10/26/2000 12:32:34 AM DEP Bureau of Laboratories Page: 001
Analytical Report For
Mining And Reclamation

Sample ID: 4117 138 10/16/2000 Status: COMPLETED

Collector: John W Davidson
County: Washington State: PA
Municipality: Smith Twp
Location: NOT INDICATED
Reason: Project
Project: RACCOON RACCOON CREEK WATERSHED PROJECT - AMD AND WATER QUALIT

BIOLOGICAL STATION A AT KEYS ROAD downstream of SB#1 + SB#2

Field Tests

pH By Color 6.5 pH

Laboratory Sample ID: I2000052152 COMPLETED
Standard Analysis: 420

Test/CAS#	Description	Reported Results	Completed
00403	pH	6.6 pH units	10/17/2000
00530A	T SUSP SOLID	22.0 MG/L	10/19/2000
00945A	SULFATE T	521.5 MG/L	10/24/2000
01045Z	IRON T	18300.000 UG/L	10/18/2000
01055Z	MANGANESE T	1280.000 UG/L	10/18/2000
01105Z	ALUMINUM T	651.000 UG/L	10/18/2000
00929Z	SODIUM T	46.600 MG/L	10/18/2000
70508	HOT ACIDITY	0 MG/L	10/17/2000
00410	ALKALINITY	76.0 MG/L	10/17/2000

Analytical Report For
Mining And Reclamation

Sample ID: 4117 137 10/16/2000 Status: COMPLETED

Collector: John W Davidson
County: Washington State: PA
Municipality: Smith Twp
Location: NOT INDICATED
Reason: Project
Project: RACCOON RACCOON CREEK WATERSHED PROJECT - AMD AND WATER QUALIT

BIOLOGICAL STATION B BEHIND BURGETTSTOWN MUNICIPAL BUILDING
downstream of Langeloth Borehole, Plum Run discharge, Eric Mine
Field Tests

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pH By Color 7.2 pH

Laboratory Sample ID: I2000052151 COMPLETED
Standard Analysis: 420

Test/CAS#	Description	Reported Results	Completed
00403	pH	7.0 pH units	10/17/2000
00530A	T SUSP SOLID	20.0 MG/L	10/19/2000
00945A	SULFATE T	807.2 MG/L	10/24/2000
01045Z	IRON T	10900.000 UG/L	10/18/2000
01055Z	MANGANESE T	1530.000 UG/L	10/18/2000
01105Z	ALUMINUM T	727.000 UG/L	10/18/2000
00929Z	SODIUM T	51.200 MG/L	10/18/2000
70508	HOT ACIDITY	0 MG/L	10/17/2000
00410	ALKALINITY	122.0 MG/L	10/17/2000

Analytical Report For
Mining And Reclamation

Sample ID: 4117 139 10/16/2000 Status: COMPLETED

Collector: John W Davidson
County: Washington State: PA
Municipality: Smith Twp
Location: NOT INDICATED
Reason: Project
Project: RACCOON RACCOON CREEK WATERSHED PROJECT - AMD AND WATER QUALIT

BIOLOGICAL STATION C AT BAVINGTON downstream of most of the major discharges

Field Tests

pH By Color 7.2 pH

Laboratory Sample ID: I2000052153 COMPLETED
Standard Analysis: 420

Test/CAS# - Description		Reported Results	Completed
00403	pH	7.4 pH units	10/17/2000
00530A	T SUSP SOLID	8.0 MG/L	10/19/2000
00945A	SULFATE T	698.7 MG/L	10/24/2000
01045Z	IRON T	<300.000 UG/L	10/18/2000
01055Z	MANGANESE T	1110.000 UG/L	10/18/2000
01105Z	ALUMINUM T	<500.000 UG/L	10/18/2000
00929Z	SODIUM T	37.900 MG/L	10/18/2000
70508	HOT ACIDITY	0 MG/L	10/17/2000
00410	ALKALINITY	78.0 MG/L	10/17/2000

DEP Bureau of Laboratories
Analytical Report For
Mining And Reclamation

Sample ID: 4117 140 10/16/2000 Status: COMPLETED

Collector: John W Davidson
County: Washington State: PA
Municipality: Robinson Twp
MP ID: SL10 (57792) MP Type: Stream

*	Alias ID	Project/Facility
*	SL10	RACCOON

Mundocksville Station D - county line

* - Indicates the sample was taken for this project/facility

Location: NOT INDICATED
Reason: Project
Project: RACCOON RACCOON CREEK WATERSHED PROJECT - AMD AND WATER QUALIT

Field Tests

pH By Color 7.2 pH

Laboratory Sample ID: I2000052154 COMPLETED
Standard Analysis: 420

Test/CAS#	Description	Reported Results	Completed
00403	pH	7.6 pH units	10/17/2000
00530A	T SUSP SOLID	6.0 MG/L	10/19/2000
00945A	SULFATE T	823.5 MG/L	10/24/2000
01045Z	IRON T	<300.000 UG/L	10/18/2000
01055Z	MANGANESE T	345.000 UG/L	10/18/2000
01105Z	ALUMINUM T	<500.000 UG/L	10/18/2000
00929Z	SODIUM T	33.100 MG/L	10/18/2000
70508	HOT ACIDITY	0 MG/L	10/17/2000
00410	ALKALINITY	86.0 MG/L	10/17/2000

DEP Bureau of Laboratories
Analytical Report For
Mining And Reclamation

Sample ID: 4117 141 10/16/2000 Status: COMPLETED

Collector: John W Davidson
County: Beaver State: PA
Municipality: Independence Twp
MP ID: SL11 (57801) MP Type: Stream

*	Alias ID	Project/Facility
*	SL11	RACCOON

Potato Garden Run Station E downstream of Hamilton discharge

* - Indicates the sample was taken for this project/facility

Location: NOT INDICATED
Reason: Project
Project: RACCOON RACCOON CREEK WATERSHED PROJECT - AMD AND WATER QUALIT

Field Tests

pH By Color 7.3 pH

Laboratory Sample ID: I2000052155 COMPLETED
Standard Analysis: 420

Test/CAS#	Description	Reported Results	Completed
00403	pH	7.6 pH units	10/17/2000
00530A	T SUSP SOLID	10.0 MG/L	10/19/2000
00945A	SULFATE T	1003.9 MG/L	10/24/2000
01045Z	IRON T	<300.000 UG/L	10/18/2000
01055Z	MANGANESE T	543.000 UG/L	10/18/2000
01105Z	ALUMINUM T	<500.000 UG/L	10/18/2000
00929Z	SODIUM T	65.400 MG/L	10/18/2000
70508	HOT ACIDITY	0 MG/L	10/17/2000
00410	ALKALINITY	92.0 MG/L	10/17/2000

Raccoon Creek Watershed Macroinvertebrate Sampling 10-15-08

Burgettstown Borough Building:

1 – Midge Fly larva – family Chironomidae, Order Diptera Hils: 6

Bavington:

26 – Watersnipe Fly larva – family Arthericidae, Order Diptera Hils: 2

2 – Dobsonfly larva – "hellgrammite", family Corydalidae, Order Megaloptera Hils: 3

4 – Cranefly Larva – family Tipulidae, Order Diptera Hils: 4

2 – Scuds – family Amphipoda, Order Crustacea Hils: 6

165 – Common Netspinning Caddisfly – family Hydropsychidae Order Trichoptera Hils: 5

5 – Trumpetnet Caddisfly - family Hydropsychidae, Order Trichoptera Hils: 6

Potato Garden Run:

1 – Scuds – family Amphipoda, Order Crustacea Hils: 6

6 – Cranefly Larva – family Tipulidae, Order Diptera Hils: 4

248 – Common Netspinning Caddisfly – family Hydropsychidae
Order Trichoptera Hils: 5

3 – Trumpetnet Caddisfly - family Hydropsychidae, Order Trichoptera Hils: 6

1 – Watersnipe Fly larva – family Arthericidae, Order Diptera Hils: 2

5 – Slender Winter Stonefly larva – family Capniidae,
Order Plecoptera Hils: 3

Raccoon Creek Watershed
Fall – October 16, 2007 – Macroinvertebrate Sampling

Site: Burgettstown Borought Building

Total: nothing	**no. of species:**	**average Hils:**
Spring: nothing	0	
Fall 2006: 4	4	5.5
Spring 06: nothing	0	

Site: Keys Road

Total: nothing	**no. of species: 0**	**average Hils:**
Spring: 1	1	2
Fall 2006: 7	3	5.6
Spring 06: 10	5	7.2

Site: Bavington

104	Caddisfly OrderTrichoptera	Common Netspinner Hydopsychidae	Hils 5
2	Scuds	Order Amplidoda	Hils 6
4	Midge Fly Larvae	Order Diptera Family Chironomidae	Hils 6
2	Watersnipe Fly	Order Diptera Family Athericidae	Hils 2
3	Cranefly Larvae	Order Diptera Family Tipulidae	Hils 4
	Total: 115	**no. of species: 5**	**average Hils: 4.6**
	Spring: 82	7	4.2
	Fall 2006: 184	6	3.5
	Spring 06: 67	5	5.4

Site: Murdocksville

128	Caddisfly OrderTrichoptera	Common Netspinner Hydopsychidae	Hils 5
1	Scud	Order Amplidoda	Hils 6
7	Watersnipe Fly	Order Diptera Family Athericidae	Hils 2
2	Cranefly Larvae	Order Diptera Family Tipulidae	Hils 4
22	Caddisfly OrderTrichoptera	Fingernet Caddisfly Family Philopotamidae	Hils 3

1	Alderfly Order Megaloptera	Family Sialidae	Hils 6
1	Stonefly Order Plecoptera	Green Stonefly FamilyChloroperlidae	Hils 0
	Total: 162	**no. of species: 7**	**average Hils: 3.7**
	Spring 2007: No species collected due to high water		
	Fall 2006: No species collected due to high water		
	Spring 06: 30	7	5.17

Site: Potato Garden Run

254	Caddisfly OrderTrichoptera	Common Netspinner Hydopsychidae	Hils 5
12	Caddisfly OrderTrichoptera	Fingernet Caddisfly Family Philopotamidae	Hils 3
22	Cranefly Larvae	Order Diptera Family Tipulidae	Hils 4
3	Alderfly Order Megaloptera	Family Sialidae	Hils 6
2	Watersnipe Fly	Order Diptera Family Athericidae	Hils 2
2	Midge Fly Larvae	Order Diptera Family Chironomidae	Hils 6
5	Dobsonfly Larvae	Order Megaloptera Sub Family Corydalus	Hils 4
4	Riffle Beetles	Order Coleoptera Family Elmidae	Hils 5
	Total: 306	**no. of species: 8**	**average Hils: 4.125**
	Spring: 72	13	4.3
	Fall 2006: 257	10	4.1
	Spring 06: 76	8	4.375

Raccoon Creek Watershed
Macro invertebrate sampling 10/18/06

Burgettstown Borough Building:

					Hils:
1	Sow Bug	Order Isopoda			
1	Alderfly	Order Megaloptera,	Family Sialidae		6
1	Caddisfly	Order Trichoptera	Family Glossosomatidae (saddlecase maker)	?	0
2	Caddisfly	Order Trichoptera	Family Hydropsychidae (common netspinner)		5
1	Centipede	?			
1	fairly large snapping turtle		Family stinkis maximus hard shelless snapperiss		

Total: 4 reliable specimens

Keys Road:

3	Aquatic Sow Bug	Order Isopoda		8
3	Alderfly	Order Megaloptera	Family Sialidae	6
1	Fishfly	Order Megaloptera	Family Corydalidae	3

Total: 7 specimens

Bavington:

158	Caddisfly	Order Trichoptera	Family Hydropsychidae (common netspinner)	5
14	Caddsifly	Order Trichoptera	Family Philopotamidae (fingernet Caddisfly)	3
14	Cranefly	Order Diptera	Family Tipulidae	4

2	Fishfly larve	Order Megaloptera	Family Corydalidae, Chauliodinae	3
1	Aquatic Dancefly	Order Diptera	Family Empididae	6
4	Crayfish			

Total: 184 specimens

Potato Garden Run:

208	Caddisfly	Order Trichoptera	Family Hydropsychidae (common netspinner)	5
23	Caddisfly	Order Trichoptera	Family Philopotamidae (fingernet Caddisfly)	3
9	Cranefly	Order Diptera	Family Tipulidae	4
7	Fishfly larve	Order Megaloptera	Family Corydalidae, Chauliodinae	3
1	Alderfly	Order Megaloptera	Family Sialidae	6
4	Aquatic Dancefly	Order Diptera	Family Empididae	6
1	Sow Bug	?		
1	Midge Fly larve	Order Diptera	Family Chironomidae	6
2	Stonefly	Order Plecoptera	Family Perlodidae	2
1	Scud	Order Amphipoda		6

Total: 257 specimens

Raccoon Creek Watershed
Spring – May 9, 2007 – Macroinvertebrate Count

Site: Keys Road

1	Caddisfly	Nettube Caddifly		
		Trichoptera	Psychomyiidae	Hil. 2
	Total: 1			

Site: Bavington

51	Caddisflies	Common Netspinner		
		Trichoptera	Hydropsychidae	Hil 5
1	Dobsonfly (Hellgrammite)			
		Megaloptera	Coryalidae	Hil 3
5	Riffle Beetle Larvae			
		Coleoptera	Elmidae	Hil 5
5	Crane Flies			
		Diptera	Tipulidae	Hil 4
2	Aquatic Sow Bugs			
		Isopoda	Asellidae	Hil 8
2	Caddisflies	Fingernet		
		Trichoptera	Philopotamidae	Hil 3
16	Stoneflies	Broadback		
		Plecoptera	Nemouridae	Hil 2
	Total: 82			

Site: Murdocksville
Water too high

Site: Burgettstown Borough Building
Nothing

Site: Potato Garden Run

2	Crane Fly Larvae			
		Diptera	Tipulidae	Hil 4
2	Caddisflies	Fingernet		
		Trichoptera	Philopotamidae	Hil 3
4	Aquatic Sow Bugs			
		Isopoda	Asellidae	Hil 8
18	Riffle Beetle Larvae			
		Coleoptera	Elmidae	Hil 5
2	Riffle Beetles			
		Coleoptera	Elmidae	Hil 5
15	Midge Fly Larvae			
		Diptera	Chironomidae	Hil 6
4	Caddisflies	Common Netspinner		
		Trichoptera	Hydropsychidae	Hil 5
4	Caddisflies	Trumpetnet & Tubemaking Caddisfly		
		Trichoptera	Polycentropodidae	Hil 6
1	Mayfly	Small Minnow Mayfly		
		Ephemeroptera	Baetidae	Hil 6
13	Stoneflies	Broadback		
		Plecoptera	Nemouridae	Hil 2
4	Stoneflies	Perlodid		
		Plecoptera	Plerodidae	Hil 2
2	Stoneflies	Green Stonefly		
		Plecoptera	Chloroperlidae	Hil 0
1	Cranefly Larve	Hexatoma		
		Siptera	Tipulidae	Hil 4

Total: 72

Raccoon Creek Macro-invertebrate sampling 4/19/06

		Hilsenhoff
Burgettstown Borough Building: no specimens found		
Keys Road:		
	2 – Alderfly – Megaloptera – Sialidae	6
	2 – Aquatic earth worms	9
	3 – Mayflies – Ephemeroptera – Caenidae	7
	2 – Midges – Diptera – Chironomidae	6
	1 – Aquatic Sow Bug – Isopoda	8
Total	10	7.2
Bavington:		
	11 – Caddisfly – Trichoptera – Hydropsychidae	5
	1 – Aquatic Sow Bug – Isopoda	8
	1 – Scud – Amphipoda	6
	53 – Midges – Diptera – Chironomidae	6
	1 – Stonefly – Plecoptera – Nemouridae	2
Total	67	5.4
Murdocksville:		
	17 – Caddisfly – Trichoptera – Hydropsychidae	5
	4 – Riffle Beetle Larva – Coleoptera – Elmidae	5
	2 – Riffle Beetles – Coleptera – Elmidae	5
	3 – Midges – Diptera – Chironomidae	6
	1 – Diving Wasp	
	1 – Midge pupa – Chironomidae	6
	2 – Caddisfly – Trichoptera – Northern Casemaker – Limnephilidae – Neophylax	4
Total	30	5.17
Potato Garden Run:		
	48 – Caddisfly – Trichoptera – Hydropsychidae	5
	1 – Dobsonfly – Corydalidae	3
	14 – Midge Fly – Diptera – Chironomidae	6
	4 – Aquatic Sow Bug – Isopodo	8
	1 – Aquatic Soldier Fly – Stratiomyidae	6
	3 – Stonefly – Plecoptera – Nemouridae	2
	4 – Stonefly – Plecoptera – Winter Stonefly – Capniidae	3
	1 – Stonefly – Plecoptera – Perlodidae	2
Total	76	4.375

Raccoon Creek Macroinvertebrate Sampling
October 12, 2005

Site: Keys Road

(1) Order Trichoptera
Family Phryganeidae
Giant Case Making Caddisfly
Hils – 4
Note: (not expected in this type of water but may have washed down from up stream), possibly Hagevella

Site: Bavington

(5) Order Trichoptera
Family Hydropsychidae
Common Netspinner Caddisfly
Hils – 5

Site: Murdocksville

(5) Order Trichoptera
Family Hydropsychidae
Common Netspinner Caddisfly
Hils – 5

(1) Order Hemiptera
Family Mesoveliidae
Water Treader
Hils – n/a

(1) Order Coleoptera
Family Elmidae
Riffle Beetle Larva
Hils – 5

(1) Order Odonata
Family Calopterygidae
Broadwinged Damselfly
Hils – 5

Site: Potato Garden Run

(1) Order Amphipoda
Family Amphipoda
Scud
Hils – 6

(131) Order Trichoptera
Family Hydropsychidae
Common Netspinner Caddisfly
Hils – 5

(2) Order Isopoda
Family Asellidae
Sow Bug
Hils – 8

(4) Order Coleoptera
Family Elmidae
Riffle Beetle Larva
Hils – 5

(7) Order Diptera
Family Tipulidae
Cranefly Larva
Hils – 4

(1) Order Diptera
Family Athericidae
Watersnipe
Hils – 2

(7) Order Megaloptera
Family Corydalidae
Dobsonfly/fishfly
Hils - 3

RACCOON CREEK WATERSHED
MACROINVERTEBRATE COLLECTION
APRIL 27, 2003

Station A – Keys Road

Scud – 1 Order: Amphipoda Hils = 6

Aquatic Sow Bug – 1 Order: Isopoda Family: Asellidae Hils = 8

Riffle Bettle – 1 Order: Coleoptera Family: Elmidae Hils = 5

Tubificid Worm – 1 Phylum: Annelida Tubificidae Hils = 10

3 vertabrates = either small fish fry or amphipians

Total count = 4

Station B – Burgettstown Municipal Building

Crane Fly – 1 Order: Diptera Family: Tipulidae Hils = 4

Caddis Fly – 3 Order: Trichoptera Family: Hydropsychidae Hils = 5

Leech – 1 Phylum: Annelida Hirudinea Hils = 9

Total count = 5

Station C – Bavington

Caddisfly – 31 Order: Trichoptera Family: Hydropsychidae Hils = 5

Aquatic Sow Bug – 1 Order: Isopoda Family: Asellidae Hils = 8

Scud – 1 Order: Amphipoda Hils = 6

Dobsonfly – 2 Order: Megoloptera Family: Corydalidae Hils = 3-4

Midges – 3 Oder: Diptera Family: Chironamidae Hils = 6

Riffle Beetle Larva – 1 Order: Coleoptera Family: Elmidae Hils = 5

Stoneflies – 3 Order: Plecoptera Family: Nemouridae Hils = 2
(Nemourid Broadbacks)

Total count = 42

Station D – Murdocksville

Dobsonfly – 2	Order: Megoloptera	Family: Corydalidae	Hils = 3-4
Cranefly – 2	Order: Diptera	Family: Tipulidae	Hils = 4
Midges – 10	Order: Diptera	Family: Chironomidae	Hils = 6
Riffle Bettle – 2	Order: Coleoptera	Family: Elmidae	Hils = 5
Caddisfly – 17	Order: Trichoptera	Family: Hydropsychidae	Hils = 5
Blackfly Larva – 2	Order: Diptera	Family: Simuliidae	Hils = 6
Fingernet Caddisfly – 3	Order: Trichoptera	Family: Philopotamidae	Hils = 3
Trumpetnet Caddisfly – 2	Order: Trichoptera	Family: Polycentropodidae	Hils = 6
Stoneflies – 25 (Nemourid Broadback)	Order: Plecoptera	Family: Nemouridae	Hils = 2
Stonefly – 1	Order: Plecoptera	Family: Capniidae	Hils = 3
Aquatic Soldier Fly – 1	Order: Diptera	Family: Stratiomyidae	Hils = 6+

Total count = 67

Station E – Potatoe Garden Run

Cranefly – 3	Order: Diptera	Family: Tipulidae	Hils = 4
Aquatic worms – 2	Phylum: Annelida		Hils = 9
Micro Caddisfly – 1 (case making)	Order: Trichoptera	Family: Hydroptilidae	Hils = 4
Aquatic Sow Bugs – 10	Order: Isopoda	Family: Asellidae	Hils = 8
Riffle Beetle – 1	Order: Coleoptera	Family: Elmidae	Hils = 5
Riffle Beetle Larva – 1			Hils = 5
Aquatice Dance Fly Larva – 5	Order: Diptera	Family: Empididae	Hils = 6
Aquatic Dance Fly pupa – 1			Hils = 6

Midges – 17 Order: Diptera Family: Chironomidae Hils = 6

Caddisfly – 9 Order: Trichoptera Family: Hydropsychidae Hils = 5

Caddisfly – 2 (Fingernet) Order: Trichoptera Family: Philopotamidae Hils = 3

Caddisfly – 4 (Trumptetnet) Order: Trichoptera Family: Polycentropodidae Hils = 6

Stonefly – 9 Order: Plecoptera Family: Nemouridae Hils = 2
(Nemourid Broadbacks)

Stonefly – 3 Order: Plecoptera Family: Perlodidae Hils = 2

Stonefly – 1 Order: Plecoptera Family: Perlidae Hils = 3
(Common Stonefly)

Total Count = 69

Raccoon Creek Biological Sampling
Collected October 14, 2001 by the Raccoon Creek Watershed Association
Identified/Categorized by Steve Carbol, October 15, 2001

1. Station A – Key's Rd.
- No organisms collected
  Station A quality rating: 0 – Poor

2. Station B – Municipal Building
- 1 Alderfly Larva
- 12 Net-spinning Caddisfly Larvae
  * Station B quality rating: 6.6 – Poor

3. Station C – Bavington
- 2 Fishfly Larvae
- 4 Water Snipe Fly Larvae
- 6 Crane Fly Larvae
- 573 Caddisfly Larvae
  *Station C quality rating: 12.6 – Poor

4. Station D – Murdocksville
- 1 Water Snipe Fly Larva
- 2 Fishfly Larvae
- 3 Whirligig Beetles
- 3 Alderfly Larvae
- 14 Net-spinning Caddisfly Larvae
  *Station D quality rating: 14.2 – Poor

5. Station E – Potato Garden Run
- 1 Alderfly Larva
- 1 Aquatic Annelid Worm
- 1 Riffle Beetle Larva
- 2 Riffle Beetle Adults
- 2 Fishfly Larvae
- 2 Aquatic Pyralid Caterpillars (Moth Larvae)
- 3 Stonefly Larvae
- 4 Crane Fly Larvae
- 7 Scuds
- 8 Midge Larvae
- 289 Net-spinning Caddisfly Larvae
  *Station E quality rating: 31.4 – Fair

Raccoon Creek Watershed Macroinvertebrate Sampling Results
Spring 2001, classified 4/30/01

1) Site A- Keys Road, Raccoon Creek

No organisms collected

2.) Site B- Municipal Building, Burgetts Fork

Crane Fly Larvae- 2

3.) Site C- Bavington, Raccoon Creek

Riffle Beetle, Adult- 2
Stonefly Larvae- 7
Aquatic Sowbug- 3
Cranefly Larvae- 3
Net-spinning Caddisfly Larvae- 44
Midge Larvae- 14

4.) Site D- Murdocksville, Raccoon Creek

Riffle Beetle, Adult-1
Stonefly Larvae- 4
Damselfly Larvae- 1
Riffle Beetle, Larvae- 1
Cranefly Larvae- 2
Net-spinning Caddisfly Larvae- 23
Midge Larvae- 3

5.) Site E- Potato Garden Run

Riffle Beetle, Adult- 1
Stonefly Larvae- 7
Scud-1
Aquatic Sowbug-7
Cranefly Larvae- 7
Net-spinning Caddisfly Larvae- 23
Midge Larvae- 28

Site ID# A, Keys Rd. Date 4/29/01 Monitor ID#_____

SENIOR ENVIRONMENT CORPS

Biosurvey: Data Sheets

Macroinvertebrate Survey

Type of Stream

☐ Rocky-bottom ☐ Muddy-bottom

Muddy-bottom Sampling Only: Record the number of jabs taken in each habitat type.

_____ Vegetated Bank Margin

_____ Snags and Logs

_____ Aquatic Vegetation Beds

_____ Silt/sand/gravel Substrate

Macroinvertebrate Count

Identify the macroinvertebrates (to order) in your sample using the identification card. We are only concerned with organisms that appear on the identification card. Record the number of organisms below and then assign them letter codes based on their abundance:

R (rare) = 1-9 organisms; C (common) = 10-99 organisms; or D (dominant) = 100 plus organisms.

example: 20 (C) *Water penny larvae*

Group I - Sensitive

_____ (____) Water penny larvae

_____ (____) Hellgrammites

_____ (____) Mayfly nymphs

_____ (____) Gilled snails

_____ (____) Riffle beetle adults

_____ (____) Stonefly nymphs

_____ (____) Non net-spinning caddisfly larvae

Group II - Somewhat Sensitive

_____ (____) Beetle larvae

_____ (____) Clams

_____ (____) Cranefly larvae

_____ (____) Crayfish

_____ (____) Damselfly nymphs

_____ (____) Dragonfly nymphs

_____ (____) Scuds

_____ (____) Sowbugs

_____ (____) Fishfly larvae

_____ (____) Alderfly larvae

_____ (____) Net-spinning caddisfly larvae

Group III - Tolerant

_____ (____) Aquatic worms

_____ (____) Blackfly larvae

_____ (____) Leeches

_____ (____) Midge larvae

_____ (____) Snails

OCT 01 1998

Biosurvey: Data Sheets

Water Quality Rating

To calculate the index value, add the number of letters found in the three groups above and multiply by the indicated weighing factor.

Group I - Sensitive

(# of R's) x 5.0 =_____

(# of C's) x 5.6 =_____

(# of D's) x 5.3 =_____

Sum of the Index Value for Group I = 0

Group II - Somewhat Sensitive

(# of R's) x 3.2 =_____

(# of C's) x 3.4 =_____

(# of D's) x 3.0 =_____

Sum of the Index Value for Group II = 0

Group III - Tolerant

(# of R's) x 1.2 =_____

(# of C's) x 1.1 =_____

(# of D's) x 1.0 =_____

Sum of the Index Value for Group III = 0

To calculate the water quality score for the stream site, add together the index values for each group. The sum of these values equals the water quality score.

Water Quality Score = 0

Compare this score to the following number ranges to determine the quality of your stream site

☐ Good >40 ☐ Fair 20 - 40 ☑ Poor <20

Note: The tolerance groupings (Group I, II, III) and the water quality rating categories were developed for streams in the Mid-Atlantic states.

Biosurvey: Data Sheets

Macroinvertebrate Survey

Type of Stream

☐ Rocky-bottom ☐ Muddy-bottom

Muddy-bottom Sampling Only: Record the number of jabs taken in each habitat type.

_____ Vegetated Bank Margin
_____ Snags and Logs
_____ Aquatic Vegetation Beds
_____ Silt/sand/gravel Substrate

Macroinvertebrate Count

Identify the macroinvertebrates (to order) in your sample using the identification card. We are only concerned with organisms that appear on the identification card. Record the number of organisms below and then assign them letter codes based on their abundance:

R (rare) = 1-9 organisms; C (common) = 10-99 organisms; or D (dominant) = 100 plus organisms.

example: 20 (C) *Water penny larvae*

Group I - Sensitive

_____ (____) Water penny larvae
_____ (____) Hellgrammites
_____ (____) Mayfly nymphs
_____ (____) Gilled snails
_____ (____) Riffle beetle adults
_____ (____) Stonefly nymphs
_____ (____) Non net-spinning caddisfly larvae

Group II - Somewhat Sensitive

_____ (____) Beetle larvae
_____ (____) Clams
2 (R) Cranefly larvae
_____ (____) Crayfish
_____ (____) Damselfly nymphs
_____ (____) Dragonfly nymphs
_____ (____) Scuds
_____ (____) Sowbugs
_____ (____) Fishfly larvae
_____ (____) Alderfly larvae
_____ (____) Net-spinning caddisfly larvae

Group III - Tolerant

_____ (____) Aquatic worms
_____ (____) Blackfly larvae
_____ (____) Leeches
_____ (____) Midge larvae
_____ (____) Snails

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Biosurvey: Data Sheets

Water Quality Rating

To calculate the index value, add the number of letters found in the three groups above and multiply by the indicated weighing factor.

Group I - Sensitive

(# of R's) x 5.0 =_____

(# of C's) x 5.6 =_____

(# of D's) x 5.3 =_____

Sum of the Index Value for Group I = 0

Group II - Somewhat Sensitive

/ (# of R's) x 3.2 = 3.2

(# of C's) x 3.4 =_____

(# of D's) x 3.0 =_____

Sum of the Index Value for Group II = 3.2

Group III - Tolerant

(# of R's) x 1.2 =_____

(# of C's) x 1.1 =_____

(# of D's) x 1.0 =_____

Sum of the Index Value for Group III = 0

To calculate the water quality score for the stream site, add together the index values for each group. The sum of these values equals the water quality score.

Water Quality Score = 3.2

Compare this score to the following number ranges to determine the quality of your stream site

☐ Good >40 ☐ Fair 20 - 40 ☑ Poor <20

Note: The tolerance groupings (Group I, II, III) and the water quality rating categories were developed for streams in the Mid-Atlantic states.

Site ID# D. Mordecksville Date __/__/__ Monitor ID#_____

SENIOR ENVIRONMENT CORPS

Biosurvey: Data Sheets

Macroinvertebrate Survey

Type of Stream

☐ Rocky-bottom ☐ Muddy-bottom

Muddy-bottom Sampling Only: Record the number of jabs taken in each habitat type.

_____ Vegetated Bank Margin

_____ Snags and Logs

_____ Aquatic Vegetation Beds

_____ Silt/sand/gravel Substrate

Macroinvertebrate Count

Identify the macroinvertebrates (to order) in your sample using the identification card. We are only concerned with organisms that appear on the identification card. Record the number of organisms below and then assign them letter codes based on their abundance:

R (rare) = 1-9 organisms; C (common) = 10-99 organisms; or D (dominant) = 100 plus organisms.

example: 20 (C) *Water penny larvae*

Group I - Sensitive

_____ (___) Water penny larvae

_____ (___) Hellgrammites

_____ (___) Mayfly nymphs

_____ (___) Gilled snails

1 (R) Riffle beetle adults

4 (R) Stonefly nymphs

_____ (___) Non net-spinning caddisfly larvae

Group II - Somewhat Sensitive

1 (R) Beetle larvae

_____ (___) Clams

2 (R) Cranefly larvae

_____ (___) Crayfish

1 (R) Damselfly nymphs

_____ (___) Dragonfly nymphs

_____ (___) Scuds

_____ (___) Sowbugs

_____ (___) Fishfly larvae

_____ (___) Alderfly larvae

23 (C) Net-spinning caddisfly larvae

Group III - Tolerant

_____ (___) Aquatic worms

_____ (___) Blackfly larvae

_____ (___) Leeches

3 (R) Midge larvae

_____ (___) Snails

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Site ID#_____ Date___/___/___ Monitor ID#_____

SENIOR ENVIRONMENT CORPS

Biosurvey: Data Sheets

Water Quality Rating

To calculate the index value, add the number of letters found in the three groups above and multiply by the indicated weighing factor.

Group I - Sensitive

2 (# of R's) x 5.0 = 10

(# of C's) x 5.6 = _____

(# of D's) x 5.3 = _____

Sum of the Index Value for Group I = 10

Group II - Somewhat Sensitive

3 (# of R's) x 3.2 = 9.6

1 (# of C's) x 3.4 = 3.4

(# of D's) x 3.0 = _____

Sum of the Index Value for Group II = 13

Group III - Tolerant

1 (# of R's) x 1.2 = 1.2

(# of C's) x 1.1 = _____

(# of D's) x 1.0 = _____

Sum of the Index Value for Group III = 1.2

To calculate the water quality score for the stream site, add together the index values for each group. The sum of these values equals the water quality score.

Water Quality Score = 24.2

Compare this score to the following number ranges to determine the quality of your stream site

☐ Good >40 ☑ Fair 20 - 40 ☐ Poor <20

Note: The tolerance groupings (Group I, II, III) and the water quality rating categories were developed for streams in the Mid-Atlantic states.

Site ID# E. Potato Garden Date 1/1/ Monitor ID#_____

SENIOR ENVIRONMENT CORPS

Biosurvey: Data Sheets

Macroinvertebrate Survey

Type of Stream

☐ Rocky-bottom ☐ Muddy-bottom

Muddy-bottom Sampling Only: Record the number of jabs taken in each habitat type.

_____ Vegetated Bank Margin

_____ Snags and Logs

_____ Aquatic Vegetation Beds

_____ Silt/sand/gravel Substrate

Macroinvertebrate Count

Identify the macroinvertebrates (to order) in your sample using the identification card. We are only concerned with organisms that appear on the identification card. Record the number of organisms below and then assign them letter codes based on their abundance:

R (rare) = 1-9 organisms; C (common) = 10-99 organisms; or D (dominant) = 100 plus organisms.

example: 20 (C) Water penny larvae

Group I - Sensitive

_____ (___) Water penny larvae

_____ (___) Hellgrammites

_____ (___) Mayfly nymphs

_____ (___) Gilled snails

1 (R) Riffle beetle adults

7 (R) Stonefly nymphs

_____ (___) Non net-spinning caddisfly larvae

Group II - Somewhat Sensitive

_____ (___) Beetle larvae

_____ (___) Clams

7 (R) Cranefly larvae

_____ (___) Crayfish

_____ (___) Damselfly nymphs

_____ (___) Dragonfly nymphs

1 (R) Scuds

7 (R) Sowbugs

_____ (___) Fishfly larvae

_____ (___) Alderfly larvae

23 (C) Net-spinning caddisfly larvae

Group III - Tolerant

_____ (___) Aquatic worms

_____ (___) Blackfly larvae

_____ (___) Leeches

28 (C) Midge larvae

_____ (___) Snails

Site ID#_____ Date___/___/___ Monitor ID#_____

SENIOR ENVIRONMENT CORPS

Biosurvey: Data Sheets

Water Quality Rating

To calculate the index value, add the number of letters found in the three groups above and multiply by the indicated weighing factor.

Group I - Sensitive

2 (# of R's) x 5.0 = 10

(# of C's) x 5.6 = _____

(# of D's) x 5.3 = _____

Sum of the Index Value for Group I = 10

Group II - Somewhat Sensitive

3 (# of R's) x 3.2 = 9.6

1 (# of C's) x 3.4 = 3.4

(# of D's) x 3.0 = _____

Sum of the Index Value for Group II = 13

Group III - Tolerant

(# of R's) x 1.2 = _____

1 (# of C's) x 1.1 = 1.1

(# of D's) x 1.0 = _____

Sum of the Index Value for Group III = 1.1

To calculate the water quality score for the stream site, add together the index values for each group. The sum of these values equals the water quality score.

Water Quality Score = 24.1

Compare this score to the following number ranges to determine the quality of your stream site

☐ Good >40 ☑ Fair 20 - 40 ☐ Poor <20

Note: The tolerance groupings (Group I, II, III) and the water quality rating categories were developed for streams in the Mid-Atlantic states.

Site ID# C. BAVINGTON Date 1/1 Monitor ID#_____

SENIOR ENVIRONMENT CORPS

Biosurvey: Data Sheets

Macroinvertebrate Survey

Type of Stream

☐ Rocky-bottom ☐ Muddy-bottom

Muddy-bottom Sampling Only: Record the number of jabs taken in each habitat type.

_____ Vegetated Bank Margin

_____ Snags and Logs

_____ Aquatic Vegetation Beds

_____ Silt/sand/gravel Substrate

Macroinvertebrate Count

Identify the macroinvertebrates (to order) in your sample using the identification card. We are only concerned with organisms that appear on the identification card. Record the number of organisms below and then assign them letter codes based on their abundance:

R (rare) = 1-9 organisms; C (common) = 10-99 organisms; or D (dominant) = 100 plus organisms.

example: 20 (C) *Water penny larvae*

Group I - Sensitive

_____ (___) Water penny larvae

_____ (___) Hellgrammites

_____ (___) Mayfly nymphs

_____ (___) Gilled snails

2 (R) Riffle beetle adults

7 (R) Stonefly nymphs

_____ (___) Non net-spinning caddisfly larvae

Group II - Somewhat Sensitive

_____ (___) Beetle larvae

_____ (___) Clams

3 (R) Cranefly larvae

_____ (___) Crayfish

_____ (___) Damselfly nymphs

_____ (___) Dragonfly nymphs

_____ (___) Scuds

3 (R) Sowbugs

_____ (___) Fishfly larvae

_____ (___) Alderfly larvae

44 (C) Net-spinning caddisfly larvae

Group III - Tolerant

_____ (___) Aquatic worms

_____ (___) Blackfly larvae

_____ (___) Leeches

14 (C) Midge larvae

_____ (___) Snails

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Site ID#_____ Date__/__/__ Monitor ID#_____

SENIOR ENVIRONMENT CORPS

Biosurvey: Data Sheets

Water Quality Rating

To calculate the index value, add the number of letters found in the three groups above and multiply by the indicated weighing factor.

Group I - Sensitive

2 (# of R's) x 5.0 = 10

(# of C's) x 5.6 = _____

(# of D's) x 5.3 = _____

Sum of the Index Value for Group I = 10

Group II - Somewhat Sensitive

2 (# of R's) x 3.2 = 6.4

1 (# of C's) x 3.4 = 3.4

(# of D's) x 3.0 = _____

Sum of the Index Value for Group II = 9.8

Group III - Tolerant

(# of R's) x 1.2 = _____

1 (# of C's) x 1.1 = 1.1

(# of D's) x 1.0 = _____

Sum of the Index Value for Group III = 1.1

To calculate the water quality score for the stream site, add together the index values for each group. The sum of these values equals the water quality score.

Water Quality Score = 20.9

Compare this score to the following number ranges to determine the quality of your stream site

☐ Good >40 ☑ Fair 20 - 40 ☐ Poor <20

Note: The tolerance groupings (Group I, II, III) and the water quality rating categories were developed for streams in the Mid-Atlantic states.

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