

Benthic Macroinvertebrate Data

Project: MD 97 - Brookeville Study

KCI Job No.: 01-95095 F1

Stream: Reddy Branch

Station 1: Stream Crossing @ Alternate 3 along Brookeville Rd.

Date Collected: 6/5/97

Method of Collection: Composite kick-net sample of fast and slow riffle areas

Taxa (Order)	Trophic Status	Tolerance Value*	Number of Individ.	Tolerance Value Score
Heptagenidae (Ephemeroptera)	Scraper	4	4	16
Ephemerellidae (Ephemeroptera)	Gathering Collector	2	3	6
Chironomidae (Diptera)	Gathering Collector	8	18	144
Aeshnidae (Odonata)	Predator	4	2	8
Coenagrionidae (Odonata)	Predator	8	2	16
Total Number of Taxa		5		
Total Number of Individuals		29		
Total Tolerance Value Score		190		

* Modified Hilsenhoff Tolerance Values determined by the Maryland Save Our Streams (SOS) Project Heartbeat Program. Tolerance Values range from 0 to 10 and increase as water quality decreases.

MD-SOS DATA SUMMARY

Project: MD 97 Brookeville Study
KCI Job No.: 01-95095 F1
Stream: Reddy Branch
Station 1: Stream Crossing @ Alternate 3 along Brookeville Rd.
Date Collected: 6/5/97
Method of Collection: Composite kick-net sample of fast and slow riffle areas
Reference Collection: MD-DNR Biological Reference for the Patuxent Piedmont

Metrics*	Reference Score	Sample Score	Comparability of Sample Score to Reference Score	Biological Condition Score of Reference*	Biological Condition Score of Sample*
Taxa Richness (TOTAX) (a)	19	5	26%	6	0
Modified Family Biotic Index (FBI) (b)	4.30	6.55	66%	6	3
Ratio of EPT and Chironomidae Abundances (EPT:CHIRO)	16.6	0.39	2%	6	0.00
% Contribution of Dominant Family (DOMTOT) (c)	23%	62%	--	6	0
EPT Index (EPTAX) (a)	10	2	20%	6	0.00
% EPT (EPTTOT) (c)	70%	24%	--	6	3
Total				36	6
% Comparability of Total Biological Condition Score of Sample to Reference (a)				17%	
BIOASSESSMENT				Severely Impaired	

* Metrics and Biological Condition Scoring Criteria based upon information provided by the MDE and Maryland Save Our Streams (SOS) Project Heartbeat Program.

- (a) Score is a ratio of sample site to reference site X 100.
- (b) Score is a ratio of reference site to sample site X 100.
- (c) Score evaluates the actual percent contribution of the sample site, rather than percent comparability to the reference site.

Benthic Macroinvertebrate Data

Project: MD 97 - Brookeville Study

KCI Job No.: 01-95095 F1

Stream: Reddy Branch

Station 2: Stream Crossing @ Alternate 4 off of Brookeville Rd.

Date Collected: 6/5/97

Method of Collection: Composite kick-net sample of fast and slow riffle areas

Taxa (Order)	Trophic Status	Tolerance Value*	Number of Individ.	Tolerance Value Score
Hydropsychidae (Trichoptera)	Filtering Collector	6	35	210
Heptageniidae (Ephemeroptera)	Scraper	4	2	8
Ephemerellidae (Ephemeroptera)	Gathering Collector	2	16	32
Baetidae (Ephemeroptera)	Gathering Collector	6	12	72
Perlidae (Plecoptera)	Predator	1	4	4
Peltoperlidae (Plecoptera)	Shredder	0	2	0
Chironomidae (Diptera)	Gathering Collector	8	6	48
Elmidae (Coleoptera)	Scraper	4	1	4
Gomphidae (Odonata)	Predator	3	1	3
Total Number of Taxa		9		
Total Number of Individuals			79	
Total Tolerance Value Score				381

* Modified Hilsenhoff Tolerance Values determined by the Maryland Save Our Streams (SOS) Project Heartbeat Program. Tolerance Values range from 0 to 10 and increase as water quality decreases.

MD-SOS DATA SUMMARY

Project: MD 97 Brookeville Study
KCI Job No.: 01-95095 F1
Stream: Reddy Branch
Station 2: Stream Crossing @ Alternate 4 off of Brookeville Rd.
Date Collected: 6/5/97
Method of Collection: Composite kick-net sample of fast and slow riffle areas
Reference Collection: MD-DNR Biological Reference for the Patuxent Piedmont

Metrics*	Reference Score	Sample Score	Comparability of Sample Score to Reference Score	Biological Condition Score of Reference*	Biological Condition Score of Sample*
Taxa Richness (TOTAX) (a)	19	9	47%	6	3
Modified Family Biotic Index (FBI) (b)	4.30	4.82	89%	6	6
Ratio of EPT and Chironomidae Abundances (EPT:CHIRO)	16.6	11.8	71%	6	0.00
% Contribution of Dominant Family (DOMTOT) (c)	23%	44%	--	6	3
EPT Index (EPTAX) (a)	10	6	60%	6	0.00
% EPT (EPTTOT) (c)	70%	90%	--	6	6
Total				36	21
% Comparability of Total Biological Condition Score of Sample to Reference (a)				58%	
BIOASSESSMENT				Moderately Impaired	

* Metrics and Biological Condition Scoring Criteria based upon information provided by the MDE and Maryland Save Our Streams (SOS) Project Heartbeat Program.

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- (c) Score evaluates the actual percent contribution of the sample site, rather than percent comparability to the reference

Benthic Macroinvertebrate Data

Project: MD 97 - Brookeville Study

KCI Job No.: 01-95095 F1

Stream: Reddy Branch

Station 3: Stream Crossing of Alternate 5 along Brighton Dam Rd.

Date Collected: 6/5/97

Method of Collection: Composite kick-net sample of fast and slow riffle areas

Taxa (Order)	Trophic Status	Tolerance Value*	Number of Individ.	Tolerance Value Score
Hydropsychidae (Trichoptera)	Filtering Collector	6	72	432
Heptageniidae (Ephemeroptera)	Scraper	4	2	8
Ephemerellidae (Ephemeroptera)	Gathering Collector	2	1	2
Baetidae (Ephemeroptera)	Gathering Collector	6	14	84
Perlidae (Plecoptera)	Predator	1	1	1
Peltoperlidae (Plecoptera)	Shredder	0	8	0
Chironomidae (Diptera)	Gathering Collector	8	8	64
Simuliidae (Diptera)	Filtering Collector	6	3	18
Total Number of Taxa	8			
Total Number of Individuals	109			
Total Tolerance Value Score	609			

* Modified Hilsenhoff Tolerance Values determined by the Maryland Save Our Streams (SOS) Project Heartbeat Program. Tolerance Values range from 0 to 10 and increase as water quality decreases.

MD-SOS DATA SUMMARY

Project: MD 97 Brookeville Study

KCI Job No.: 01-95095 F1

Stream: Reddy Branch

Station 3: Stream Crossing of Alternate 5 along Brighton Dam Rd.

Date Collected: 6/5/97

Method of Collection: Composite kick-net sample of fast and slow riffle areas

Reference Collection: MD-DNR Biological Reference for the Patuxent Piedmont

Metrics*	Reference Score	Sample Score	Comparability of Sample Score to Reference Score	Biological Condition Score of Reference*	Biological Condition Score of Sample*
Taxa Richness (TOTAX) (a)	19	8	42%	6	3
Modified Family Biotic Index (FBI) (b)	4.30	5.59	77%	6	3
Ratio of EPT and Chironomidae Abundances (EPT:CHIRO)	16.6	12.3	74%	6	3
% Contribution of Dominant Family (DOMTOT) (c)	23%	66%	--	6	0
EPT Index (EPTAX) (a)	10	6	60%	6	0.00
% EPT (EPTTOT) (c)	70%	90%	--	6	6
Total				36	15
% Comparability of Total Biological Condition Score of Sample to Reference (a)				42%	
BIOASSESSMENT				Moderately Impaired	

* Metrics and Biological Condition Scoring Criteria based upon information provided by the MDE and Maryland Save Our Streams (SOS) Project Heartbeat Program.

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(b) Score is a ratio of reference site to sample site X 100.

(c) Score evaluates the actual percent contribution of the sample site, rather than percent comparability to the reference site.

Benthic Macroinvertebrate Data

Project: MD 97 - Brookeville Study

KCI Job No.: 01-95095 F1

Stream: Reddy Branch

Station 4: Control Point east of Alternate 5 along Brighton Dam Rd.

Date Collected: 6/5/97

Method of Collection: Composite kick-net sample of fast and slow riffle areas

Taxa (Order)	Trophic Status	Tolerance Value*	Number of Individ.	Tolerance Value Score
Hydropsychidae (Trichoptera)	Filtering Collector	6	4	24
Hydrotillidae (Trichoptera)	Scraper	5	1	5
Heptagenidae (Ephemeroptera)	Scraper	4	4	16
Ephemereillidae (Ephemeroptera)	Gathering Collector	2	7	14
Baetidae (Ephemeroptera)	Gathering Collector	6	6	36
Perlidae (Plecoptera)	Predator	1	3	3
Peltoperlidae (Plecoptera)	Shredder	0	1	0
Chironomidae (Diptera)	Gathering Collector	8	4	32
Elmidae (Coleoptera)	Scraper	4	6	24
Total Number of Taxa		9		
Total Number of Individuals		36		
Total Tolerance Value Score		154		

* Modified Hilsenhoff Tolerance Values determined by the Maryland Save Our Streams (SOS) Project Heartbeat Program. Tolerance Values range from 0 to 10 and increase as water quality decreases.

MD-SOS DATA SUMMARY

Project: MD 97 Brookeville Study

KCI Job No.: 01-95095 F1

Stream: Reddy Branch

Station 4: Control Point east of Alternate 5 along Brighton Dam Rd.

Date Collected: 6/5/97

Method of Collection: Composite kick-net sample of fast and slow riffle areas

Reference Collection: MD-DNR Biological Reference for the Patuxent Piedmont

Metrics*	Reference Score	Sample Score	Comparability of Sample Score to Reference Score	Biological Condition Score of Reference*	Biological Condition Score of Sample*
Taxa Richness (TOTAX) (a)	19	9	47%	6	3
Modified Family Biotic Index (FBI) (b)	4.30	4.28	100%	6	6
Ratio of EPT and Chironomidae Abundances (EPT:CHIRO)	16.6	6.5	39%	6	0.00
% Contribution of Dominant Family (DOMTOT) (c)	23%	19%	--	6	6
EPT Index (EPTAX) (a)	10	7	70%	6	3
% EPT (EPTTOT) (c)	70%	72%	--	6	6
Total				36	27
% Comparability of Total Biological Condition Score of Sample to Reference (a)				75%	
BIOASSESSMENT				Moderately Impaired to Non-Impaired	

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Benthic Macroinvertebrate Data

Project: MD 97 - Brookeville Study

KCI Job No.: 01-95095 F1

Stream: Unnamed tributary to Reddy Branch

Station 5: Stream Crossings of Alternates 3 & 4

Date Collected: 6/27/97

Method of Collection: Composite kick-net sample of fast and slow riffle areas

Taxa (Order)	Trophic Status	Tolerance Value*	Number of Individ.	Tolerance Value Score
Hydropsychidae (Trichoptera)	Filtering Collector	6	95	570
Heptageniidae (Ephemeroptera)	Scraper	4	1	4
Baetidae (Ephemeroptera)	Gathering Collector	6	5	30
Chironomidae (Diptera)	Gathering Collector	8	26	208
Simuliidae (Diptera)	Filtering Collector	6	1	6
Tipulidae (Diptera)	Shredder	3	5	15
Elmidae (Coleoptera)	Scraper	4	13	52
Psephenidae (Coleoptera)	Scraper	4	9	36
Gammaridae (Amphipoda)	Gathering Collector	6	1	6
Palaemonidae (Decapoda)	Predator	6	2	12
Total Number of Taxa		10		
Total Number of Individuals		158		
Total Tolerance Value Score		939		

* Modified Hilsenhoff Tolerance Values determined by the Maryland Save Our Streams (SOS) Project Heartbeat Program. Tolerance Values range from 0 to 10 and increase as water quality decreases.

Stream: Unnamed tributary to Reddy Branch

Station 5: Stream Crossings of Alternates 3 & 4

Date Collected: 6/27/97

Method of Collection: Composite kick-net sample of fast and slow riffle areas

Reference Collection: MD-DNR Biological Reference for the Patuxent Piedmont

Metrics*	Reference Score	Sample Score	Comparability of Sample Score to Reference Score	Biological Condition Score of Reference*	Biological Condition Score of Sample*
Taxa Richness (TOTAX) (a)	19	10	53%	6	3
Modified Family Biotic Index (FBI) (b)	4.30	5.94	72%	6	3
Ratio of EPT and Chironomidae Abundances (EPT:CHIRO)	16.6	3.88	23%	6	0.00
% Contribution of Dominant Family (DOMTOT) (c)	23%	60%	--	6	0
EPT Index (EPTAX) (a)	10	3	30%	6	0
% EPT (EPTTOT) (c)	70%	64%	--	6	6
Total				36	12
% Comparability of Total Biological Condition Score of Sample to Reference (a)				33%	
BIOASSESSMENT				Severely to Moderately Impaired	

* Metrics and Biological Condition Scoring Criteria based upon information provided by the MDE and Maryland Save Our Streams (SOS) Project Heartbeat Program.

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 (c) Score evaluates the actual percent contribution of the sample site, rather than percent comparability to the reference site.