



**Maine Department of Environmental Protection  
Biological Monitoring Program  
Aquatic Life Classification Attainment Report**

**Station Information**

<b>Station Number:</b> S-436	River Basin:	Saco	
Waterbody:	Merriland River - Station 436	HUC8 Name:	Piscataqua-Salmon Falls
Town:	Wells	Latitude:	43 21 34.37 N
Directions:	UPSTREAM RTE 9A - SECOND RIFFLE - ABOUT 40M	Longitude:	70 36 32.09 W
		Stream Order:	3

**Sample Information**

<b>Log Number:</b> 2382	Type of Sample:	ROCK BAG	Date Deployed:	7/22/2015	
Subsample Factor:	X1	Replicates:	3	Date Retrieved:	8/19/2015

**Classification Attainment**

<b>Statutory Class:</b> A	<b>Final Determination:</b> A	Date:	4/28/2016
Model Result with $P \geq 0.6$ :	A	<b>Reason for Determination:</b>	Model
Date Last Calculated:	4/26/2016	Comments:	

**Model Probabilities**

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.70	Class C	0.01
Class B	0.29	NA	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	1.00	Class A	0.90
Class C or Non-Attainment	0.00	Class B or C or Non-Attainment	0.10

**Model Variables**

01 Total Mean Abundance	170.00	18 Relative Abundance Ephemeroptera	0.25
02 Generic Richness	54.00	19 EPT Generic Richness	23.00
03 Plecoptera Mean Abundance	7.33	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	27.00
04 Ephemeroptera Mean Abundance	42.67	23 Relative Generic Richness- Plecoptera	0.07
05 Shannon-Wiener Generic Diversity	4.13	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	3.33
06 Hilsenhoff Biotic Index	4.87	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	15.00
07 Relative Abundance - Chironomidae	0.48	28 EP Generic Richness/14	0.71
08 Relative Generic Richness Diptera	0.39	30 Presence of Class A Indicator Taxa/7	0.14
09 <i>Hydropsyche</i> Abundance	2.00		
11 <i>Cheumatopsyche</i> Abundance	1.33		
12 EPT Generic Richness/ Diptera Generic Richness	1.10		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	6.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	2.67		
17 Chironomini Abundance (Family Functional Group)	44.67		

**Five Most Dominant Taxa**

Rank	Taxon Name	Percent
1	<i>Microtendipes</i>	24.12
2	<i>Micropsectra</i>	15.29
3	<i>Acerpenna</i>	12.75
4	<i>Maccaffertium</i>	8.04
5	<i>Simulium</i>	3.33



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**Station Number: S-436**      Town: Wells      Date Deployed: 7/22/2015  
**Log Number: 2382**      Waterbody: Merriland River - Station 436      Date Retrieved: 8/19/2015

**Sample Collection and Processing Information**

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

**Waterbody Information - Deployment**

Temperature: 20.5 deg C  
Dissolved Oxygen: 7.58 mg/l  
Dissolved Oxygen Saturation:  
Specific Conductance: 86.9 uS/cm  
Velocity: 18.3 cm/s  
pH: 7.03  
Wetted Width: 5.8 m  
Bankfull Width: 10.2 m  
Depth: 29 cm

**Waterbody Information - Retrieval**

Temperature: 22.8 deg C  
Dissolved Oxygen: 6.96 mg/l  
Dissolved Oxygen Saturation:  
Specific Conductance: 100.6 uS/cm  
Velocity: 15.2 cm/s  
pH: 7.19  
Wetted Width: 5.1 m  
Bankfull Width: 10.2 m  
Depth: 27 cm

**Water Chemistry**

**Summary of Habitat Characteristics**

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>	
Pasture	Dense	Rolling	
Upland Hardwood			
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>	
	Above Road Crossing	Boulder	45 %
	Below Agriculture NPS	Gravel	10 %
		Rubble/Cobble	35 %
		Sand	10 %

**Landcover Summary - 2004 Data**

Total Area (ac)	7279	High Int. Dev. %	0.3	Water %	0.1	Non-vegetated %	1.2
		Med Int. Dev. %	0.4	Wetland %	24.4	Tilled Agriculture %	0.8
		Low Int. Dev. %	2.9	Upland Woody %	65.2	Grassland %	2.6
		Development %	3.6	Natural %	89.6	Human Altered %	10.3
						Impervious %	2.7

**Sample Comments**

7/22/2015: 85.2% DO.  
8/19/2015: 80.7% DO.



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**Station Number: S-436**

Waterbody: Merriland River - Station 436

Town: Wells

**Log Number: 2382**

Subsample Factor: X1

Replicates: 3

Calculated: 4/26/2016

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Girardia</i>	03010102002		1.00		--		0.6
<i>Girardia tigrina</i>	03010102002001	1.00			--	0.6	
<i>Helobdella</i>	08030101005		1.00		--		0.6
<i>Helobdella elongata</i>	08030101005001	1.00			--	0.6	
<i>Paracapnia</i>	09020203018	0.33	0.33	1	SH	0.2	0.2
<i>Leuctra</i>	09020204020		1.00	0	SH		0.6
<i>Leuctra truncata</i>	09020204020058	1.00			--	0.6	
<i>Acroneuria</i>	09020209042	0.67	1.33	0	PR	0.4	0.8
<i>Acroneuria abnormis</i>	09020209042121	0.33		0	PR	0.2	
<i>Acroneuria internata</i>	09020209042124	0.33			--	0.2	
<i>Neoperla</i>	09020209048	4.67	4.67	1	PR	2.7	2.7
<i>Boyeria</i>	09020301004		0.67	2	PR		0.4
<i>Boyeria vinosa</i>	09020301004012	0.67			--	0.4	
<i>Stylogomphus</i>	09020302017		0.33	0	PR		0.2
<i>Stylogomphus albistylus</i>	09020302017037	0.33			--	0.2	
Corduliidae	09020305	0.33	0.33		--	0.2	0.2
<i>Baetis</i>	09020401001	3.33	3.33	4	CG	2.0	2.0
<i>Acerpenna</i>	09020401007	2.33	21.67	5	CG	1.4	12.7
<i>Acerpenna pygmaea</i>	09020401007011	19.33			--	11.4	
Heptageniidae	09020402	2.33	2.33		--	1.4	1.4
<i>Maccaffertium</i>	09020402015	11.33	13.67	4	SC	6.7	8.0
<i>Maccaffertium modestum</i>	09020402015051	2.33			--	1.4	
Leptophlebiidae	09020406	1.33	1.33		--	0.8	0.8
<i>Paraleptophlebia</i>	09020406026	0.33	0.33	1	CG	0.2	0.2
<i>Dolophilodes</i>	09020601001	2.33	2.33	0	CF	1.4	1.4
<i>Chimarra</i>	09020601003	0.67	5.33	2	CF	0.4	3.1
<i>Chimarra aterrima</i>	09020601003002	4.67			--	2.7	
<i>Cernotina</i>	09020603006	0.67	0.67		PR	0.4	0.4
<i>Neureclipsis</i>	09020603008	0.33	0.33	7	CF	0.2	0.2
<i>Polycentropus</i>	09020603010	0.33	0.33	6	PR	0.2	0.2
<i>Plectrocnemia</i>	09020603012		0.33	6	PR		0.2
<i>Plectrocnemia remota</i>	09020603012001	0.33			--	0.2	
<i>Cheumatopsyche</i>	09020604015	1.33	1.33	5	CF	0.8	0.8
<i>Hydropsyche</i>	09020604016		2.00	4	CF		1.2
<i>Hydropsyche morosa</i>	09020604016030	0.33			--	0.2	
<i>Hydropsyche sparna</i>	09020604016032	1.67			--	1.0	
<i>Rhyacophila</i>	09020605019	1.67	1.67	2	PR	1.0	1.0



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Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Mayatrichia</i>	09020607033	0.33	0.33		SC	0.2	0.2
<i>Lepidostoma</i>	09020611064	3.33	3.33	1	SH	2.0	2.0
<i>Psilotreta</i>	09020614068	2.00	2.00	0	SC	1.2	1.2
<i>Oecetis</i>	09020618078		1.33	8	PR		0.8
<i>Oecetis persimilis</i>	09020618078157	1.33			--	0.8	
<i>Nigronia</i>	09020701003		0.33	0	PR		0.2
<i>Nigronia serricornis</i>	09020701003003	0.33			--	0.2	
<i>Ablabesmyia</i>	09021011001			8	PR		
<i>Meropelopia</i>	09021011010	0.33	0.33		--	0.2	0.2
<i>Nilotanyus</i>	09021011012		1.00	6	PR		0.6
<i>Nilotanyus fimbriatus</i>	09021011012027	1.00			--	0.6	
<i>Paramerina</i>	09021011013	0.67	0.67		--	0.4	0.4
<i>Trissopelopia</i>	09021011021		0.67		PR		0.4
<i>Trissopelopia ogemawi</i>	09021011021042	0.67			--	0.4	
<i>Cricotopus</i>	09021011037		0.33	7	SH		0.2
<i>Cricotopus bicinctus</i>	09021011037057	0.33			--	0.2	
<i>Nanocladius</i>	09021011049	0.67	0.67	3	CG	0.4	0.4
<i>Orthocladius</i>	09021011050		0.33	6	CG		0.2
<i>Orthocladius lignicola</i>	09021011050100	0.33			--	0.2	
<i>Parametriocnemus</i>	09021011053	0.67	0.67	5	CG	0.4	0.4
<i>Rheocricotopus</i>	09021011057		0.33	6	CG		0.2
<i>Rheocricotopus robacki</i>	09021011057105	0.33			--	0.2	
<i>Synorthocladius</i>	09021011061	0.33	0.33	2	CG	0.2	0.2
<i>Thienemanniella</i>	09021011062	0.33	0.33	6	CG	0.2	0.2
<i>Tvetenia</i>	09021011065		0.33	5	CG		0.2
<i>Tvetenia paucunca</i>	09021011065114	0.33			--	0.2	
<i>Micropsectra</i>	09021011070	26.00	26.00	7	CG	15.3	15.3
<i>Rheotanytarsus</i>	09021011072		2.00	6	CF		1.2
<i>Rheotanytarsus exiguus group</i>	09021011072127	1.33			CF	0.8	
<i>Rheotanytarsus pellucidus</i>	09021011072128	0.67			CF	0.4	
<i>Stempellinella</i>	09021011074		1.00	2	--		0.6
<i>Stempellinella fimbriata</i>	09021011074002	1.00			--	0.6	
<i>Tanytarsus</i>	09021011076	1.67	1.67	6	CF	1.0	1.0
<i>Microtendipes</i>	09021011094		41.00	6	CF		24.1
<i>Microtendipes rydalensis group</i>	09021011094168	41.00			--	24.1	
<i>Nilothauma</i>	09021011095	0.33	0.33	2	--	0.2	0.2
<i>Polypedilum</i>	09021011102		2.67	6	SH		1.6
<i>Polypedilum aviceps</i>	09021011102181	1.67			--	1.0	



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Town: Wells

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Subsample Factor: X1

Replicates: 3

Calculated: 4/26/2016

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Polypedilum albicorne</i>	09021011102195	0.33			--	0.2	
<i>Polypedilum illinoense</i>	09021011102204	0.67			--	0.4	
<i>Stenochironomus</i>	090210111105	0.67	0.67	5	CG	0.4	0.4
<i>Simulium</i>	09021012047	0.67	5.67	4	CF	0.4	3.3
<i>Simulium jenningsi</i>	09021012047060				--		
<i>Simulium jenningsi species group</i>	09021012047070	5.00			CF	2.9	
<i>Psephenus</i>	09021108058		0.33	4	SC		0.2
<i>Psephenus herricki</i>	09021108058028	0.33			--	0.2	
<i>Macronychus</i>	09021113065		2.67	4	--		1.6
<i>Macronychus glabratus</i>	09021113065040	2.67			--	1.6	
<i>Promoresia</i>	09021113069		3.67		--		2.2
<i>Promoresia tardella</i>	09021113069052	3.67			--	2.2	
<i>Stenelmis</i>	09021113070	1.33	1.33	5	SC	0.8	0.8