

Attachment A

SNEP Low Gradient Macroinvertebrate IBI Report

Taxonomic Data Quality Control Report

Analysis completed	May 08, 2020
Report completed	May 21, 2020
Tetra Tech project numbers	Mass DEP: 100-WTR-T38938.002 (Task 03) SNEP: 100-IWM-T39299 (Task 2D)
Project names	Massachusetts Department of Environmental Protection Biocriteria Development Phase III New England Interstate Water Pollution Control Commission Low-Gradient Coastal Index of Biotic Integrity for Wadeable Waters in Southern New England
Clients	Massachusetts Department of Environmental Protection (MA DEP) New England Interstate Water Pollution Control Commission (NEIWPCC)
Client contacts	James Meek (MA DEP; 508-767-2863) Richard Friesner (NEIWPCC; 978-349-2514)
Primary taxonomists	Michael Cole & Ann Gregoire (Cole Ecological, Inc.) (T1)
QC taxonomists	Kelly Nolan (Watershed Assessment Associates) (T2)
QC analyst	Benjamin D. Block (802-778-3256)

Table of Contents

Taxonomic data quality project summary	3
Project Background.....	3
Test conditions and narrative summary	3
Mass DEP Samples	4
SNEP Samples	5
Hierarchical target levels	6
Summary statistics (by sample lot)	8
Abbreviations/column headers.....	9
Summary statistics (by individual samples)	9
Taxon by taxon comparisons (within samples)	10
Mass DEP samples.....	10
SNEP samples.....	17
Conclusion	24
References.....	24

Prepared by: Tetra Tech, Inc., 73 Main Street, Suite 38, Montpelier, VT, 05602 (with questions, contact Benjamin D. Block by phone at 802-778-3256 or email at ben.block@tetrattech.com).

Taxonomic data quality project summary

Analysis completed	May 08, 2020
Report completed	May 21, 2020
Tetra Tech project numbers	Mass DEP: 100-WTR-T38938.002 (Task 03) SNEP: 100-IWM-T39299 (Task 2D)
Project names	Massachusetts Department of Environmental Protection Biocriteria Development Phase III New England Interstate Water Pollution Control Commission Low-Gradient Coastal Index of Biotic Integrity for Wadeable Waters in Southern New England
Clients	Massachusetts Department of Environmental Protection (MA DEP) New England Interstate Water Pollution Control Commission (NEIWPCC)
Client contacts	James Meek (MA DEP; 508-767-2863) Richard Friesner (NEIWPCC; 978-349-2514)
Primary taxonomists	Michael Cole & Ann Gregoire (Cole Ecological, Inc.) (T1)
QC taxonomists	Kelly Nolan (Watershed Assessment Associates) (T2)
QC analyst	Benjamin D. Block (802-778-3256)

Project Background

Two concurrent taxonomic identification projects for NEIWPCC and MADEP were conducted during the 2019 sampling season. Both projects used the same sampling protocols and taxonomists, though the field crews and project administrations were independent. Taxonomic QC results for both projects are reported because each data set can corroborate results from the other and overall strengthen the interpretation of results. The results are, however, reported separately in each section because the projects ultimately need to be reported independently.

Test conditions and narrative summary

Taxonomic disagreements between T1 and T2 were classified as either straight, hierarchical, or enumeration disagreements. Straight disagreements occur when T1 and T2 disagree on the identity of a specimen but agree on the taxonomic hierarchy of the specimen (e.g., a specimen is identified as two different species within the same genus). In some cases, damage may have

occurred during shipping and handling, therefore, the second or third identification effort may include specimens with missing features that would lead to a taxonomic misidentification or hierarchical disagreement. Hierarchical disagreements occurred when one taxonomist could not identify a specimen with the same specificity as the other, which could be due to cumulative damage or uncertain feature recognition. Enumeration disagreements can be attributed to specimens degrading to unrecognizable organisms after shipping and handling, specimens hidden within or behind other specimens, or enumeration error by a taxonomist.

Mass DEP Samples

Five benthic macroinvertebrate samples were randomly selected as approximately 12 % of the multi-habitat sample lot for this year ($n = 41$). These taxonomic comparison results represent a direct comparison of identification results by independent taxonomists in separate laboratories; primary identifications were done by Cole Ecological, Inc. (Greenfield, Massachusetts) and quality control identifications were completed by Watershed Assessment Associates (Schenectady, New York). The QC analysis (taxonomic comparison) done for this sample set was on five randomly selected from the full sample lot. The mean percent taxonomic disagreement (PTD) was 6.2 %, substantially lower than the 15 % measurement quality objective (MQO). No individual samples exceeded the PTD_{MQO} . The mean percent difference in enumeration (PDE) was 1.1 %, lower than the programmatic MQO of 5 %. No individual samples exceeded the PDE_{MQO} . Consistency of effort in meeting hierarchical target levels set by the primary taxonomist was characterized by percent taxonomic completeness (PTC). PTC values for T1 for this sample lot ranged from 90.2 – 98.8 % (mean 93.8 %), whereas PTC values for T2 ranged from 88.0 – 98.1 % (mean 93.1 %). The mean absolute difference in PTC between T1 and T2 for this sample dataset was 0.8 %, illustrating good consistency. The rate of error in this dataset is negligible and there are no corrective actions necessary, thus the overall data quality is acceptable for additional analyses.

Of the taxonomic disagreements found, very few were due to straight disagreements (2.9 %) which suggest that T1 and T2 both recognized morphological features on specimens that allowed the taxonomists to agree on the taxonomic identity of each specimen. Hierarchical disagreement made up 10.3 % of the taxonomic disagreements. Differences in enumeration made up 86.8 % of the taxonomic disagreements.

SNEP Samples

Six benthic macroinvertebrate samples were randomly selected as approximately 10 % of the sample lot for this year ($n = 59$). These taxonomic comparison results represent a direct comparison of identification results by independent taxonomists in separate laboratories; primary identifications were done by Cole Ecological, Inc. (Greenfield, Massachusetts) and quality control identifications were completed by Watershed Assessment Associates (Schenectady, New York). The QC analysis (taxonomic comparison) done for this sample set was on six randomly selected from the full sample lot. The mean percent taxonomic disagreement (PTD) was 6.1 %, substantially lower than the 15 % measurement quality objective (MQO). No individual samples exceeded the PTD_{MQO} . The mean percent difference in enumeration (PDE) was 0.8 %, lower than the programmatic MQO of 5 %. No individual samples exceeded the PDE_{MQO} . Consistency of effort in meeting hierarchical target levels set by the primary taxonomist was characterized by percent taxonomic completeness (PTC). PTC values for T1 for this sample lot ranged from 82.7 – 99.7 % (mean 95.0 %), whereas PTC values for T2 ranged from 84.2 – 98.5 % (mean 93.3 %). The mean absolute difference in PTC between T1 and T2 for this sample dataset was 2.2 %, illustrating good consistency. The mean absolute difference in PTC of sample 19-126-24 (5.7 %) marginally exceeded the MQO of 5 %. The rate of error in this dataset is negligible and there are no corrective actions necessary; the overall data quality is acceptable for additional analyses.

Of the taxonomic disagreements found, very few were due to straight disagreements (3.2 %) which suggest that T1 and T2 both recognized morphological features on specimens that allowed the taxonomists to agree on the taxonomic identity of each specimen. Hierarchical disagreement made up 19.1 % of the taxonomic disagreements. Differences in enumeration made up 77.7 % of the taxonomic disagreements.

Standard operating procedures (SOP) for identifications documented and provided to all primary and QC taxonomists? Yes.

Additional comments: No systematic errors were identified during the analyses or the reconciliation process. Following the reconciliation process, there were fewer than 10 corrections (10 individual re-identifications) made by T1 for both data sets (less than 0.5% of specimens identified).

Hierarchical target levels

The hierarchical target levels for taxonomic identification were set by Cole Ecological (T1; SNEP Sampling Plan 2019).

Cole Ecological Inc. Standard Taxonomic Effort for Northeast North America Freshwater Macroinvertebrate Samples

Last updated by M Cole on
4/9/2019

REJECTED MATERIAL

	Common Name	NE STE	Comments
Molt skins and exuvia		reject	
Invertebrates dead prior to sampling		reject	
Eggs and egg cases		reject	
Empty shells		reject*	
Empty cases and retreats		reject*	
Adults (spinners)		reject*	dead adults that have fallen into water
Porifera/Silicea	sponges	reject*	
Bryozoa/Ectoprocta	moss animalcules	reject*	
Tardigrada	water bears	reject	not censused quantitatively when using 500 micron mesh
Copepoda	copepods	reject	
Cladocera	water fleas	reject	
Terrestrial invertebrates		reject	
Collembola	springtails	reject	generally reject, but some states/projects require
Araneae	spiders	reject	
Vertebrates	fish and amphibians	reject*	

reject*= identifications may be included/excluded in data sets as incidental information depending on project objectives

NON-INSECTS

	Common Name	NE STE	Comments
Cnidaria (Hydrozoa)	hydroids	Class Hydrozoa	
Platyhelminthes	flatworms	Subclass Trepanonemata	some easily recognized taxa such as Girardia and Cura to genus
Nemertea	proboscis worms	Genus Prostoma	
Nemata	round worms	Phylum Nemata	
Nematomorpha	horseshair worms	Phylum Nematomorpha	
Mollusca: Bivalvia	bivalves	genus	often family when immature
Mollusca: Gastropoda	snails	various, see list	see list: STE highly variable among taxa
Oligochaeta	segmented worms	family, subfamily, genus/species	varies among the families and by taxon within families
Hirudinea	leeches	Genus/Species	see list
Branchiobdellida	crayfish commensal	Order Branchiobdellida	
Polychaeta	polychaete worms	Genus	
<i>Manayunkia speciosa</i>	polychaete worms	Species	
Ostracoda	seed shrimp	Class Ostracoda	
Amphipoda	scuds	Genus	
Isopoda	aquatic sow bugs	Genus	Caecidotea to species when mature males present
Decapoda	shrimps and crayfish	Genus	
Acanthi	water mites	Genus	

INSECTS (confirmed monotypic taxa to species: see detailed lists)

	Common Name	NE STE	Comments
Coleoptera	beetles	Genus/species	larval and adult beetles generally to genus, some to species, SEE LIST
Diptera larvae	true flies	Genus (but see below)	See List: Generally genus for those families not listed below
Diptera pupae	true flies	Family	Empididae pupae to genus if possible (see keys for Clinocerinae and Hemerodromiinae)
Ceratopogonidae	no-see-um midges	Subfamily/Genus	Ceratopogonidae to subfamily, Dasyhelea/Trichopogon/Forcipomyia to genus
Chironomidae larvae	midges	Genus/group/species	
Chironomidae pupae	midges	Genus	often damaged and left at subfamily/tribe
Culicidae	mosquitoes	Genus**	reject from data set unless project specifies other
Dolichopodidae	long-legged midges	Family	
Ephydriidae	shore and brine flies	Family	
Psychodidae	moth flies	Tribe	per G. Courtney, 2019
Simuliidae larvae	black flies	Genus	
Simuliidae pupae	black flies	Genus	
Sarcophagidae	flesh flies	Family	
Sciomyzidae	marsh flies	Family	
Tabanidae	horse & deer flies	Genus	often left at family when immature
Thaumaleidae	solitary midges	Genus	NE STE to genus based on corr with Bradley Sinclair 2019
Tipulidae	crane flies	Genus	extensively revised in 2018
Ephemeroptera	may flies	Genus/group/species	see list
Hemiptera	true bugs	Genus	some projects require rejecting from data set
Belostomatidae	giant water bugs	Genus	some projects require rejecting from data set
Corixidae	water boatman	Genus	some projects require rejecting from data set
Gerridae	water striders	Genus	some projects require rejecting from data set
Naucoridae	creeping water bugs	Genus	some projects require rejecting from data set
Nepidae	water scorpions	Genus	some projects require rejecting from data set
Notonectidae	back swimmers	Genus	some projects require rejecting from data set
Veliidae	broad-shouldered water striders	Genus	some projects require rejecting from data set
Lepidoptera	aquatic moths	Family/Genus	exclude terrestrial taxa
Megaloptera	hellgramites/dobsonflies/alderflies	Genus/species	
Neuroptera	spongilla flies	Genus	
Odonata	dragon and damselflies	Genus/species	see list
Plecoptera	stone flies	Genus/group/species	see list
Trichoptera	caddis flies	Genus/group/species	see list

Genus** & Species**= These are surface, water column, or shore taxa that are included/excluded in data analysis on a project specific basis.

Finer level resolution identifications are dependent on the life stage and condition of specimens and may need to be rolled up to a coarser taxonomic level.

Other than whole specimens, below are guidelines for biological material which should or should not be included as part of sample data:

Count

- Damaged insects and crustaceans only if they have at least a head and thorax
- Mollusk shells only if there is soft tissue present
- Oligochaeta fragments only if they are headed AND have enough segments for identification

Do not count

- Terrestrial insects and invertebrates
- Collembola
- Hydra
- Turbellaria
- Nematoda
- Decapoda
- Larval Molt Skins
- Invertebrates that are dead prior to sample collection and preservation
- Eggs of invertebrates or vertebrates
- Miscellaneous body parts
- Microinvertebrates such as copepods, Cladocera, ostracods
- Small fragments of Oligochaeta
- Empty caddisfly cases or mollusk shells
- Aerial adults of benthic insect larvae
- Vertebrates

Summary statistics (by sample lot)

Mass DEP samples

Number of samples in lot	41
Number of samples for QC comparison	5
Percent of sample lot	12
Percent taxonomic disagreement (PTD)	
Average	6.2
Standard deviation	2.6
Measurement quality objective (MQO)	15
No. samples exceeding MQO	0
Percent difference in enumeration (PDE)	
Average	1.2
Standard deviation	1.1
Measurement quality objective (MQO)	5
No. samples exceeding MQO	0
Percent taxonomic completeness (PTC [absolute difference T1-T2])	
Average	0.8
Standard deviation	0.8
Measurement quality objective (MQO)	5
No. samples exceeding MQO	0

SNEP samples

Number of samples in lot	59
Number of samples for QC comparison	6
Percent of sample lot	10
Percent taxonomic disagreement (PTD)	
Average	6.1
Standard deviation	3.1
Measurement quality objective (MQO)	15
No. samples exceeding MQO	0
Percent difference in enumeration (PDE)	
Average	0.8
Standard deviation	0.7
Measurement quality objective (MQO)	5
No. samples exceeding MQO	0
Percent taxonomic completeness (PTC [absolute difference T1-T2])	
Average	2.2
Standard deviation	2.1
Measurement quality objective (MQO)	5
No. samples exceeding MQO	1

Abbreviations/column headers

The following provides definitions for abbreviations and column headers in tables found in the subsequent pages.

A	No_Ind_T1	Number of individuals counted by primary taxonomist
B	No_Ind_T2	Number of individuals counted by QC taxonomist
C	Matches	Number of agreements between the two taxonomists
D	PDE	Percent difference in enumeration
E	PTD	Percent taxonomic disagreement
F	Target_T1	Number of individuals identified to target level, primary taxonomist
G	Target_T2	Number of individuals identified to target level, QC taxonomist
H	PTC_T1	Percent taxonomic completeness, primary taxonomist
I	PTC_T2	Percent taxonomic completeness, QC taxonomist
J	PTC (abs diff)	Percent taxonomic completeness (absolute difference)
K	Diff_strt	Number of straight disagreements
L	Diff_hier	Number of hierarchical differences
M	Diff_miss	Number of apparently missing specimens

Summary statistics (by individual samples)

Mass DEP samples

Sample ID	A	B	C	D	E	F	G	H	I	J
19-133-02	337	317	310	2.9	8.0	333	311	98.8	98.1	0.7
19-133-52	335	330	322	0.8	3.9	303	300	90.4	90.9	0.5
19-133-70	362	357	348	0.7	3.9	340	335	93.9	93.8	0.1
19-133-86	338	333	319	0.7	5.6	305	293	90.2	88.0	2.2
19-133-95	319	315	288	0.6	9.7	305	299	95.6	94.9	0.7

SNEP samples

Sample ID	A	B	C	D	E	F	G	H	I	J
19-126-24	309	302	274	1.1	11.3	308	284	99.7	94.0	5.7
19-126-30	323	326	310	0.5	4.9	316	313	97.8	96.0	1.8
19-126-34	339	335	331	0.6	2.4	330	327	97.3	97.6	0.3
19-126-41	324	311	305	2.0	5.9	268	262	82.7	84.2	1.5
19-126-47	344	344	330	0.0	4.1	340	339	98.8	98.5	0.3
19-126-51	304	302	280	0.3	7.9	284	271	93.4	89.7	3.7

Taxon by taxon comparisons (within samples)

Mass DEP samples

Sample ID	Taxon	A	B	C	K	L	M
19-133-02	Ablabesmyia sp.	2	2	2			
19-133-02	Acerpenna macdunnoughi	1	1	1			
19-133-02	Antocha sp.	5	5	5			
19-133-02	Baetis tricaudatus complex	2	2	2			
19-133-02	Brillia sp.	11	11	11			
19-133-02	Caecidotea sp.	9	8	8			✓
19-133-02	Caenis sp.	3	3	3			
19-133-02	Cheumatopsyche sp.	4	3	3			✓
19-133-02	Chimarra aterrima	1	1	1			
19-133-02	Cladotanytarsus sp.	3	3	3			
19-133-02	Corynoneura sp.	1	1	1			
19-133-02	Cricotopus sp.	4	3	3			✓
19-133-02	Cryptochironomus sp.	1	1	1			
19-133-02	Dicranota sp.	4	3	3			✓
19-133-02	Diplocladius sp.	2	2	2			
19-133-02	Dolichopodidae	1	0	0			✓
19-133-02	Dolophilodes distincta	6	6	6			
19-133-02	Ferrissia sp.	1	1	1			
19-133-02	Hydrobius fuscipes	1	1	1			
19-133-02	Hydropsyche betteni	2	1	1			✓
19-133-02	Hydropsyche sp.	4	4	4			
19-133-02	Hydropsyche sparna	1	1	1			
19-133-02	Labiobaetis sp.	10	10	10			
19-133-02	Leuctra sp.	1	1	1			
19-133-02	Lumbriculidae	5	5	5			
19-133-02	Lype diversa	2	2	2			
19-133-02	Maccaffertium modestum	4	3	3			✓
19-133-02	Maccaffertium sp.	5	5	5			
19-133-02	Micropsectra sp.	15	15	15			
19-133-02	Microtendipes pedellus group	10	11	10			
19-133-02	Microtendipes rydalensis group	1	0	0	✓		
19-133-02	Microvelia sp.	1	1	1			
19-133-02	Nais behningi	3	3	3			
19-133-02	Nigronia serricornis	5	5	5			
19-133-02	Orthocladius (Symposiocladius) lignicola	1	1	1			
19-133-02	Paralauterborniella nigrohalteralis	0	1	0		✓	
19-133-02	Paralauterborniella sp.	1	0	0			

19-133-02	Parametrioctenemus sp.	52	49	49			✓
19-133-02	Paratanytarsus longistylus	2	2	2			
19-133-02	Paratanytarsus sp.	1	2	1			✓
19-133-02	Phaenopsectra punctipes group	1	1	1			
19-133-02	Phanogomphus sp.	2	2	2			
19-133-02	Phylocentropus sp.	1	1	1			
19-133-02	Plauditus sp.	1	1	1			
19-133-02	Polypedilum aviceps	2	2	2			
19-133-02	Polypedilum fallax group	5	3	3			✓
19-133-02	Polypedilum illinoense group	7	7	7			
19-133-02	Polypedilum scalaenum group	2	2	2			
19-133-02	Pycnopsyche sp.	3	3	3			
19-133-02	Rhagovelia sp.	2	2	2			
19-133-02	Rheotanytarsus exiguus group	20	18	18			✓
19-133-02	Rheotanytarsus sp.	2	2	2			
19-133-02	Simulium sp.	15	13	13			✓
19-133-02	Sperchopsis tessellata	1	1	1			
19-133-02	Sphaeriidae	4	2	2			✓
19-133-02	Stempellinella sp.	31	26	26			✓
19-133-02	Stylodrilus heringianus	3	3	3			
19-133-02	Sublettea coffmani	1	1	1			
19-133-02	Tabanidae	1	1	1			
19-133-02	Tanytarsini	0	4	0		✓	
19-133-02	Tanytarsus sp.	20	18	18			
19-133-02	Thienemannimyia group	16	16	16			
19-133-02	Tvetenia paucunca	8	8	8			
19-133-02	Zavrelimyia sp.	1	1	1			
19-133-52	Ablabesmyia sp.	6	6	6			
19-133-52	Acentrella rallatoma	1	1	1			
19-133-52	Amnicola sp.	10	10	10			
19-133-52	Ancyronyx variegatus	20	19	19			✓
19-133-52	Aulodrilus limnobius	10	11	10			✓
19-133-52	Baetidae	2	2	2			
19-133-52	Baetis intercalaris	3	4	3			✓
19-133-52	Caecidotea sp.	15	15	15			
19-133-52	Campeloma sp.	4	4	4			
19-133-52	Cheumatopsyche sp.	1	1	1			
19-133-52	Chironomini	2	1	1			✓
19-133-52	Chironomus sp.	1	1	1			
19-133-52	Cladotanytarsus sp.	2	2	2			
19-133-52	Coenagrionidae	20	20	20			

19-133-52	Corixidae	1	1	1			
19-133-52	Crangonyx sp.	8	8	8			
19-133-52	Cryptotendipes sp.	2	2	2			
19-133-52	Dicrotendipes sp.	23	23	23			
19-133-52	Diplocladius sp.	2	2	2			
19-133-52	Dubiraphia sp.	5	5	5			
19-133-52	Ferrissia sp.	3	3	3			
19-133-52	Gyraulax parvus	1	1	1			
19-133-52	Heptageniidae	1	1	1			
19-133-52	Hyaella sp.	2	2	2			
19-133-52	Hydropsyche betteni	4	1	1			✓
19-133-52	Hydropsyche sp.	0	2	0		✓	
19-133-52	Hydroptila sp.	4	4	4			
19-133-52	Hygrobatas sp.	11	11	11			
19-133-52	Labrundinia sp.	1	1	1			
19-133-52	Lebertia sp.	2	2	2			
19-133-52	Leptoceridae	1	0	0			✓
19-133-52	Lymnaeidae	1	1	1			
19-133-52	Lype diversa	20	20	20			
19-133-52	Maccaffertium modestum	1	1	1			
19-133-52	Maccaffertium sp.	1	1	1			
19-133-52	Macronychus glabratus	16	17	16			✓
19-133-52	Manayunkia speciosa	31	27	27			✓
19-133-52	Menetus dilatatus	1	1	1			
19-133-52	Microtendipes pedellus group	3	3	3			
19-133-52	Microtendipes rydalensis group	8	7	7			✓
19-133-52	Nais sp.	1	1	1			
19-133-52	Nilothauma sp.	3	3	3			
19-133-52	Nyctiophylax sp.	1	1	1			
19-133-52	Oecetis sp.	1	1	1			
19-133-52	Paralauterborniella nigrohalteralis	0	1	0		✓	
19-133-52	Paralauterborniella sp.	1	0	0			
19-133-52	Paratanytarsus sp.	2	2	2			
19-133-52	Phaenopsectra obedians group	3	2	2	✓		
19-133-52	Phaenopsectra punctipes group	9	10	9			
19-133-52	Planorbinae	1	1	1			
19-133-52	Polycentropus sp. sensu stricto	1	1	1			
19-133-52	Polypedilum fallax group	3	3	3			
19-133-52	Polypedilum flavum	10	10	10			
19-133-52	Rheotanytarsus exiguus group	2	2	2			
19-133-52	Rheotanytarsus pellucidus	2	2	2			

19-133-52	Simulium sp.	2	2	2			
19-133-52	Sphaeriidae	4	4	4			
19-133-52	Stempellinella sp.	1	1	1			
19-133-52	Stenacron pallidum	2	2	2			
19-133-52	Stenacron sp.	4	4	4			
19-133-52	Stenochironomus sp.	5	5	5			
19-133-52	Tanytarsus sp.	15	16	15			✓
19-133-52	Thienemannimyia group	3	3	3			
19-133-52	Torrenticola sp.	1	1	1			
19-133-52	Trombidiformes	2	2	2			
19-133-52	Tubificoid Naididae w capilliform setae	1	1	1			
19-133-52	Tubificoid Naididae w/out capilliform setae	1	1	1			
19-133-52	Unionicola sp.	1	1	1			
19-133-52	Xylotopus par	3	3	3			
19-133-70	Ablabesmyia sp.	13	13	13			
19-133-70	Amnicolidae	14	14	14			
19-133-70	Anacaena sp.	1	1	1			
19-133-70	Argia sp.	1	1	1			
19-133-70	Aulodrilus limnobius	2	2	2			
19-133-70	Aulodrilus pigueti	1	1	1			
19-133-70	Belostoma sp.	1	1	1			
19-133-70	Caecidotea sp.	46	44	44			✓
19-133-70	Calopteryx sp.	4	4	4			
19-133-70	Ceratopogoninae	3	3	3			
19-133-70	Clinotanypus sp.	1	1	1			
19-133-70	Coenagrion/Enallagma sp.	21	20	20			✓
19-133-70	Coenagrionidae	12	12	12			
19-133-70	Corduliidae	3	3	3			
19-133-70	Crangonyx sp.	6	8	6			✓
19-133-70	Cricotopus bicinctus	2	3	2			
19-133-70	Cricotopus sp.	1	0	0			
19-133-70	Cricotopus/Orthocladius Complex	9	9	9			
19-133-70	Epitheca sp.	1	1	1			
19-133-70	Erpobdella sp.	1	1	1			
19-133-70	Eurylophella sp.	1	1	1			
19-133-70	Ferrissia sp.	1	1	1			
19-133-70	Gammarus sp.	53	48	48			✓
19-133-70	Hyalella sp.	13	11	11			✓
19-133-70	Ischnura sp.	1	1	1			
19-133-70	Labiobaetis sp.	1	1	1			
19-133-70	Labrundinia pilosella	1	1	1			

19-133-70	Lebertia sp.	2	2	2			
19-133-70	Leptophlebiidae	7	7	7			
19-133-70	Maccaffertium modestum	4	4	4			
19-133-70	Maccaffertium sp.	7	7	7			
19-133-70	Macronychus glabratus	1	1	1			
19-133-70	Musculium sp.	1	1	1			
19-133-70	Oecetis sp.	2	2	2			
19-133-70	Orthocladiinae	0	1	0			
19-133-70	Pisidium sp.	3	3	3			
19-133-70	Polypedilum illinoense group	2	2	2			
19-133-70	Pristina sp.	1	1	1			
19-133-70	Procladius sp.	3	3	3			
19-133-70	Rheotanytarsus exiguus group	1	1	1			
19-133-70	Stempellinella sp.	8	10	8			✓
19-133-70	Stenochironomus sp.	5	5	5			
19-133-70	Synurella chamberlaini	13	16	13			✓
19-133-70	Tanytarsus sp.	72	70	70			✓
19-133-70	Thienemannimyia group	11	10	10			✓
19-133-70	Triaenodes sp.	2	2	2			
19-133-70	Tribelos jucundum	1	1	1			
19-133-70	Tubificoid Naididae w capilliform setae	1	1	1			
19-133-70	Tubificoid Naididae w/out capilliform setae	1	1	1			
19-133-86	Ablabesmyia sp.	1	1	1			
19-133-86	Arrenurus sp.	1	1	1			
19-133-86	Aulodrilus pigueti	6	5	5			✓
19-133-86	Caecidotea sp.	64	60	60			✓
19-133-86	Calopterygidae	1	1	1			
19-133-86	Cardiocladius sp.	1	1	1			
19-133-86	Ceratopogoninae	2	2	2			
19-133-86	Cheumatopsyche sp.	4	4	4			
19-133-86	Coenagrionidae	10	13	10			✓
19-133-86	Corduliidae	16	15	15			✓
19-133-86	Crangonyx sp.	15	17	15			✓
19-133-86	Dero sp.	1	1	1			
19-133-86	Dicrotendipes sp.	13	13	13			
19-133-86	Erpobdella sp.	2	2	2			
19-133-86	Hyaella sp.	4	4	4			
19-133-86	Hydroporinae	1	1	1			
19-133-86	Ischnura sp.	18	15	15			✓
19-133-86	Labiobaetis sp.	2	2	2			
19-133-86	Lebertia sp.	1	1	1			

19-133-86	Leptophlebiidae	0	2	0		✓	
19-133-86	Leuctridae	3	3	3			
19-133-86	Limnephilidae	1	1	1			
19-133-86	Lumbriculidae	2	2	2			
19-133-86	Menetus dilatatus	5	5	5			
19-133-86	Microtendipes pedellus group	7	7	7			
19-133-86	Nais sp.	1	1	1			
19-133-86	Nigronia serricornis	1	1	1			
19-133-86	Oecetis sp.	2	2	2			
19-133-86	Optioservus tardella	4	4	4			
19-133-86	Orthoclaudiinae	1	1	1			
19-133-86	Oxyethira sp.	4	4	4			
19-133-86	Parachironomus sp.	2	2	2			
19-133-86	Paraleptophlebia sp.	2	0	0			
19-133-86	Paratanytarsus longistylus	5	6	5			✓
19-133-86	Paratanytarsus sp.	54	52	52			✓
19-133-86	Phaenopsectra punctipes group	3	2	2			✓
19-133-86	Physella sp.	5	5	5			
19-133-86	Pisidium sp.	1	1	1			
19-133-86	Polypedilum aviceps	2	2	2			
19-133-86	Polypedilum illinoense group	2	2	2			
19-133-86	Polypedilum sp.	0	1	0			✓
19-133-86	Polypedilum tritum	3	3	3			
19-133-86	Procladius sp.	8	6	6			✓
19-133-86	Pseudosuccinea columella	5	5	5			
19-133-86	Ptilostomis sp.	1	1	1			
19-133-86	Rheotanytarsus exiguus group	2	0	0			✓
19-133-86	Rheotanytarsus pellucidus	8	8	8			
19-133-86	Sphaeriidae	1	1	1			
19-133-86	Stenelmis sp.	6	5	5			✓
19-133-86	Stenochironomus sp.	2	2	2			
19-133-86	Tanytarsini	0	3	0		✓	
19-133-86	Tanytarsus sp.	12	12	12			
19-133-86	Thienemanniella sp.	2	2	2			
19-133-86	Thienemannimyia group	4	5	4			✓
19-133-86	Triaenodes sp.	2	2	2			
19-133-86	Tubificoid Naididae w/out capilliform setae	2	3	2			✓
19-133-86	Tvetenia paucunca	5	5	5			
19-133-86	Zavrelimyia sp.	5	5	5			
19-133-95	Ablabesmyia sp.	3	3	3			
19-133-95	Amnicolidae	7	7	7			

19-133-95	Ancyronyx variegatus	7	7	7			
19-133-95	Aulodrilus pluriseta	2	2	2			
19-133-95	Caecidotea sp.	2	2	2			
19-133-95	Calopterygidae	1	1	1			
19-133-95	Calopteryx sp.	2	2	2			
19-133-95	Cheumatopsyche sp.	3	3	3			
19-133-95	Coenagrionidae	4	4	4			
19-133-95	Crangonyx sp.	2	2	2			
19-133-95	Diplocladius cultriger	0	1	0		✓	
19-133-95	Diplocladius sp.	1	0	0			
19-133-95	Gammarus sp.	2	2	2			
19-133-95	Hemerodromia sp.	1	1	1			
19-133-95	Hyalella sp.	1	1	1			
19-133-95	Hydropsychidae	1	1	1			
19-133-95	Hygrobates sp.	2	2	2			
19-133-95	Lumbriculidae	1	1	1			
19-133-95	Macronychus glabratus	1	1	1			
19-133-95	Menetus dilatatus	1	2	1			✓
19-133-95	Nanocladius sp.	1	1	1			
19-133-95	Orthoclaadiinae	1	2	1			✓
19-133-95	Paratanytarsus sp.	0	5	0			✓
19-133-95	Physella sp.	18	16	16			✓
19-133-95	Polypedilum flavum	3	3	3			
19-133-95	Polypedilum sp.	1	1	1			
19-133-95	Potthastia longimanus	3	3	3			
19-133-95	Rhagovelia sp.	2	2	2			
19-133-95	Rheocricotopus sp.	3	3	3			
19-133-95	Rheotanytarsus exiguus group	174	151	151			✓
19-133-95	Rheotanytarsus pellucidus	24	40	24			✓
19-133-95	Rheotanytarsus sp.	23	19	19			✓
19-133-95	Sphaeriidae	4	3	3			✓
19-133-95	Tanytarsini	0	1	0			✓
19-133-95	Tanytarsus sp.	1	1	1			
19-133-95	Thienemanniella sp.	2	2	2			
19-133-95	Thienemannimyia group	2	2	2			
19-133-95	Tubificoid Naididae w/out capilliform setae	9	10	9			✓
19-133-95	Tvetenia paucunca	1	1	1			
19-133-95	Veliidae	2	2	2			
19-133-95	Zygoptera	1	2	1			✓

SNEP samples

Sample ID	Taxon	A	B	C	K	L	M
19-126-24	Ablabesmyia sp.	3	3	3			
19-126-24	Acerpenna macdunnoughi	1	1	1			
19-126-24	Amphipoda	0	1	0			✓
19-126-24	Anopheles sp.	1	1	1			
19-126-24	Caecidotea sp.	15	15	15			
19-126-24	Calopterygidae	2	3	2			✓
19-126-24	Calopteryx sp.	3	2	2			✓
19-126-24	Campeloma sp.	1	1	1			
19-126-24	Ceratopogoninae	9	8	8			✓
19-126-24	Cheumatopsyche sp.	1	1	1			
19-126-24	Cladotanytarsus sp.	1	1	1			
19-126-24	Corynoneura sp.	4	3	3			✓
19-126-24	Crangonyctidae	1	0	0		✓	
19-126-24	Cricotopus sp.	1	1	1			
19-126-24	Djalmabatista sp.	1	1	1			
19-126-24	Eccopectura xanthenes	1	1	1			
19-126-24	Enchytraeidae	2	2	2			
19-126-24	Ephemerellidae	2	4	2			✓
19-126-24	Erpobdella punctata	1	1	1			
19-126-24	Eurylophella sp.	3	1	1			✓
19-126-24	Ferrissia sp.	1	1	1			
19-126-24	Hemerodromia sp.	2	2	2			
19-126-24	Hyalella sp.	11	10	10			✓
19-126-24	Lepidostoma sp.	1	1	1			
19-126-24	Leptophlebiidae	76	91	76			✓
19-126-24	Limnophyes sp.	2	2	2			
19-126-24	Lumbriculidae	5	5	5			
19-126-24	Lype diversa	3	3	3			
19-126-24	Maccaffertium sp.	11	11	11			
19-126-24	Menetus dilatatus	1	0	0			
19-126-24	Microtendipes rydalensis group	1	1	1			
19-126-24	Naididae	0	2	0		✓	
19-126-24	Nais communis/variabilis	2	0	0			
19-126-24	Nais sp.	0	2	0		✓	
19-126-24	Orthocladius (Symposiocladius) lignicola	1	1	1			
19-126-24	Paraleptophlebia sp.	25	10	10			✓
19-126-24	Parametriocnemus sp.	3	3	3			
19-126-24	Paratanytarsus longistylus	8	5	5			✓

19-126-24	Paratendipes sp.	11	9	9			✓
19-126-24	Pentaneurini	1	1	1			
19-126-24	Philopotamidae	1	1	1			
19-126-24	Phryganeidae	1	1	1			
19-126-24	Physella sp.	1	1	1			
19-126-24	Pisidium sp.	2	2	2			
19-126-24	Planorbidae	0	1	0		✓	
19-126-24	Polypedilum fallax group	1	1	1			
19-126-24	Polypedilum halterale group	0	2	0	✓		
19-126-24	Polypedilum scalaenum group	2	0	0			
19-126-24	Potthastia longimanus	1	1	1			
19-126-24	Pristina sp.	1	0	0			✓
19-126-24	Sialis sp.	2	2	2			
19-126-24	Sphaeriidae	17	15	15			✓
19-126-24	Stempellinella sp.	18	18	18			
19-126-24	Synurella chamberlaini	14	15	14			✓
19-126-24	Tanytarsus sp.	9	10	9			✓
19-126-24	Thienemannimyia group	17	17	17			
19-126-24	Tvetenia paucunca	1	1	1			
19-126-24	Zavrelimyia sp.	3	3	3			
19-126-30	Ablabesmyia sp.	13	11	11			✓
19-126-30	Amphipoda	3	4	3			✓
19-126-30	Argia sp.	1	1	1			
19-126-30	Caecidotea sp.	28	30	28			✓
19-126-30	Cheumatopsyche sp.	2	2	2			
19-126-30	Chironomini	0	1	0		✓	
19-126-30	Chironomus sp.	1	1	1			
19-126-30	Clinotanypus sp.	7	7	7			
19-126-30	Coenagrion/Enallagma sp.	1	0	0		✓	
19-126-30	Coenagrionidae	3	8	3			✓
19-126-30	Corduliidae	1	1	1			
19-126-30	Corynoneura sp.	3	3	3			
19-126-30	Crangonyx sp.	7	6	6			✓
19-126-30	Cricotopus bicinctus	4	4	4			
19-126-30	Cryptochironomus sp.	1	1	1			
19-126-30	Halipplus sp.	1	1	1			
19-126-30	Helobdella sp.	2	2	2			
19-126-30	Hyaella sp.	133	134	133			✓
19-126-30	Ischnura sp.	10	6	6			✓
19-126-30	Lebertia sp.	3	3	3			
19-126-30	Lumbriculidae	1	1	1			

19-126-30	Oligochaetous Clitellata	0	1	0		✓	
19-126-30	Paratanytarsus sp.	7	7	7			
19-126-30	Phaenopsectra obedians group	3	3	3			
19-126-30	Phaenopsectra punctipes group	1	2	1			✓
19-126-30	Physella sp.	4	4	4			
19-126-30	Pisidium sp.	1	1	1			
19-126-30	Polypedilum flavum	1	1	1			
19-126-30	Polypedilum halterale group	1	2	1			
19-126-30	Polypedilum illinoense group	42	41	41			✓
19-126-30	Polypedilum sp.	1	0	0		✓	
19-126-30	Procladius sp.	3	3	3			
19-126-30	Rheotanytarsus exiguus group	5	5	5			
19-126-30	Rheotanytarsus pellucidus	2	4	2			✓
19-126-30	Rheotanytarsus sp.	1	0	0		✓	
19-126-30	Simulium sp.	1	1	1			
19-126-30	Tanytarsus sp.	7	7	7			
19-126-30	Tetragoneuria sp.	1	1	1			
19-126-30	Thienemanniella sp.	6	5	5			✓
19-126-30	Thienemannimyia group	3	3	3			
19-126-30	Triaenodes sp.	2	2	2			
19-126-30	Tribelos sp.	1	2	1			✓
19-126-30	Tubificoid Naididae w capilliform setae	1	1	1			
19-126-30	Tubificoid Naididae w/out capilliform setae	4	3	3			✓
19-126-34	Acentrella rallatoma	7	6	6			✓
19-126-34	Ancyronyx variegatus	4	4	4			
19-126-34	Anopheles sp.	2	2	2			
19-126-34	Argia sp.	1	1	1			
19-126-34	Brachycentrus numerosus	2	2	2			
19-126-34	Calopterygidae	5	4	4			
19-126-34	Calopteryx sp.	0	1	0		✓	
19-126-34	Cheumatopsyche sp.	18	18	18			
19-126-34	Chimarra aterrima	1	1	1			
19-126-34	Chironominae	0	1	0		✓	
19-126-34	Cladotanytarsus sp.	1	1	1			
19-126-34	Corynoneura sp.	3	3	3			
19-126-34	Ephemerellidae	1	1	1			
19-126-34	Gammarus sp.	21	20	20			✓
19-126-34	Hemerodromia sp.	1	1	1			
19-126-34	Hydropsyche betteni	6	6	6			
19-126-34	Iswaeon anoka	1	1	1			
19-126-34	Labiobaetis sp.	2	2	2			

19-126-34	Limnephilidae	2	2	2			
19-126-34	Lype diversa	1	1	1			
19-126-34	Maccaffertium modestum	12	14	12			✓
19-126-34	Maccaffertium sp.	5	3	3			✓
19-126-34	Macronychus glabratus	3	3	3			
19-126-34	Microtendipes rydalensis group	24	22	22			✓
19-126-34	Nigronia serricornis	1	1	1			
19-126-34	Oecetis sp.	1	1	1			
19-126-34	Optioservus ovalis	1	1	1			
19-126-34	Optioservus tardella	4	4	4			
19-126-34	Oulimnius latiusculus	1	1	1			
19-126-34	Paracladopelma sp.	1	0	0			
19-126-34	Pisidium sp.	3	3	3			
19-126-34	Polycentropodidae	1	1	1			
19-126-34	Polypedilum flavum	1	1	1			
19-126-34	Polypedilum illinoense group	4	4	4			
19-126-34	Rheocricotopus sp.	6	6	6			
19-126-34	Rheotanytarsus exiguus group	6	6	6			
19-126-34	Rheotanytarsus pellucidus	1	1	1			
19-126-34	Sialis sp.	2	2	2			
19-126-34	Simulium sp.	153	153	153			
19-126-34	Stenelmis sp.	4	4	4			
19-126-34	Stenochironomus sp.	1	1	1			
19-126-34	Tanytarsus sp.	13	13	13			
19-126-34	Tipula sp.	1	1	1			
19-126-34	Tvetenia tshernovskii	11	11	11			
19-126-41	Aulodrilus limnobius	1	0	0			✓
19-126-41	Aulodrilus pigueti	1	0	0			✓
19-126-41	Brillia sp.	1	1	1			
19-126-41	Caecidotea sp.	70	70	70			
19-126-41	Ceratopogoninae	3	3	3			
19-126-41	Chaetarthria sp.	1	0	0			
19-126-41	Chironomini	1	0	0			✓
19-126-41	Corynoneura sp.	5	5	5			
19-126-41	Dicranota sp.	2	2	2			
19-126-41	Diplectrona modesta	11	11	11			
19-126-41	Diplocladius sp.	2	2	2			
19-126-41	Enchytraeidae	2	2	2			
19-126-41	Erioptera	0	3	0			✓
19-126-41	Erpobdella sp.	1	1	1			
19-126-41	Frenesia difficilis	2	2	2			

19-126-41	Helobdella stagnalis species complex	2	2	2			
19-126-41	Hydrophilidae	0	1	0		✓	
19-126-41	Leptophlebiidae	3	3	3			
19-126-41	Limnephilidae	9	8	8			✓
19-126-41	Limnodrilus hoffmeisteri	3	2	2			✓
19-126-41	Lumbriculidae	64	63	63			✓
19-126-41	Lype diversa	6	6	6			
19-126-41	Molanna sp.	1	1	1			
19-126-41	Oligostomis sp.	1	1	1			
19-126-41	Optioservus ovalis	1	1	1			
19-126-41	Oulimnius latiusculus	2	1	1			✓
19-126-41	Parametriocnemus sp.	6	7	6			✓
19-126-41	Paraphaenocladus sp.	4	3	3			✓
19-126-41	Phryganeidae	8	8	8			
19-126-41	Pisidium sp.	7	8	7			✓
19-126-41	Polypedilum aviceps	12	12	12			
19-126-41	Polypedilum sp.	1	1	1			
19-126-41	Psilotreta frontalis	7	7	7			
19-126-41	Psilotreta sp.	2	2	2			
19-126-41	Sphaeriidae	35	29	29			✓
19-126-41	Stenelmis sp.	8	8	8			
19-126-41	Symplecta sp.	3	0	0			✓
19-126-41	Tanytarsus sp.	7	7	7			
19-126-41	Thienemanniella sp.	1	0	0			✓
19-126-41	Thienemannimyia group	8	8	8			
19-126-41	Tubificoid Naididae w/out capilliform setae	19	19	19			
19-126-41	Zavrelimyia sp.	1	1	1			
19-126-47	Ablabesmyia sp.	3	3	3			
19-126-47	Aeolosoma sp.	2	2	2			
19-126-47	Aulodrilus limnobius	1	0	0			
19-126-47	Caecidotea sp.	16	16	16			
19-126-47	Cheumatopsyche sp.	43	43	43			
19-126-47	Chimarra aterrima	1	1	1			
19-126-47	Chironominae	0	1	0			✓
19-126-47	Coenagrionidae	7	7	7			
19-126-47	Cricotopus sp.	5	2	2			
19-126-47	Cricotopus/Orthocladus Complex	0	3	0		✓	
19-126-47	Enchytraeidae	3	3	3			
19-126-47	Ferrissia sp.	1	2	1			✓
19-126-47	Helisoma anceps	6	8	6			✓
19-126-47	Hyaella sp.	2	2	2			

19-126-47	Hydropsyche alhedra	0	1	0			✓
19-126-47	Hydropsyche betteni	1	1	1			
19-126-47	Hydropsyche sparna	1	1	1			
19-126-47	Hydropsychidae	4	5	4			✓
19-126-47	Hydroptila sp.	14	10	10			✓
19-126-47	Hygrobates sp.	1	1	1			
19-126-47	Ilyodrilus templetoni	1	1	1			
19-126-47	Iswaeon anoka	5	5	5			
19-126-47	Lebertia sp.	2	2	2			
19-126-47	Lyogyryus sp.	6	6	6			
19-126-47	Menetus dilatatus	7	5	5			✓
19-126-47	Micropsectra sp.	1	1	1			
19-126-47	Naididae	0	1	0		✓	
19-126-47	Nais communis/variabilis	5	5	5			
19-126-47	Nais simplex	1	1	1			
19-126-47	Ophidonais serpentina	91	92	91			✓
19-126-47	Physella sp.	52	50	50			✓
19-126-47	Pisidium sp.	4	4	4			
19-126-47	Polypedilum flavum	1	1	1			
19-126-47	Polypedilum illinoense group	9	9	9			
19-126-47	Polypedilum sp.	3	2	2			✓
19-126-47	Pristina jenkiniae	1	1	1			
19-126-47	Rheocricotopus sp.	15	15	15			
19-126-47	Rheotanytarsus exiguus group	3	2	2	✓		
19-126-47	Rheotanytarsus pellucidus	4	5	4	✓		
19-126-47	Rheotanytarsus sp.	1	1	1			
19-126-47	Simulium sp.	2	2	2			
19-126-47	Sphaeriidae	5	6	5			✓
19-126-47	Stenelmis sp.	1	1	1			
19-126-47	Stenochironomus sp.	1	1	1			
19-126-47	Sublettea coffmani	2	2	2			
19-126-47	Tanypodinae	0	1	0			✓
19-126-47	Thienemannimyia group	1	1	1			
19-126-47	Tipula sp.	1	1	1			
19-126-47	Tubificoid Naididae w/out capilliform setae	7	7	7			
19-126-47	Zavreliomyia sp.	1	1	1			
19-126-51	Ablabesmyia sp.	1	1	1			
19-126-51	Amphipoda	0	1	0		✓	
19-126-51	Ancyronyx variegatus	3	3	3			
19-126-51	Anopheles sp.	4	4	4			
19-126-51	Caecidotea sp.	10	10	10			

19-126-51	Calopteryx sp.	7	7	7			
19-126-51	Ceratopogoninae	4	4	4			
19-126-51	Cheumatopsyche sp.	6	6	6			
19-126-51	Chironomini	1	1	1			
19-126-51	Coenagrionidae	1	1	1			
19-126-51	Corynoneura sp.	2	2	2			
19-126-51	Crangonyx sp.	5	5	5			
19-126-51	Crassicitellata	1	0	0			✓
19-126-51	Cryptochironomus sp.	2	2	2			
19-126-51	Dicrotendipes sp.	3	3	3			
19-126-51	Diplocladius sp.	1	1	1			
19-126-51	Gammarus sp.	23	21	21			✓
19-126-51	Labioaetis sp.	1	1	1			
19-126-51	Leptophlebiidae	12	19	12			✓
19-126-51	Limnephilidae	6	7	6			✓
19-126-51	Lumbriculidae	2	2	2			
19-126-51	Lymnaeidae	2	1	1			✓
19-126-51	Lype diversa	8	8	8			
19-126-51	Maccaffertium sp.	1	1	1			
19-126-51	Microvelia sp.	5	5	5			
19-126-51	Molanna sp.	4	4	4			
19-126-51	Musculium sp.	1	1	1			
19-126-51	Orthocladius (Symposiocladius) lignicola	1	1	1			
19-126-51	Paralauterborniella nigrohalteralis	0	5	0		✓	
19-126-51	Paralauterborniella sp.	5	0	0			
19-126-51	Paraleptophlebia sp.	9	2	2			✓
19-126-51	Paraphaenocladius sp.	2	1	1			✓
19-126-51	Paratanytarsus sp.	3	4	3			✓
19-126-51	Phaenopsectra punctipes group	2	2	2			
19-126-51	Phylocentropus sp.	1	1	1			
19-126-51	Physella sp.	1	1	1			
19-126-51	Polypedilum fallax group	2	2	2			
19-126-51	Polypedilum halterale group	1	1	1			
19-126-51	Polypedilum illinoense group	15	16	15			✓
19-126-51	Polypedilum sp.	1	1	1			
19-126-51	Procladius sp.	2	2	2			
19-126-51	Pseudosuccinea columella	2	3	2			✓
19-126-51	Rheocricotopus sp.	3	3	3			
19-126-51	Rheotanytarsus exiguus group	11	10	10			✓
19-126-51	Rheotanytarsus pellucidus	2	5	2			✓
19-126-51	Rheotanytarsus sp.	2	0	0		✓	

19-126-51	Sperchopsis tessellata	1	1	1			
19-126-51	Stempellinella sp.	9	9	9			
19-126-51	Stenochironomus sp.	1	1	1			
19-126-51	Stilocladius sp.	1	1	1			
19-126-51	Tabanidae	1	1	1			
19-126-51	Tanytarsini	0	2	0		✓	
19-126-51	Tanytarsus sp.	81	78	78			
19-126-51	Thienemannimyia group	7	7	7			
19-126-51	Tribelos jucundum	6	6	6			
19-126-51	Tribelos sp.	7	7	7			
19-126-51	Tubificoid Naididae w/out capilliform setae	1	1	1			
19-126-51	Xylotopus par	5	5	5			
19-126-51	Zavrelimyia sp.	3	2	2			✓

Conclusion

There are no corrective actions needed that should be considered prior to the full analysis of these data.

References

Jessup, B., and J. Stamp. 2019. Sampling and analysis plan: Data collection for development of an index of biotic integrity for freshwater low-gradient wadeable streams in southern New England. Contract Number SNEPWG18-13-NEIWPCC / EPA #00A00370