



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-04-0008	14T-101	MHAB	AB18398	140716305	7/16/14	Delaware
Stream Name		Location		HUC 12		HUCTO14
Tributary of Campbell Creek		CR 200 N		051201030401		05120103030010
Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score	
4453690.06	650196.08	55	12.468	3.524	59	

Taxon	Count	Notes	HBI Tolerance
1084 (TURBELLARIA)	1		4
1552 (Tubificidae with bifid chetae and no hair chetae)	2		
1553 (Tubificidae with pectinate chetae and hair chetae)	1		
1234 (GLOSSIPHONIIDAE)	3		
2269 (Menetus)	3		
2252 (Physella)	16		8
2181 (Sphaerium)	4		6
2157 (Musculium)	1		6
1083 (ACARI)	2		4
9050 (Hyalella)	33		
9019 (Cambarus)	1		2
8996 (Orconectes)	5		4
3066 (Baetis intercalaris)	4		3
3071 (Baetis flavistriga)	6	Slide 0213.4	3
3081 (Callibaetis)	1	Slide 0213.3	6
3183 (Caenis)	4		3
3188 (Caenis latipennis)	1		
3189 (Caenis punctata)	3		
3157 (Aeshna)	1		
1026 (COENAGRIONIDAE)	2		9
3546 (Enallagma)	2		9
3551 (Enallagma exsulans)	1		
9095 (Argia fumipennis)	2		
7201 (Trichocorixa calva)	1		4
7220 (Ranatra nigra)	1		4
7120 (Trepobates pictus)	1		
3600 (Peltodytes duodecimpunctatus)	6	6A	
9112 (Laccophilus fasciatus)	1	1A	
3851 (Berosus peregrinus)	4	4A	6
3946 (Cyphon)	3	3L	
7293 (Psephenus herricki)	1	1L	4
7307 (Stenelmis)	8	1A, 7L	5
7296 (Dubiraphia)	5	5L	5
7299 (Dubiraphia quadrinotata)	24	24A; Slide 0213.2	3
7300 (Dubiraphia vittata)	10	10A; Slide 0213.1	
7303 (Optioservus)	1	1L	4
7304 (Optioservus fastiditus)	1	1A	2
1057 (HYDROPSYCHIDAE)	2		4
3432 (Cheumatopsyche)	19		3
8980 (Hydropsyche betteni grp)	22		
3419 (Ceratopsyche)	2		
3000 (Hydroptila)	1		3

Type	Value	Metric Score
Total Taxa:	63	5
Total No. Individuals:	279	5
EPT Taxa:	11	5
% Orthocladiinae + Tanytarsini of Chironomidae:	42.37	3
% Non-insects excluding Astacidae:	23.66	3
Diptera Taxa:	21	5
% Intolerant (0-3):	22.58	3
% Tolerant (8-10):	7.53	5
% Predators FFG 1:	5.38	1
% Shredders + Scrapers FFG 1:	12.54	3
% Collector-Filterers FFG 1:	13.62	3
% Sprawlers:	2.15	1
mIBI Metric Score:		42

Supplemental Metrics

	HBI	
	4.44	
Shannon-Weaver Index		5.08
Shannon Equitability		.54
% Dominant 3 Taxon		28.32
% Chironomidae		21.15



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Taxon	Count	Notes	HBI Tolerance
9285 (Tipula (Yamatotipula))	5		
7814 (Simulium)	3		5
7963 (Labrundinia)	1		4
7984 (Procladius)	1		7
8083 (Chironomini (Tribe))	2		
8227 (Tanytarsini (Tribe))	1		
9261 (Thienemannimyia grp.)	2		
8006 (Orthoclaadiinae (Subfamily))	1		
8060 (Parametrioconemus)	3		3
8074 (Thienemanniella)	1		4
8086 (Chironomus)	1		8
8104 (Cryptotendipes)	3		4
8112 (Dicrotendipes)	3		6
9296 (Microtendipes pedellus grp)	1		
8168 (Paratendipes albimanus)	2		4
8235 (Paratanytarsus)	13		4
8241 (Tanytarsus)	6		4
9260 (Cricotopus (Cricotopus)/Orthocladus (Orthocladus)	1		
9237 (Polypedilum (Uresipedilum) aviceps)	1		
9238 (Polypedilum (Uresipedilum) flavum)	3		
9241 (Polypedilum (Polypedilum) illinoense grp.)	13		



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Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-02-0010	14T-102	MHAB	AB18397	140716304	7/16/14	Randolph

Stream Name	Location	HUC 12	HUCTO14
Elkhorn Creek	CR 500 N	051201030204	05120103020050

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4455499.65	656534.18	55	8.539	7.098	31

Taxon	Count	Notes	HBI Tolerance
1084 (TURBELLARIA)	1		4
1232 (NAIDIDAE)	1		8
1498 (Nais)	3		8
1552 (Tubificidae with bifid chetae and no hair chetae)	2		
1234 (GLOSSIPHONIIDAE)	5		
1233 (ERPOBDELLIDAE)	3		
1088 (Gyraulid)	2		8
1089 (Helisoma)	14		6
2252 (Physella)	29		8
2215 (Elimia)	3		
2181 (Sphaerium)	7		6
2162 (Pisidium)	1		6
1083 (ACARI)	1		4
9036 (Caecidotea)	1		8
9050 (Hyalella)	20		
8996 (Orconectes)	6		4
1251 (ISOTOMIDAE)	1		
3081 (Callibaetis)	2	slide 0220.1	6
3230 (Aeshna umbrosa)	1		
7031 (Ischnura verticalis)	3		
9095 (Argia fumipennis)	1		
7189 (Sigara)	6	3M, 3F	
7208 (Belostoma flumineum)	1		4
3598 (Peltodytes)	5	5L	7
3600 (Peltodytes duodecimpunctatus)	29	29A	
3601 (Peltodytes lengi)	1	1A	
3605 (Peltodytes edentulus)	5	5A	6
3776 (Uvarus)	1	1A	
3851 (Berosus peregrinus)	4	4A	6
3863 (Paracymus)	1	1A	
3872 (Tropisternus)	1	1L	
3873 (T. lateralis nimbatus)	1	1A	
3877 (Tropisternus glaber)	1	1A	
3946 (Cyphon)	2	2L	
7307 (Stenelmis)	2	2L	5
7296 (Dubiraphia)	9	9L	5
7299 (Dubiraphia quadrinotata)	25	25A, slide 0220.3	3
7300 (Dubiraphia vittata)	3	3A, slide 0220.2	
7304 (Optioservus fastiditus)	3	3A	2
3432 (Cheumatopsyche)	4		3
8980 (Hydropsyche betteni grp)	4		
9319 (Ceratopsyche "checkerboard")	2		

Type	Value	Metric Score
Total Taxa:	74	5
Total No. Individuals:	431	5
EPT Taxa:	6	3
% Orthocladiinae + Tanytarsini of Chironomidae:	32.02	3
% Non-insects excluding Astacidae:	21.58	3
Diptera Taxa:	30	5
% Intolerant (0-3):	9.28	1
% Tolerant (8-10):	14.39	3
% Predators FFG 1:	6.96	1
% Shredders + Scrapers FFG 1:	19.95	3
% Collector-Filterers FFG 1:	7.19	5
% Sprawlers:	2.55	1
mIBI Metric Score:		38

Supplemental Metrics

	HBI	
	5.41	
Shannon-Weaver Index		5.3
Shannon Equitability		.57
% Dominant 3 Taxon		22.27
% Chironomidae		47.1



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Taxon	Count	Notes	HBI Tolerance
3000 (Hydroptila)	5		3
8920 (Nectopsyche)	2		2
7814 (Simulium)	1		5
7830 (Atrichopogon)	3		5
1073 (CHIRONOMIDAE(all other))	1	1P	6
7943 (Ablabesmyia)	1	1P	5
7955 (Conchapelopia)	1	1P	4
7984 (Procladius)	3		7
7926 (Tanypodinae (Subfamily))	2		
8083 (Chironomini (Tribe))	6		
9248 (Ablabesmyia (Ablabesmyia mallochi grp.)	3		
9261 (Thienemannimyia grp.)	7		
8006 (Orthoclaadiinae (Subfamily))	5	3P	
8051 (Orthocladus)	1		4
9284 (Tribelos jucundus)	3		
8074 (Thienemanniella)	1		4
8086 (Chironomus)	26		8
8099 (Cryptochironomus)	2		5
8104 (Cryptotendipes)	5		4
8112 (Dicrotendipes)	10	1P	6
8168 (Paratendipes albimanus)	4		4
8172 (Phaenopsectra)	13		7
8228 (Cladotanytarsus)	2	1P	4
8235 (Paratanytarsus)	38	1P	4
9093 (Stempellinella)	1		3
8241 (Tanytarsus)	17	3P	4
9260 (Cricotopus (Cricotopus)/Orthocladus (Orthocladus)	25		
9277 (Polypedilum (Tripodura) scalaenum grp)	2		
9238 (Polypedilum (Uresipedilum) flavum)	5		
9241 (Polypedilum (Polypedilum) illinoense grp.)	3		
9257 (Cricotopus (Cricotopus))	15		
9258 (Cricotopus (Cricotopus) trifascia)	1		



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Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-02-0011	14T-103	MHAB	AB18396	140716303	7/16/14	Randolph

Stream Name	Location	HUC 12	HUCTO14
Tributary of Bush Creek	CR 500 N	051201030204	05120103020050

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4455573.36	659183.5	55	13.67	4.196	58

Taxon	Count	Notes	HBI Tolerance
1357 (BRANCHIOBDELLIDAE)	23		6
1234 (GLOSSIPHONIIDAE)	3		
2272 (Planorbella)	2		
2252 (Physella)	11		8
2181 (Sphaerium)	4		6
8996 (Orconectes)	1		4
9008 (Orconectes rusticus)	2		6
1251 (ISOTOMIDAE)	1		
3020 (Stenonema femoratum)	1		3
3066 (Baetis intercalaris)	1		3
3074 (Centroptilum)	1	slide 0231.1	3
3183 (Caenis)	7		3
3188 (Caenis latipennis)	4		
3540 (Ischnura)	1		9
9095 (Argia fumipennis)	2		
7207 (Belostoma)	3		
3600 (Peltodytes duodecimpunctatus)	4	4A	
3872 (Tropisternus)	1	1L	
3946 (Cyphon)	2	2L	
7309 (Stenelmis crenata)	2	2A, slide 0231.3	5
7296 (Dubiraphia)	1	1L	5
7299 (Dubiraphia quadrinotata)	13	13A	3
7298 (Dubiraphia minima)	7	7A, slide 0231.2	
7304 (Optioservus fastiditus)	2	2A	2
3432 (Cheumatopsyche)	5		3
8980 (Hydropsyche betteni grp)	1		
7723 (Dixella)	1		
7814 (Simulium)	7		5
8083 (Chironomini (Tribe))	1	1P	
9248 (Ablabesmyia (Ablabesmyia mallochi grp.))	2		
9261 (Thienemannimyia grp.)	4		
9284 (Tribelos jucundus)	1		
8086 (Chironomus)	3		8
8099 (Cryptochironomus)	1		5
8112 (Dicrotendipes)	3		6
8168 (Paratendipes albimanus)	4		4
8172 (Phaenopsectra)	3		7
8211 (Stictochironomus)	11		4
8235 (Paratanytarsus)	8		4
8241 (Tanytarsus)	2		4
9277 (Polypedilum (Tripodura) scalaenum grp)	1		
9278 (Polypedilum (Tripodura))	1		

Type	Value	Metric Score
Total Taxa:	44	5
Total No. Individuals:	177	3
EPT Taxa:	7	5
% Orthocladiinae + Tanytarsini of Chironomidae:	15.63	5
% Non-insects excluding Astacidae:	24.29	3
Diptera Taxa:	18	5
% Intolerant (0-3):	16.95	3
% Tolerant (8-10):	8.47	5
% Predators FFG 1:	5.65	1
% Shredders + Scrapers FFG 1:	11.3	3
% Collector-Filterers FFG 1:	10.17	3
% Sprawlers:	.56	1
MIBI Metric Score:		42

Supplemental Metrics

	HBI	
	4.97	
Shannon-Weaver Index		4.83
Shannon Equitability		.52
% Dominant 3 Taxon		28.25
% Chironomidae		36.16



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Taxon	Count	Notes	HBI Tolerance
halterale-simulans grp)			
9238 (Polypedilum (Uresipedilum flavum)	5		
9241 (Polypedilum (Polypedilum illinoense grp.)	14		



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Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-02-0012	14T-104	MHAB	AB18395	140716302	7/16/14	Randolph
Stream Name		Location		HUC 12		HUCTO14
Bear Creek		CR 800 N		051201030202		05120103020030
Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score	
4460545.34	663602.29	55	5.889	15.382	47	

Taxon	Count	Notes	HBI Tolerance
1552 (Tubificidae with bifid chetae and no hair chetae)	1		
2252 (Physella)	6		8
2215 (Elimia)	11		
2181 (Sphaerium)	11		6
1083 (ACARI)	4		4
9031 (Lirceus)	1		8
9050 (Hyalella)	11		
8996 (Orconectes)	3		4
9008 (Orconectes rusticus)	1	1MII	6
3020 (Stenonema femoratum)	1		3
3049 (Stenacron interpunctatum)	2	Slide 0241.1	7
3183 (Caenis)	1		3
3245 (Boyeria vinosa)	1		4
3054 (Gomphus)	1		5
3397 (Macromia)	1		2
3551 (Enallagma exsulans)	1		
9095 (Argia fumipennis)	1		
7208 (Belostoma flumineum)	1		4
7117 (Trepobates)	2		
3600 (Peltodytes duodecimpunctatus)	8	8A	
3851 (Berosus peregrinus)	5	5A	6
3946 (Cyphon)	2	2L	
7307 (Stenelmis)	4	4L	5
7309 (Stenelmis crenata)	6	6A; Slide 0241.2	5
7317 (Stenelmis sexlineata)	1	1A	
7296 (Dubiraphia)	5	5L	5
7299 (Dubiraphia quadrinotata)	1	1A	3
7300 (Dubiraphia vittata)	44	44A; Slide 0241.3, 0241.4	
3773 (Sialis)	1		5
3432 (Cheumatopsyche)	2		3
3000 (Hydroptila)	1		3
8952 (Helicopsyche borealis)	1		3
9285 (Tipula (Yamatotipula))	1		
7963 (Labrundinia)	1		4
7984 (Procladius)	1		7
7926 (Tanypodinae (Subfamily))	1		
8083 (Chironomini (Tribe))	3	1P	
8086 (Chironomus)	8		8
8099 (Cryptochironomus)	2		5
8104 (Cryptotendipes)	1		4
8112 (Dicrotendipes)	1		6
8172 (Phaenopsectra)	5		7

Type	Value	Metric Score
Total Taxa:	45	5
Total No. Individuals:	178	3
EPT Taxa:	6	3
% Orthocladiinae + Tanytarsini of Chironomidae:	17.14	5
% Non-insects excluding Astacidae:	25.28	3
Diptera Taxa:	13	3
% Intolerant (0-3):	4.49	1
% Tolerant (8-10):	8.43	5
% Predators FFG 1:	7.87	1
% Shredders + Scrapers FFG 1:	16.85	3
% Collector-Filterers FFG 1:	7.87	5
% Sprawlers:	2.25	1
mIBI Metric Score:		38

Supplemental Metrics

	HBI	Value
Shannon-Weaver Index	5.53	4.49
Shannon Equitability		.48
% Dominant 3 Taxon		37.08
% Chironomidae		19.66



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Taxon	Count	Notes	HBI Tolerance
8235 (Paratanytarsus)	5	1P	4
8241 (Tanytarsus)	1		4
9241 (Polypedilum (Polypedilum) illinoense grp.)	6		



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Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-02-0013	14T-105	MHAB	AB18394	140716301	7/16/14	Randolph

Stream Name	Location	HUC 12	HUCTO14
Fetid Creek	CR 800 N	051201030203	05120103020010

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4460662.79	667756.59	55	10.869	3.957	40

Taxon	Count	Notes	HBI Tolerance
2252 (Physella)	2		8
2162 (Pisidium)	1		6
1083 (ACARI)	1		4
9031 (Lirceus)	1		8
8996 (Orconectes)	7	2MII, 3F, 2J	4
3230 (Aeshna umbrosa)	2		
7099 (Aquarius remigis)	2	1M, 1F	
9290 (Gerridae (Gerrinae))	1		
9117 (CRAMBIDAE)	1	? id	
7723 (Dixella)	2		
7732 (Anopheles)	1		
9094 (Paramerina)	1		
7984 (Procladius)	2		7
7926 (Tanypodinae (Subfamily))	1		
8083 (Chironomini (Tribe))	1		
9248 (Ablabesmyia (Ablabesmyia mallochi grp.))	1		
8086 (Chironomus)	1		8
8099 (Cryptochironomus)	2		5
8104 (Cryptotendipes)	1		4
8168 (Paratendipes albimanus)	3		4
8172 (Phaenopsectra)	1		7
8235 (Paratanytarsus)	2		4
8241 (Tanytarsus)	1		4
9241 (Polypedilum (Polypedilum illinoense grp.))	9		

Type	Value	Metric Score
Total Taxa:	24	3
Total No. Individuals:	47	1
EPT Taxa:	0	1
% Orthocladiinae + Tanytarsini of Chironomidae:	11.54	5
% Non-insects excluding Astacidae:	10.64	5
Diptera Taxa:	15	5
% Intolerant (0-3):	0	1
% Tolerant (8-10):	8.51	5
% Predators FFG 1:	17.02	1
% Shredders + Scrapers FFG 1:	6.38	1
% Collector-Filterers FFG 1:	6.38	5
% Sprawlers:	10.64	5
mIBI Metric Score:		38

Supplemental Metrics

HBI	5.16
Shannon-Weaver Index	4.13
Shannon Equitability	.44
% Dominant 3 Taxon	40.43
% Chironomidae	55.32



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Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI020-0002	14T-106	MHAB	AB18399	140804401	8/4/14	Randolph

Stream Name		Location		HUC 12	HUCTO14
Mississinewa River		CR 100 W, near Ridgeville		051201030203	05120103020010
Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4460763.38	670427.27	55	3.52	133	57

Taxon	Count	Notes	HBI Tolerance
1396 (LUMBRICULIDAE)	1		5
1091 (Lymnaea)	1		6
2252 (Physella)	3		8
1083 (ACARI)	8		4
9056 (Crangonyx)	1		6
8996 (Orconectes)	1	1J	4
3071 (Baetis flavistriga)	2		3
3188 (Caenis latipennis)	14		
3175 (Tricorythodes)	7		3
3245 (Boyeria vinosa)	2		4
7031 (Ischnura verticalis)	2		
3546 (Enallagma)	1		9
3569 (Argia apicalis)	1		
7186 (Palmacorixa nana)	2		4
3600 (Peltodytes duodecimpunctatus)	1	1A	
3851 (Berosus peregrinus)	1	1A	6
3946 (Cyphon)	1	1L	
7307 (Stenelmis)	6	6L	5
7310 (Stenelmis decorata)	10	10A; Slide 0209.1	
7299 (Dubiraphia quadrinotata)	2	2A; Slide 0209.4	3
7300 (Dubiraphia vittata)	10	10A; Slide 0209.2	
7298 (Dubiraphia minima)	18	18A; Slide 0209.3	
7295 (Ancyronyx variegatus)	8	8A	4
3432 (Cheumatopsyche)	24		3
3480 (Hydropsyche frisoni)	1		2
9319 (Ceratopsyche "checkerboard")	9		
3000 (Hydroptila)	1		3
7977 (Zavreliomyia)	1		4
7984 (Procladius)	3		7
7992 (Tanypus neopunctipennis)	1		8
7926 (Tanypodinae (Subfamily))	2		
8083 (Chironomini (Tribe))	3	2P	
9248 (Ablabesmyia (Ablabesmyia mallochi grp.))	6		
8086 (Chironomus)	5		8
8099 (Cryptochironomus)	4		5
8112 (Dicrotendipes)	1		6
8168 (Paratendipes albimanus)	1		4
8172 (Phaenopsectra)	2		7
8211 (Stictochironomus)	1		4
8228 (Cladotanytarsus)	17	2P	4
8235 (Paratanytarsus)	2		4
9093 (Stempellinella)	2		3

Type	Value	Metric Score
Total Taxa:	47	5
Total No. Individuals:	212	3
EPT Taxa:	7	3
% Orthocladiinae + Tanytarsini of Chironomidae:	37.31	3
% Non-insects excluding Astacidae:	6.6	5
Diptera Taxa:	20	5
% Intolerant (0-3):	18.4	3
% Tolerant (8-10):	4.72	5
% Predators FFG 1:	7.55	1
% Shredders + Scrapers FFG 1:	11.79	3
% Collector-Filterers FFG 1:	13.21	3
% Sprawlers:	4.25	3
MIBI Metric Score:		42

Supplemental Metrics

	HBI	
	4.34	
Shannon-Weaver Index		4.86
Shannon Equitability		.52
% Dominant 3 Taxon		27.83
% Chironomidae		31.6



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Taxon	Count	Notes	HBI Tolerance
8241 (Tanytarsus)	4		4
9277 (Polypedilum (Tripodura) scalaenum grp)	7		
9238 (Polypedilum (Uresipedilum) flavum)	1		
9241 (Polypedilum (Polypedilum) illinoense grp.)	4		
8320 (Chrysops)	7		5



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-02-0005	14T-108	MHAB	AB18393	140804402	8/4/14	Jay

Stream Name	Location	HUC 12	HUCTO14
Flesher Creek	CR 800 S	051201030201	05120103020020

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4465394.81	664560.93	55	4.792	7.265	44

Taxon	Count	Notes	HBI Tolerance	Type	Value	Metric Score
1084 (TURBELLARIA)	1		4	Total Taxa:	31	3
2235 (Pseudosuccinea)	1			Total No. Individuals:	109	1
1089 (Helisoma)	6		6	EPT Taxa:	1	1
2252 (Physella)	22		8	% Orthocladiinae + Tanytarsini of Chironomidae:	23.53	5
1083 (ACARI)	1		4	% Non-insects excluding Astacidae:	28.44	3
3227 (Anax)	1			Diptera Taxa:	7	3
3157 (Aeshna)	1			% Intolerant (0-3):	7.34	1
3245 (Boyeria vinosa)	1		4	% Tolerant (8-10):	20.18	3
7031 (Ischnura verticalis)	10			% Predators FFG 1:	25.69	3
3542 (Ischnura posita)	2			% Shredders + Scrapers FFG 1:	38.53	5
7189 (Sigara)	1			% Collector-Filterers FFG 1:	1.83	5
7201 (Trichocorixa calva)	4	2M, 2F	4	% Sprawlers:	0	1
7218 (Ranatra fusca)	1		4	mIBI Metric Score:	34	
7111 (Rheumatobates)	1			<u>Supplemental Metrics</u>		
7121 (Trepobates subnitidus)	1			HBI		5.85
7096 (Gerris)	4			Shannon-Weaver Index		4.16
7122 (Microvelia)	1			Shannon Equitability		.45
3600 (Peltodytes duodecimpunctatus)	4	4A		% Dominant 3 Taxon		39.45
3946 (Cyphon)	11	11L		% Chironomidae		15.6
7296 (Dubiraphia)	1	1L	5			
7299 (Dubiraphia quadrinotata)	8	8A	3			
7300 (Dubiraphia vittata)	7	7A, slide 0202.1				
3899 (Helophorus)	1	1A	5			
9222 (Cernotina/Polycentropus)	1					
9284 (Tribelos jucundus)	1					
8104 (Cryptotendipes)	1		4			
8112 (Dicrotendipes)	1		6			
8123 (Endochironomus)	2		6			
8235 (Paratanytarsus)	2		4			
8241 (Tanytarsus)	2		4			
9241 (Polypedilum (Polypedilum) illinoense grp.)	8					



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-02-0006	14T-109	MHAB	AB18392	140805401	8/5/14	Randolph

Stream Name	Location	HUC 12	HUCTO14
Days Creek	SR 28	051201030201	05120103020020

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4461906.15	664333.03	55	3.464	17.063	37

Taxon	Count	Notes	HBI Tolerance
1558 (Nais/Dero)	1		
2252 (Physella)	9		8
1083 (ACARI)	1		4
9019 (Cambarus)	1		2
3049 (Stenacron interpunctatum)	1		7
3074 (Centroptilum)	1		3
3081 (Callibaetis)	1		6
3188 (Caenis latipennis)	3		
3546 (Enallagma)	1		9
9290 (Gerridae (Gerrinae))	1		
3600 (Peltodytes duodecimpunctatus)	1	1A	
3851 (Berosus peregrinus)	1	1A	6
7300 (Dubiraphia vittata)	8	8A; Slide 0215.1, 0215.2	
7984 (Procladius)	2		7
8083 (Chironomini (Tribe))	3		
9284 (Tribelos jucundus)	2		
8086 (Chironomus)	18		8
8099 (Cryptochironomus)	4		5
8112 (Dicrotendipes)	4		6
8123 (Endochironomus)	1		6
8235 (Paratanytarsus)	4		4
8241 (Tanytarsus)	4		4
9241 (Polypedilum (Polypedilum) illinoense grp.)	6		

Type	Value	Metric Score
Total Taxa:	23	3
Total No. Individuals:	78	1
EPT Taxa:	4	3
% Orthocladiinae + Tanytarsini of Chironomidae:	16.67	5
% Non-insects excluding Astacidae:	14.1	5
Diptera Taxa:	10	3
% Intolerant (0-3):	2.56	1
% Tolerant (8-10):	35.9	1
% Predators FFG 1:	8.97	1
% Shredders + Scrapers FFG 1:	14.1	3
% Collector-Filterers FFG 1:	5.13	5
% Sprawlers:	7.69	5
mIBI Metric Score:		36

Supplemental Metrics

HBI	6.58
Shannon-Weaver Index	3.87
Shannon Equitability	.41
% Dominant 3 Taxon	44.87
% Chironomidae	61.54



Indiana Department of Environmental Management Fish Community Assessments

Site Information

SubBasin: Mississinewa **14 digit HUC:** 05120103020040 **LSite:** WMI-02-0007
Site: Mississinewa River **Location:** CR 600 W **County:** Randolph
Latitude: 40.285212 **Longitude:** -85.092729 **IASNat Region:** 5C **Topo:** D-67 **Segment:** 39
Ecoregion: Eastern Corn Belt Plains **Drainage Area (sq.miles):** 179.063 **Gradient (ft/mile):** 2.331

Sample Information

SampleNumber: AB18391 **EventID:** 14T110 **Sample MediumCollected:** Fish Community + Water + Macro
SampleDate: 08/06/2014 **SurveyCrewChief:** KAG **SampleTime:** 10:45:00 AM **HydroLabNumber:** Q6
WaterFlowType: Run **WaterAppearance:** Brown **SkyConditions:** 4 - Cloudy **AirTemperature:** 4 - 61-75
WindDirection: 27 - West (270 degrees) **WindStrength:** 0 - Calm
DissolvedO2 (mg/l): 4.73 **pH:** 7.87 **WaterTemp(°C):** 22.06 **SpecificConductivity (µS/cm):** 688 **Turbidity (NTU):** 23.5
SpecialNotes: Q6 Turb = 23.5

ElectrofishingEquipment: Canoe **Voltage:** 100 **Avg.StreamWidth(m):** 27 **DistanceFished (m):** 405
SecondsFished: 3000 **WaterDepthAvg (m):** .5 **WaterDepthMax (m):** 1.2 **TimeAtSite:** 03:00
BridgeInReach: **ReachRepresentative:** **WhyReachNotRepresentative:**
SpecialComments:

Habitat Information

TotalScore (max100): 49 **SubstrateScore (max20):** 9 **InstreamCover Score (max20):** 7 **ChannelMorphologyScore (max20):** 13
RiparianZoneBankErosion Score(max10): 6 **Pool/GlideQualityScore(max12):** 6 **Riffle/RunQualityScore(max8):** 0
GradientScore (max10): 8 **%Pool: # \$ %Riffle: # \$ %Run: 100 %Glide: # \$ CanopyCover PctOpen: 55%-<85%**
SubjectiveRating: AestheticRating: NOTES: "NEW RECORD"

Fish Community Index of Biotic Integrity (IBI) Information

Calibration Used: Eastern Corn Belt Plains

	<u>Actual</u> <u>Observation</u>	<u>Metric</u> <u>Score</u>		<u>Actual</u> <u>Observation</u>	<u>Metric</u> <u>Score</u>
SpeciesCount:	19	5	%TolerantIndividuals:	29.88	3
DarterSpeciesCount:	1	1	%OmnivoreIndividuals:	17.68	5
SunfishSpeciesCount:	4	5	%InsectivoreIndividuals:	80.49	5
SuckerSpeciesCount:	4	5	%CarnivoreIndividuals:	1.83	1
SensitiveSpeciesCount:	4	3	Total # of Individuals (CPUE):	164	1
			%SimpleLithophilicInd.:	20.12	3
			%Ind.withDELT:	0	5

Metrics are dependent on Ecoregion and Drainage Area.
 Metrics can score a 0, 1, 3, or 5 depending on calibration.

Total IBI Score (min 0, max 60)	42
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SampleNumber: AB18391

EventID: 14T110

LSite: WMI-02-0007

County: Randolph

StreamName: Mississinewa River

LocationDescription: CR 600 W

Common Name	Individual Fish Count	Deformities	Eroded Fins	Lesions	Tumors	Multiple Anomalies
Black Redhorse	2					
Blackside Darter	1					
Blackspotted Topminnow	1					
Bluntnose Minnow	10					
Common Carp	8					
Freshwater Drum	1					
Golden Redhorse	3					
Goldfish	1					
Green Sunfish	18					
Largemouth Bass	1					
Longear Sunfish	58					
Orangespotted Sunfish	13					
Redfin Shiner	1					
Rock Bass	1					
Spotfin Shiner	17					
Spotted Bass	1					
Spotted Sucker	15					
Striped Shiner	1					
White Sucker	11					



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MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-02-0009	14T-112	MHAB	AB18390	140805402	8/5/14	Randolph
Stream Name		Location		HUC 12		HUCTO14
Bush Creek		CR 750 N		051201030204		05120103020050
Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score	
4459551.79	657713.57	55	8.598	19.939	60	

Taxon	Count	Notes	HBI Tolerance
1409 (ENCHYTRAEIDAE)	1		10
1552 (Tubificidae with bifid chetae and no hair chetae)	4		
1233 (ERPOBDELLIDAE)	1		
2272 (Planorbella)	1		
2252 (Physella)	10		8
2215 (Elimia)	10		
2181 (Sphaerium)	3		6
1083 (ACARI)	3		4
9050 (Hyaella)	21		
3049 (Stenacron interpunctatum)	3		7
3188 (Caenis latipennis)	5		
3175 (Tricorythodes)	2		3
3248 (Basiaeschna janata)	1		6
7026 (Calopteryx maculata)	1		
3542 (Ischnura posita)	2		
3546 (Enallagma)	1		9
7189 (Sigara)	2	1M, 1F	
7186 (Palmacorixa nana)	1		4
7122 (Microvelia)	1		
3600 (Peltodytes duodecimpunctatus)	20	20A	
3604 (Peltodytes sexmaculatus)	1	1A	
3851 (Berosus peregrinus)	1	1A	6
3946 (Cyphon)	1	1L	
7293 (Psephenus herricki)	1	1L	4
7307 (Stenelmis)	2	2L	5
7309 (Stenelmis crenata)	4	4A; Slide 0221.3	5
7296 (Dubiraphia)	3	3L	5
7299 (Dubiraphia quadrinotata)	7	7A; Slide 0221.2	3
7300 (Dubiraphia vittata)	22	22A; Slide 0221.1, 0221.4	
7295 (Ancyronyx variegatus)	1	1A	4
3432 (Cheumatopsyche)	2		3
8952 (Helicopsyche borealis)	3		3
7732 (Anopheles)	2		
1073 (CHIRONOMIDAE(all other))	1		6
9248 (Ablabesmyia (Ablabesmyia mallochi grp.))	2		
8099 (Cryptochironomus)	4		5
8211 (Stictochironomus)	1		4
9093 (Stempellinella)	2		3
9277 (Polypedilum (Tripodura) scalaenum grp)	2		
9278 (Polypedilum (Tripodura))	1		

Type	Value	Metric Score
Total Taxa:	42	5
Total No. Individuals:	162	3
EPT Taxa:	5	3
% Orthocladiinae + Tanytarsini of Chironomidae:	11.11	5
% Non-insects excluding Astacidae:	33.33	3
Diptera Taxa:	10	3
% Intolerant (0-3):	9.88	1
% Tolerant (8-10):	7.41	5
% Predators FFG 1:	8.02	1
% Shredders + Scrapers FFG 1:	13.58	3
% Collector-Filterers FFG 1:	4.94	5
% Sprawlers:	3.7	3
mIBI Metric Score:		40

Supplemental Metrics

	HBI	
Shannon-Weaver Index	5.21	4.55
Shannon Equitability		.49
% Dominant 3 Taxon		38.89
% Chironomidae		11.11



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Taxon	Count	Notes	HBI Tolerance
halterale-simulans grp)			
9241 (Polypedilum (Polypedilum illinoense grp.)	5		
8320 (Chrysops)	1		5



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-02-0015	14T-113	MHAB	AB18368	140805403	8/5/14	Randolph
Stream Name		Location		HUC 12		HUCTO14
Dinner Creek		SR 28		051201030206		05120103020060
Northing	Easting	Ecoregion	Gradient	Drainage Area		QHEI Score
4461975.05	657799.35	55	6.278	5.957		43

Taxon	Count	Notes	HBI Tolerance	Type	Value	Metric Score
2252 (Physella)	17		8	Total Taxa:	26	3
2181 (Sphaerium)	1		6	Total No. Individuals:	109	1
9019 (Cambarus)	1		2	EPT Taxa:	2	1
3020 (Stenonema femoratum)	1		3	% Orthoclaadiinae + Tanytarsini of Chironomidae:	0	5
3188 (Caenis latipennis)	1			% Non-insects excluding Astacidae:	16.51	5
3157 (Aeshna)	2			Diptera Taxa:	7	3
3277 (Perithemis tenera)	1			% Intolerant (0-3):	22.94	3
1026 (COENAGRIONIDAE)	4		9	% Tolerant (8-10):	21.1	3
7031 (Ischnura verticalis)	3			% Predators FFG 1:	24.77	3
9095 (Argia fumipennis)	17			% Shredders + Scrapers FFG 1:	18.35	3
7189 (Sigara)	1			% Collector-Filterers FFG 1:	1.83	5
7207 (Belostoma)	1			% Sprawlers:	0	1
7117 (Trepobates)	1			mIBI Metric Score:		36
7122 (Microvelia)	1					
3600 (Peltodytes duodecimpunctatus)	16	16A				
3946 (Cyphon)	2	2L				
7309 (Stenelmis crenata)	1	1A, slide 0208.2	5			
7296 (Dubiraphia)	2	2L	5			
7299 (Dubiraphia quadrinotata)	23	23A, slide 0208.1, 0208.3	3			
7732 (Anopheles)	1					
8083 (Chironomini (Tribe))	1					
8086 (Chironomus)	2		8			
8112 (Dicrotendipes)	1		6			
8168 (Paratendipes albimanus)	1		4			
8211 (Stictochironomus)	1		4			
9241 (Polypedilum (Polypedilum illinoense grp.)	6					

Supplemental Metrics

	HBI	5.4
Shannon-Weaver Index		3.62
Shannon Equitability		.39
% Dominant 3 Taxon		52.29
% Chironomidae		11.01



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-02-0016	14T-114	MHAB	AB18389	140804403	8/4/14	Jay
Stream Name		Location		HUC 12	HUCTO14	
Halfway Creek		CR 1000 W		051201030205	05120103020080	
Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score	
4467051.2	655569.67	55	5.649	4.413	33	

Taxon	Count	Notes	HBI Tolerance	Type	Value	Metric Score
1084 (TURBELLARIA)	1		4	Total Taxa:	29	3
1234 (GLOSSIPHONIIDAE)	2			Total No. Individuals:	116	1
1233 (ERPOBDELLIDAE)	3			EPT Taxa:	2	3
1088 (Gyraulus)	2		8	% Orthoclaadiinae + Tanytarsini of Chironomidae:	0	5
2252 (Physella)	27		8	% Non-insects excluding Astacidae:	33.62	3
2181 (Sphaerium)	1		6	Diptera Taxa:	7	3
1083 (ACARI)	2		4	% Intolerant (0-3):	19.83	3
9036 (Caecidotea)	1		8	% Tolerant (8-10):	28.45	1
3189 (Caenis punctata)	1			% Predators FFG 1:	17.24	1
3228 (Anax junius)	1			% Shredders + Scrapers FFG 1:	31.9	5
3331 (Sympetrum)	1		10	% Collector-Filterers FFG 1:	3.45	5
7031 (Ischnura verticalis)	9			% Sprawlers:	0	1
3546 (Enallagma)	2		9	mIBI Metric Score:		34
9095 (Argia fumipennis)	1					
3600 (Peltodytes duodecimpunctatus)	6	6A				
3846 (Berosus)	1	1L	7			
3851 (Berosus peregrinus)	8	8A	6			
3882 (Enochrus hamiltoni)	1	1A				
7296 (Dubiraphia)	1	1L	5			
7299 (Dubiraphia quadrinotata)	22	22A	3			
7300 (Dubiraphia vittata)	10	10A, slide 0227.1, 0227.2				
3432 (Cheumatopsyche)	1		3			
7545 (Helius)	1		4			
9285 (Tipula (Yamatotipula))	2					
7732 (Anopheles)	2					
8112 (Dicrotendipes)	1		6			
8221 (Pseudochironomus)	1		5			
9241 (Polypedilum (Polypedilum) illinoense grp.)	4					
8560 (SCIOMYZIDAE)	1					

Supplemental Metrics

HBI	5.89
Shannon-Weaver Index	3.82
Shannon Equitability	.41
% Dominant 3 Taxon	50.86
% Chironomidae	5.17



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-02-0017	14T-116	MHAB	AB18386	140715301	7/15/14	Delaware

Stream Name	Location	HUC 12	HUCTO14
Halfway Creek	Water Street	051201030205	05120103020080

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4462302.76	649831.35	55	2.806	24.875	45

Taxon	Count	Notes	HBI Tolerance
1552 (Tubificidae with bifid chetae and no hair chetae)	1		
2252 (Physella)	8		8
9050 (Hyalella)	16		
8996 (Orconectes)	1	1F	4
3183 (Caenis)	12		3
3188 (Caenis latipennis)	8	slide 0224.4	
3397 (Macromia)	1		2
7046 (Epiteca princeps)	1		
7031 (Ischnura verticalis)	1		
3542 (Ischnura posita)	1		
1039 (BELOSTOMATIDAE)	2		
7207 (Belostoma)	1		
3600 (Peltodytes duodecimpunctatus)	29	29A	
3851 (Berosus peregrinus)	10	10A	6
7309 (Stenelmis crenata)	1	1A; slide 0224.1	5
7296 (Dubiraphia)	2	2L	5
7300 (Dubiraphia vittata)	10	10A, slide 0224.2	
7298 (Dubiraphia minima)	4	4A, slide 0224.3	
3432 (Cheumatopsyche)	1		3
3423 (Hydropsyche)	1		4
8923 (Nectopsyche diarina)	1		3
1073 (CHIRONOMIDAE(all other))	1		6
7984 (Procladius)	3		7
9248 (Ablabesmyia (Ablabesmyia mallochi grp.))	3		
9284 (Tribelos jucundus)	1		
8086 (Chironomus)	15		8
8104 (Cryptotendipes)	2		4
8112 (Dicrotendipes)	7		6
8126 (Glyptotendipes)	1		6
8168 (Paratendipes albimanus)	1		4
8172 (Phaenopsectra)	5		7
8235 (Paratanytarsus)	9		4
8241 (Tanytarsus)	3		4
9260 (Cricotopus (Cricotopus)/Orthocladius (Orthocladius))	5		
9277 (Polypedilum (Tripodura) scalaenum grp)	1		
9240 (Polypedilum (Polypedilum) fallax grp.)	1		
9241 (Polypedilum (Polypedilum) illinoense grp.)	24		

Type	Value	Metric Score
Total Taxa:	38	3
Total No. Individuals:	195	3
EPT Taxa:	5	3
% Orthoclaadiinae + Tanytarsini of Chironomidae:	14.46	5
% Non-insects excluding Astacidae:	12.82	5
Diptera Taxa:	17	5
% Intolerant (0-3):	7.69	1
% Tolerant (8-10):	11.79	5
% Predators FFG 1:	5.13	1
% Shredders + Scrapers FFG 1:	12.31	3
% Collector-Filterers FFG 1:	3.59	5
% Sprawlers:	2.05	1
mIBI Metric Score:		40

Supplemental Metrics

	HBI	
	5.66	
Shannon-Weaver Index		4.37
Shannon Equitability		.47
% Dominant 3 Taxon		35.38
% Chironomidae		42.56



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Taxon	Count	Notes	HBI Tolerance
9258 (Cricotopus (Cricotopus) trifascia)	1		



OWQ/WAPB Macroinvertebrate Community Assessment

MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-02-0018	14T-117	MHAB	AB18388	140812401	8/12/14	Delaware

Stream Name	Location	HUC 12	HUCTO14
Mississinewa River	Strong Road	051201030206	05120103020070

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4461627.34	649812.03	55	1.938	240.014	61

Taxon	Count	Notes	HBI Tolerance
1231 (BRANCHIOBDELLIDA)	34		
2181 (Sphaerium)	2		6
1083 (ACARI)	1		4
9008 (Orconectes rusticus)	3	3F	6
3024 (Maccaffertium terminatum)	3		2
3049 (Stenacron interpunctatum)	3		7
3066 (Baetis intercalaris)	4		3
3071 (Baetis flavistriga)	1		3
3188 (Caenis latipennis)	10		
3189 (Caenis punctata)	1	Slide 0233.2	
3197 (Ephemera)	5		3
3175 (Tricorythodes)	3		3
1026 (COENAGRIONIDAE)	1	imm	9
3546 (Enallagma)	1		9
7218 (Ranatra fusca)	2		4
7111 (Rheumatobates)	1		
7118 (Trepobates inermis)	1		
7120 (Trepobates pictus)	1		
7130 (Rhagovelia)	1		
7132 (Rhagovelia oriander)	2	2M	
3600 (Peltodytes duodecimpunctatus)	7	7A	
3946 (Cyphon)	1	1L	
7293 (Psephenus herricki)	2	2L	4
7307 (Stenelmis)	9	9L	5
7317 (Stenelmis sexlineata)	13	13A	
7300 (Dubiraphia vittata)	8	8A; Slide 0233.1, 256um	
7295 (Ancyronyx variegatus)	9	9A	4
1057 (HYDROPSYCHIDAE)	3		4
3432 (Cheumatopsyche)	28		3
3477 (Hydropsyche cuanis)	1		
9319 (Ceratopsyche "checkerboard")	2		
3000 (Hydroptila)	1		3
8083 (Chironomini (Tribe))	1		
8086 (Chironomus)	2		8
8112 (Dicrotendipes)	1		6
8123 (Endochironomus)	2		6
8241 (Tanytarsus)	1		4
9238 (Polypedilum (Uresipedilum) flavum)	1		
9241 (Polypedilum (Polypedilum) illinoense grp.)	2		

Type	Value	Metric Score
Total Taxa:	39	3
Total No. Individuals:	174	3
EPT Taxa:	13	5
% Orthocladiinae + Tanytarsini of Chironomidae:	10	5
% Non-insects excluding Astacidae:	21.26	3
Diptera Taxa:	7	3
% Intolerant (0-3):	25.86	3
% Tolerant (8-10):	2.3	5
% Predators FFG 1:	3.45	1
% Shredders + Scrapers FFG 1:	10.34	3
% Collector-Filterers FFG 1:	19.54	3
% Sprawlers:	0	1
mIBI Metric Score:		38

Supplemental Metrics

	HBI	
	4.05	
Shannon-Weaver Index		4.29
Shannon Equitability		.46
% Dominant 3 Taxon		43.1
% Chironomidae		5.75



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-02-0019	14T-118	MHAB	AB18385	140715302	7/15/14	Delaware
Stream Name		Location		HUC 12	HUCTO14	
Mud Creek		Edgewater Road		051201030206	05120103020070	
Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score	
4461153.77	649951.71	55	2.284	12.547	39	

Taxon	Count	Notes	HBI Tolerance
1552 (Tubificidae with bifid chetae and no hair chetae)	1		
1233 (ERPOBDELLIDAE)	1		
2252 (Physella)	1		8
9031 (Lirceus)	3		8
8990 (CAMBARIDAE)	2		
8996 (Orconectes)	1	1F	4
3049 (Stenacron interpunctatum)	1		7
3273 (Perithemis)	1		
7112 (Rheumatobates palosi)	2		
7296 (Dubiraphia)	1	1L	5
7300 (Dubiraphia vittata)	15	15A; Slide 0205.1, 274um	
3432 (Cheumatopsyche)	1		3
7941 (Natarsia baltimoreus)	1		6
7984 (Procladius)	1		7
7926 (Tanypodinae (Subfamily))	1		
9248 (Ablabesmyia (Ablabesmyia mallochi grp.))	4		
8067 (Rheocricotopus robacki)	1		4
8074 (Thienemanniella)	1		4
8086 (Chironomus)	2		8
8104 (Cryptotendipes)	1		4
8172 (Phaenopsectra)	2		7
8202 (Saetheria)	2	sp 1 in Epler 2001	
9165 (Saetheria tylus)	1		4
8235 (Paratanytarsus)	5		4
8241 (Tanytarsus)	2		4
9277 (Polypedilum (Tripodura) scalaenum grp)	1		
9278 (Polypedilum (Tripodura) halterale-simulans grp)	1		
9241 (Polypedilum (Polypedilum) illinoense grp.)	2		

Type	Value	Metric Score
Total Taxa:	28	3
Total No. Individuals:	58	1
EPT Taxa:	2	1
% Orthocladiinae + Tanytarsini of Chironomidae:	32.14	3
% Non-insects excluding Astacidae:	10.34	5
Diptera Taxa:	16	5
% Intolerant (0-3):	1.72	1
% Tolerant (8-10):	10.34	5
% Predators FFG 1:	6.9	1
% Shredders + Scrapers FFG 1:	5.17	1
% Collector-Filterers FFG 1:	5.17	5
% Sprawlers:	3.45	3
mIBI Metric Score:		34

Supplemental Metrics	
HBI	5.52
Shannon-Weaver Index	4.19
Shannon Equitability	.45
% Dominant 3 Taxon	41.38
% Chironomidae	48.28



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-04-0013	14T-119	MHAB	AB18387	140806402	8/6/14	Delaware
Stream Name		Location		HUC 12		HUCTO14
Mississinewa River		Dowden Avenue		051201030402		05120103030020
Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score	
4461898.51	648871.67	55	1.951	266.976	55	

Taxon	Count	Notes	HBI Tolerance
1084 (TURBELLARIA)	1		4
1396 (LUMBRICULIDAE)	3		5
1357 (BRANCHIOBDELLIDAE)	2		6
2252 (Physella)	2		8
9036 (Caecidotea)	1		8
9050 (Hyalella)	3		
9002 (Orconectes virilis)	1	1MII	6
3024 (Maccaffertium terminatum)	1	Slide 0214.4	2
3049 (Stenacron interpunctatum)	1	Slide 0214.3	7
3183 (Caenis)	2		3
3188 (Caenis latipennis)	11		
3197 (Ephemera)	1		3
3251 (Nasiaeschna pentacantha)	1		
1021 (GOMPHIDAE)	1		1
3397 (Macromia)	1		2
3546 (Enallagma)	2		9
3560 (Enallagma basidens)	1		
7201 (Trichocorixa calva)	1		4
7208 (Belostoma flumineum)	1		4
3600 (Peltodytes duodecimpunctatus)	3	3A	
3846 (Berosus)	2	2L	7
3851 (Berosus peregrinus)	4	4A	6
3946 (Cyphon)	2	2L	
7307 (Stenelmis)	1	1L	5
7309 (Stenelmis crenata)	1	1A; Slide 0214.1	5
7317 (Stenelmis sexlineata)	1	1A	
7296 (Dubiraphia)	2	2L	5
7300 (Dubiraphia vittata)	10	10A; Slide 0214.2	
7295 (Ancyronyx variegatus)	27	27A	4
8083 (Chironomini (Tribe))	5		
9250 (Ablabesmyia (Ablabesmyia) rhamphae grp.)	1		
8048 (Nanocladius distinctus)	1		6
9284 (Tribelos jucundus)	1		
8086 (Chironomus)	5		8
8112 (Dicrotendipes)	6		6
8123 (Endochironomus)	3		6
8235 (Paratanytarsus)	2		4
9241 (Polypedilum (Polypedilum) illinoense grp.)	6		

Type	Value	Metric Score
Total Taxa:	38	3
Total No. Individuals:	120	1
EPT Taxa:	5	1
% Orthocladiinae + Tanytarsini of Chironomidae:	10	5
% Non-insects excluding Astacidae:	10	5
Diptera Taxa:	9	3
% Intolerant (0-3):	5	1
% Tolerant (8-10):	8.33	5
% Predators FFG 1:	7.5	1
% Shredders + Scrapers FFG 1:	11.67	3
% Collector-Filterers FFG 1:	0	5
% Sprawlers:	0	1
mIBI Metric Score:		34

Supplemental Metrics

	HBI	Value
Shannon-Weaver Index	5.09	4.43
Shannon Equitability		.47
% Dominant 3 Taxon		40
% Chironomidae		25



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-04-0014	14T-120	MHAB	AB19831	140715304	7/15/14	Delaware

Stream Name	Location	HUC 12	HUCTO14
Campbell Creek	Schindel Road	051201030401	05120103030010

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4458140.35	645468.99	55	10.741	20.321	72

Taxon	Count	Notes	HBI Tolerance
1234 (GLOSSIPHONIIDAE)	1		
1233 (ERPOBDELLIDAE)	1		
2333 (Ferrissia rivularis)	2		6
2252 (Physella)	3		8
2181 (Sphaerium)	5		6
1083 (ACARI)	5		4
9031 (Lirceus)	1		8
9050 (Hyalella)	7		
8996 (Orconectes)	1	1MII	4
3020 (Stenonema femoratum)	2		3
3036 (Leucrocuta)	1		2
3049 (Stenacron interpunctatum)	5	slide 0218.1	7
3071 (Baetis flavistriga)	5		3
3188 (Caenis latipennis)	5		
1022 (CALOPTERYGIDAE)	1		5
3540 (Ischnura)	1		9
7118 (Trepobates inermis)	1		
7120 (Trepobates pictus)	1		
7130 (Rhagovelia)	1		
7131 (Rhagovelia obesa)	2		
3946 (Cyphon)	3	3L	
7293 (Psephenus herricki)	21	1A, 20L	4
7307 (Stenelmis)	12	12L	5
7308 (Stenelmis bicarinata)	15	15A, slide 0218.3, 0218.4	5
7317 (Stenelmis sexlineata)	6	6A	
7296 (Dubiraphia)	5	5L	5
7297 (Dubiraphia bivittata)	1	1A	3
7300 (Dubiraphia vittata)	10	10A, sllide 0218.2	
7304 (Optioservus fastiditus)	1	1A	2
7295 (Ancyronyx variegatus)	3	3A	4
3773 (Sialis)	1		5
3267 (Chimarra obscura)	1		4
3432 (Cheumatopsyche)	24		3
8980 (Hydropsyche betteni grp)	45		
9319 (Ceratopsyche "checkerboard")	4		
3000 (Hydroptila)	3		3
8944 (Triaenodes melacus)	1		
7548 (Antocha)	1		2
7732 (Anopheles)	1		
7814 (Simulium)	3		5
7926 (Tanypodinae (Subfamily))	1	1P	
9248 (Ablabesmyia (Ablabesmyia) mallochi grp.)	1		

Type	Value	Metric Score
Total Taxa:	52	5
Total No. Individuals:	235	3
EPT Taxa:	11	5
% Orthocladiinae + Tanytarsini of Chironomidae:	52.17	1
% Non-insects excluding Astacidae:	10.64	5
Diptera Taxa:	15	5
% Intolerant (0-3):	16.6	3
% Tolerant (8-10):	2.13	5
% Predators FFG 1:	4.26	1
% Shredders + Scrapers FFG 1:	27.23	5
% Collector-Filterers FFG 1:	15.74	3
% Sprawlers:	.85	1
MIBI Metric Score:		42

Supplemental Metrics

	HBI	
	4.41	
Shannon-Weaver Index		4.66
Shannon Equitability		.5
% Dominant 3 Taxon		38.3
% Chironomidae		9.79



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Taxon	Count	Notes	HBI Tolerance
9261 (Thienemannimyia grp.)	3		
8006 (Orthoclaadiinae (Subfamily))	1	1P	
8047 (Nanocladius)	1		5
8112 (Dicrotendipes)	1		6
8172 (Phaenopsectra)	3		7
8228 (Cladotanytarsus)	5		4
8235 (Paratanytarsus)	1		4
9093 (Stempellinella)	1		3
8241 (Tanytarsus)	3	1P	4
9241 (Polypedilum (Polypedilum) illinoense grp.)	2		



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-04-0014	14T-120	MHAB	AB18384	140715303	7/15/14	Delaware

Stream Name	Location	HUC 12	HUCTO14
Campbell Creek	Schindel Road	051201030401	05120103030010

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4458140.35	645468.99	55	10.741	20.321	77

Taxon	Count	Notes	HBI Tolerance
2333 (Ferrissia rivularis)	1		6
2252 (Physella)	4		8
1083 (ACARI)	6		4
9050 (Hyalella)	1		
8996 (Orconectes)	4	1M, 3F juveniles	4
1251 (ISOTOMIDAE)	1		
1017 (HEPTAGENIIDAE)	2		4
3020 (Stenonema femoratum)	1		3
3036 (Leucrocuta)	2		2
3049 (Stenacron interpunctatum)	7		7
3066 (Baetis intercalaris)	2		3
3071 (Baetis flavistriga)	2		3
3074 (Centroptilum)	1		3
3365 (Procloeon)	1		
3183 (Caenis)	2		3
3188 (Caenis latipennis)	13		
3245 (Boyeria vinosa)	4		4
3551 (Enallagma exsulans)	1		
3572 (Argia tibialis)	1		
7132 (Rhagovelia oriander)	5		
3598 (Peltodytes)	1	1L	7
3600 (Peltodytes duodecimpunctatus)	3	3A	
3851 (Berosus peregrinus)	1	1A	6
7293 (Psephenus herricki)	25	25L	4
7307 (Stenelmis)	11	11L	5
7309 (Stenelmis crenata)	27	27A, slide 0212.1, 0212.2	5
7317 (Stenelmis sexlineata)	17	17A	
7296 (Dubiraphia)	2	2L	5
7300 (Dubiraphia vittata)	28	28A, slide 0211.3, 0211.4	
7298 (Dubiraphia minima)	20	20A, slide 0211.1	
7304 (Optioservus fastiditus)	1	1A	2
7295 (Ancyronyx variegatus)	7	7A	4
3432 (Cheumatopsyche)	47		3
8980 (Hydropsyche betteni grp)	29		
9319 (Ceratopsyche "checkerboard")	9		
8944 (Triaenodes melacus)	1		
8926 (Oecetis)	1		3
8952 (Helicopsyche borealis)	3		3
7814 (Simulium)	5		5
7965 (Larsia)	1		4
8083 (Chironomini (Tribe))	2		

Type	Value	Metric Score
Total Taxa:	43	5
Total No. Individuals:	305	5
EPT Taxa:	16	5
% Orthocladiinae + Tanytarsini of Chironomidae:	16.67	5
% Non-insects excluding Astacidae:	3.93	5
Diptera Taxa:	5	1
% Intolerant (0-3):	20.33	3
% Tolerant (8-10):	1.31	5
% Predators FFG 1:	3.28	1
% Shredders + Scrapers FFG 1:	24.92	5
% Collector-Filterers FFG 1:	17.05	3
% Sprawlers:	.98	1
mIBI Metric Score:		44

Supplemental Metrics

	HBI	Value
Shannon-Weaver Index	4.15	
Shannon Equitability	4.39	
% Dominant 3 Taxon	.47	
% Chironomidae	34.1	
	1.97	



OWQ/WAPB Macroinvertebrate Community Assessment
MHAB Report

Taxon	Count	Notes	HBI Tolerance
8099 (Cryptochironomus)	2		5
8228 (Cladotanytarsus)	1		4



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-04-0015	14T-121	MHAB	AB18383	140715401	7/15/14	Jay

Stream Name	Location	HUC 12	HUCTO14
Rees Ditch	Layne Drive	051201030402	05120103030030

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4469993.25	651182.63	55	12.796	1.428	40

Taxon	Count	Notes	HBI Tolerance
1396 (LUMBRICULIDAE)	2		5
1552 (Tubificidae with bifid chetae and no hair chetae)	3		
1553 (Tubificidae with pectinate chetae and hair chetae)	1		
1234 (GLOSSIPHONIIDAE)	5		
1233 (ERPOBDELLIDAE)	9		
1089 (Helisoma)	7		6
2272 (Planorbella)	1		
2252 (Physella)	33		8
2181 (Sphaerium)	31		6
9019 (Cambarus)	3	3J	2
8996 (Orconectes)	5	1M, 1F, 3J	4
3230 (Aeshna umbrosa)	2		
3282 (Plathemis lydia)	1		8
9095 (Argia fumipennis)	5		
7117 (Trepobates)	1		
3851 (Berosus peregrinus)	1	1A	6
3863 (Paracymus)	1	1A	
7296 (Dubiraphia)	3	3L	5
7299 (Dubiraphia quadrinotata)	4	4A	3
7300 (Dubiraphia vittata)	2	2A; Slide 0225.1, 256um	
7732 (Anopheles)	1		
7984 (Procladius)	1		7
8083 (Chironomini (Tribe))	3		
9248 (Ablabesmyia (Ablabesmyia mallochi grp.))	1		
8006 (Orthocladiinae (Subfamily))	1	1P	
8086 (Chironomus)	2		8
8099 (Cryptochironomus)	1		5
8112 (Dicrotendipes)	1		6
8211 (Stictochironomus)	2		4
8235 (Paratanytarsus)	13		4
8241 (Tanytarsus)	3		4
9260 (Cricotopus (Cricotopus)/Orthocladius (Orthocladius))	2		
9241 (Polypedilum (Polypedilum illinoense grp.))	2		
1079 (EPHYDRIDAE)	1		6

Type	Value	Metric Score
Total Taxa:	34	3
Total No. Individuals:	154	3
EPT Taxa:	0	1
% Orthocladiinae + Tanytarsini of Chironomidae:	53.13	1
% Non-insects excluding Astacidae:	59.74	1
Diptera Taxa:	14	5
% Intolerant (0-3):	4.55	1
% Tolerant (8-10):	23.38	3
% Predators FFG 1:	14.94	1
% Shredders + Scrapers FFG 1:	26.62	5
% Collector-Filterers FFG 1:	22.73	1
% Sprawlers:	1.3	1
MIBI Metric Score:		26

Supplemental Metrics

Metric	HBI
Shannon-Weaver Index	5.97
Shannon Equitability	4.04
% Dominant 3 Taxon	.43
% Chironomidae	50
	20.78



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-03-0003	14T-122	MHAB	AB18382	140715402	7/15/14	Blackford

Stream Name	Location	HUC 12	HUCTO14
Big Lick Creek	CR 700 E	051201030301	05120103040010

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4472166.44	649469.34	55	4.58	7.152	25

Taxon	Count	Notes	HBI Tolerance
1084 (TURBELLARIA)	1		4
1558 (Nais/Dero)	1		
1552 (Tubificidae with bifid chetae and no hair chetae)	3		
1357 (BRANCHIOBDELLIDAE)	2		6
1234 (GLOSSIPHONIIDAE)	3		
1233 (ERPOBDELLIDAE)	9		
2252 (Physella)	14		8
2181 (Sphaerium)	5		6
2162 (Pisidium)	1		6
9008 (Orconectes rusticus)	1	1MII	6
3188 (Caenis latipennis)	6		
3331 (Sympetrum)	5		10
7031 (Ischnura verticalis)	11		
7121 (Trepobates subnitidus)	1		
3605 (Peltodytes edentulus)	3	3A	6
3851 (Berosus peregrinus)	31	31A	6
9216 (Tropisternus lateralis)	2	2A	
9135 (Tropisternus affinis)	1	1A	
3432 (Cheumatopsyche)	12		3
8980 (Hydropsyche betteni grp)	10		
3000 (Hydroptila)	1		3
1073 (CHIRONOMIDAE(all other))	1		6
8082 (Chironominae (Subfamily))	1		
8083 (Chironomini (Tribe))	5		
9321 (Cricotopus (Isocladius) sylvestris grp.)	3		
8006 (Orthocladiinae (Subfamily))	1	1P	
8086 (Chironomus)	6		8
8112 (Dicrotendipes)	4		6
8172 (Phaenopsectra)	1		7
8221 (Pseudochironomus)	1		5
8228 (Cladotanytarsus)	1		4
8235 (Paratanytarsus)	7		4
8241 (Tanytarsus)	5	1P	4
9260 (Cricotopus (Cricotopus)/Orthocladius (Orthocladius))	30		
9241 (Polypedilum (Polypedilum) illinoense grp.)	17		

Type	Value	Metric Score
Total Taxa:	35	3
Total No. Individuals:	206	3
EPT Taxa:	4	3
% Orthocladiinae + Tanytarsini of Chironomidae:	16.87	5
% Non-insects excluding Astacidae:	18.93	3
Diptera Taxa:	14	5
% Intolerant (0-3):	6.31	1
% Tolerant (8-10):	12.14	5
% Predators FFG 1:	14.08	1
% Shredders + Scrapers FFG 1:	24.27	5
% Collector-Filterers FFG 1:	11.65	3
% Sprawlers:	0	1
mIBI Metric Score:		38

Supplemental Metrics

	HBI	
	5.93	
Shannon-Weaver Index		4.32
Shannon Equitability		.46
% Dominant 3 Taxon		37.86
% Chironomidae		40.29



**OWQ/WAPB Macroinvertebrate Community Assessment
MHAB Report**

<i>Site Name</i>	<i>EPA ID</i>	<i>Macro Sample Type</i>	<i>Sample #</i>	<i>Macro Event #</i>	<i>Sample Date</i>	<i>County</i>
WMI-04-0018	14T-123	MHAB	AB18381	140715404	7/15/14	Delaware

<i>Stream Name</i>		<i>Location</i>	<i>HUC 12</i>	<i>HUCTO14</i>
Rees Ditch		CR 350 E	051201030402	05120103030030

<i>Northing</i>	<i>Easting</i>	<i>Ecoregion</i>	<i>Gradient</i>	<i>Drainage Area</i>	<i>QHEI Score</i>
4466363.08	642411.34	55	5.659	13.065	43

<i>Taxon</i>	<i>Count</i>	<i>Notes</i>	<i>HBI Tolerance</i>
1552 (Tubificidae with bifid chetae and no hair chetae)	1		
1234 (GLOSSIPHONIIDAE)	5		
1233 (ERPOBDELLIDAE)	2		
2252 (Physella)	7		8
2215 (Elimia)	6		
2181 (Sphaerium)	4		6
9050 (Hyalella)	13		
8996 (Orconectes)	4	4J	4
1017 (HEPTAGENIIDAE)	2		4
3048 (Stenacron)	2		3
3248 (Basiaeschna janata)	1		6
7118 (Trepobates inermis)	1		
3598 (Peltodytes)	1	1L	7
3600 (Peltodytes duodecimpunctatus)	3	3A	
7296 (Dubiraphia)	5	5L	5
7300 (Dubiraphia vittata)	38	38A; Slide 0203.1, 0203.2	
8083 (Chironomini (Tribe))	1		
8104 (Cryptotendipes)	1		4
8112 (Dicrotendipes)	1		6
8168 (Paratendipes albimanus)	1		4
8235 (Paratanytarsus)	3		4
9241 (Polypedilum (Polypedilum illinoense grp.))	2		
8320 (Chrysops)	1		5

<i>Type</i>	<i>Value</i>	<i>Metric Score</i>
Total Taxa:	23	3
Total No. Individuals:	105	1
EPT Taxa:	2	1
% Orthoclaudiinae + Tanytarsini of Chironomidae:	33.33	3
% Non-insects excluding Astacidae:	36.19	1
Diptera Taxa:	7	3
% Intolerant (0-3):	1.9	1
% Tolerant (8-10):	6.67	5
% Predators FFG 1:	7.62	1
% Shredders + Scrapers FFG 1:	9.52	1
% Collector-Filterers FFG 1:	3.81	5
% Sprawlers:	0	1
mIBI Metric Score:		26

Supplemental Metrics

	<i>HBI</i>	
	5.42	
Shannon-Weaver Index	3.48	
Shannon Equitability	.37	
% Dominant 3 Taxon	55.24	
% Chironomidae	8.57	



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-04-0016	14T-124	MHAB	AB18380	140715403	7/15/14	Delaware

Stream Name	Location	HUC 12	HUOTO14
Bosman Ditch	CR 900 N	051201030402	05120103030020

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4464720.9	644275.43	55	9.828	5.452	52

Taxon	Count	Notes	HBI Tolerance
1435 (Limnodrilus hoffmeisteri)	2	PL=470um, 265um	10
1233 (ERPOBDELLIDAE)	2		
2252 (Physella)	1		8
1083 (ACARI)	1		4
8996 (Orconectes)	5	1M, 2F, 2J	4
9095 (Argia fumipennis)	1		
7120 (Trepobates pictus)	1		
3851 (Berosus peregrinus)	1	1A	6
7307 (Stenelmis)	1	1F	5
7296 (Dubiraphia)	2	2L	5
7299 (Dubiraphia quadrinotata)	7	7A	3
7300 (Dubiraphia vittata)	5	5A; Slide 0223.1	
7295 (Ancyronyx variegatus)	2	2A	4
3432 (Cheumatopsyche)	8		3
8980 (Hydropsyche betteni grp)	3		
7723 (Dixella)	1		
7984 (Procladius)	1		7
8112 (Dicrotendipes)	1		6
8211 (Stictochironomus)	2		4
8241 (Tanytarsus)	1		4
9238 (Polypedilum (Uresipedilum) flavum)	1		
9241 (Polypedilum (Polypedilum) illinoense grp.)	2		

Type	Value	Metric Score
Total Taxa:	22	3
Total No. Individuals:	51	1
EPT Taxa:	2	1
% Orthocladiinae + Tanytarsini of Chironomidae:	12.5	5
% Non-insects excluding Astacidae:	11.76	5
Diptera Taxa:	7	3
% Intolerant (0-3):	29.41	3
% Tolerant (8-10):	5.88	5
% Predators FFG 1:	9.8	1
% Shredders + Scrapers FFG 1:	5.88	1
% Collector-Filterers FFG 1:	17.65	3
% Sprawlers:	1.96	1
mIBI Metric Score:	32	

Supplemental Metrics

HBI	4.31
Shannon-Weaver Index	4.03
Shannon Equitability	.43
% Dominant 3 Taxon	39.22
% Chironomidae	15.69



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Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-04-0017	14T-125	MHAB	AB18379	140812402	8/12/14	Delaware

Stream Name	Location	HUC 12	HUCTO14
Mississinewa River	CR 371 E	051201030402	05120103030020

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4464490.62	642779.57	55	2.391	310.689	52

Taxon	Count	Notes	HBI Tolerance
1435 (Limnodrilus hoffmeisteri)	1	PL=350um	10
1357 (BRANCHIOBDELLIDAE)	1		6
2215 (Elimia)	2		
2156 (Corbicula fluminea)	3		6
2181 (Sphaerium)	3		6
1083 (ACARI)	1		4
8996 (Orconectes)	3	2M, 1F	4
3048 (Stenacron)	1		3
3081 (Callibaetis)	1		6
3183 (Caenis)	1		3
3188 (Caenis latipennis)	1		
3189 (Caenis punctata)	1	Slide 0234.2	
3248 (Basiaeschna janata)	1		6
7046 (Epiptera princeps)	1		
3546 (Enallagma)	5		9
3549 (Enallagma divagans)	9		
7201 (Trichocorixa calva)	1		4
7230 (Neoplea striola)	1		
7111 (Rheumatobates)	1		
7122 (Microvelia)	1		
3600 (Peltodytes duodecimpunctatus)	4	4A	
3851 (Berosus peregrinus)	1	1A	6
3946 (Cyphon)	2	2L	
7293 (Psephenus herricki)	1	1L	4
7307 (Stenelmis)	2	1F, 1L	5
7300 (Dubiraphia vittata)	9	9A; Slide 0234.1	
7295 (Ancyronyx variegatus)	3	3A	4
3773 (Sialis)	1		5
7984 (Procladius)	4		7
8083 (Chironomini (Tribe))	5		
9284 (Tribelos jucundus)	5		
8086 (Chironomus)	13		8
8099 (Cryptochironomus)	1		5
8104 (Cryptotendipes)	5		4
8112 (Dicrotendipes)	3		6
8123 (Endochironomus)	2		6
8168 (Paratendipes albimanus)	1		4
8228 (Cladotanytarsus)	3		4
8241 (Tanytarsus)	3		4
9240 (Polypedilum (Polypedilum) fallax grp.)	2		
9241 (Polypedilum (Polypedilum) illinoense grp.)	2		
1078 (TABANIDAE)	1		6

Type	Value	Metric Score
Total Taxa:	42	5
Total No. Individuals:	112	1
EPT Taxa:	5	1
% Orthocladiinae + Tanytarsini of Chironomidae:	12.24	5
% Non-insects excluding Astacidae:	9.82	5
Diptera Taxa:	14	5
% Intolerant (0-3):	1.79	1
% Tolerant (8-10):	16.96	3
% Predators FFG 1:	23.21	3
% Shredders + Scrapers FFG 1:	8.04	1
% Collector-Filterers FFG 1:	8.04	5
% Sprawlers:	5.36	3
mIBI Metric Score:		38

Supplemental Metrics

	HBI	
	5.95	
Shannon-Weaver Index		4.91
Shannon Equitability		.53
% Dominant 3 Taxon		27.68
% Chironomidae		43.75



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Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-04-0019	14T-126	MHAB	AB18367	140812403	8/12/14	Delaware
Stream Name		Location		HUC 12		HUCTO14
Mississinewa River		Romy Street		051201030404		05120103030040
Northing	Easting	Ecoregion	Gradient	Drainage Area		QHEI Score
4466619.82	639746.1	55	6.779	334.545		56

Taxon	Count	Notes	HBI Tolerance
1396 (LUMBRICULIDAE)	1		5
1357 (BRANCHIOBDELLIDAE)	1		6
2252 (Physella)	2		8
2215 (Elimia)	15		
9050 (Hyalella)	13		
9008 (Orconectes rusticus)	1		6
9002 (Orconectes virilis)	3		6
3049 (Stenacron interpunctatum)	3		7
3197 (Ephemera)	9		3
3175 (Tricorythodes)	1		3
3549 (Enallagma divagans)	12		
7201 (Trichocorixa calva)	1	1F	4
1038 (GERRIDAE)	1		
3600 (Peltodytes duodecimpunctatus)	7	7A	
3851 (Berosus peregrinus)	10	10A	6
3946 (Cyphon)	1	1L	
7307 (Stenelmis)	1	1L	5
7296 (Dubiraphia)	1	1L	5
7300 (Dubiraphia vittata)	6	6A, slide 0226.1, 0226.2	
3432 (Cheumatopsyche)	1		3
3477 (Hydropsyche cuanis)	1		
7943 (Ablabesmyia)	1	1P	5
7984 (Procladius)	2		7
8083 (Chironomini (Tribe))	2	1P	
8086 (Chironomus)	4		8
8099 (Cryptochironomus)	1		5
8112 (Dicrotendipes)	1		6
9277 (Polypedilum (Tripodura) scalaenum grp)	1		

Type	Value	Metric Score
Total Taxa:	28	3
Total No. Individuals:	103	1
EPT Taxa:	5	1
% Orthocladinae + Tanytarsini of Chironomidae:	0	5
% Non-insects excluding Astacidae:	31.07	3
Diptera Taxa:	7	3
% Intolerant (0-3):	10.68	1
% Tolerant (8-10):	5.83	5
% Predators FFG 1:	16.5	1
% Shredders + Scrapers FFG 1:	13.59	3
% Collector-Filterers FFG 1:	.97	5
% Sprawlers:	3.88	3
mIBI Metric Score:		34

Supplemental Metrics

HBI	5.48
Shannon-Weaver Index	4.06
Shannon Equitability	.43
% Dominant 3 Taxon	38.83
% Chironomidae	11.65



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Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-04-0009	14T-128	MHAB	AB18378	140715405	7/15/14	Delaware

Stream Name	Location	HUC 12	HUCTO14
Dodge Creek	Eaton-Wheeling Pike	051201030404	05120103030040

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4467781.79	634497.39	55	16.949	1.716	43

Taxon	Count	Notes	HBI Tolerance
1232 (NAIDIDAE)	1		8
1552 (Tubificidae with bifid chetae and no hair chetae)	1		
1206 (PLANORBIDAE)	1		6
2252 (Physella)	12		8
2181 (Sphaerium)	1		6
2157 (Musculium)	1		6
1083 (ACARI)	1		4
8996 (Orconectes)	1	1MII	4
9002 (Orconectes virilis)	1	1MII	6
1251 (ISOTOMIDAE)	1		
3066 (Baetis intercalaris)	2		3
3071 (Baetis flavistriga)	4		3
3183 (Caenis)	1		3
3188 (Caenis latipennis)	1		
1023 (AESHNIDAE)	1		3
3230 (Aeshna umbrosa)	2		
1026 (COENAGRIONIDAE)	4		9
7031 (Ischnura verticalis)	17		
7121 (Trepobates subnitidus)	1		
9290 (Gerridae (Gerrinae))	1		
3851 (Berosus peregrinus)	4	4A	6
3946 (Cyphon)	1	1L	
7307 (Stenelmis)	1	1L	5
7300 (Dubiraphia vittata)	1	1A, slide 0230.1	
3432 (Cheumatopsyche)	10		3
3477 (Hydropsyche cuanis)	1		
8980 (Hydropsyche betteni grp)	1		
9319 (Ceratopsyche "checkerboard")	1		
7452 (Tipula)	2		7
7732 (Anopheles)	2	1L, 1P	
8984 (Bezzia/Palpomyia)	3		
1073 (CHIRONOMIDAE(all other))	1		6
7926 (Tanypodinae (Subfamily))	1	1P	
8083 (Chironomini (Tribe))	1		
9261 (Thienemannimyia grp.)	4		
9321 (Cricotopus (Isocladius) sylvestris grp.)	1		
8099 (Cryptochironomus)	1		5
8112 (Dicrotendipes)	1		6
8162 (Paracladopelma)	1		7
8168 (Paratendipes albimanus)	1		4
8172 (Phaenopsectra)	5		7
8211 (Stictochironomus)	28		4

Type	Value	Metric Score
Total Taxa:	45	5
Total No. Individuals:	135	3
EPT Taxa:	8	5
% Orthocladiinae + Tanytarsini of Chironomidae:	1.92	5
% Non-insects excluding Astacidae:	13.33	5
Diptera Taxa:	17	5
% Intolerant (0-3):	13.33	1
% Tolerant (8-10):	12.59	5
% Predators FFG 1:	16.3	1
% Shredders + Scrapers FFG 1:	19.26	3
% Collector-Filterers FFG 1:	11.11	3
% Sprawlers:	.74	1
mIBI Metric Score:		42

Supplemental Metrics

	HBI	
Shannon-Weaver Index	5.16	
Shannon Equitability	4.47	
% Dominant 3 Taxon	.48	
% Chironomidae	42.22	
	38.52	



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Taxon	Count	Notes	HBI Tolerance
8228 (Cladotanytarsus)	1		4
9241 (Polypedilum (Polypedilum illinoense grp.)	6		
1078 (TABANIDAE)	1		6



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MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-04-0010	14T-129	MHAB	AB18377	140813403	8/13/14	Delaware
Stream Name		Location		HUC 12	HUCTO14	
Hedgeland Ditch		CR 1070 N		051201030403	05120103030050	
Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score	
4467221.98	630442.28	55	4.857	12.323	38	

Taxon	Count	Notes	HBI Tolerance	Type	Value	Metric Score
2272 (Planorbella)	2			Total Taxa:	17	1
2252 (Physella)	2		8	Total No. Individuals:	61	1
2181 (Sphaerium)	6		6	EPT Taxa:	2	1
9056 (Crangonyx)	6		6	% Orthocladiinae + Tanytarsini of Chironomidae:	22.22	5
9019 (Cambarus)	1		2	% Non-insects excluding Astacidae:	26.23	3
3130 (Paraleptophlebia)	19		3	Diptera Taxa:	4	1
3157 (Aeshna)	1			% Intolerant (0-3):	44.26	5
7123 (Microvelia americana)	1			% Tolerant (8-10):	3.28	5
9290 (Gerridae (Gerrinae))	1			% Predators FFG 1:	1.64	1
7296 (Dubiraphia)	3	3L	5	% Shredders + Scrapers FFG 1:	4.92	1
7299 (Dubiraphia quadrinotata)	7	7A; Slide 0217.1	3	% Collector-Filterers FFG 1:	13.11	3
7303 (Optioservus)	1	1L	4	% Sprawlers:	0	1
8937 (Trienodes)	2			mIBI Metric Score:		28
8083 (Chironomini (Tribe))	1			Supplemental Metrics		
8168 (Paratendipes albimanus)	1		4	HBI		4.13
8211 (Stictochironomus)	5		4	Shannon-Weaver Index		3.38
8241 (Tanytarsus)	2		4	Shannon Equitability		.36
				% Dominant 3 Taxon		52.46
				% Chironomidae		14.75



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Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-04-0011	14T-130	MHAB	AB18376	140811405	8/11/14	Delaware
Stream Name		Location		HUC 12		HUCTO14
Pike Creek		Eaton-Wheeling Pike		051201030403		05120103030050
Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score	
4469207.63	630999.23	55	14.044	21.311	68	

Taxon	Count	Notes	HBI Tolerance
2252 (Physella)	6		8
2215 (Elimia)	7		
1083 (ACARI)	2		4
9050 (Hyalella)	2		
9008 (Orconectes rusticus)	5	2MII, 3F	6
1251 (ISOTOMIDAE)	1		
3071 (Baetis flavistriga)	1		3
3245 (Boyeria vinosa)	2		4
7225 (Notonecta irrorata)	1		
7230 (Neoplea striola)	4		
7120 (Trepobates pictus)	1		
7130 (Rhagovelia)	3	imm	
9290 (Gerridae (Gerrinae))	1		
3600 (Peltodytes duodecimpunctatus)	1	1A	
3851 (Berosus peregrinus)	4	4A	6
3946 (Cyphon)	4	4L	
7293 (Psephenus herricki)	3	3L	4
7309 (Stenelmis crenata)	4	4A; Slide 0219.2	5
7297 (Dubiraphia bivittata)	1	1A	3
7299 (Dubiraphia quadrinotata)	1	1A	3
7300 (Dubiraphia vittata)	8	8A; Slide 0219.1	
7303 (Optioservus)	2	2L	4
7304 (Optioservus fastiditus)	4	4A	2
7295 (Ancyronyx variegatus)	1	1A	4
3267 (Chimarra obscura)	7		4
3432 (Cheumatopsyche)	13		3
3423 (Hydropsyche)	8		4
8980 (Hydropsyche betteni grp)	12		
9319 (Ceratopsyche "checkerboard")	6		
3000 (Hydroptila)	2		3
8926 (Oecetis)	2		3
8952 (Helicopsyche borealis)	2		3
7610 (Hexatoma)	1		2
9285 (Tipula (Yamatotipula))	2		
7926 (Tanypodinae (Subfamily))	1		
8083 (Chironomini (Tribe))	1		
8066 (Rheocricotopus)	1		5
8168 (Paratendipes albimanus)	1		4
8235 (Paratanytarsus)	1		4
9093 (Stempellinella)	1		3
9238 (Polypedilum (Uresipedilum) flavum)	1		
9241 (Polypedilum (Polypedilum))	1		

Type	Value	Metric Score
Total Taxa:	43	5
Total No. Individuals:	133	3
EPT Taxa:	9	5
% Orthocladiinae + Tanytarsini of Chironomidae:	37.5	3
% Non-insects excluding Astacidae:	12.78	5
Diptera Taxa:	11	3
% Intolerant (0-3):	21.05	3
% Tolerant (8-10):	4.51	5
% Predators FFG 1:	8.27	1
% Shredders + Scrapers FFG 1:	23.31	5
% Collector-Filterers FFG 1:	21.05	1
% Sprawlers:	.75	1
MIBI Metric Score:		40

Supplemental Metrics

	HBI	Value
Shannon-Weaver Index	4.19	4.9
Shannon Equitability		.52
% Dominant 3 Taxon		24.81
% Chironomidae		6.02



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Taxon	Count	Notes	HBI Tolerance
illinoense grp.)			
8560 (SCIOMYZIDAE)	1		



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Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-04-0012	14T-131	MHAB	AB18375	140813401	8/13/14	Delaware

Stream Name	Location	HUC 12	HUCTO14
Mississinewa River	CR 364 W	051201030404	05120103030050

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4470241.7	631042.12	55	3.063	424.403	58

Taxon	Count	Notes	HBI Tolerance
1396 (LUMBRICULIDAE)	2		5
1233 (ERPOBDELLIDAE)	1		
1083 (ACARI)	1		4
9050 (Hyalella)	8		
9056 (Crangonyx)	1		6
9008 (Orconectes rusticus)	3	1MI, 2F	6
9002 (Orconectes virilis)	1	1MII	6
3049 (Stenacron interpunctatum)	10		7
3188 (Caenis latipennis)	1		
3197 (Ephemera)	8		3
3175 (Tricorythodes)	4		3
1025 (MACROMIIDAE)	1		3
3546 (Enallagma)	9		9
3549 (Enallagma divagans)	5		
3551 (Enallagma exsulans)	1		
7032 (Argia moesta)	3		
1041 (CORIXIDAE)	1		5
7225 (Notonecta irrorata)	3		
7230 (Neoplea striola)	3		
7218 (Ranatra fusca)	2		4
7118 (Trepobates inermis)	1		
3600 (Peltodytes duodecimpunctatus)	2	2A	
3846 (Berosus)	2	2L	7
3851 (Berosus peregrinus)	20	20A	6
3872 (Tropisternus)	1	1L	
7307 (Stenelmis)	1	1F	5
3773 (Sialis)	1		5
3477 (Hydropsyche cuanis)	1		
9222 (Cernotina/Polycentropus)	1		
7984 (Procladius)	2		7
7926 (Tanypodinae (Subfamily))	1	1P	
8083 (Chironomini (Tribe))	2	1P	
9248 (Ablabesmyia (Ablabesmyia mallochi grp.))	2		
8086 (Chironomus)	5		8
8104 (Cryptotendipes)	5		4
8112 (Dicrotendipes)	3		6
8123 (Endochironomus)	3		6
8168 (Paratendipes albimanus)	1		4
8172 (Phaenopsectra)	2		7
8228 (Cladotanytarsus)	2		4
8241 (Tanytarsus)	3		4
9241 (Polypedilum (Polypedilum illinoense grp.))	2		

Type	Value	Metric Score
Total Taxa:	44	5
Total No. Individuals:	135	3
EPT Taxa:	6	3
% Orthocladiinae + Tanytarsini of Chironomidae:	15.15	5
% Non-insects excluding Astacidae:	11.11	5
Diptera Taxa:	14	5
% Intolerant (0-3):	9.63	1
% Tolerant (8-10):	10.37	5
% Predators FFG 1:	23.7	3
% Shredders + Scrapers FFG 1:	19.26	3
% Collector-Filterers FFG 1:	2.22	5
% Sprawlers:	1.48	1
mIBI Metric Score:		44

Supplemental Metrics

	HBI	
	5.78	
Shannon-Weaver Index		4.88
Shannon Equitability		.52
% Dominant 3 Taxon		28.89
% Chironomidae		24.44



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Taxon	Count	Notes	HBI Tolerance
8320 (Chrysops)	2		5
18006 (Urnatella gracilis)	2		



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Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-03-0009	14T-132	MHAB	AB18374	140813402	8/13/14	Delaware
Stream Name		Location		HUC 12		HUCTO14
Big Lick Creek		CR 1275 N		051201030302		05120103040050
Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score	
4470771.37	631760.42	55	4.092	76.171	47	

Taxon	Count	Notes	HBI Tolerance
1396 (LUMBRICULIDAE)	2		5
1234 (GLOSSIPHONIIDAE)	1		
1233 (ERPOBDELLIDAE)	2		
2252 (Physella)	2		8
2181 (Sphaerium)	1		6
9050 (Hyalella)	23		
8996 (Orconectes)	2		4
3183 (Caenis)	6		3
3188 (Caenis latipennis)	2		
3397 (Macromia)	1		2
3560 (Enallagma basidens)	1		
1041 (CORIXIDAE)	3		5
7225 (Notonecta irrorata)	1		
3604 (Peltodytes sexmaculatus)	1	1A	
3846 (Berosus)	4	4L	7
3851 (Berosus peregrinus)	6	6A	6
7296 (Dubiraphia)	1	1L	5
7297 (Dubiraphia bivittata)	1	1A, slide 0228.1	3
7298 (Dubiraphia minima)	2	2A, slide 0228.2	
7984 (Procladius)	1		7
8083 (Chironomini (Tribe))	1		
8104 (Cryptotendipes)	1		4
8112 (Dicrotendipes)	2		6
8211 (Stictochironomus)	2		4
8228 (Cladotanytarsus)	1		4
8241 (Tanytarsus)	8		4
9241 (Polypedilum (Polypedilum) illinoense grp.)	1		

Type	Value	Metric Score
Total Taxa:	27	3
Total No. Individuals:	79	1
EPT Taxa:	2	1
% Orthocladiinae + Tanytarsini of Chironomidae:	52.94	1
% Non-insects excluding Astacidae:	39.24	1
Diptera Taxa:	8	3
% Intolerant (0-3):	10.13	1
% Tolerant (8-10):	2.53	5
% Predators FFG 1:	17.72	1
% Shredders + Scrapers FFG 1:	10.13	3
% Collector-Filterers FFG 1:	11.39	3
% Sprawlers:	1.27	1
mIBI Metric Score:		24

Supplemental Metrics

HBI	4.86
Shannon-Weaver Index	3.93
Shannon Equitability	.42
% Dominant 3 Taxon	46.84
% Chironomidae	21.52



**OWQ/WAPB Macroinvertebrate Community Assessment
MHAB Report**

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-03-0005	14T-134	MHAB	AB18373	140811404	8/11/14	Blackford
Stream Name		Location		HUC 12		HUCTO14
Townsend Lucas Ditch		CR 300 S		051201030302		05120103040050
Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score	
4474178.47	633989.52	55	14.085	6.984	58	

Taxon	Count	Notes	HBI Tolerance
1357 (BRANCHIOBDELLIDAE)	10		6
1234 (GLOSSIPHONIIDAE)	1		
1233 (ERPOBDELLIDAE)	1		
2272 (Planorbella)	1		
2252 (Physella)	2		8
1002 (ASELLIDAE)	1		8
9050 (Hyalella)	2		
9002 (Orconectes virilis)	3	2MII, 1F	6
3020 (Stenonema femoratum)	1		3
3277 (Perithemis tenera)	1		
3551 (Enallagma exsulans)	1		
9290 (Gerridae (Gerrinae))	1		
3946 (Cyphon)	1	1L	
7307 (Stenelmis)	2	2L	5
7296 (Dubiraphia)	1	1L	5
7299 (Dubiraphia quadrinotata)	2	2A	3
7300 (Dubiraphia vittata)	31	31A, slide 0207.1, 0207.2	
7723 (Dixella)	1		
7732 (Anopheles)	1		
9248 (Ablabesmyia (Ablabesmyia mallochi grp.))	3		
8086 (Chironomus)	2		8
8099 (Cryptochironomus)	1		5
8112 (Dicrotendipes)	1		6
8168 (Paratendipes albimanus)	1		4
8228 (Cladotanytarsus)	1		4
8235 (Paratanytarsus)	1		4
8241 (Tanytarsus)	2		4
9277 (Polypedilum (Tripodura) scalaenum grp)	2		

Type	Value	Metric Score
Total Taxa:	28	3
Total No. Individuals:	78	1
EPT Taxa:	1	1
% Orthoclaadiinae + Tanytarsini of Chironomidae:	28.57	3
% Non-insects excluding Astacidae:	23.08	3
Diptera Taxa:	11	3
% Intolerant (0-3):	3.85	1
% Tolerant (8-10):	6.41	5
% Predators FFG 1:	6.41	1
% Shredders + Scrapers FFG 1:	7.69	1
% Collector-Filterers FFG 1:	3.85	5
% Sprawlers:	1.28	1
mIBI Metric Score:		28

Supplemental Metrics

HBI	5.58
Shannon-Weaver Index	3.59
Shannon Equitability	.38
% Dominant 3 Taxon	56.41
% Chironomidae	17.95



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-03-0010	14T-135	MHAB	AB18372	140811403	8/11/14	Blackford

Stream Name	Location	HUC 12	HUCTO14
Little Joe Creek	CR 300 S	051201030302	05120103040040

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4474183.47	636330.08	55	15.163	4.393	58

Taxon	Count	Notes	HBI Tolerance
1084 (TURBELLARIA)	1		4
1234 (GLOSSIPHONIIDAE)	1		
2333 (Ferrissia rivularis)	1		6
2252 (Physella)	3		8
2181 (Sphaerium)	2		6
1083 (ACARI)	2		4
9019 (Cambarus)	1	1MII	2
8996 (Orconectes)	2	2F	4
3157 (Aeshna)	1		
3245 (Boyeria vinosa)	1		4
3534 (Calopteryx)	8		4
1026 (COENAGRIONIDAE)	1		9
1038 (GERRIDAE)	1		
7120 (Trepobates pictus)	1		
7122 (Microvelia)	1		
7123 (Microvelia americana)	2		
3846 (Berosus)	1	1L	7
3946 (Cyphon)	4	4L	
7307 (Stenelmis)	3	2A, 1L	5
7296 (Dubiraphia)	1	1L	5
7299 (Dubiraphia quadrinotata)	10	10A; Slide 0210.1, 415 um	3
7321 (Macronychus glabratus)	1	1L	3
3432 (Cheumatopsyche)	15		3
3423 (Hydropsyche)	2		4
8980 (Hydropsyche betteni grp)	3		
9319 (Ceratopsyche "checkerboard")	2		
1073 (CHIRONOMIDAE(all other))	1		6
7926 (Tanypodinae (Subfamily))	1		
8083 (Chironomini (Tribe))	2		
8047 (Nanocladius)	1		5
8099 (Cryptochironomus)	2		5
8112 (Dicrotendipes)	2		6
8211 (Stictochironomus)	5		4
8235 (Paratanytarsus)	3		4
9093 (Stempellinella)	1		3
8241 (Tanytarsus)	4		4
9277 (Polypedilum (Tripodura) scalaenum grp)	2		
9238 (Polypedilum (Uresipedilum) flavum)	2		
9241 (Polypedilum (Polypedilum) illinoense grp.)	1		
9242 (Polypedilum (Polypedilum))	2		

Type	Value	Metric Score
Total Taxa:	40	3
Total No. Individuals:	100	1
EPT Taxa:	4	5
% Orthoclaadiinae + Tanytarsini of Chironomidae:	31.03	3
% Non-insects excluding Astacidae:	10	5
Diptera Taxa:	14	5
% Intolerant (0-3):	28	3
% Tolerant (8-10):	4	5
% Predators FFG 1:	18	3
% Shredders + Scrapers FFG 1:	11	3
% Collector-Filterers FFG 1:	24	1
% Sprawlers:	4	3
mIBI Metric Score:		40

Supplemental Metrics

	HBI	
	4.14	
Shannon-Weaver Index		4.78
Shannon Equitability		.51
% Dominant 3 Taxon		33
% Chironomidae		29



OWQ/WAPB Macroinvertebrate Community Assessment
MHAB Report

Taxon	Count	Notes	HBI Tolerance
laetum grp.)			



OWQ/WAPB Macroinvertebrate Community Assessment

MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-03-0006	14T-136	MHAB	AB19833	140811402	8/11/14	Blackford

Stream Name	Location	HUC 12	HUCTO14
Big Lick Creek	CR 100 W	051201030302	05120103040040

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4476708.57	636638.18	55	3.704	52.302	

Taxon	Count	Notes	HBI Tolerance
1084 (TURBELLARIA)	1		4
1396 (LUMBRICULIDAE)	1		5
1552 (Tubificidae with bifid chetae and no hair chetae)	1		
1234 (GLOSSIPHONIIDAE)	1		
1233 (ERPOBDELLIDAE)	8		
2252 (Physella)	1		8
2181 (Sphaerium)	6		6
9050 (Hyalella)	5		
9002 (Orconectes virilis)	1	1F	6
3183 (Caenis)	3		3
3188 (Caenis latipennis)	3		
3540 (Ischnura)	1		9
3546 (Enallagma)	2		9
9095 (Argia fumipennis)	1		
7230 (Neoplea striola)	3		
7218 (Ranatra fusca)	1		4
3600 (Peltodytes duodecimpunctatus)	1	1A	
3846 (Berosus)	23	23L	7
3851 (Berosus peregrinus)	3	3A	6
3872 (Tropisternus)	1	1L	
7293 (Psephenus herricki)	2	2L	4
7296 (Dubiraphia)	11	10L, 1F	5
7300 (Dubiraphia vittata)	13	13A, slide 0235.1, 0235.2	
7295 (Ancyronyx variegatus)	1	1A	4
3432 (Cheumatopsyche)	5		3
3477 (Hydropsyche cuanis)	1		
3480 (Hydropsyche frisoni)	1		2
3000 (Hydroptila)	1		3
8923 (Nectopsyche diarina)	3		3
7984 (Procladius)	4		7
7926 (Tanypodinae (Subfamily))	1		
8083 (Chironomini (Tribe))	2		
9284 (Tribelos jucundus)	2		
8104 (Cryptotendipes)	4		4
8112 (Dicrotendipes)	10		6
8211 (Stictochironomus)	2		4
8228 (Cladotanytarsus)	24		4
8235 (Paratanytarsus)	3		4
8241 (Tanytarsus)	15	1P	4
9260 (Cricotopus (Cricotopus)/Orthocladius (Orthocladius))	1		

Type	Value	Metric Score
Total Taxa:	42	5
Total No. Individuals:	176	3
EPT Taxa:	7	3
% Orthocladiinae + Tanytarsini of Chironomidae:	59.15	1
% Non-insects excluding Astacidae:	13.64	5
Diptera Taxa:	13	3
% Intolerant (0-3):	7.39	1
% Tolerant (8-10):	2.27	5
% Predators FFG 1:	23.86	3
% Shredders + Scrapers FFG 1:	3.98	1
% Collector-Filterers FFG 1:	14.77	3
% Sprawlers:	2.27	1
MIBI Metric Score:		34

Supplemental Metrics

HBI	5.07
Shannon-Weaver Index	4.55
Shannon Equitability	.49
% Dominant 3 Taxon	35.23
% Chironomidae	40.34



OWQ/WAPB Macroinvertebrate Community Assessment
MHAB Report

Taxon	Count	Notes	HBI Tolerance
9277 (Polypedilum (Tripodura) scalaenum grp)	2		
9238 (Polypedilum (Uresipedilum) flavum)	1		



OWQ/WAPB Macroinvertebrate Community Assessment

MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-03-0006	14T-136	MHAB	AB18371	140811401	8/11/14	Blackford

Stream Name	Location	HUC 12	HUCTO14
Big Lick Creek	CR 100 W	051201030302	05120103040040

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4476708.57	636638.18	55	3.704	52.302	43

Taxon	Count	Notes	HBI Tolerance
1084 (TURBELLARIA)	2		4
1552 (Tubificidae with bifid chetae and no hair chetae)	1		
1234 (GLOSSIPHONIIDAE)	2		
1233 (ERPOBDELLIDAE)	11		
2252 (Physella)	4		8
2181 (Sphaerium)	8		6
2157 (Musculium)	1		6
9050 (Hyalella)	4		
9002 (Orconectes virilis)	2	1M, 1F	6
3188 (Caenis latipennis)	1		
3202 (Hexagenia)	1		4
7031 (Ischnura verticalis)	2		
9095 (Argia fumipennis)	1		
1041 (CORIXIDAE)	1		5
3591 (Haliphus borealis)	1	1A	5
3600 (Peltodytes duodecimpunctatus)	2	2A	
3604 (Peltodytes sexmaculatus)	1	1A	
3846 (Berosus)	16	16L	7
3851 (Berosus peregrinus)	11	11A	6
3872 (Tropisternus)	1	1L	
7296 (Dubiraphia)	2	2L	5
7300 (Dubiraphia vittata)	3	3A; Slide 0216.1	
7893 (Probezzia)	1		
7965 (Larsia)	1		4
7984 (Procladius)	4		7
7926 (Tanypodinae (Subfamily))	1	1P	
9248 (Ablabesmyia (Ablabesmyia mallochi grp.))	2		
9261 (Thienemannimyia grp.)	3		
8104 (Cryptotendipes)	1		4
8112 (Dicrotendipes)	5		6
8151 (Microtendipes)	1		7
8228 (Cladotanytarsus)	9		4
8235 (Paratanytarsus)	1		4
8241 (Tanytarsus)	14		4
9277 (Polypedilum (Tripodura) scalaenum grp.)	3		
9241 (Polypedilum (Polypedilum illinoense grp.))	1		
8274 (Stratiomys)	1		

Type	Value	Metric Score
Total Taxa:	37	3
Total No. Individuals:	126	1
EPT Taxa:	2	1
% Orthocladiinae + Tanytarsini of Chironomidae:	52.17	1
% Non-insects excluding Astacidae:	26.19	3
Diptera Taxa:	15	5
% Intolerant (0-3):	0	1
% Tolerant (8-10):	3.17	5
% Predators FFG 1:	31.75	3
% Shredders + Scrapers FFG 1:	12.7	3
% Collector-Filterers FFG 1:	19.84	3
% Sprawlers:	4.76	3
MIBI Metric Score:		32

Supplemental Metrics

	HBI	
	5.61	
Shannon-Weaver Index		4.52
Shannon Equitability		.48
% Dominant 3 Taxon		32.54
% Chironomidae		36.51



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-03-0007	14T-137	MHAB	AB18370	140716404	7/16/14	Blackford

Stream Name	Location	HUC 12	HUCTO14
Moore Prong	CR 100 W	051201030302	05120103040040

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4478039.8	636612.12	55	10.565	5.167	34

Taxon	Count	Notes	HBI Tolerance
1553 (Tubificidae with pectinate chetae and hair chetae)	1		
1357 (BRANCHIOBDELLIDAE)	2		6
1233 (ERPOBDELLIDAE)	1		
2252 (Physella)	4		8
1083 (ACARI)	1		4
9008 (Orconectes rusticus)	3		6
3365 (Proclleon)	1		
3540 (Ischnura)	1		9
3600 (Peltodytes duodecimpunctatus)	2	2A	
1064 (DYTISCIDAE)	1	1L	
3851 (Berosus peregrinus)	3	3A	6
3946 (Cyphon)	1	1L	
7307 (Stenelmis)	1	1L	5
7309 (Stenelmis crenata)	1	1A	5
7296 (Dubiraphia)	4	3L, 1F	5
7299 (Dubiraphia quadrinotata)	2	2A	3
7300 (Dubiraphia vittata)	3	3A	
1057 (HYDROPSYCHIDAE)	2		4
3432 (Cheumatopsyche)	5		3
8980 (Hydropsyche betteni grp)	2		
9285 (Tipula (Yamatotipula))	2		
1073 (CHIRONOMIDAE(all other))	4		6
7984 (Procladius)	2		7
8083 (Chironomini (Tribe))	3		
9248 (Ablabesmyia (Ablabesmyia mallochi grp.))	1		
9261 (Thienemannimyia grp.)	2		
8086 (Chironomus)	8		8
8099 (Cryptochironomus)	1		5
8112 (Dicrotendipes)	3		6
8172 (Phaenopsectra)	2		7
8202 (Saetheria)	1	sp. 1 in Epler 2001	
8211 (Stictochironomus)	4		4
8228 (Cladotanytarsus)	6		4
8235 (Paratanytarsus)	11		4
8241 (Tanytarsus)	10		4
9260 (Cricotopus (Cricotopus)/Orthocladius (Orthocladius))	1		
9277 (Polypedilum (Tripodura) scalaenum grp)	3		
9238 (Polypedilum (Uresipedilum) flavum)	1		

Type	Value	Metric Score
Total Taxa:	42	5
Total No. Individuals:	115	1
EPT Taxa:	4	3
% Orthocladiinae + Tanytarsini of Chironomidae:	38.57	3
% Non-insects excluding Astacidae:	7.83	5
Diptera Taxa:	22	5
% Intolerant (0-3):	6.09	1
% Tolerant (8-10):	11.3	5
% Predators FFG 1:	5.22	1
% Shredders + Scrapers FFG 1:	10.43	3
% Collector-Filterers FFG 1:	18.26	3
% Sprawlers:	3.48	3
mIBI Metric Score:		38

Supplemental Metrics

Metric	HBI
Shannon-Weaver Index	5.19
Shannon Equitability	4.98
% Dominant 3 Taxon	.53
% Chironomidae	25.22
	60.87



OWQ/WAPB Macroinvertebrate Community Assessment
MHAB Report

Taxon	Count	Notes	HBI Tolerance
9241 (Polypedilum (Polypedilum) illinoense grp.)	5		
9257 (Cricotopus (Cricotopus))	2		
8320 (Chrysops)	1		5
8397 (Hemerodromia)	1		



**OWQ/WAPB Macroinvertebrate Community Assessment
MHAB Report**

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI040-0003	14T-138	MHAB	AB18400	140716402	7/16/14	Blackford

Stream Name	Location		HUC 12	HUCTO14	
Little Lick Creek	SR 3, S of Hartford City		051201030301	05120103040030	
Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4478120.62	638231.19	55	2.39	12.939	29

Taxon	Count	Notes	HBI Tolerance
1084 (TURBELLARIA)	7		4
1552 (Tubificidae with bifid chetae and no hair chetae)	4		
1555 (Tubificidae with bifid chetae and hair)	1		
1234 (GLOSSIPHONIIDAE)	8		
1233 (ERPOBDELLIDAE)	16		
2252 (Physella)	4		8
2157 (Musculium)	15		6
9050 (Hyalella)	10		
9056 (Crangonyx)	7		6
8996 (Orconectes)	1	1M	4
1026 (COENAGRIONIDAE)	1		9
7031 (Ischnura verticalis)	15		
3542 (Ischnura posita)	2		
1039 (BELOSTOMATIDAE)	2		
3600 (Peltodytes duodecimpunctatus)	3	3A	
3605 (Peltodytes edentulus)	1	1A	6
3851 (Berosus peregrinus)	3	3A	6
7732 (Anopheles)	1		
9111 (Ceratopogon)	1		
8112 (Dicrotendipes)	3		6
8123 (Endochironomus)	3		6
8241 (Tanytarsus)	2		4
9241 (Polypedilum (Polypedilum) illinoense grp.)	2		

Type	Value	Metric Score
Total Taxa:	23	3
Total No. Individuals:	112	1
EPT Taxa:	0	1
% Orthocladiinae + Tanytarsini of Chironomidae:	20	5
% Non-insects excluding Astacidae:	64.29	1
Diptera Taxa:	6	1
% Intolerant (0-3):	0	1
% Tolerant (8-10):	4.46	5
% Predators FFG 1:	39.29	5
% Shredders + Scrapers FFG 1:	9.82	1
% Collector-Filterers FFG 1:	16.07	3
% Sprawlers:	0	1
mIBI Metric Score:		28

<u>Supplemental Metrics</u>	
HBI	5.81
Shannon-Weaver Index	3.94
Shannon Equitability	.42
% Dominant 3 Taxon	41.07
% Chironomidae	8.93



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI040-0009	14T-139	MHAB	AB18401	140716403	7/16/14	Blackford

Stream Name	Location	HUC 12	HUCTO14
Big Lick Creek	SR 3 South of Hartford City	051201030301	05120103040020

Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score
4476930	638245.11	55	3.699	32.464	36

Taxon	Count	Notes	HBI Tolerance
1084 (TURBELLARIA)	2		4
1234 (GLOSSIPHONIIDAE)	2		
1233 (ERPOBDELLIDAE)	1		
1089 (Helisoma)	1		6
2252 (Physella)	11		8
2181 (Sphaerium)	1		6
8996 (Orconectes)	2	2J	4
3188 (Caenis latipennis)	2		
3245 (Boyeria vinosa)	1		4
3277 (Perithemis tenera)	1		
1026 (COENAGRIONIDAE)	1		9
7031 (Ischnura verticalis)	4		
7230 (Neoplea striola)	1		
7208 (Belostoma flumineum)	2		4
7122 (Microvelia)	1		
3783 (Liodessus)	1	1A	
3846 (Berosus)	1	1L	7
3851 (Berosus peregrinus)	20	20A	6
3872 (Tropisternus)	3	3L	
7296 (Dubiraphia)	1	1L	5
7300 (Dubiraphia vittata)	3	3A; slide 0204.1	
3432 (Cheumatopsyche)	12		3
9149 (Hydropsyche demora)	2		
3480 (Hydropsyche frisoni)	4		2
8980 (Hydropsyche betteni grp)	13		
3000 (Hydroptila)	1		3
8006 (Orthocladiinae (Subfamily))	1		
8033 (Cricotopus trifasciatus)	1		
8086 (Chironomus)	30		8
8104 (Cryptotendipes)	1		4
8228 (Cladotanytarsus)	7		4
8235 (Paratanytarsus)	8	1P	4
9093 (Stempellinella)	1		3
9278 (Polypedilum (Tripodura halterale-simulans grp))	3		
9241 (Polypedilum (Polypedilum illinoense grp.))	32		
9257 (Cricotopus (Cricotopus))	6		
8397 (Hemerodromia)	1		

Type	Value	Metric Score
Total Taxa:	37	3
Total No. Individuals:	185	3
EPT Taxa:	6	3
% Orthocladiinae + Tanytarsini of Chironomidae:	20	5
% Non-insects excluding Astacidae:	9.73	5
Diptera Taxa:	11	3
% Intolerant (0-3):	9.73	1
% Tolerant (8-10):	22.7	3
% Predators FFG 1:	7.57	1
% Shredders + Scrapers FFG 1:	17.84	3
% Collector-Filterers FFG 1:	7.03	5
% Sprawlers:	1.08	1
mIBI Metric Score:		36

Supplemental Metrics

	HBI	
	5.82	
Shannon-Weaver Index		4.16
Shannon Equitability		.45
% Dominant 3 Taxon		44.32
% Chironomidae		48.65



OWQ/WAPB Macroinvertebrate Community Assessment MHAB Report

Site Name	EPA ID	Macro Sample Type	Sample #	Macro Event #	Sample Date	County
WMI-03-0008	14T-140	MHAB	AB18369	140716401	7/16/14	Blackford
Stream Name		Location		HUC 12		HUCTO14
Little Lick Creek		CR 75 E		051201030301		05120103040030
Northing	Easting	Ecoregion	Gradient	Drainage Area	QHEI Score	
4478917.55	639432.81	55	2.39	12.075	46	

Taxon	Count	Notes	HBI Tolerance
1084 (TURBELLARIA)	7		4
1396 (LUMBRICULIDAE)	1		5
1498 (Nais)	2		8
1233 (ERPODELLIDAE)	1		
2333 (Ferrissia rivularis)	1		6
1088 (Gyraulus)	1		8
2272 (Planorbella)	5		
2252 (Physella)	13		8
2181 (Sphaerium)	6		6
1083 (ACARI)	3		4
9050 (Hyaella)	21		
8996 (Orconectes)	1	1F	4
3189 (Caenis punctata)	5	slide 0222.1	
3228 (Anax junius)	3		
3230 (Aeshna umbrosa)	2		
3245 (Boyeria vinosa)	1		4
1026 (COENAGRIONIDAE)	2		9
7031 (Ischnura verticalis)	28		
3542 (Ischnura posita)	3		
7207 (Belostoma)	2		
7096 (Gerris)	1		
3600 (Peltodytes duodecimpunctatus)	1	1A	
3602 (Peltodytes muticus)	1	1A	
3851 (Berosus peregrinus)	10	10A	6
3863 (Paracymus)	1	1A	
3872 (Tropisternus)	1	1L	
3946 (Cyphon)	1	1L	
7307 (Stenelmis)	2	1L, 1F	5
7296 (Dubiraphia)	4	4L	5
7299 (Dubiraphia quadrinotata)	7	7A	3
7300 (Dubiraphia vittata)	10	10A, slide 0222.3	
9214 (Dubiraphia robusta)	3	3A, slide 0222.2	
3432 (Cheumatopsyche)	2		3
3423 (Hydropsyche)	4		4
3000 (Hydroptila)	1		3
7723 (Dixella)	1		
8074 (Thienemanniella)	1		4
8112 (Dicrotendipes)	4		6
8172 (Phaenopsectra)	2		7
8235 (Paratanytarsus)	6		4
8241 (Tanytarsus)	1		4
9238 (Polypedilum (Uresipedilum) flavum)	2		
9241 (Polypedilum (Polypedilum))	6		

Type	Value	Metric Score
Total Taxa:	43	5
Total No. Individuals:	180	3
EPT Taxa:	4	3
% Orthocladiinae + Tanytarsini of Chironomidae:	36.36	3
% Non-insects excluding Astacidae:	33.89	3
Diptera Taxa:	8	3
% Intolerant (0-3):	5.56	1
% Tolerant (8-10):	10	5
% Predators FFG 1:	21.67	3
% Shredders + Scrapers FFG 1:	17.22	3
% Collector-Filterers FFG 1:	7.22	5
% Sprawlers:	.56	1
mIBI Metric Score:		38

Supplemental Metrics

	HBI	
Shannon-Weaver Index	5.45	4.66
Shannon Equitability		.5
% Dominant 3 Taxon		34.44
% Chironomidae		12.22



OWQ/WAPB Macroinvertebrate Community Assessment
MHAB Report

Taxon	Count	Notes	HBI Tolerance
illinoense grp.)			