Toledo Metropolitan Area Coucil of Governments and Portage River Basin Council

FINAL REPORT

Portage River Water Quality Education Project

The Portage River Basin Council was formed in early 1994. It unites scientists, public officials and educators who live and work in the Portage River watershed in an ongoing effort to improve water quality of the river and also to call attention to the beauty of the river and its value to the communities through which it flows. The Council is aware that improving water quality of a stream that empties into Lake Erie will also improve the water quality of Lake Erie. In addition, members of the Council believe that working in or on the river will place watershed residents close to the river where they will be affected by the river's overall beauty and value.

The Council has two groups. One, the science section is dedicated to improving the quality of the water, especially in the Port Clinton area where there have been beach closings due to pollution. The other section is the education group, which works to improve water quality and maintain and preserve natural habitat throughout the watershed. Overall the goal of the Council is to provide information about the river by collecting, evaluating and disseminating information about the environmental quality of the Portage to the citizens of the area through news items, reports and the active involvement of communities. The education group submitted a proposal for a mini-grant to the Lake Erie Protection Fund on November 23, 1994, for $5,000 to purchase chemical and biological monitoring equipment and supplies for ten teachers in eight schools up and down the Portage. (Appendix 1)

The Portage River Basin Council was notified that a revised grant proposal was funded by the Lake Erie Protection Fund in late July. The four activities that were proposed were begun immediately and continue at this time.

1. Orders were placed for 40 seine kits, five for each school. The kits were on hand at the Allen County Soil and Water Conservation District Office and were obtained within days. Orders were also placed with the Hach Company and Ben Meadows Supply company for chemicals and test instruments and reagents. These also arrived within the week. The Mitchell and Stapp field guide *Water Quality Monitoring Field Guide* was also purchased. All materials were distributed to the ten teachers before the QHEI training session was held. Approximately $667 of monitoring equipment was distributed to the teachers. The shortfall of $336 between the grant and the cost of supplies was paid by donation. (Appendix 2)

2. Arrangements were made with Ed Rankin of the Ohio Environmental Protection Agency to offer a training session in Qualitative Habitat Evaluation Inventory techniques on August 15. Teachers Steve Steel in Toledo and Jean McCullough in Bowling Green, who were recruited for their expertise in chemical and biological testing, were available to help the teachers plan their testing regime.

All schools worked on the river in the fall. Test reports were mailed to Justine Magsig at Bowling Green State University, the Council's liaison with the teachers. (Appendix 3) Information about the project was published in the TMACOG newsletter *Cognates* and in the *Sugar Creek Newsletter* in August and in January. (Appendix 4a and 4b)

During the winter months, sponsors for each of the schools was contacted and support solicited. Sponsors were asked to provide the modest amount ($75 approximately) to replenish chemical supplies for their adopted schools so that monitoring would be continued in future years. (Sponsors are listed in Appendix 5)

3. A Student Congress for the 225 students working on the project was scheduled for May 15, 1996, at the Olscamp Building on the Bowling Green State University campus. Students and their teachers brought displays of their work and findings and presented reports. Six concurrent workshops on topics of interest to river monitors were held in the afternoon. Several city and county officials spoke to the students and commended them for their commitment to the river and the northwest Ohio region. The luncheon speaker was Steve Pollick, Outdoor Editor of *The Blade*. (Appendix 6)

4. Test results are accumulated and will be disseminated during the first week in July to all participating schools, media outlets and the Ohio Department of Natural Resources and the Ohio EPA.

Comments we have received from the teachers indicate that the quality of the Portage River indicated through the monitoring, is much higher than either the teachers or their students expected. Keith Huizenga of Elmore said, "The river seemed really clear and we were surprised that the water was such good quality when we tested it." Sam Radel of Oak Harbor High School said, "We were amazed that there were living mollusks in the river. The water quality tested out 'good' and the QHEI was 'excellent.' The students were really surprised." I also enclose a comment from Linda Darnall of Van Buren Middle School. (Appendix 7)

Although TMACOG and the education section managed the project without compensation, several entities contributed to the program's success. Davis-Besse Nuclear Power Plant, the Sugar Creek Protection Society, and the 1995 "Walk for the World" in Bowling Green, as well as individual donors provided funds for the Student Congress, substitute teacher compensation, travel for the participating teachers and schools, and minimal payment for the teacher trainers. We hope to raise the funds for another congress in 1997. The year's activity and the bonding with the river of several hundred students and their teachers from Van Buren in the headwaters of the Portage to Port Clinton on Lake Erie would never have taken place without the help of the Lake Erie Protection Fund mini-grant. The students who participated in the project now know the river have developed a special personal relationship with it.

We enclose a section of pictures taken at the Student Congress and some of the Portage River.

Narrative prepared by:
Justine Magsig, Publicity Chair,
Sugar Creek Protection Society
P.O. Box 151
Elmore, OH 43416

Appendix 1

TEACHERS AND SCHOOLS IN THE PORTAGE RIVER BASIN EDUCATION PROJECT

Van Buren Middle School	Linda Darnall
Elmwood High School	Mary Potter
Bowling Green High School	Jean McCullough
Eastwood Middle School	Barb Stough
Genoa High School	Leslee Dolph
Woodmore High School	Dennis Epling Keith Huizenga*
Oak Harbor Middle School	Kenneth Phillips
Oak Harbor High School	Sam Radel
Port Clinton High School	Rod Zerkle

*Keith Huizenga teaches Biology at Libbey High School in Toledo. He is an Elmore resident and former member of Elmore Village Council and wishes to take part in the project because of personal interest.

Portage River Basin Council
Water Quality Education Project

Water Quality Test Kits (for each school - 2 samplings)

Item #	*Quantity*	*Item*	*Unit Cost*	*Total Cost*
1	1	Dissolved Oxygen Test Kit Hach Model OX-2P (1469-00)	44.00	44.00
2	1	pH Test Kit Hach Model 17N (1470-11)	49.50	49.50
3	1	Total Phosphorus Test Kit Hach Model PO-24 (2250-01)	109.75	109.75
4	1	Low Range Nitrate Test Kit Hach Model NI-14 (14161-00)	49.25	49.25
5	4	Dissolved Oxygen Bottles (60 ml) Hach 1909-00	6.50	26.00
6	2	Starch Indicator Solution Hach 349-37	5.25	10.50
7	1	Dropping Bottle (30 ml) Hach 20861-30	2.50	2.50
8	2	Demineralized Water (3.78 l) Hach 272-17	11.55	23.10
9	5	Filter Units with Filters - Sterile, Disposable Hach 22530-00	3.90	19.50
10	1	Forceps Hach 21411-00	18.50	18.50
11	5	Sterile Petri Dishes with Pads Hach 14717-99	.21	1.05
12	5	Sterile Sampling Bottles (125 ml) Hach 23240-43	1.90	9.50
13	12	Sterile Pipets (5 ml) Hach 20926-47	.54	6.50
14	1	Alcohol Lamp Hach 20877-81	5.40	5.40
15	1	Wash Bottle (500 ml) Hach 620-11	3.50	3.50
16	1	Pipet Filler Hach 12189-00	10.50	10.50
17	6	Total Coliform Broth (m-Endo Broth) Hach 23735-20	.70	4.20
18	4	Fecal Coliform Broth (m-FC Broth) Hach 23732-20	.85	3.40
19	1	Syringe (10 ml) Hach 22024	1.05	1.05
20	1	Secchi Disk Ben Meadows Co. 224217	26.00	26.00

21	1	Hester-Dendy Sampler Ben Meadows Co. 244285	18.00	18.00
22	5	Macroinvertebrate Collection Kits Including Seine, Magnifying Glass, Thermometer Collection Tray, Ruler, and Identification Keys and Information Packet	45.00	225.00
		Total Cost per Participating School		**$667.00**
		Total Request for Eight Schools		**$5,336.00**

Appendix 3

Oak Harbor

Chart 10: Calculating the Overall Water Quality of a Section of a River System

Date 9/28/95 Time 4:00pm

Test Location Portage River / St. Rt. 590 Bridge

Weather Conditions 74°F Sunny

Water Tests	Text Page	Chart Page
Dissolved Oxygen	27	76
Fecal Coliform	34	77
pH	43	78
BOD	47	79
Temperature	51	80
Total Phosphate	54	81
Nitrates	60	82
Turbidity	66	83
Total Solids	70	84
Water Quality Index	74	85

	Test Results (Column A)	Q-Value (Column B)	Weighting Factor (Column C)	TOTAL (Column D)
1. DO	% sat.	~~2~~ 45	0.17	7.65
2. Fecal Coliform	colonies/100 ml	52	0.16	8.32
3. pH	units	93	0.11	10.23
4. BOD	mg/l	91	0.11	10.01
5. Temperature	Δ°C	25	0.10	2.5
6. Total Phosphate	mg/l	~~100~~ 99	0.10	9.9
7. Nitrates	mg/l	100	0.10	10
8. Turbidity	NTU or Ft.	100	0.08	8
9. Total Solids	mg/l	71	0.07	4.97

Overall Water Quality Index 71.58

STREAM QUALITY ASSESSMENT FORM

STATION _____ STREAM Portage River SAMPLE # _____

LOCATION St. Route 590 Bridge

COUNTY Ottawa TOWNSHIP/CITY _____ DATE 9-28-95 TIME _____

GROUP OR INDIVIDUALS Marine Science Class-Oak Harbor HS NO. OF PARTICIPANTS _____

DESCRIBE WATER CONDITIONS (COLOR, ODOR, BEDGROWTHS, SURFACE SCUM, ETC.)

HACH KIT RESULTS (if used) AND OTHER OBSERVATIONS

USE BACK OF FORM IF NECESSARY

WIDTH OF RIFFLE _____

WATER DEPTH _____

WATER TEMP. (°F) 62°

BED COMPOSITION OF RIFFLE (%)

SILT ☐ SAND ☐ GRAVEL (¼"- 2") ☐

COBBLES (2"- 10") ☐ BOULDERS (> 10") ☐

MACROINVERTEBRATE TALLY

ESTIMATED COUNT LETTER CODE

A = 1 to 9
B = 10 to 99
C = 100 or more

GROUP 1 TAXA	LETTER CODE	GROUP 2 TAXA	LETTER CODE	GROUP 3 TAXA	LETTER CODE
WATER PENNY LARVAE		DAMSELFLY NYMPHS		BLACKFLY LARVAE	
MAYFLY NYMPHS		DRAGONFLY NYMPHS		AQUATIC WORMS	B
STONEFLY NYMPHS	A	CRANE FLY LARVAE		MIDGE LARVAE	
DOBSONFLY LARVAE		BEETLE LARVAE	A	POUCH SNAILS	B
CADDISFLY LARVAE		CRAYFISH	C	LEECHES	
RIFFLE BEETLE ADULT	A	SCUDS	B		
OTHER SNAILS	A	CLAMS	B		
		SOWBUGS			
NUMBER OF TAXA	3	NUMBER OF TAXA	4	NUMBER OF TAXA	2
(times) INDEX VALUE 3	9	(times) INDEX VALUE 2	8	(times) INDEX VALUE 1	2

CUMULATIVE INDEX VALUE: 19

STREAM QUALITY ASSESSMENT

EXCELLENT (> 22) ☐ GOOD (17-22) ☑

FAIR (11-16) ☐ POOR (< 11) ☐

PLEASE SEND THIS FORM TO:

Assessments In Allen County, Ohio

Beth Seibert
Allen Soil and Water
219 W. Northern Ave.
Lima, Ohio 45801

Assessments Outside Allen County

Scenic Rivers Coordinator
ODNR, Scenic Rivers Program
1889 Fountain Square
Columbus, Ohio 43224

JUN. 2 1 1996

Oak Harbor

7. Gradient and Drainage Area - these numbers will be provided for you by the staff for your site or included in the computer program.

Gradient $\frac{\text{rise}}{\text{run}}$ -:- _____ = 4 ft./mi

Drainage Area (sq. mile) 110

(value associated found in chart in QHEI handbook) _____

Total Score:

14 Substrate Types (0 to 22 Possible) Max 20

8 Instream Cover (1 to 21 Possible) Max 20

17 Channel Morphology (1 to 20 Possible) Max 20

10 Riparian zone and Bank Erosion (1 to 18 possible) Max 10

5 Pool/Glide - Max 12

5 Riffle/Run Quality - Max 8

8 Gradient/Drainage Area - Max 10

67 **TOTAL**

IF TOTAL IS GREATER THAN 60 = WARM WATER HABITAT
45 TO 60 = SOME IMPAIRMENT
32 TO 45 = NOT GOOD FISH HABITAT
LESS THAN 32 = QUESTIONABLE

Genoa

Chart 10: Calculating the Overall Water Quality of a Section of a River System

Date 10/26/95 Time 12 - 2 pm

Test Location Woodville Trail Marker Park

Weather Conditions Overcast, Cool Slight breeze

Water Tests	Text Page	Chart Page
Dissolved Oxygen	27	76
Fecal Coliform	34	77
pH	43	78
BOD	47	79
Temperature	51	80
Total Phosphate	54	81
Nitrates	60	82
Turbidity	66	83
Total Solids	70	84
Water Quality Index	74	85

	Test Results (Column A)		Q-Value (Column B)	Weighting Factor (Column C)	TOTAL (Column D)
1. DO	% sat.		83%	0.17	14.11
2. Fecal Coliform	colonies/100 ml		0	0.16	0
3. pH	units		6.75	0.11	.7425
4. BOD	mg/l		68 mg/l	0.11	7.48
5. Temperature	Δ°C		6°C	0.10	.6
6. Total Phosphate	mg/l		96	0.10	9.6
7. Nitrates	.1	mg/l	95	0.10	9.5
8. Turbidity	NTU or Ft.		.414 ft.	0.08	.033
9. Total Solids	mg/l		401	0.07	28

Overall Water Quality Index 70

Medium/Good

STREAM QUALITY ASSESSMENT FORM

STATION _____ STREAM Portage River SAMPLE # 1

LOCATION Woodville Trail marker Park

COUNTY Sandusky TOWNSHIP/CITY Woodville DATE 10/26/95 TIME 12-2

GROUP OR INDIVIDUALS Genoa High School Advanced Chemistry Class NO. OF PARTICIPANTS 11

DESCRIBE WATER CONDITIONS (COLOR, ODOR, BEDGROWTHS, SURFACE SCUM, ETC.)
Could see the bottom but not real clear didn't smell much, no real surface scum had a few plants growing on rocks

HACH KIT RESULTS (if used) AND OTHER OBSERVATIONS
See Attached

USE BACK OF FORM IF NECESSARY

WIDTH OF RIFFLE 3ft

WATER DEPTH 2ft

WATER TEMP. (°F) 39°

BED COMPOSITION OF RIFFLE (%)

SILT ☐ SAND ☒ GRAVEL (¼"- 2") ☒

COBBLES (2"- 10") ☒ BOULDERS (> 10") ☒

MACROINVERTEBRATE TALLY

ESTIMATED COUNT LETTER CODE
A = 1 to 9
B = 10 to 99
C = 100 or more

GROUP 1 TAXA	LETTER CODE	GROUP 2 TAXA	LETTER CODE	GROUP 3 TAXA	LETTER CODE
WATER PENNY LARVAE		DAMSELFLY NYMPHS		BLACKFLY LARVAE	
MAYFLY NYMPHS		DRAGONFLY NYMPHS		AQUATIC WORMS	A
STONEFLY NYMPHS		CRANE FLY LARVAE		MIDGE LARVAE	
DOBSONFLY LARVAE		BEETLE LARVAE	A	POUCH SNAILS	
CADDISFLY LARVAE		CRAYFISH	B	LEECHES	
RIFFLE BEETLE ADULT		SCUDS			
OTHER SNAILS	A	CLAMS	A		
		SOWBUGS	B		
NUMBER OF TAXA	1	NUMBER OF TAXA	4	NUMBER OF TAXA	1
(times) INDEX VALUE 3	3	(times) INDEX VALUE 2	8	(times) INDEX VALUE 1	1

CUMULATIVE INDEX VALUE

STREAM QUALITY ASSESSMENT

EXCELLENT (> 22) ☐ GOOD (17-22) ☐

FAIR (11-16) ☒ POOR (< 11) ☐

PLEASE SEND THIS FORM TO:

Assessments In Allen County, Ohio	Assessments Outside Allen County
Beth Seibert Allen Soil and Water 219 W. Northern Ave. Lima, Ohio 45801	Scenic Rivers Coordinator ODNR, Scenic Rivers Program 1889 Fountain Square Columbus, Ohio 43224

Chart 10: Calculating the Overall Water Quality of a Section of a River System

Date October 13, 1996 Time 12:00 (approx)

Test Location North Branch - Portage River (Section 14)

Weather Conditions Sunny

Water Tests	Text Page	Chart Page
Dissolved Oxygen	27	76
Fecal Coliform	34	77
pH	43	78
BOD	47	79
Temperature	51	80
Total Phosphate	54	81
Nitrates	60	82
Turbidity	66	83
Total Solids	70	84
Water Quality Index	74	85

	Test Results (Column A)	Q-Value (Column B)	Weighting Factor (Column C)	TOTAL (Column D)
1. DO 8 mg/l	90 % sat.	105	0.17	17.85
2. Fecal Coliform	colonies/100 ml	N/A	0.16	
3. pH	7.8 units	90	0.11	11.86
4. BOD	4 mg/l	63	0.11	6.93
5. Temperature	20 Δ°C	22	0.10	2.2
6. Total Phosphate	.2 mg/l	90	0.10	9.0
7. Nitrates	26.4 mg/l	33	0.10	3.3
8. Turbidity water to shallow	NTU or Ft.	N/A	0.08	
9. Total Solids	mg/l	N/A	0.07	

Overall Water Quality Index 51.14

STREAM QUALITY ASSESSMENT

STATION _____ STREAM Middle Branch Portage River SAMPLE # _____
Section 21
LOCATION _____
COUNTY Wood TOWNSHIP/CITY _____ DATE Sept 28/29 TIME _____
GROUP OR INDIVIDUALS Bowling Green High School Ecology Classes NO. OF PARTICIPANTS 25/29

DESCRIBE WATER CONDITIONS (COLOR, ODOR, BEDGROWTHS, SURFACE SCUM, ETC.)
Clear - to "beige" (suspended sediment in water)

HACH KIT RESULTS (if used) AND OTHER OBSERVATIONS
D.O. 10/12 mg/l

USE BACK OF FORM IF NECESSARY

WIDTH OF RIFFLE 20 yds
WATER DEPTH 18"-24"
WATER TEMP. (°F) 63°F

BED COMPOSITION OF RIFFLE (%)
SILT ☐ SAND ☐ GRAVEL (¼"- 2") ☐
COBBLES (2"- 10") ☐ BOULDERS (> 10") -

MACROINVERTEBRATE TALLY

ESTIMATED COUNT LETTER CODE
A = 1 to 9
B = 10 to 99
C = 100 or more

GROUP 1 TAXA	LETTER CODE	GROUP 2 TAXA	LETTER CODE	GROUP 3 TAXA	LETTER CODE
WATER PENNY LARVAE		DAMSELFLY NYMPHS	A	BLACKFLY LARVAE	
MAYFLY NYMPHS	A	DRAGONFLY NYMPHS		AQUATIC WORMS	B
STONEFLY NYMPHS	A	CRANE FLY LARVAE		MIDGE LARVAE	A
DOBSONFLY LARVAE		BEETLE LARVAE	A	POUCH SNAILS	
CADDISFLY LARVAE	A	CRAYFISH	A	LEECHES	B
RIFFLE BEETLE ADULT	A	SCUDS			
OTHER SNAILS		CLAMS	A		
		SOWBUGS			
NUMBER OF TAXA	4	NUMBER OF TAXA	4	NUMBER OF TAXA	3
(times) INDEX VALUE 3	12	(times) INDEX VALUE 2	8	(times) INDEX VALUE 1	3

CUMULATIVE INDEX VALUE: 23

STREAM QUALITY ASSESSMENT
EXCELLENT (> 22) ☒ GOOD (17-22) ☐
FAIR (11-16) ☐ POOR (< 11) ☐

PLEASE SEND THIS FORM TO:

Justine Magsig
151 CPOB - BGSU
Bowling Green, OH 43403

ONR 5213 (2/90)

[illegible]
Middle Branch - Portage River (Section 2
Sept 28/29 1995

7. Gradient and Drainage Area - these numbers will be provided for you by the staff for your site or included in the computer program.

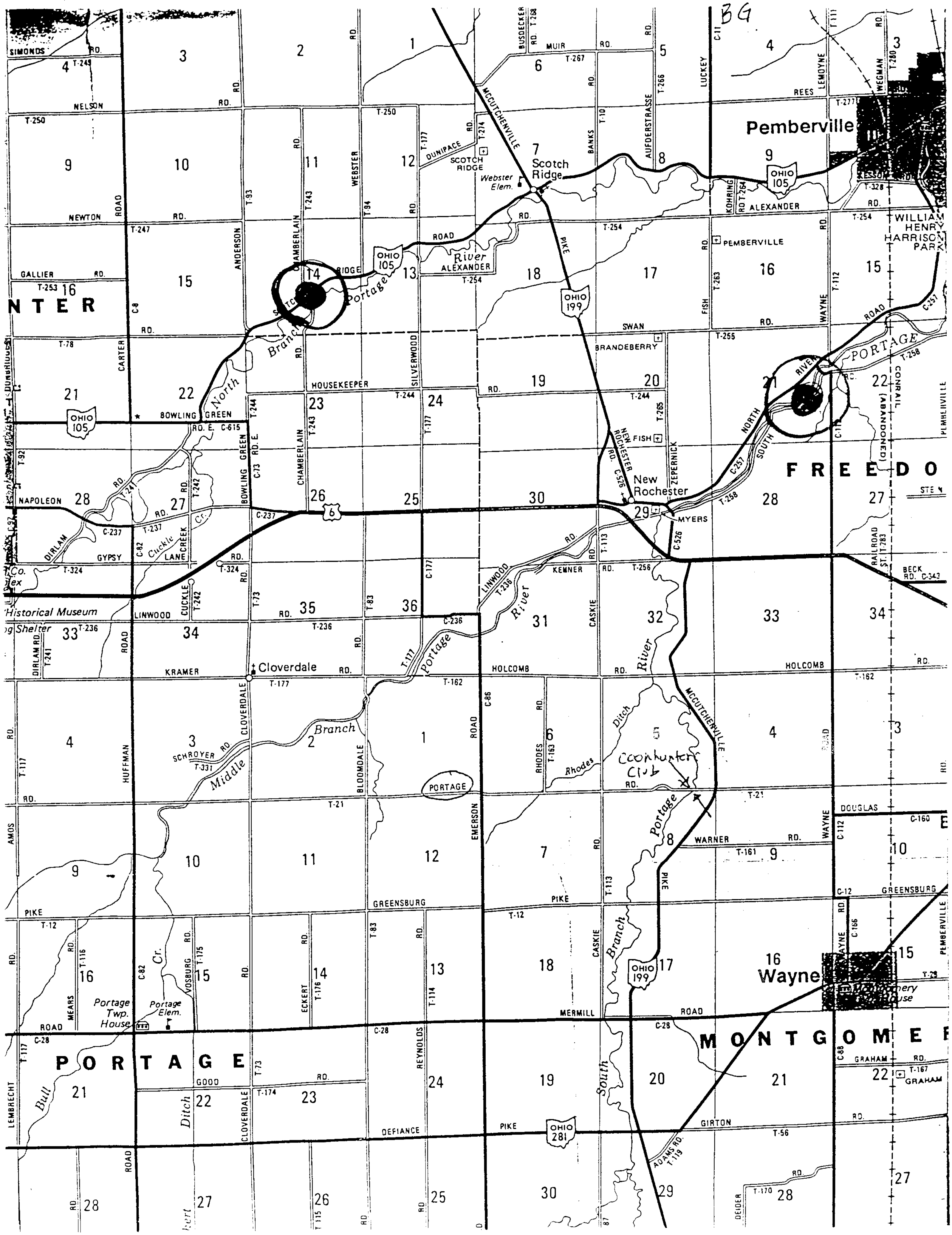
Gradient ________________ -:- ____________ = ______________
rise run

Drainage Area (sq. mile) 581 sq mi
(value associated found in chart in QHEI handbook) ____________

Total Score:

Summary Parameter	Parameter Component	Parameter Scoring Range	Max Score	2 groups	Area Score
1. Substrate	a. Type # of types	0 to ?	20	16/15	15.5
	b. Origin	-2 to 2			
	c. Quality	-2 to 1			
	d. Embeddedness	-2 to 1			
2. Instream Cover	a. Type	1 to 10	20	15/15	15
	b. Amount	1 to 11			
3. Stream Morpholgy	a. Sinuosity	1 to 4	20	15/19	17
	b. Development	1 to 7			
	c. Channelization	1 to 6			
	d. Stability	1 to 3			
4. Riparian Zone	a. Riparian Width	0 to 4	10	7/8	7.5
	b. Flood Plain	0 to 3			
	c. Bank Erosion	1 to 3			
5. Pool/glide and Riffle/run Quality	a. Max Depth	0 to 6	12	7/4	5.5
	b. Pool/Glide form	0 to 2			
	c. Current Velocity	-2 to 4			
	d. Riffle/Run depth	0 to 4	8	6/6	6
	e. Riffle/Run Substrate	-1 to 2			
	f. Riffle/Run	-1 to 2			
6. Gradient	(Drainage Area 581 mi^2)	4 to 10	10		

TOTAL ________



BG
Pemberville
Scotch Ridge
Webster Elem.
New Rochester
Myers
Cloverdale
Wayne
Montgomery House
Portage Twp. House
Portage Elem.
Historical Museum
William Henry Harrison Park
Coonhunters Club
PORTAGE
FREEDOM
MONTGOMERY
NTER
North Branch Portage River
Middle Branch
South Branch Portage River
Rhodes Ditch
Cuckle Creek
Bull Ditch
Ohio 105
Ohio 199
Ohio 281
6
Simonds Rd.
Nelson Rd.
Newton Rd.
Gallier Rd.
Bowling Green Rd. E.
Napoleon Rd.
Dirlam
Gypsy Lane Rd.
Linwood Rd.
Kramer Rd.
Holcomb Rd.
Schroyer Rd.
Portage Rd.
Greensburg Pike
Mermill Road
Defiance Pike
Good Rd.
Girton Rd.
Muir Rd.
Rees
Alexander Rd.
Swan Rd.
Housekeeper Rd.
Kemner Rd.
Warner Rd.
Douglas
Graham Rd.
Dunipace
Brandeberry
Pemberville
Fish
Carter
Huffman Road
Anderson
Chamberlain Rd.
Webster
Silverwood
Cloverdale
Bloomdale
Emerson Road
Rhodes Rd.
Caskie
McCutchenville
Pike
Aufderstrasse
Banks
Luckey
Lemoyne
Wegman
Kohring
Zepernick
Wayne Rd.
Vosburg Rd.
Eckert Rd.
Reynolds Rd.
Mears Rd.
Amos Rd.
Lembrecht Rd.
Adams Rd.
Deider
Busdecker
Conrail (Abandoned)
Railroad St.
Beck Rd.

JUN. 3 1996

Elmwood

Chart 10: Calculating the Overall Water Quality of a Section of a River System

Date May 7,1996 Time 12:00-2:00PM

Test Location Portage River, Mennonite Cemetery, Jerry City Rd. + Emerson Rd.

Weather Conditions Sunny/Partly Cloudy, Warm Air Conditions (70F)

Water Tests	Text Page	Chart Page
Dissolved Oxygen	27	76
Fecal Coliform	34	77
pH	43	78
BOD	47	79
Temperature	51	80
Total Phosphate	54	81
Nitrates	60	82
Turbidity	66	83
Total Solids	70	84
Water Quality Index	74	85

	Test Results (Column A)	Q-Value (Column B)	Weighting Factor (Column C)	TOTAL (Column D)
1. DO	65 % sat.	75	0.17	12.75
2. Fecal Coliform	45 colonies/100 ml	53	0.16	8.48
3. pH	8 units	83	0.11	9.13
4. BOD	1 mg/l	95	0.11	10.45
5. Temperature	5 Δ°C	72	0.10	7.2
6. Total Phosphate	0.7 mg/l	45	0.10	4.5
7. Nitrates	9 mg/l	55	0.10	5.5
8. Turbidity	3 NTU or Ft.	78	0.08	6.24
9. Total Solids	1000 mg/l	20	0.07	1.4

Overall Water Quality Index 65.65

STREAM QUALITY ASSESSMENT

TATION 2 STREAM South Branch, Portage River SAMPLE # 2

OCATION Mennonite Cemetary, Emerson + Jerry City Rds.

OUNTY Wood TOWNSHIP/CITY Perry DATE May 7, 1996 TIME 12:00 PM

ROUP OR NDIVIDUALS Elmwood High School NO. OF PARTICIPANTS 8

ESCRIBE WATER CONDITIONS (COLOR, ODOR, BEDGROWTHS, URFACE SCUM, ETC.)

Murky

HACH KIT RESULTS (if used) AND OTHER OBSERVATIONS

65.65

USE BACK OF FORM IF NECESSARY

IDTH OF RIFFLE 20'

ATER DEPTH 3'

ATER TEMP. (°F) 45

BED COMPOSITION OF RIFFLE (%)

SILT 65 SAND 30 GRAVEL (¼"- 2") 15

COBBLES (2"- 10") 5 BOULDERS (> 10") 5

MACROINVERTEBRATE TALLY

ESTIMATED COUNT LETTER CODE

A = 1 to 9
B = 10 to 99
C = 100 or more

GROUP 1 TAXA	LETTER CODE	GROUP 2 TAXA		LETTER CODE	GROUP 3 TAXA	LETTER CODE
WATER PENNY LARVAE 3	A	DAMSELFLY NYMPHS			BLACKFLY LARVAE	
MAYFLY NYMPHS		DRAGONFLY NYMPHS			AQUATIC WORMS	
STONEFLY NYMPHS 2	A	CRANE FLY LARVAE			MIDGE LARVAE	
DOBSONFLY LARVAE		BEETLE LARVAE			POUCH SNAILS	
CADDISFLY LARVAE		CRAYFISH			LEECHES	
RIFFLE BEETLE ADULT		SCUDS	10	B		
OTHER SNAILS		CLAMS	44	C		
		SOWBUGS				
NUMBER OF TAXA	2	NUMBER OF TAXA	2		NUMBER OF TAXA	0
(times) INDEX VALUE 3	6	(times) INDEX VALUE 2	4		(times) INDEX VALUE 1	0

CUMULATIVE INDEX VALUE

10

STREAM QUALITY ASSESSMENT

EXCELLENT (> 22) ☐ GOOD (17-22) ☐

FAIR (11-16) ☐ POOR (< 11) ☒

PLEASE SEND THIS FORM TO:

Justine Magsig
151 CPOB - BGSU
Bowling Green, OH 43403

DNR 5213 (2/90)

7. Gradient and Drainage Area - these numbers will be provided for you by the staff for your site or included in the computer program.

Elmwood

Gradient 10 (rise) -:- 11400 (run) = 0.09%

Drainage Area (sq. mile) 635.9

(value associated found in chart in QHEI handbook) 4

Total Score:

8 Substrate Types (0 to 22 Possible) Max 20

14 Instream Cover (1 to 21 Possible) Max 20

15 Channel Morphology (1 to 20 Possible) Max 20

6.5 Riparian zone and Bank Erosion (1 to 18 possible) Max 10

9 Pool/Glide - Max 12

5 Riffle/Run Quality - Max 8

4 Gradient/Drainage Area - Max 10

75.5 **TOTAL**

IF TOTAL IS GREATER THAN 60 = WARM WATER HABITAT
45 TO 60 = SOME IMPAIRMENT
32 TO 45 = NOT GOOD FISH HABITAT
LESS THAN 32 = QUESTIONABLE IF AREA CAN SUPPORT