

Stream	Warm Spring Run		Level	3	Date(s)	11/20/12
Monitor(s)	Lehman, Dean, Swaim, Jones, Oaks, and others					
Directions	Behind Earth Dog Café on Route 522 and Whisner Ave.		Start time	1:15 P.M.		
			County	Morgan		
			RR Miles	Station	EarthDog	
Latitude	37	25	Longitude	78	13	5
			Database code	Warm Spring Run Earth Dog		

WATER CHEMISTRY

	Result	Units		Result	Units		Result	Units
Temp. (°F or °C)	10	c	Alkalinity			Fecal coliform/E-coli		
pH	7		Nitrate/Nitrite	1	ppm	Iron	.5	Ppm
Conductivity			Phosphates			Aluminum		
Dissolved O ₂	120%		Total Dissolved Solids			Manganese		
Acidity			Turbidity			Other (describe below)		

Describe other conditions analyzed:

PHYSICAL CONDITIONS

Water	murky	Algae color	brown
Water color	brown	Algae abundance	moderate
Water/Sedi		Algae texture	even coating
Streambed	brown	Surface foam	none
Comments	Lots of trash. Two manhole/sewer covers, moderate amount of Japanese Knot weed present. Water murky because of drenching at the High School.		

Riffle width	Run width	Pool width	
Riffle depth	Run depth	Pool depth	
			Feet Meters
			Indicate units

Estimate	Count			Entire reach		Riffles only	
Silt/clay	Sand	Fine gravel	Coarse gravel	Cobble	Boulder	Bedrock	Woody debris
Index					% Riffles	% Runs	% Pools
			Woody debris adjustment				

HABITAT CONDITIONS

Attachment sites	12	Channel flow status	9	Embeddedness	15
Riffle frequency	9	Channel alterations	17	Bank veg. protection	7
Velocity/depth	13	Sediment deposition	16	Bank stability	5
Total Score	124	Channel shade	60-80%	Riparian buffer width	3
Integrity Rating	good				5
Comments					

BIOLOGICAL CONDITIONS

Richness		Composition		Tolerance	
Total Taxa	11	% EPT Abundance	85.8	Biotic Index	3.90
EPT Taxa	5	% Dominance	45.8	% Tolerant	4.7
				Stream Score	72.7
Other aquatic organisms observed or collected (e.g. fish, salamanders etc.), or additional comments:				Integrity Rating	suboptimal
Discharge (cfs)				Water level	Low Normal High No flow
Current/past weather conditions:					

LAND USE IMPACTS: Indicate the types of land uses that affect your stream reach and their approximate location using the code: **(S)** streamside, **(M)** within ¼ mile, and **(W)** within the watershed. Also estimate the level of impact with the numeric codes (1) slight, (2) moderate, or (3) for high impacts.

	Impact	Location		Impact	Location	
Single family residences	1	S	Trash dumps			
Sub-urban developments	1	W	Intensive feedlots			
Urban areas			Pastureland	2	W	
Industrial areas	1	W	Cropland			
Parking lots, malls etc.	1	S	Oil & gas wells			
Bridges	1	S	Logging			
Paved roads			Mountaintop mining			
Unpaved roads	1	W	Abandoned mining			
Active construction	1	W	Deep mining			
Parks, trails etc	2	W	Quarries			
Other recreation			Other (describe)			
Landfills						
Comments:				Pipes?	Yes	No

BENTHIC MACROINVERTEBRATES: Record the total number of each macroinvertebrate collected. Note: In the VAD the macroinvertebrates are recorded in three columns based upon their tolerance rating.

Low	Total	Moderate	Total	High	Total
Ameletidae (Ameletid minnow mayfly)		Baetidae (Small minnow mayfly)		Coenagrionidae (Narrow-wing damselfly)	
Ephemereillidae (Spiny-crawler mayfly)		Beatiscidae (Armored mayfly)		Lestidae (Spread-wing damselfly)	
Heptageniidae (Flatheaded mayfly)	3	Caenidae (Square-gilled mayfly)		Libellulidae (Skimmer dragonfly)	
Isonychiidae (Brush-legged mayfly)	1	Ephemeridae (Burrowing mayfly)		Chrysomelidae (Reed beetle)	
Leptophlebiidae (Prong-gilled mayfly)		Potamanthidae (Hackle-gilled mayfly)		Dytiscidae (Predacious diving beetle)	
Siphonuridae (Primitive minnow mayfly)		Tricorythidae (Stout-crawler mayfly)		Haliplidae (Crawling water beetle)	
Capniidae (Small winter stonefly)	48	Hdropsychidae (Common netspinner)	33	Hydrophilidae (Water scavenger beetle)	
Chloroperlidae (Green stonefly)		Hdroptilidae (Purse-case caddisfly)		Belostomatidae (Giant water bug)	
Leuctridae (Rolled-wing stonefly)		Molannidae (Hooded-case caddisfly)		Corixidae (Water boatman)	
Nemouridae (Little brown stonefly)		Phryganeidae (Giant-case caddisfly)		Gerridae/Veliidae (Water striders)	
Perlidae (Common stonefly)		Polvcentronodidae (Tube-net caddisfly)		Hydrometridae (Water measurer)	
Perlodidae (Patterned stonefly)		Psychomiidae (Trumpet-net caddisfly)		Nepidae (Water scorpion)	
Peltoperlidae (Roach-like stonefly)		Pvralidae (Aquatic moth)		Notonectidae (Backswimmer)	
Pteronarcyidae (Giant stonefly)		Caloptervoidae (Broad-wing damselfly)		Ceratopogonidae (Biting midge)	
Taenioptervoidae (Large winter stonefly)		Gomphidae (Clubtail dragonfly)		Chironomidae (Non-biting midge)	4
Brachycentridae (Humpless-case caddisfly)		Drvopidae (Long-toed beetle)		Culicidae (Mosquito)	
Glossosomatidae (Saddle-case caddisfly)		Elmidae (Riffle beetle)		Muscidae (Muscid fly)	
Goeridae (Goerid-case caddisfly)		Gyrinidae (Whirligig beetle)		Psychodidae (Moth fly)	
Helicopsychidae (Snail-case caddisfly)		Sialidae (Alderfly)		Ptychopteridae (Phantom cranefly)	
Lepidostomatidae (Case-maker caddisfly)		Entomobrvidae (Springtail)		Stratiomyidae (Soldier fly)	
Leptoceridae (Longhorn-case caddisfly)		Dixidae (Dixid midge)		Syrphidae (Rat-tailed maggot)	
Limnephilidae (Northern-case caddisfly)		Empididae (Dance fly)		Tabanidae (Horse fly)	
Philopotamidae (Finger-net caddisfly)	97	Simuliidae (Black fly)	4	Asellidae (Aquatic sowbug)	
Rhyacophilidae (Free-living caddisfly)		Tipulidae (Crane fly)		Ancylidae (Limpet snail)	
Uenoidae (Uenoid-case caddisfly)		Hydrachnidae (Water mites)		Physidae (Left-handed snail)	
Aeshnidae (Damner dragonfly)		Cambaridae (Crawfish)	2	Planorbidae (Orb snail)	
Cordulegastridae (Spiketail dragonfly)		Gammaridae (Sideswimmer)		Hirudinea (Leech)	
Psephenidae (Water penny)	14	Palaemonidae (Freshwater shrimp)		Nematoda (Round worm)	
Corvidae (Hellgrammite/Fishfly)		Bithyniidae (Bithynid snail)		Nematomorpha (Horsehair worm)	4
Athericidae (Watersnipe fly)		Pleuroceridae (Rock snail)		Oligochaeta (Aquatic worm)	
Blephariceridae (Net-wing midge)		Viviparidae (Viviparid snail)		Turbellaria (Flatworms)	2
Hydrobiidae (Pebble snail)		Corbiculidae (Asian clam)		Tolerance unknown	
Unionidae (Musse)		Sphaeriidae (Pea clam)		Hydrozoa (Freshwater jellyfish)	
				Neuroptera (Spongilliflies)	
				Soonilla (Freshwater sponge)	