Subsystem Perennial—Th

-WATER QUALITY AND VEGETATION FIELD DATA SHEET

IMTS WATERSHED FEATURES Local Watershed NPS Pollution
☐ No evidence ☐ Some potential sources Predominant Surrounding Landuse ☐ Commercial ☐ Industrial ☐ Field/Pasture □ Obvious sources ☐ Agricultural ☐ Residential Other Local Watershed Erosion

Moderate

Heavy See CAT RIPARIAN VEGETATION (18 meter buffer) Indicate the dominant type and record the dominant species present ☐ Herbaceous dominant species present INSTREAM FEATURES **Estimated Reach Length** Canopy Cover
☐ Partly open ☐ Partly shaded ☐ Shaded **Estimated Stream Width** High Water Mark Sampling Reach Area Proportion of Reach Represented by Stream Morphology Types
☐ Riffle ______% Area in km2 (m2x1000) km² O Run Pool **Estimated Stream Depth** ☐ Yes Channelized Surface Velocity m/sec (at thalweg) ☐ Yes □ No Dam Present LARGE WOODY DEBRIS $_{\rm m}^{\rm 2}$ LWD Density of LWD m2/km2 (LWD/ reach area) Indicate the dominant type and record the dominant species present

☐ Rooted emergent
☐ Rooted submergent
☐ Rooted floating
☐ Attached Algae
☐ Attached Algae
☐ Attached Algae AQUATIC VEGETATION ☐ Free floating Periphyton dominant species present Portion of the reach with aquatic vegetation Water Odors
Normal/None Sewage
Petroleum Chemical
Fishy Other WATER QUALITY Temperature Specific Conductance_ Dissolved Oxygen Water Surface Oils

Slick Sheen Globs Flecks

None Other Turbidity_ Turbidity (if not measured)
Clear Slightly turbid
Opaque Stained Turbid Other WO Instrument Used Deposits
□ Sludge □ Sawdust □ H
□ Relict shells □ Other SEDIMENT/ SUBSTRATE Odors Normal Chemical ☐ Sewage ☐ Anaerobic ☐ Petroleum ☐ Paper fiber ☐ Sand None □ Other Looking at stones which are not deeply embedded, are the undersides black in color? Oils ☑ Absent ☐ Slight ☐ Moderate ☐ Profuse ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%) INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) % Composition in Sampling Area Substrate Diameter % Composition in Substrate Characteristic Sampling Reach Type Type sticks, wood, coarse plant materials (CPOM) Bedrock Detritus Boulder > 256 mm (10") black, very fine organic (FPOM) Cobble 64-256 mm (2.5"-10") Muck-Mud Gravel 2-64 mm (0.1"-2.5") Marl Sand 0.06-2mm (gritty) grey, shell fragments Silt 0.004-0.06 mm Clay < 0.004 mm (slick)

WATER QUALITY AND VEGETATION FIELD DATA SHEET FOR HERRINGTON LAKE

STREAM NAME	41-4	LOCATION (HL-U
STATION #I	RIVERMILE	STREAM CLASS
LATL	ONG	RIVER BASIN HOWINGON Lake
STORET #		AGENCY
INVESTIGATORS		
FORM COMPLETED BY	-	DATE TIME AM PM REASON FOR SURVEY
WEATHER CONDITIONS	show	Past 24 hours Im (heavy rain) In (steady
SITE LOCATION/MAP	Draw a map of the	site and indicate the areas sampled (or attach a photograph)
See CAP	Same	ple 10
111111	1.1	001-LAL3-171012
LHL=9	AV-001-LALS-11010	
	(Collected by divers)	
	/ Collec	ted by arvers
	1	
	1	
	1	
	1	
	1	
	1	
	Stroom Suboustan	MATS Stream Time
CTREAM	II Stream Subsystem	Stream Type Coldwater Warmwater
STREAM-CHARACTERIZATION	L.Perennial U	Thomas a walliwater
STREAM CHARACTERIZATION SAMPLE	Stream Origin	Catchment Area km²
CHARACTERIZATION		Catchment Area km²

WATER QUALITY AND VEGETATION FIELD DATA SHEET

LHLH

WATERSH FEATURE	ATERSHED ATURES Predominant Surrounding Lan Greet Forest Field/Pasture Agricultural Residential Other			rcial al	Local Watershed NPS No evidence	potential sources
RIPARIAN VEGETAT (18 meter b	IPARIAN EGETATION 8 meter buffer) Indicate the dominant type and Trees dominant species present					rbaceous
INSTREAM FEATURES SOL CAP WayS		Estimated Reach Lengthm Estimated Stream Width m Sampling Reach Aream² Area in km² (m²x1000) km² Estimated Stream Depth m Surface Velocity m/sec (at thalweg)		Canopy Cover Partly open Partly High Water Mark Proportion of Reach Resort String Riffle % Pool % Channelized Yes Dam Present Yes	m epresented by Stream Run%	
LARGE WOODY LWDm² S			MC CLWD/	reach area)	Shortelne	
AQUATIC VEGETAT	OUATIC EGETATION Indicate the dominant type and Rooted emergent Rooted emergent Rooted dominant species present Portion of the reach with aquati			ooted submerge tached Algae	nt Rooted floating	algae 10% periphy
WATER QUALITY Set Water Specific Conductance Dissolved Oxygen pH Turbidity WQ Instrument Used		Conductance d Oxygen			Chemical Other Globs □ Flecks	
SEDIMEN SUBSTRA		Other	al Sewage ical Anaerobic		Deposits Sludge Sawdust Relict shells Looking at stones whice are the undersides blaces Yes	□ Paper fiber □ Sand Other h are not deeply embedded, k in color?
INC		STRATE (COMPONENTS 00%)	1	ORGANIC SUBSTRATE C (does not necessarily add	
Substrate Type	Diamet	er	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock Boulder	> 256 mm (10")		Detritus	sticks, wood, coarse plant materials (CPOM)	
Cobble Gravel	64-256 mm (2.5 2-64 mm (0.1"-	5"-10")		Muck-Mud	black, very fine organic (FPOM)	
Sand Silt	0.004-0.06 mm	ty)		Marl	grey, shell fragments	
Clay	< 0.004 mm (sl		20/2)			

WATER QUALITY AND VEGETATION FIELD DATA SHEET FOR HERRINGTON LAKE

STREAM NAME LT	15	LOCATION	Lbras	nation lake 5
-	IVERMILE	STREAM CLASS Mallard Cove / Cave Run &		
	ONG (-Y5	RIVER BASIN	10 11.00	ington Lake
STORET# //		AGENCY	THAV	Irigio i Costa
INVESTIGATORS				
FORM COMPLETED BY		DATE (Q/12)	1,7	REASON FOR SURVEY
MtSorens	l-	TIME 709	AM PM	CAP
WEATHER CONDITIONS	rain (shower		Past 24 hours	Has there been a heavy rain in the last 7 days? No Air Temperature0 C Other
SEE CAP LHL-5	Samp AV-OC	eID 21-LH	<u>L</u> 5	oled (or attach a photograph) - 1710(Z IVEYS)
STREAM CHARACTERIZATION	Stream Subsystem Derennial Int Stream Origin Glacial Non-glacial montane Swamp and bog	□ Spring-fed		Stream Type Coldwater Catchment Areakm² Weight 40.79
1416	5 /Pg 1 8	972)		. 0

WATER QUALITY AND VEGETATION FIELD DATA SHEET

4465

		_				
WATERSHED FEATURES Predominant Surrounding Forest Field/Pasture Indi Agricultural Residential		nant Surrounding Land Commer asture	duse cial	Local Watershed NPS P □ No evidence □ Some □ Obvious sources	Local Watershed NPS Pollution 1 No evidence	
See	CAP	MI				
RIPARIAN VEGETAT (18 meter b		100000	the dominant type and Sh it species present		minant species present Grasses Grasses	baceous
INSTREAL FEATURE		Estimate Samplin Area in Estimate	ed Reach Length d Stream Width g Reach Area km² (m²x1000) ed Stream Depth Velocitym	m m² km² m	Canopy Cover Partly open Partly High Water Mark Proportion of Reach Re Morphology Types Riffle Pool Ves Channelized Pyes Dam Present Person	m presented by Stream Run%
LARGE W DEBRIS	OODY		m² of LWDm	1 ² /km² (LWD / 1	reach area)	
AQUATIC VEGETAT	IC ATION Indicate the dominant type an Cotted emergent Indicate the dominant type and Rooted emergent Indicate the Rooted Emergence Indicate I			record the do noted submerge tached Algae 535 Sub ic vegetation	minant species present nt Rooted floating Merged algue %	Free floating + 25% Eviphyton
Sea	er to	Temper Specific Dissolve pH Turbidi	ature0 C Conductance d Oxygen		Water Odors D Normal/None D Sewa	Chemical Other Globs □ Flecks
SEDIMEN SUBSTRA		Odors Norm Chem Other	ical Anaerobic	Petroleum None	Looking at stones which	Paper fiber Sand Other are not deeply embedded, k in color?
INC	DRGANIC SUR	2	COMPONENTS		ORGANIC SUBSTRATE C	OMPONENTS
	(should a	idd up to 1	.00%)		(does not necessarily add	up to 100%)
Substrate Type	Diamet	ter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock				Detritus	sticks, wood, coarse plant materials (CPOM)	
Boulder	> 256 mm (10"		re-	26 1 26 1	11.1	
Cobble	64-256 mm (2.:			Muck-Mud	black, very fine organic (FPOM)	
Gravel	2-64 mm (0.1"-	_		26.1	1.116	
Sand	0.06-2mm (grit	-		Marl	grey, shell fragments	
Silt	0.004-0.06 mm			1		
Clay	< 0.004 mm (slick)					

LHL-5(Pg2062)

WATER QUALITY AND VEGETATION FIELD DATA SHEET FOR HERRINGTON LAKE

STREAM NAME	1-6	LOCATION		
STATION# RIVERMILE		STREAM CLASS		
LAT_GPS_L	ONG GPS	RIVER BASIN		
STORET # 1		AGENCY		
INVESTIGATORS				
FORM COMPLETED BY MT DOVEN	Sln	DATE 10/12/17 REASON FOR SURVEY CAP		
WEATHER CONDITIONS	□ rair □ showe %□ %	Past 24 hours		
SITE LOCATION/MAP	Draw a map of the s	ite and indicate the areas sampled (or attach a photograph)		
CICAD	0	Ole II		
Section	Jan	PIC 10		
1445	10	ected by divers		
	HV-	-001-67-111-1		
V 11		all allocs		
	16011	lented by aiver 5		
	(011	1		
11				
	KI -			
/)			
9				
TREAM	Stream Subsystem	Stream Type O Coldwater D Wannwater		
TIADAODED TO A DECA !!	Terenmal Tal	ermittent U Fidal Q Coldwater D Wannwater		
HARACTERIZATION	Charles and a file			
HARACTERIZATION	Stream Origin	Spring-fed Catchment Areakm²		
HARACTERIZATION	Stream Origin Glacial Non-glacial montan	U Spring-fed		
HARACTERIZATION	Stream Origin Glacial Non-glacial montan Swamp and bog	c Spring-fed Mixture of origins Wu 32.55		

Source: Rapid Bioassessment Protocols For Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates, and Fish, Second Edition - Form 1

WATER QUALITY AND VEGETATION FIELD DATA SHEET

LHL-6

			asture Commer Industria tural Other	Commercial		
RIPARIAN VEGETAT (18 meter b	TION Trees					baceous
INSTREAM FEATURES SuCAP Samplin Area in Estimate Estimate Samplin Area in Estimate		ated Stream Width m High Water Mar ling Reach Area m² Proportion of Re in km² (m²x1000) km² Morphology Typ lated Stream Depth m Pool 96 ce Velocity m/sec Channelized Calveg)		☐ Partly open ☐ Partly High Water Mark Proportion of Reach Re Morphology Types	m presented by Stream Run%	
LARGE W DEBRIS	OODY		m² of LWDm	1²/km² (LWD/ 1	each area)	
AQUATIC VEGETAT		dominan		tached Algae	tenralgae -	
WATER Q	Temperature C Specific Conductance Dissolved Oxygen pH Turbidity WQ Instrument Used		Conductance d Oxygen y			Chemical Other Globs Flecks
SEDIMEN SUBSTRA		Odors Norma Chem Other Oils	cal Anaerobic		are the undersides blac	Other
INC	ORGANIC SUI (should	BSTRATE (COMPONENTS 00%)		ORGANIC SUBSTRATE C (does not necessarily add	
Substrate Type	Diamo	eter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock				Detritus	sticks, wood, coarse plant materials (CPOM)	
Boulder	> 256 mm (10	66 mm (10")				
Cobble	64-256 mm (2.5"-10")			Muck-Mud	black, very fine organic (FPOM)	
Gravel	2-64 mm (0.1"-2.5")				X	
Sand	0,06-2mm (gr	itty)		Marl	grey, shell fragments	
Silt	0.004-0.06 mi	n				
Clay	< 0.004 mm (slick)				
Lt	(L-6	· (Pg Z %	2)		3

WATER QUALITY AND VEGETATION FIELD DATA SHEET FOR HERRINGTON LAKE

Dix	Piver MTS	0
STREAM NAME	= 2 MB LOCATION LUYES PORTER DIXI	river
STATION # R	IVERMILE STREAM CLASS \(\sqrt{A} \)	
LAT (S) LO	ong 695 RIVER BASIN Herrington Lake-i	Downstream
STORET #	AGENCY Ivon dam	_
INVESTIGATORS		
FORM COMPLETED BY	DATE 10107117 REASON FOR SURVEY	
1011001-01	S, I	
WEATHER CONDITIONS	Now Past 24 Has there been a heavy rain in the hours Past 24 Yes No	
	rain (steady rain) rain (steady rain) rain (steady rain) Air Temperature C C C C C C C C C C C C C	<i>Y</i> 5
SITE LOCATION/MAP	Draw a map of the site and indicate the areas sampled (or attach a photograph)	
SILE EGGIIIOIVIII	zan, a many or the site and indicate the areas sampled (or attach a photograph)	
DEX	Sample D.	
10		
Kiver	AV-101-DR-171007	
	My Cor British	
		- 1
1		
1		
1	11 1 ()	
1 0	Sample collected from	-
	Jerra College	
	Nadeoldle Will ville	-
	Collaran	
. 1	Sample collected from Wadeable area near Spillway	
STREAM CHARACTERIZATION	Stream Subsystem Stream Type Coldwater Warmwater	
	Stream Origin Catchment Area km²	
	Glacial Spring-ted Non-glacial montane Mixture of origins	7/30
	Swamp and bog Other Weight	91.79
	[0]	
Dox Ko	ver (PglofZ)	

WATER QUALITY AND VEGETATION FIELD DATA SHEET

FEATURES Greet Gried/P		dominant Surrounding Landuse orest		□ No evidence □ Some □ Obvious sources	Local Watershed Erosion	
	UPARIAN EGETATION 18 meter buffer) Indicate the dominant type and Trees dominant species present					baceous
INSTREAM FEATURES Sel CAPP Samplin Area in Estimat Surface Surface		mated Reach Lengthm mated Stream Widthm pling Reach Aream² in km² (m²x1000)km² mated Stream Depthm ace Velocitym/sec palweg)		Canopy Cover Partly open Partly shaded Shaded High Water Markm Proportion of Reach Represented by Stream Morphology Types Riffle		
LARGE W DEBRIS	OODY	LWD Density	m² of LWDn	n²/km² (LWD /	reach area)	
AQUATIC VEGETAT	ATIC Indicate the dominant type and record the dominant species present			☐ Free floating		
Sue Sue Sue Shell	WATER QUALITY Specific Conductance Dissolved Oxygen pH Turbidity WQ Instrument Used			Water Odors Normal/None Sewa Retroleum Fishy Water Surface Oils Slick Sheen None Other Darbidity (if not measu Clear Slightly tur	Chemical Other Globs □ Flecks	
SEDIMEN SUBSTRA		Odors Norm Chem Other Oils Abser	ical Anaerobic	Petroleum None	Looking at stones which	Other not deeply embedded.
INC		STRATE of the state of the stat	COMPONENTS 00%)		ORGANIC SUBSTRATE C	
Substrate Type	Diame	ter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock				Detritus	sticks, wood, coarse plant materials (CPOM)	
Boulder	> 256 mm (10")			Carried Street	
Cobble	64-256 mm (2.	5"-10")		Muck-Mud	black, very fine organic (FPOM)	
Gravel	2-64 mm (0.1"-2.5")				No Kod	
Sand	0.06-2mm (gritty)		3	Marl	grey, shell fragments	
Silt	0.004-0.06 mm		19			
Clay	< 0.004 mm (s	ick)				
Di	x Rn	lex	(Pg 28	32)		

APPENDIX D: SAMPLE COLLECTION FIELD DATA SHEETS

Appendix D4: Aquatic Invertebrates Field Data Sheets

	HERRINGTON LAKE TR	RANSECT ID CI-1	
	DATE		
	DATE 0 ex 4, 2017	TIME //30	Grab sample
SITE	FORM COMPLETED BY		O Hester Dendy Sample Volume: NA
<u>is</u>	I OKINI COINIFEETED DI	AJS MTSorense	5.34 & Weight
	OTHER:	/ 3	Depuration Time
	SampleID A1-C	201-C1-171004	24hrs
100			27717
	Present conditions (chec		
WEATHER	O Heavy Rain	Inches of rain in last 24	Hours /
I ₹	O Overcast	# NO	
A	O Steady Rain		
Ę,	O Partly Cloudy	Other:	
5	O Intermittent Rain		
_	Clear/Sunny Check all that apply		
	FLOW	WATER CLARITY	WATER COLOR
	O Dry	O / Clear/Transparent	O None
	O Stagnant/Still	O Cloudy/Slightly Turbid	O Brown/Muddy
	O Low	O Opaque/Very Turbid	O Green
w	⑨ Normal	O Other: at out fall with the	O Milky/White
Ž	O High	at out the	O Tannic/Black
\mathbf{Q}	O Flood over banks	VV .	Of Other:
AT			Slightly Turbiol
RVAT	O. Clear/Suppy	WATER SURFACE	at outfall mixing
SERVAT	O Clear/Sunny	WATER SURFACE	at outfall mixing
BSERVAT	O Oily sheen that break	WATER SURFACE as when disturbed	at outfall minging
OBSERVATIONS	O Oily sheen that break O Oily sheen that does	WATER SURFACE as when disturbed not break when disturbed	ar day sace my sprey
OBSERVAT	O Oily sheen that break O Oily sheen that does	WATER SURFACE as when disturbed not break when disturbed	Slightly Turbid at outfall mirgring
OBSERVAT	O Oily sheen that break O Oily sheen that does O Some foam (My limit	water surface s when disturbed not break when disturbed led Color Pale Ye	ar day sace my sprey
OBSERVAT	O Oily sheen that break O Oily sheen that does O Some foam (Very limit) O More than 3" foam O Natural/None	water surface s when disturbed not break when disturbed Color Color Water odor O Gasoline	ar day sace my sprey
OBSERVAT	O Oily sheen that break O Oily sheen that does O Some foam (Reg length O More than 3" foam O Natural/None O Fishy	water surface s when disturbed not break when disturbed Color Color Water odor O Gasoline O Chlorine	llow
OBSERVAT	O Oily sheen that break O Oily sheen that does O Some foam (Pop limit) O More than 3" foam O Natural/None O Fishy O Sewage	water surface s when disturbed not break when disturbed Color Color Water odor O Gasoline O Chlorine O Sulfur	O Other
OBSERVAT	O Oily sheen that break O Oily sheen that does O Some foam (Very limit) O More than 3" foam O Natural/None O Fishy O Sewage	water surface s when disturbed not break when disturbed color Color Water odor O Gasoline O Chlorine O Sulfur ARK THESE TAXA AS X, R,	O Other
	O Oily sheen that break O Oily sheen that does O Some foam (My limit) O More than 3" foam O Natural/None O Fishy O Sewage MA X = not	water surface s when disturbed not break when disturbed Color Color Water odor O Gasoline O Chlorine O Sulfur ARK THESE TAXA AS X, R, found, R (rare)=1-9, C (comi	O Other C, or D mon)=10-99
	O Oily sheen that break O Oily sheen that does O Some foam (Per limit) O More than 3" foam O Natural/None O Fishy O Sewage MA X = not and D	water surface s when disturbed not break when disturbed Color Color Water odor O Gasoline O Chlorine O Sulfur ARK THESE TAXA AS X, R, found, R (rare)=1-9, C (composite to the composite to the c	O Other C, or D mon)=10-99 or greater
	O Oily sheen that break O Oily sheen that does O Some foam (Rey land) O More than 3" foam O Natural/None O Fishy O Sewage X = not and D Stonefly Nymphs	water surface s when disturbed not break when disturbed Color Color Water odor O Gasoline O Chlorine O Sulfur ARK THESE TAXA AS X, R, found, R (rare)=1-9, C (composite to the composite to t	O Other C, or D mon)=10-99 or greater s
	O Oily sheen that break O Oily sheen that does O Some foam (Replanted of the length of	water surface s when disturbed not break when disturbed Color Color Water odor O Gasoline O Chlorine O Sulfur ARK THESE TAXA AS X, R, found, R (rare)=1-9, C (composite to the composite to the c	O Other C, or D mon)=10-99 or greater Midge Fly Larvae Black Fly Larvae
	O Oily sheen that break O Oily sheen that does O Some foam (Rey land) O More than 3" foam O Natural/None O Fishy O Sewage X = not and D Stonefly Nymphs	water surface s when disturbed not break when disturbed Color Color Water odor O Gasoline O Chlorine O Sulfur ARK THESE TAXA AS X, R, found, R (rare)=1-9, C (composite to the composite to the c	O Other C, or D mon)=10-99 or greater s / Midge Fly Larvae Black Fly Larvae Lunged Snails
	O Oily sheen that break O Oily sheen that does Some foam (Replant) O More than 3" foam O Natural/None O Fishy O Sewage MA X = not and D Stonefly Nymphs Mayfly Nymphs Water Penny Larvae Riffle Beetles Aquatic Snipe Flies	water surface s when disturbed not break when disturbed Color Color Water odor Water odor O Gasoline O Chlorine O Sulfur ARK THESE TAXA AS X, R, found, R (rare)=1-9, C (composite of the composite odd of the color of the composite odd of the color odd odd odd odd odd odd odd odd odd o	O Other C, or D mon)=10-99 or greater S
TAXA GROUPS OBSERVAT	O Oily sheen that break O Oily sheen that does Some foam (Reg length O More than 3" foam Natural/None O Fishy O Sewage MA X = not and D Stonefly Nymphs Mayfly Nymphs Water Penny Larvae Riffle Beetles Aquatic Snipe Flies Caddisflies	water surface s when disturbed not break when disturbed Color Color Water odor O Gasoline O Chlorine O Sulfur ARK THESE TAXA AS X, R, found, R (rare)=1-9, C (composite to the composite to the c	O Other C, or D mon)=10-99 or greater S
	O Oily sheen that break O Oily sheen that does Some foam (Replant) O More than 3" foam O Natural/None O Fishy O Sewage MA X = not and D Stonefly Nymphs Mayfly Nymphs Water Penny Larvae Riffle Beetles Aquatic Snipe Flies	water surface s when disturbed not break when disturbed Color Color Water odor Water odor O Gasoline O Chlorine O Sulfur ARK THESE TAXA AS X, R, found, R (rare)=1-9, C (composite of the composite odd of the color of the composite odd of the color odd odd odd odd odd odd odd odd odd o	O Other C, or D mon)=10-99 or greater s

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	HERRINGTON LAKE TRA	ANSECT ID CI-2	
ш	DATE 10-05-17	TIME	O Grab sample O Hester Dendy
SITE	FORM COMPLETED BY:	54-	Sample Volume:
	OTHER:		Depuration Time
		-001-012-171005	24 hrs
æ	Present conditions (check O Heavy Rain	all that apply) Inches of rain in last 24 H	Houre
WEATHER	O Overcast		
Ė	O Steady Rain	1	Vo
Ē	O Partly Cloudy	Other:	
3	O Intermittent Rain		
	Check all that apply		
	FLOW	WATER CLARITY	WATER COLOR
	1	Ø Clear/Transparent	Ø None
		O Cloudy/Slightly Turbid	O Brown/Muddy
		O Opaque/Very Turbid O Other:	O Green
ठे	O Normal (O Other:	O Milky/White O Tannic/Black
<u> </u>	O Flood over banks		O Other:
OBSERVATIONS		WATER OUREAGE	
≩	O Clear/ Sunn y	WATER SURFACE	
밇	O Oily sheen that breaks	when disturbed	
Ä	A STATE OF THE STA		
	O Oily sheen that does no		
	O Some foam	Color	
		Color Color	
	O Some foam O More than 3" foam	Color Color WATER ODOR	O Other
	O Some foam O More than 3" foam Natural/None	Color Color	O Other
	O Some foam O More than 3" foam O Natural/None O Fishy O Sewage	Color Color WATER ODOR O Gasoline O Chlorine O Sulfur	
	O Some foam O More than 3" foam O Natural/None O Fishy O Sewage MAF	Color Color WATER ODOR O Gasoline O Chlorine O Sulfur RK THESE TAXA AS X, R, C	C, or D
S	O Some foam O More than 3" foam O Natural/None O Fishy O Sewage MAF X = not fo	Color Color WATER ODOR O Gasoline O Chlorine O Sulfur RK THESE TAXA AS X, R, Cound, R (rare)=1-9, C (comm	C, or D non)=10-99
JPS	O Some foam O More than 3" foam O Natural/None O Fishy O Sewage MAF X = not fo	Color Color WATER ODOR O Gasoline O Chlorine O Sulfur RK THESE TAXA AS X, R, Cound, R (rare)=1-9, C (commodominant)=100 individuals of	C, or D non)=10-99 or greater
ROUPS	O Some foam O More than 3" foam O Natural/None O Fishy O Sewage MAF X = not for and D Stonefly Nymphs	Color Color WATER ODOR O Gasoline O Chlorine O Sulfur RK THESE TAXA AS X, R, Cound, R (rare)=1-9, C (commodity) (dominant)=100 individuals of the Net Spinning Caddisflies	C, or D non)=10-99 or greater Midge Fly Larvae
GROUPS	O Some foam O More than 3" foam O Natural/None O Fishy O Sewage MAF X = not fo	Color Color WATER ODOR O Gasoline O Chlorine O Sulfur RK THESE TAXA AS X, R, Cound, R (rare)=1-9, C (commodominant)=100 individuals of	C, or D non)=10-99 or greater
A GROUPS	O Some foam O More than 3" foam O Natural/None O Fishy O Sewage MAF X = not for and D Stonefly Nymphs Mayfly Nymphs Water Penny Larvae Riffle Beetles	Color Color WATER ODOR O Gasoline O Chlorine O Sulfur RK THESE TAXA AS X, R, Cound, R (rare)=1-9, C (comm (dominant)=100 individuals of Net Spinning Caddisflies Dobsonfly/Helgrammite Dragonfly & Damselfly R Crayfish (Z)	C, or D non)=10-99 or greater Midge Fly Larvae Black Fly Larvae Lunged Snails Aquatic Worms
AXA GROUPS	O Some foam O More than 3" foam O Natural/None O Fishy O Sewage MAF X = not for and D Stonefly Nymphs Mayfly Nymphs Water Penny Larvae Riffle Beetles Aquatic Snipe Flies	Color Color WATER ODOR O Gasoline O Chlorine O Sulfur RK THESE TAXA AS X, R, Cound, R (rare)=1-9, C (comm (dominant)=100 individuals of Net Spinning Caddisflies Dobsonfly/Helgrammite Dragonfly & Damselfly Crayfish (2) Crane Flies	C, or D non)=10-99 or greater Midge Fly Larvae Black Fly Larvae Lunged Snails Aquatic Worms Leeches
TAXA GROUPS	O Some foam O More than 3" foam O Natural/None O Fishy O Sewage MAF X = not for and D Stonefly Nymphs Mayfly Nymphs Water Penny Larvae Riffle Beetles	Color Color WATER ODOR O Gasoline O Chlorine O Sulfur RK THESE TAXA AS X, R, Cound, R (rare)=1-9, C (comm (dominant)=100 individuals of Net Spinning Caddisflies Dobsonfly/Helgrammite Dragonfly & Damselfly R Crayfish (Z)	C, or D non)=10-99 or greater Midge Fly Larvae Black Fly Larvae Lunged Snails Aquatic Worms

Page ____ of ____

	HERRINGTON LAKE TR	RAN	SECTID CT3	
ш	DATE 10 - 05 - 17		TIME	Grab sample O Hester Dendy
SITE	FORM COMPLETED BY	: ~	5h-	Sample Volume:
	OTHER:	i	ANI CIO IN	Depuration Time
	1	_	-001-C13-17100S	24h15
~	Present conditions (chec	k all		James 2
WEATHER	O Heavy Rain O Overcast		Inches of rain in last 24 I	
ΙĔΙ	O Steady Rain			NO
<	O Partly Cloudy		Other:	
💆	O Intermittent Rain		3	
	O Clear/Sunny			
	Check all that apply			
	FLOW	.,	WATER CLARITY	WATER COLOR
	O Dry	Ø_	Clear/Transparent	Ø None
	O Stagnant/Still	0	Cloudy/Slightly Turbid	O Brown/Muddy
	O Low	0	Opaque/Very Turbid Other:	O Green
ङ	O Normal O High	0	Other:	O Milky/White O Tannic/Black
ΙÓ	O Flood over banks			O Other:
Ē	O 1 lood over ballks			
OBSERVATIONS			WATER SURFACE	
	O Clear/Sunny			
ଫ୍ଲୀ	O Oily sheen that break			
8	O Oily sheen that does	not		
	O Some foam		Color Color	
	O More than 3" foam		WATER ODOR	
	O Natural/None	0	Gasoline	O Other
11 19	O Fishy	Ö	Chlorine	o outoi
	O Sewage	0	Sulfur	
			THESE TAXA AS X, R, C	
1 (2)			nd, R (rare)=1-9, C (comn	
<u>ŭ</u>		(dc	minant)=100 individuals	
<u>ا ک</u>	Stonefly Nymphs Mayfly Nymphs		Net Spinning Caddisflies	
Ķ	Mayfly Nymphs(\(\lambda \lambda \) Water Penny Larvae	-	Dobsonfly/Helgrammite Dragonfly & Damselfly	Black Fly Larvae Lunged Snails
0	Riffle Beetles	12		Aquatic Worms
TAXA GROUPS	Aquatic Snipe Flies	-	Crane Flies	Leeches
₹	Caddisflies		Aquatic Sow Bugs	
'-	Cilled Snails(13)		Scud	
			Clams & Mussels	

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Page	of	

	HERRINGTON LAKE TRA	ANSECT ID				
	DATE 0-85-17	TIME	Ø Grab sample			
SITE	FORM COMPLETED BY:		O Hester Dendy Sample Volume:			
<u>S</u>	MISOFENS		14,49			
	OTHER:		Depuration Time			
	· V	DOI-C14-171005	24 hrs			
nz.	Present conditions (check O Heavy Rain	all that apply) Inches of rain in last 24 l	7			
WEATHER	O Heavy Rain O Overcast		· ·			
亨	O Steady Rain	NE				
Ē	O Partly Cloudy	Other:				
	O Intermittent Rain					
	Ø Clear/Sunny Check all that apply					
	FLOW	WATER CLARITY	WATER COLOR			
	1	O/_Clear/Transparent	None None			
	1	O Cloudy/Slightly Turbid	O Brown/Muddy			
	10. W. N. C. C.	O Opaque/Very Turbid O Other:	O Green O Milkv/White			
2	O High	J Other.	O Milky/White O Tannic/Black			
ō	O Flood over banks		O Other:			
OBSERVATIONS	WATER SURFACE					
Į Ķ	O Clear/Sunny					
33.	O Oily sheen that breaks					
8	O Oily sheen that does not	ot break when disturbed Color				
	O More than 3" foam	Color				
	O INIOIO MICH.	WATER ODOR				
1		O Gasoline	O Other			
	1	O Chlorine O Sulfur				
		J Sullul				
			2 or D			
10	MAF X = not fe	RK THESE TAXA AS X, R, C ound, R (rare)=1-9, C (comm	non)=10-99			
PS	X = not for and D	RK THESE TAXA AS X, R, 0 ound, R (rare)=1-9, C (comm (dominant)=100 individuals o	non)=10-99 or greater			
OUPS	X = not for and D Stonefly Nymphs	rk THESE TAXA AS X, R, Cound, R (rare)=1-9, C (commodominant)=100 individuals of Net Spinning Caddisflies	non)=10-99 or greater sMidge Fly Larvae			
ROUPS	MAF X = not for and D Stonefly Nymphs Mayfly Nymphs	rk THESE TAXA AS X, R, Cound, R (rare)=1-9, C (comm (dominant)=100 individuals of Net Spinning Caddisflies Dobsonfly/Helgrammite	non)=10-99 or greater sMidge Fly LarvaeBlack Fly Larvae			
A GROUPS	MAF X = not for and D Stonefly Nymphs Mayfly Nymphs Water Penny Larvae	round, R (rare)=1-9, C (commound) (dominant)=100 individuals of Net Spinning Caddisflies Dobsonfly/Helgrammite Dragonfly & Damselfly	non)=10-99 or greater Midge Fly Larvae Black Fly Larvae Lunged Snails			
XA GROUPS	MAF X = not for and D Stonefly Nymphs Mayfly Nymphs	rk THESE TAXA AS X, R, Cound, R (rare)=1-9, C (comm (dominant)=100 individuals of Net Spinning Caddisflies Dobsonfly/Helgrammite	non)=10-99 or greater sMidge Fly LarvaeBlack Fly Larvae			
TAXA GROUPS	MAF X = not for and D Stonefly Nymphs Mayfly Nymphs Water Penny Larvae Riffle Beetles Aquatic Snipe Flies Caddisflies	RK THESE TAXA AS X, R, Cound, R (rare)=1-9, C (commound)=100 individuals of the Net Spinning Caddisflies Dobsonfly/Helgrammite Dragonfly & Damselfly Crayfish Crane Flies Aquatic Sow Bugs	non)=10-99 or greater Midge Fly Larvae Black Fly Larvae Lunged Snails Aquatic Worms			
TAXA GROUPS	MAF X = not for and D Stonefly Nymphs Mayfly Nymphs Water Penny Larvae Riffle Beetles Aquatic Snipe Flies	RK THESE TAXA AS X, R, Cound, R (rare)=1-9, C (commoderate) (dominant)=100 individuals of the Net Spinning Caddisflies Dobsonfly/Helgrammite Dragonfly & Damselfly Crayfish (2)	non)=10-99 or greater Midge Fly Larvae Black Fly Larvae Lunged Snails Aquatic Worms			

	A	1
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	HERRINGTON LAKE TR	RAN	SECT ID	CT		
	DATE		HQ INL			
	DATE 10-6-17		TIME	Of Grab sample		
	FORM COMPLETED BY		T. A	O Hester Dendy		
SITE	I OKINI COMPLETED BY	h	MTSorensen	Sample Volume:		
	OTHER:			Depuration Time		
	Sample 10 A	V-1	201-612-17100	24 hrs		
			HQ-171000	a c (m)		
~	Present conditions (check	k all				
WEATHER	O Heavy Rain O Overcast		Inches of rain in last 24	Hours		
l Œ	1					
I∢	O Steady Rain O Partly Cloudy		Other:			
Ι₩	O Intermittent Rain		Other.			
>	O Clear/Sunny					
	Check all that apply					
	FLOW		WATER CLARITY	WATER COLOR		
	O Dry	0/	Clear/Transparent	O' None		
	O Stagnant/Still	0	Cloudy/Slightly Turbid	O Brown/Muddy		
	O Low	0	Opaque/Very Turbid	O Green		
<u> က</u>	O Normal	0	Other:	O Milky/White		
 	O High			O Tannic/Black		
Ĕ	O Flood over banks			O Other:		
OBSERVATIONS	WATER SURFACE					
	O Clear/Sunny M70					
	O Oily sheen that break					
	O Oily sheen that does	not l				
~	O Some foam		Color			
	O More than 3" foam		Color WATER ODOR			
_	Ø Natural/None	0	Gasoline	O Other		
,	O Fishy	Õ	Chlorine	o outer		
	O Sewage	0	Sulfur			
	MA		THESE TAXA AS X, R,			
·~			nd, R (rare)=1-9, C (comm	•		
<u>ĕ</u>		(do	minant)=100 individuals			
<u>ا ج</u> ا	Stonefly Nymphs		Net Spinning Caddisflies			
<u>K</u>	Mayfly Nymphs	17	Dobsonfly/Helgrammite	Black Fly Larvae		
၂ ပ	Water Penny Larvae Riffle Beetles	K	Dragonfly & Damselfly Crayfish	Lunged Snails Aquatic Worms		
TAXA GROUPS	Aquatic Snipe Flies		Crane Flies	Leeches		
💆	Caddisflies		Aquatic Sow Bugs			
-	C Gilled Snails		Scud	Sample Weight		
			Clams & Mussels	119		

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	HERRINGTON LAKE TE	HERRINGTON LAKE TRANSECT ID					
	DATE 10-12-17		TIME 9:30	O Grab sample			
SITE	FORM COMPLETED BY			O Hester Dendy Sample Volume:			
0,	OTHER:	Ba	1	Depuration Time			
) <i>j</i> _	001-LHU-171012	24 h VS			
1				メナリソ			
2	Present conditions (chec O Heavy Rain	k alı	Inches of rain in last 24 H	loure 2			
WEATHER	O Overcast		1 /	louis 🦿			
F	O Steady Rain		Yes				
Ü	O Partly Cloudy		Other:				
5	O Intermittent Rain O Clear/Sunny						
	Check all that apply						
	FLOW		WATER CLARITY	WATER COLOR			
	O Dry	0	Clear/Transparent	Ø None			
	O Stagnant/Still O Low	0	Cloudy/Slightly Turbid Opaque/Very Turbid	O Brown/Muddy O Green			
40	Ø Normal	0	Other:	O Milky/White			
SZ S	O High		outon.	O Tannic/Black			
은	O Flood over banks			O Other:			
OBSERVATIONS	WATER SURFACE						
H H	Ø Clear/Sunny	IAT DATAMENT					
BS	O Oily sheen that breaks when disturbed O Oily sheen that does not break when disturbed						
0	O Some foam	HOL,	Color				
	O More than 3" foam		Color				
	O Net Who	^	WATER ODOR	0.00			
	Natural/None Fishy	0	Gasoline Chlorine	O Other			
	O Sewage	0	Sulfur				
	MA		THESE TAXA AS X, R, C				
၂ ဟ			nd, R (rare)=1-9, C (comm				
TAXA GROUPS	Stonefly Nymphs	(ac	ominant)=100 individuals o Net Spinning Caddisflies				
ΙÖ	R Mayfly Nymphs(2)		Dobsonfly/Helgrammite	Black Fly Larvae			
E	Water Penny Larvae		Dragonfly & Damselfly	Lunged Snails			
Ā	Riffle Beetles	R	Crayfish (4)	Aquatic Worms			
X	Aquatic Snipe Flies		Crane Flies	Leeches			
F	Caddisflies Gilled Snails (15)		Aquatic Sow Bugs Scud	Weget 28.29			
	Collied Origins (127)		Clams & Mussels				

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	HERRINGTON LAKE TRANSECT ID LHL2					
ш	DATE 10-12-17		TIME	O Grab sample O Hester Dendy		
SITE	FORM COMPLETED BY	12	ASIA	Sample Volume:		
	OTHER:		DOI-LHLZ-17101Z	Depuration Time		
	Present conditions (chec	k all	that apply)	3		
WEATHER	O Heavy Rain		Inches of rain in last 24 h	lours (
王	Ø Overcast		Ves			
4	O Steady Rain					
μÜ	O Partly Cloudy		Other:			
	O Intermittent Rain					
	O Clear/Sunny					
	Check all that apply FLOW		MATER OLARITY	WATER COLOR		
		0	WATER CLARITY	WATER COLOR		
	O Dry O Stagnant/Still	0	Clear/Transparent Cloudy/Slightly Turbid	NoneBrown/Muddy		
	O Low	0	Opaque/Very Turbid	O Green		
	O Normal	0	Other:	O Milky/White		
S	O High		Outer.	O Tannic/Black		
ō	O Flood over banks			O Other:		
F	C 11000 OVOI BUILLO			o diner.		
OBSERVATIONS	1		WATER SURFACE			
K K	O Clear/Sunny					
S	O Oily sheen that break					
B	O Oily sheen that does not break when disturbed					
~	O Some foam		Color			
	O More than 3" foam		Color			
	O/ Natural/Nava	_	WATER ODOR	0.00		
	O Natural/None	0	Gasoline Chlorine	O Other		
	O Fishy O Sewage	0	Sulfur			
			THESE TAXA AS X, R, C	or D		
			nd, R (rare)=1-9, C (comm			
က္ဆ			minant)=100 individuals o			
	Stonefly Nymphs	70.0	Net Spinning Caddisflies			
Q	Mayfly Nymphs		Dobsonfly/Helgrammite	Black Fly Larvae		
	Water Penny Larvae	-	Dragonfly & Damselfly	Lunged Snails		
ď	Riffle Beetles	R	Crayfish(2)	R Aquatic Worms		
TAXA GROUPS	Aquatic Snipe Flies		Crane Flies	R Leeches		
\(\(\)	Caddisflies		Aquatic Sow Bugs			
	Gilled Snails		Scud	Weight 8.19		
	12		Clams & Mussels			

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	HERRINGTON LAKE TRANSECT ID					
ш	DATE (0-(2-(7)		TIME /230	0	Grab sample Hester Dendy	
SITE	PORIVI COMPLETED BY	24	/MTSorense	4	ample Volume:	
	OTHER: Sample 1D-A	1-0	DOI-LHL3	De	epuration Time 24 hrs	
04	Present conditions (chec	k all	that apply)		2	
WEATHER	O Heavy Rain	-	Inches of rain in last 24 I	Hou	rs	
프	O Overcast		Ves			
\bar{4}	O Steady Rain		100			
	O Partly Cloudy O Intermittent Rain		Other:			
>	O Clear/Sunny					
	Check all that apply			-		
	FLOW		WATER CLARITY		WATER COLOR	
	O Dry	0	Clear/Transparent	0	None	
	O Stagnant/Still	0	Cloudy/Slightly Turbid	0	Brown/Muddy	
	O Low	0	Opaque/Very Turbid	0	Green	
ဟ	○ Normal	0	Other:	0	Milky/White	
Z	O High			0	Tannic/Black	
∣≌	O Flood over banks			10	Other:	
OBSERVATIONS	WATER SURFACE					
K	O Clear/Sunny M175					
SSI	O Oily sheen that break					
	O Oily sheen that does					
	O Some foam		Color			
	O More than 3" foam		Color WATER ODOR			
	Natural/None	0	Gasoline	0	Other	
	O Fishy	Ö	Chlorine	V	Other	
	O Sewage	Ö	Sulfur			
		RK	THESE TAXA AS X, R, C), OI	D	
40			nd, R (rare)=1-9, C (comm			
<u>S</u>		(do	eminant)=100 individuals o			
	K Stonefly Nymphs		Net Spinning Caddisflies		Midge Fly Larvae	
X	Mayfly Nymphs		Dobsonfly/Helgrammite	_	Black Fly Larvae	
O	Water Penny Larvae Riffle Beetles	D	Dragonfly & Damselfly		Lunged Snails	
≴	Aquatic Snipe Flies	D	Crayfish (2) Crane Flies	-	Aquatic Worms Leeches	
TAXA GROUPS	Caddisflies		Aquatic Sow Bugs	_	the second secon	
	K Gilled Snails		Scud	N	leight - 23,59	
			Clams & Mussels		0 .	

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	HERRINGTON LAKE TRANSECT ID					
ш	DATE 10-12-17		TIME 13:30	Ø Grab sample O Hester Dendy		
SITE	FORM COMPLETED BY	:	B6	Sample Volume:		
	Sample 10 A	1-0	001-171012	Depuration Time		
	Present conditions (chec	k all	that apply)			
WEATHER	O Heavy Rain O Overcast O Steady Rain		Inches of rain in last 24 h	lours 124 hrs? Yes		
WEA	O Partly Cloudy O Intermittent Rain O Clear/Sunny		Other:			
	Check all that apply					
	FLOW	-	WATER CLARITY	WATER COLOR		
တ	O Dry O Stagnant/Still O Low O Normal	000	Clear/Transparent Cloudy/Slightly Turbid Opaque/Very Turbid Other:	NoneBrown/MuddyGreenMilky/White		
OBSERVATIONS	O High O Flood over banks			O Tannic/Black O Other:		
\$	WATER SURFACE					
吊吊	O Clear/Sunny					
3S	O Oily sheen that break O Oily sheen that does					
5	O Some foam		break when disturbed Color			
	O More than 3" foam		Color			
	WATER ODOR					
	Natural/None	0	Gasoline	O Other		
	O Fishy O Sewage	0	Chlorine Sulfur			
		_	THESE TAXA AS X, R, C	, or D		
.	X = not	four	nd, R (rare)=1-9, C (comm	on)=10-99		
TAXA GROUPS	Stonefly Nymphs Mayfly Nymphs Water Penny Larvae Riffle Beetles Aquatic Snipe Flies		minant)=100 individuals of Net Spinning Caddisflies Dobsonfly/Helgrammite Dragonfly & Damselfly Crayfish (2) Crane Flies			
1	Caddisflies Gilled Snails		Aquatic Sow Bugs Scud Clams & Mussels	Weight 25.69		

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	HERRINGTON LAKE TRANSECT ID							
ш	DATE 10-12-17		TIME 1530	Grab sample O Hester Dendy				
SITE	FORM COMPLETED BY	Sample Volume: 7859						
	OTHER:			Depuration Time				
	Present conditions (chec							
WEATHER	O Heavy Rain O Overcast O Steady Rain O Partly Cloudy	(Inches of rain in last 24 l	Hours				
₹	O Intermittent Rain O Clear/Sunny		4 5 7 3 7 2					
- 4	Check all that apply FLOW		WATER CLARITY	WATER COLOR				
TIONS	O Dry O Stagnant/Still O Low O Normal O High O Flood over banks	0000	Clear/Transparent Cloudy/Slightly Turbid Opaque/Very Turbid Other:	None O Brown/Muddy O Green O Milky/White O Tannic/Black O Other:				
\	WATER SURFACE							
OBSERVATIONS	O Clear/Surmy O Oily sheen that breaks when disturbed O Oily sheen that does not break when disturbed							
~	O Some foam O More than 3" foam		Color Color					
			WATER ODOR					
	Natural/NoneFishySewage	000	Gasoline Chlorine Sulfur	O Other				
	MA		THESE TAXA AS X, R,					
TAXA GROUPS	•	(dd	nd, R (rare)=1-9, C (commoniant)=100 individuals of the Spinning Caddisflies Dobsonfly/Helgrammite Dragonfly & Damselfly Crayfish (2) Crane Flies Aquatic Sow Bugs Scud Clams & Mussels	or greater sMidge Fly Larvae				

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	HERRINGTON LAKE TR	RAN	SECTID LHG					
	DATE 10-12-17		TIME 1620	O Grab sample O Hester Dendy				
SITE	FORM COMPLETED BY	1-1	nw	Sample Volume:				
	OTHER:			Depuration Time				
. —	4		1-001-44L6-171012	24 hrs				
n _x	Present conditions (chec	k all	that apply) Inches of rain in last 24 h	Laura				
WEATHER	O Heavy Rain O Overcast		Inches of fair in last 24 F	10urs				
🗦	O Steady Rain		465					
Į į	O Partly Cloudy		Other:					
5	O Intermittent Rain O Clear/Sunny							
	Check all that apply							
	FLOW	10	WATER CLARITY	WATER COLOR				
	O Dry O Stagnant/Still	0	Clear/Transparent Cloudy/Slightly Turbid	O None				
	O Stagnant/Still O Low	0	Opaque/Very Turbid	O Brown/Muddy O Green				
,,	O Normal	o	Other:	O Milky/White				
Ž	O High			O Tannic/Black				
은	O Flood over banks			O Other:				
/AT	WATER SURFACE							
			TITTLE TO OTTE TO DE					
ER	O Clear/Sunny	مارور						
BSERV	O Oily sheen that break		nen disturbed					
OBSERVATIONS			nen disturbed					
OBSERV	O Oily sheen that break O Oily sheen that does		nen disturbed oreak when disturbed Color Color					
OBSERV	O Oily sheen that break O Oily sheen that does O Some foam O More than 3" foam	not k	nen disturbed break when disturbed Color Color WATER ODOR					
OBSERV	O Oily sheen that break O Oily sheen that does O Some foam O More than 3" foam O Natural/None	not k	nen disturbed oreak when disturbed Color Color WATER ODOR Gasoline	O Other				
OBSERV	O Oily sheen that break O Oily sheen that does O Some foam O More than 3" foam	not k	nen disturbed break when disturbed Color Color WATER ODOR	O Other				
OBSERV	O Oily sheen that break O Oily sheen that does O Some foam O More than 3" foam O Natural/None O Fishy O Sewage	O O O ARK	nen disturbed Dreak when disturbed Color Color WATER ODOR Gasoline Chlorine Sulfur THESE TAXA AS X, R, C	C, or D				
	O Oily sheen that break O Oily sheen that does O Some foam O More than 3" foam O Natural/None O Fishy O Sewage MA X = not	O O O ARK	nen disturbed preak when disturbed Color Color WATER ODOR Gasoline Chlorine Sulfur THESE TAXA AS X, R, Cond, R (rare)=1-9, C (comm	c, or D				
	O Oily sheen that break O Oily sheen that does O Some foam O More than 3" foam O Natural/None O Fishy O Sewage X = not and D	O O O ARK	nen disturbed Dreak when disturbed Color Color WATER ODOR Gasoline Chlorine Sulfur THESE TAXA AS X, R, Cond, R (rare)=1-9, C (commoniant)=100 individuals o	C, or D non)=10-99 or greater				
	O Oily sheen that break O Oily sheen that does O Some foam O More than 3" foam O Natural/None O Fishy O Sewage X = not and D Stonefly Nymphs	O O O ARK	nen disturbed creak when disturbed Color Color WATER ODOR Gasoline Chlorine Sulfur THESE TAXA AS X, R, Cond, R (rare)=1-9, C (commoninant)=100 individuals of the point of the control of	or D on)=10-99 or greater Midge Fly Larvae				
	O Oily sheen that break O Oily sheen that does O Some foam O More than 3" foam O Natural/None O Fishy O Sewage X = not and D Stonefly Nymphs	O O O ARK four (do	nen disturbed creak when disturbed Color Color WATER ODOR Gasoline Chlorine Sulfur THESE TAXA AS X, R, Cond, R (rare)=1-9, C (commoninant)=100 individuals of Net Spinning Caddisflies Dobsonfly/Helgrammite	c, or D non)=10-99 or greater Midge Fly Larvae Black Fly Larvae				
	O Oily sheen that break O Oily sheen that does O Some foam O More than 3" foam O Natural/None O Fishy O Sewage X = not and D Stonefly Nymphs	O O O ARK four (do	reak when disturbed Color Color WATER ODOR Gasoline Chlorine Sulfur THESE TAXA AS X, R, Cond, R (rare)=1-9, C (commoninant)=100 individuals of Net Spinning Caddisflies Dobsonfly/Helgrammite Dragonfly & Damselfly Crayfish (1)	or D on)=10-99 or greater Midge Fly Larvae				
	O Oily sheen that break O Oily sheen that does O Some foam O More than 3" foam O Natural/None O Fishy O Sewage X = not and D Stonefly Nymphs Water Penny Larvae Riffle Beetles Aquatic Snipe Flies	O O O Government of the control of t	nen disturbed creak when disturbed Color Color WATER ODOR Gasoline Chlorine Sulfur THESE TAXA AS X, R, Cond, R (rare)=1-9, C (commoninant)=100 individuals of Net Spinning Caddisflies Dobsonfly/Helgrammite Dragonfly & Damselfly Crayfish (/) Crane Flies	c, or D non)=10-99 or greater Midge Fly Larvae Black Fly Larvae Lunged Snails				
TAXA GROUPS OBSERV	O Oily sheen that break O Oily sheen that does O Some foam O More than 3" foam O Natural/None O Fishy O Sewage X = not and D Stonefly Nymphs Water Penny Larvae Riffle Beetles	O O O Government of the control of t	reak when disturbed Color Color WATER ODOR Gasoline Chlorine Sulfur THESE TAXA AS X, R, Cond, R (rare)=1-9, C (commoninant)=100 individuals of Net Spinning Caddisflies Dobsonfly/Helgrammite Dragonfly & Damselfly Crayfish (/) Crane Flies	or D on)=10-99 or greater Midge Fly Larvae Black Fly Larvae Lunged Snails Aquatic Worms				

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	HERRINGTON LAKE TRANSECT ID DX RUD RIVEN								
l	DATE 10-7-17		TIME	O Grab sample O Hester Dendy					
SITE	FORM COMPLETED BY	115	en IBG	Sample Volume:					
	OTHER: Sample 10-A1-		/	Depuration Time					
				24hrs					
1 02	Present conditions (chec O Heavy Rain	K all	Inches of rain in last 24 Hours						
WEATHER	O Overcast								
=	O Steady Rain		N	\bigcirc					
∢	O Partly Cloudy		Other:	0					
"	O Intermittent Rain		Other.						
>	© Clear/Sunny								
-	Check all that apply	_							
	FLOW		WATER CLARITY	WATER COLOR					
	O Dry	0	Clear/Transparent	None					
	O Stagnant/Still	0	Cloudy/Slightly Turbid	O Brown/Muddy					
	O Low	0	Opaque/Very Turbid	O Green					
(0)	O Normal	0	Other:	O Milky/White					
Ž	O High			O Tannic/Black					
으	O Flood over banks			O Other:					
OBSERVATIONS									
≥	Ø Clear/ Sunny		WATER SURFACE						
Π̈́	O Oily sheen that break	e w	nen disturbed						
	O Oily sheen that does								
0	O Some foam	iiot	Color						
	O More than 3" foam		Color	*					
	o more than a ream		WATER ODOR						
	Natural/None	0	Gasoline	O Other					
	O Fishy	0	Chlorine						
	O Sewage	0	Sulfur						
	MA	RK	THESE TAXA AS X, R, (, or D					
	X = not found, R (rare)=1-9, C (common)=10-99								
		(dc	minant)=100 individuals o						
	Stonefly Nymphs		Net Spinning Caddisflies	Midge Fly Larvae					
	Mayfly Nymphs		Dobsonfly/Helgrammite	Black Fly Larvae					
5	Water Penny Larvae		Dragonfly & Damselfly	Lunged Snails					
< <	Riffle Beetles		Crayfish	Aquatic Worms					
TAXA GROUPS	Aquatic Snipe Flies	-	Crane Flies	Leeches					
F	Caddisflies	F	Aquatic Sow Bugs	Weight 10.969					
	Gilled Snails	J.	Scud	10.90g					
			Clams & Mussels	4					

APPENDIX E: KENTUCKY ENVIRONMENTAL SERVICES BRANCH SPLIT SAMPLE SELENIUM WHOLE BODY TISSUE CALCULATION

Table E1: Calculation of Bluegill Selenium Fish Whole Body Fish Tissue Concentration

Table E2: Comparison of Kentucky Environmental Services Branch and Phase I Fish Tissue Sample Results

Kentucky Department of Water Laboratory Report for fillet sample

Kentucky Department of Water Laboratory Report for carcass sample

Table E1: Calculation of Bluegill Selenium Fish Whole Body Fish Tissue Concentration EW Station Phase I Technical Memorandum Herrington Lake Mercer County, Kentucky

Sample ID	Portion	CAS Number	Constituent	Basis	Selenium in mg/kg (C_F and C_R)	Weight of portion (W _F and W _R) grams	Weight (W _{WB}) grams	Selenium Whole Body Fish Concentration (WBFC) mg/kg wet weight (WW) Using Equation 1
Phase I Sample - WET W					1			
FF-001(BG)-CI-171004	Fillet	7782-49-2	Selenium	Wet	1.85	75.991	209.753	1.74
FWB-001(BG)-CI-171004	Carcass	7782-49-2	Selenium	Wet	1.68	133.762		
Phase I Sample Duplicat		WEIGHT						
FF-001(BG)-CI-171004-FD		7782-49-2	Selenium	Wet	2.15	75.991	209.753	2.00
FWB-001(BG)-CI-171004-F	Carcass	7782-49-2	Selenium	Wet	1.91	133.762		
Kentucky ESB Split Sam FF-001(BG)-CI-171004	p le - WE Fillet	T WEIGHT 7782-49-2	Selenium	Wet	2.19	75.991	209.753	2.08
FWB-001(BG)-CI-171004	Carcass	7782-49-2	Selenium	Wet	2.01	133.762		
Phase I Sample - DRY WEIGHT						75.991	209.753	6.47
FWB-001(BG)-CI-171004	Carcass	7782-49-2	Selenium	Dry	5.08	133.762		
Phase I Sample - DRY W				1				,
FF-001(BG)-CI-171004-FD		7782-49-2		Dry	10.2	75.991	209.753	7.38
FWB-001(BG)-CI-171004-F	Carcass	7782-49-2	Selenium	Dry	5.78	133.762		
					1			
Kentucky ESB Split Sample - DRY WEIGHT	Portion	% Moisture (Ramboll Data)	Selenium mg/kg w (C _F and (/W	Selenium in mg/kg dw (C _F and C _R)	Weight of portion (W _F and W _R) grams	Weight (W _{WB}) grams	Selenium Whole Body Fish Concentration (WBFC) mg/kg wet weight (WW) Using Equation 1
FF-001(BG)-CI-171004	Fillet	79.2	2.19		10.53	75.991	209.753	7.69
FWB-001(BG)-CI-171004	Carcass	66.9	2.01		6.07	133.762		

Table E1: Calculation of Bluegill Selenium Fish Whole Body Fish Tissue Concentration EW Station Phase I Technical Memorandum Herrington Lake Mercer County, Kentucky

Section 5.1.1 of the Phase I Technical Memorandum shows the equation used to calculate whole body fish tissue concentrations for bluegill:

```
WBFC = ([WF/ (WF + WR)] * CF) + ([WR/ (WF + WR)] * CR)
Where:
WBFC = Whole body fish chemical concentration (mg/kg)
```

Wf = Weight of fish fillet (g)

Wr = Weight of fish remains or carcass (g)

Cf = Chemical concentration in fish fillet composite sample (mg/kg)

Cr = Chemical concentration in remains composite sample (mg/kg)

% Solids 100-% moisture

Dry Weigh Concentration in Wet Weight/(1-% solids)

ESB Kentucky Environmental Services Branch

mg/kg DW Miligrams per kilogram dry weight

mg/kg WW Miligrams per kilogram wet weight

WwB Weight of Whole body (Wf+Wr)

Table E2: Comparison of Kentucky Environmental Services Branch and Phase I Fish Tissue
Sample Results
EW Station Phase I Technical Memorandum Herrington Lake
Mercer County, Kentucky

Portion	CAS Number	Constituent	KY ESB Result (mg/kg WW)	Phase I Sample Result (mg/kg WW)	% Difference
Fillet	7440-38-2	Arsenic, total	0.103	0.08	22
Fillet	7440-43-9	Cadmium	< 0.0186	0.0084	NA
Fillet	7782-49-2	Selenium	2.19	1.85	16
Fillet	7440-66-6	Zinc	9.76	7.45	24
Carcass	7440-38-2	Arsenic, total	0.302	0.24	21
Carcass	7440-43-9	Cadmium	0.125	0.105	16
Carcass	7782-49-2	Selenium	2.01	1.68	16
Carcass	7440-66-6	Zinc	40.2	27.9	31

KY ESB Kentucky Environmental Services Branch mg/kg ww Miligrams per kilogram wet weight



MATTHEW G. BEVIN

CHARLES G. SNAVELY

ENERGY AND ENVIRONMENT CABINET DEPARTMENT FOR ENVIRONMENTAL PROTECTION

AARON B. KEATLEY

100 SOWER BOULEVARD, STE. 104 FRANKFORT, KENTUCKY 40601

Friday, March 23, 2018

Lab Sample Number: AP00581 Station/Project ID:

To: Division of Water Re: EW Brown Fish Tissue Monitoring

300 Sower Blvd

Frankfort, KY 40601 Program Code: A10

ATTN: Andrea Keatley

County: Mercer

AKGWA:
Facility:

 Collected By:
 Ramboll Environ
 Date:
 10/03/2017
 Time:
 10:00

 Delivered By:
 FedEx
 Date:
 03/08/2018
 Time:
 10:35

 Received By:
 Jennifer Clark
 Date:
 03/08/2018
 Time:
 10:35

Sample Matrix: FISH-FILLET Collection Method: Grab

Sample Description: K17-12350 Sample Type: Field Sample

Sample ID: 008 Container ID:

REPORT OF ANALYSIS Shipment Temp: 0.8C

LAB ACODE	CAS NUM	CONSTITUENTS	RESULT UNIT	LOQ	<u>LOD</u>	FLAG
\$3130T_CALC	7429-90-5	Aluminum	Not detected mg/Kg AR	1.86	0.929	U
\$3130T_CALC	7440-38-2	Arsenic	0.103 mg/Kg AR	0.0465	0.0186	
\$3130T_CALC	7440-41-7	Beryllium	Not detected mg/Kg AR	0.0465	0.0186	U
\$3130T_CALC	7440-43-9	Cadmium	Not detected mg/Kg AR	0.0465	0.0186	U
\$3130T_CALC	7440-47-3	Chromium	0.824 mg/Kg AR	0.0465	0.0186	
\$3130T_CALC	7440-50-8	Copper	Not detected mg/Kg AR	0.0930	0.0465	QU
\$3130T_CALC	7439-92-1	Lead	Not detected mg/Kg AR	0.0465	0.0186	U
\$3130T_CALC	7439-96-5	Manganese	1.11 mg/Kg AR	0.0465	0.0186	V
\$3130T_CALC	7440-02-0	Nickel	0.522 mg/Kg AR	0.0930	0.0465	
\$3130T_CALC	7782-49-2	Selenium	2.19 mg/Kg AR	0.0465	0.0186	
\$3130T_CALC	7440-62-2	Vanadium	0.0436 mg/Kg AR	0.0465	0.0186	J
\$3130T_CALC	7440-66-6	Zinc	9.76 mg/Kg AR	0.930	0.465	

Container Preservation Status at Sample Login

@G-4OZF Glass 4 oz widemouth jar -frozen pH not tested

Data Quality Flag Description

Unit Description

J = Estimated Value

AR = Analyzed on an "As Received" Weight Basis

Q = QC Limits Exceeded

U = Analyte Not Detected

V = Calibration Verification Limits Exceeded

Case Narrative

Copper (Cu) is Q flagged for this sample analysis (\$3130T) due to it not meeting the method limits in regard to the calibration for this indivdual metal.

This report has been prepared and reviewed by personnel within the Environmental Services Branch (ESB) and has been approved for release.

Original report is on file at ESB

Report Format: DESFinal Michael Goss, Branch Manager

Kentucky

AP00581 Report Version 1

Sample Number:



MATTHEW G. BEVIN GOVERNOR

CHARLES G. SNAVELY SECRETARY

ENERGY AND ENVIRONMENT CABINET DEPARTMENT FOR ENVIRONMENTAL PROTECTION

AARON B. KEATLEY COMMISSIONER

100 SOWER BOULEVARD, STE. 104 FRANKFORT, KENTUCKY 40601

Friday, March 23, 2018

Lab Sample Number: AP00582 **Station/Project ID:**

Division of Water **Re:** EW Brown Fish Tissue Monitoring

300 Sower Blvd

Frankfort, KY 40601 **Program Code:** A10

ATTN: Andrea Keatley **AKGWA: County:** Mercer **Facility:**

Collected By: Ramboll Environ **Date:** 10/03/2017 **Time:** 10:00 **Delivered By:** FedEx **Time:** 10:35 **Date:** 03/08/2018 **Received By:** Jennifer Clark **Date:** 03/08/2018 **Time:** 10:35

Sample Matrix: FISH-OFFAL **Collection Method:**

Sample Type: Field Sample Sample Description: K17-12350

Sample ID: 009 **Container ID:**

Shipment Temp: 0.8C REPORT OF ANALYSIS

LAB ACODE	CAS NUM	CONSTITUENTS	RESULT UNIT	LOQ	<u>LOD</u>	FLAG
\$3130T_CALC	7429-90-5	Aluminum	27.8 mg/Kg A	AR 1.65	0.826	
\$3130T_CALC	7440-38-2	Arsenic	0.302 mg/Kg A	R 0.0412	0.0165	
\$3130T_CALC	7440-41-7	Beryllium	Not detected mg/Kg A	R 0.0412	0.0165	U
\$3130T_CALC	7440-43-9	Cadmium	0.125 mg/Kg A	R 0.0412	0.0165	
\$3130T_CALC	7440-47-3	Chromium	0.263 mg/Kg A	R 0.0412	0.0165	
\$3130T_CALC	7440-50-8	Copper	0.564 mg/Kg A	AR 0.0826	0.0413	Q
\$3130T_CALC	7439-92-1	Lead	0.0540 mg/Kg A	R 0.0412	0.0165	
\$3130T_CALC	7439-96-5	Manganese	56.3 mg/Kg A	R 0.0412	0.0165	V
\$3130T_CALC	7440-02-0	Nickel	0.332 mg/Kg A	AR 0.0826	0.0413	
\$3130T_CALC	7782-49-2	Selenium	2.01 mg/Kg A	R 0.0412	0.0165	
\$3130T_CALC	7440-62-2	Vanadium	0.604 mg/Kg A	R 0.0412	0.0165	
\$3130T CALC	7440-66-6	Zinc	40.2 mg/Kg A	AR 0.826	0.413	

Container Preservation Status at Sample Login

@G-4OZF Glass 4 oz widemouth jar -frozen pH not tested

AP00582

Data Quality Flag Description

Unit Description

AR = Analyzed on an "As Received" Weight Basis

O = OC Limits Exceeded U = Analyte Not Detected

V = Calibration Verification Limits Exceeded

Case Narrative

Copper (Cu) is Q flagged for this sample analysis (\$3130T) due to it not meeting the method limits in regard to the calibration for this indivdual metal.

This report has been prepared and reviewed by personnel within the Environmental Services Branch (ESB) and has been approved for release. Original report is on file at ESB

Michael Goss, Branch Manager Report Format: DESFinal

Sample Number: KentuckyUnbridledSpirit.com Report Version 1

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