

Region WCR County Chippewa ^{- 1991 -} Date 10.10.84 Classification LFF

Water Body: Duncan Creek, trib to...

Discharger: Nelson Filter Plant

If classified as Limited Forage Fish (LFF) or Limited Aquatic Life (LAL), check any of the following Use Attainability Analysis factors that apply:

Naturally occurring pollutant concentrations prevent the attainment of use

Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met

Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place

Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or operate such modification in a way that would result in the attainment of the use

Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses

Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact
adequate flow, poor habitat

Supporting Evidence included

- Biological Data (fish/invert)
- Chemical Data (temp, D.O., etc.)
- Physical Data (flow, depth, etc.)
- Habitat Description
- Site Description/Map
- Other:

Comments:

-adequate flow, poor habitat ∴ LFF

Jack/Jo

STATE OF WISCONSIN

CORRESPONDENCE/MEMORANDUM

Date: September 19, 1989

File Ref: 3200

To: Duane Schuettepelz - WR/2

From: Paul La Liberte *Paul*

Subject: Water Quality Standards Review for a Tributary to Duncan Creek at Big Stone Inc. in Bloomer, Wisconsin

Since the original stream classification was done in 1985, no new information about this stream was obtained. Big Stone Inc. still discharges cannery cooling water into it on a seasonal basis. As with most other canneries, chlorine levels in excess of .1 mg/l exist in the effluent. No changes in the stream classification are indicated at this time.

c: Steve Thon

WR6\PL005.plm

INSTRUCTIONS TO SENDER:
REMOVE YELLOW COPY FOR YOUR FILE.
SEND REMAINDER OF FORM INTACT WITH CARBONS TO PERSON ADDRESSED.

TO: Dorey Erickson

FROM: Paul J. Gilbert

6-25-91

SUBJECT-MESSAGE

Re Limits for consolidated thermoplastics, Chippewa Falls discharge to a trib to Duncan Cr. (General Permit)

Based on the presence of sport fish during a fish kill investigation in August 1987, the receiving water should be classified warmwater fish & aquatic life. USGS has estimated the Q_{7.10} at this site as 0.04 cfs.

Sorry for the delay.

cc J. Sullivan ~~WR2~~ WR2

SIGNED

DATE

REPLY

J. Ball

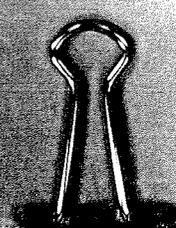
WR2

Classification

Trib To Duncan Creek

SIGNED

DATE



CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date: April 23, 1990

File Ref: 3200

To: Nelson Filter-Bloomer Facility File

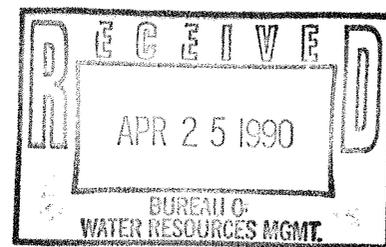
From: Paul LaLiberte



Subject: Water Quality Standards Review

Since the last water quality standards review for the Nelson Filter tributary to Duncan Creek (1986), no additional information has been collected. The stream classification therefore should remain the same. No changes in applicable water quality standards are needed. Future attempts to rehabilitate the trout fishery in Duncan Creek below Como Lake should include an evaluation of the thermal influence of this cooling water discharge and the one from Indianhead Foods (different tributary) as well as the influence of Lake Como and the City of Bloomer POTW.

cc → Duane Schuettpelz WR/2
Steve Thon



CLASSIFICATION OF AN UNNAMED TRIBUTARY
TO DUNCAN CREEK
NEAR THE NELSON FILTER PLANT
AT BLOOMER, WISCONSIN

EVALUATION DATE: 10/10/86

BY
PAUL LALIBERTE

PL

JAN 10 1986

An unnamed stream flowing northeast through S8, 30N, 5W, near Bloomer, WI, was evaluated to determine the appropriate surface water classification as specified in NR 104, Wisconsin Administrative Code. The stream flows near the Nelson Filter Plant which is considering the stream for a cooling water discharge.

The stream is indicated on the USGS map as being intermittent upstream from a spring located at the first town road west of Highway 53. Land use in the watershed is agriculture. On the date of the survey, significant flow was present, both above and below the spring. Some of the creek is bordered by wetlands. The stream is about 5 feet wide and .7 feet deep with a sand and silt bottom. Scouring and deposition result in most of the bottom being unstable and is the main factor limiting habitat. The source of the erosional materials is probably agricultural land, as the stream banks are well vegetated and stable. Available aquatic habitat was rated as poor (see attached data).

A D-frame net was used to survey stream biology. Samples were collected upstream and downstream from the spring. Due to the lack of aquatic habitat, bank vegetation was sampled. Fish collected in the net included tolerant forage species (creek chub, stickleback, and sand shiner) and one intolerant species (blacknose dace). A diverse group of macroinvertebrates were found including 36 species in 8 orders. The predominant orders were mayflies and Diptera. The Hilsenhoff biotic index at the two sites indicated good water quality.

Recommended Classification:

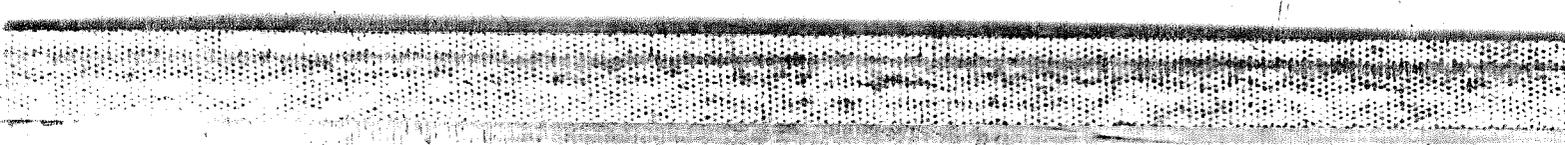
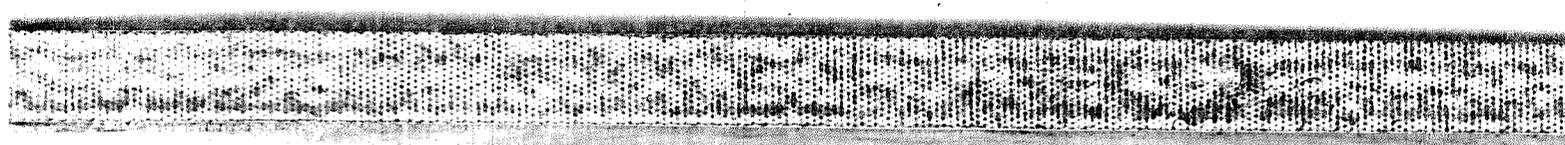
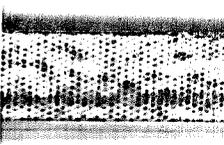
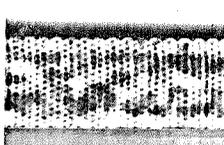
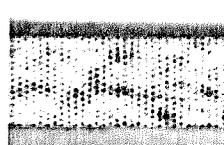
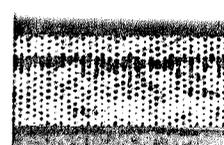
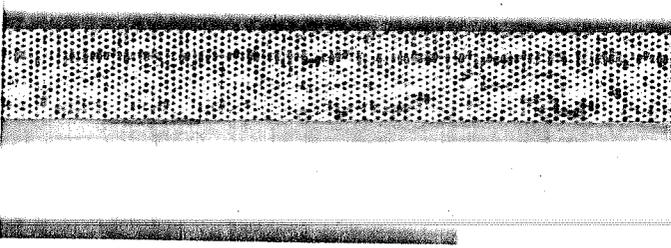
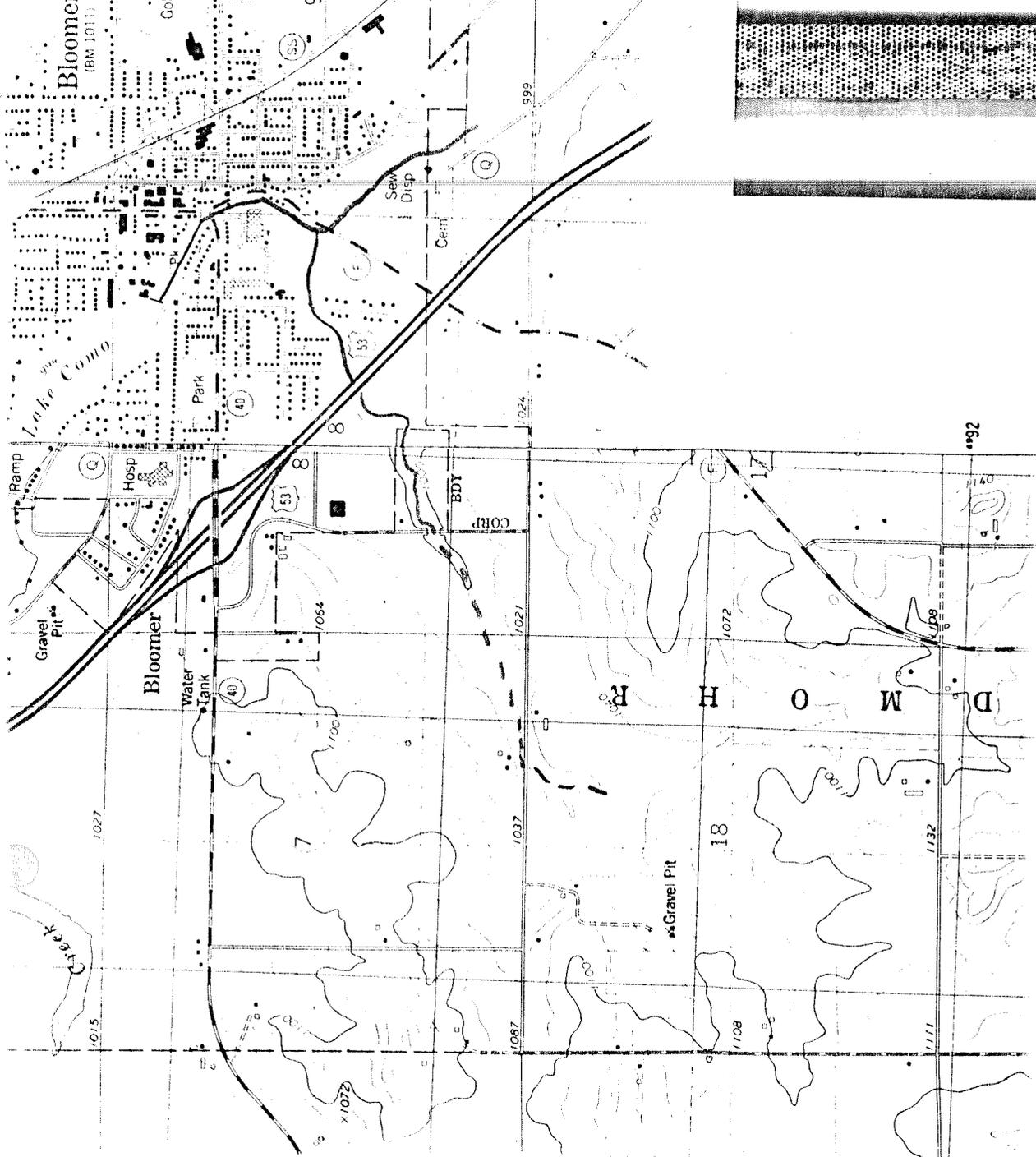
In recognition of the apparent good water quality, adequate flow, and poor habitat, the entire length of the creek should be classified as capable of supporting intermediate aquatic life (use class D). Effluent limits for discharges should conform to those contained in NR 210, Wisconsin Administrative Code. The applicable thermal limit for discharges to this stream would be 120°F.

PL:dd

cc: Steve Thon

→ Duane Schuettpelz - WR/2
Marty Lueck, Material Engineer, Nelson Division, Hwy 51 West,
P.O. Box 428, Stoughton, WI 53589

PLT294



*** WEST CENTRAL DISTRICT BIOTIC INDEX REPORT ***

SAMPLE ID#: 861010-09-01
 AMPLE LOCATION: S08, T30N, R09W
 ROJECT NAME: NELSON FILTER SSC
 OLLECTOR: LALIBERTE, P.
 RTER: POWERS, B.

WATERBODY NAME: UNNAMED TRIB. BLOOMER
 STORET STATION#: 2151800
 FIELD NUMBERS: 01
 WATER TEMP (CELCIUS): 6
 AVERAGE STREAM WIDTH (FT): 4
 AVERAGE STREAM DEPTH (FT): 1
 AVERAGE CURRENT VELOCITY
 ESTIMATED CURRENT VELOCITY: MODERATE

ONOMIST: DIMICK, J.
 AMPLING DEVICE: D FRAME NET
 AMPLIFIED HABITAT: RUN
 BSTRATE SAMPLED:
 VEGETATION

LOCATION DESCRIPTION:

TRIB. TO DUNCAN CRK. 200' UPSTREAM FROM 1ST RD. W. OF HWY 53

OMMENTS:

	*** TAXA ***	*** SPECIES ***	TAXONOMIC TOL		ORGANISM ID	ORGANISM COUNT		
			KEY USED	VAL		REP1	REP2	REP3
LECOPTERA								
PERLODIDAE								
	ISOPERLA	SLOSSONAE	*1	2.00	01060411	1	0	0
HEMEROPTERA								
BAETIDAE								
	BAETIS	BRUNNEICOLOR	*1	4.00	02010101	3	0	0
		FLAVISTRIGA	*1	4.00	02010112	3	0	0
		POOR SPECIMEN	*1		02010115	1	0	0
LEPTOPHLEBIIDAE								
	LEPTOPHLEBIA		*1	4.00	02070100	37	0	0
DOPTERA								
BRACHYCENTRIDAE								
	BRACHYCENTRUS	OCCIDENTALIS	*2	1.00	04010104	1	0	0
HYDROPSYCHIDAE								
	CERATOPSYCHE	SPARNA	*3	1.00	04040707	1	0	0
PHRYGANEIDAE								
	PTILOSTOMIS		*1	5.00	04120400	2	0	0
DIPTERA								
CERATOPOGONIDAE								
	PROBEZZIA		*1	6.00	08030600	5	0	0
SIMULIIDAE								
	SIMULIUM	VERECUNDUM	*4	6.00	08110406	1	0	0
TIPULIDAE								
	DICRANOTA		*1	3.00	08140200	3	0	0
	PEDICIA		*1	6.00	08140900	1	0	0
	PRIONOCERA		*1		08141500	1	0	0
	TIPULA		*1	4.00	08141200	5	0	0
CHIRONOMIDAE								
	BRILLIA		*2	5.00	08050300	2	0	0
	CONCHAPELOPIA		*2	6.00	08058200	1	0	0
	CORYNONEURA		*1	7.00	08051200	1	0	0
	LARSIA		*2	6.00	08053000	2	0	0
	MICROPSECTRA		*1	7.00	08053400	9	0	0
	POLYPEDILUM	NR. SCALAEUM	*2	7.00	08055005	1	0	0
	RHEOTANYTARSUS		*1	6.00	08055900	3	0	0

*** WEST CENTRAL DISTRICT BIOTIC INDEX REPORT ***

AMPLE ID# 861010-09-01

PAGE 2

*** TAXA ***	*** SPECIES ***	TAXONOMIC KEY USED	TOL VAL	ORGANISM ID	ORGANISM COUNT	REP1	REP2	REP3
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PTERA

CHIRONOMIDAE

TANYTARSUS

THIENEMANNIMYIA

ZALUTSCHIA

✓ *1	6.00	08056800	2	0	0
*2		08057000	26	0	0
✓ *1	7.00	08057300	1	0	0

*** TOTALS: *** 113

0

0

*** BIOTIC INDEX: *** 4.694

Taxonomic Key Code References

*1	HILSENHOFF 1981,82
*2	HILSENHOFF 1981,85
*3	HILSENHOFF 1981,86
*4	HILSENHOFF 1985

*** WEST CENTRAL DISTRICT BIOTIC INDEX REPORT ***

AMPLE ID#: 861010-09-02
 AMPL LOCATION: 508,30N,09W
 PROJECT NAME: NELSON FILTER SSC
 COLLECTOR: LALIBERTE, P.
 ORDER: POWERS, B.
 ECONOMIST: DIMICK, J.
 SAMPLING DEVICE: D FRAME NET
 SAMPLED HABITAT: RUN
 SUBSTRATE SAMPLED:
 VEGETATION

WATERBODY NAME: UNNAMED TRIB. BLOOMER
 STORET STATION#: 2151800
 FIELD NUMBERS: 02
 WATER TEMP (CELCIUS): 6
 AVERAGE STREAM WIDTH (FT) 5
 AVERAGE STREAM DEPTH (FT) .5
 AVERAGE CURRENT VELOCITY
 ESTIMATED CURRENT VELOCITY: MODERATE

LOCATION DESCRIPTION:

TRIB TO DUNCAN CR. 100' DOWNSTREAM FROM 1ST TWN. RD W. OF HWY 53

COMMENTS:

	*** TAXA ***	*** SPECIES ***	TAXONOMIC TOL		ORGANISM ID	ORGANISM COUNT		
			KEY USED	VAL		REP1	REP2	REP3
HEMEROPTERA								
BAETIDAE								
	BAETIS	BRUNNEICOLOR	*1	4.00	02010101	13	0	0
		FLAVISTRIGA	*1	4.00	02010112	3	0	0
		MACDUNNOUGH	*1	5.00	02010106	1	0	0
		POOR SPECIMEN	*1		02010115	1	0	0
LEPTOPHLEBIIDAE								
	LEPTOPHLEBIA		*1	4.00	02070100	39	0	0
TRICHOPTERA								
BRACHYCENTRIDAE								
	BRACHYCENTRUS	OCCIDENTALIS	*2	1.00	04010104	3	0	0
HYDROPSYCHIDAE								
	HYDROPSYCHE	BETTENI	*3	6.00	04040201	1	0	0
PHRYGANEIDAE								
	PTILOSTOMIS		*1	5.00	04120400	2	0	0
LIMNAPHILIDAE								
	HYDATOPHYLAX	ARGUS	*1	2.00	04080501	1	0	0
GALOPTERA								
SIALIDAE								
	SIALIS		*1	4.00	05020100	5	0	0
DIPLEOPTERA								
ELMIDAE								
	DUBIRAPHIA		*1	6.00	07020200	1	0	0
PTERA								
CERATOPOGONIDAE								
	CERATOPOGON	CULICOIDITHORAX	*1		08031901	1	0	0
	PROBEZZIA		*1	6.00	08030600	11	0	0
SIMULIIDAE								
	SIMULIUM	VERECUNDUM	*4	6.00	08110406	2	0	0
		VITTATUM	*4	8.00	08110407	1	0	0
	PUPAE		*5		08110700	1	0	0
TABANIDAE								
	CHRYSOPS		*1	6.00	08130100	5	0	0
EMPHIPODA								
TALITRIDAE								
	HYALLELA	AZTECA	*5	9.00	09020101	3	0	0

*** WEST CENTRAL DISTRICT BIOTIC INDEX REPORT ***

SAMPLE ID# 861010-09-02

PAGE 2

*** TAXA ***	*** SPECIES ***	TAXONOMIC KEY USED	TOL VAL	ORGANISM ID	ORGANISM COUNT	REP1	REP2	REP3
SOPODA								
ASELLIDAE								
ASELLUS	INTERMEDIUS	*6	10.00	10010101	3	0	0	0
DIPTERA								
CHIRONOMIDAE								
BRILLIA		*2	5.00	08050300	1	0	0	0
CONCHAPELOPIA		*2	6.00	08058200	1	0	0	0
EUKIEFFERIELLA	SP.A	*2	8.00	08052301	1	0	0	0
MICROPSECTRA		*1	7.00	08053400	2	0	0	0
POLYPEDILUM	NR.SCALAEUM	*2	7.00	08055005	2	0	0	0
PROCLADIUS		*1	9.00	08055200	10	0	0	0
STICTOCHIRONOMUS		*1	9.00	08056500	1	0	0	0
THIENEMANNIMYIA		*2		08057000	3	0	0	0

*** TOTALS: *** 118

0

*** BIOTIC INDEX: *** 5.277

0

Taxonomic Key Code References

- *1 HILSENHOFF 1981,82
- *2 HILSENHOFF 1981,85
- *3 HILSENHOFF 1981,86
- *4 HILSENHOFF 1985
- *5 PENNAK 1978
- *6 WILLIAMS 1972

Stream 2151800 Reach Location above 1st Turn Rd W of Hwy 53 Reach Score/Rating _____
 County Chip Date _____ Evaluator L. Libovte Classification _____

Rating Item	Category			
	Excellent	Good	Fair	Poor
Watershed Erosion	No evidence of significant erosion. Stable forest or grass land. Little potential for future erosion. 8	Some erosion evident. No significant "raw" areas. Good land mgmt. practices in area. Low potential for significant erosion. 10	Moderate erosion evident. Erosion from heavy storm events obvious. Some "raw" areas. Potential for significant erosion. 14	Heavy erosion evident. Probable erosion from any run off. 16
Watershed Nonpoint Source	No evidence of significant source. Little potential for future problem. 8	Some potential sources (roads, urban area, farm fields). 10	Moderate sources (small wetlands, tile fields, urban area, intense agriculture). 14	Obvious sources (major wetland drainage, high use urban or industrial area, feed lots, impoundment). 16
Bank Erosion, Failure	No evidence of significant erosion or bank failure. Little potential for future problem. 4	Infrequent, small areas, mostly healed over. Some potential in extreme floods. 8	Moderate frequency and size. Some "raw" spots. Erosion potential during high flow. 16	Many eroded areas. "Raw" areas frequent along straight sections and bends. 20
Bank Vegetative Protection	90% plant density. Diverse trees, shrubs, grass. Plants healthy with apparently good root system. 6	70-90% density. Fewer plant species. A few barren or thin areas. Vegetation appears generally healthy. 9	50-70% density. Dominated by grass, sparse trees and shrubs. Plant types and conditions suggest poorer soil binding. 15	<50% density. Many raw areas. Thin grass, few if any trees and shrubs. 18
Lower Bank Channel Capacity	Ample for present peak flow plus some increase. Peak flow contained. W/D ratio <7. 8	Adequate. Overbank flows rare. W/D ratio 8-15. 10	Barely contains present peaks. Occasional overbank flow. W/D ratio 15-25. 14	Inadequate, overbank flow common. W/D ratio >25. 16
Lower Bank Deposition	Little or no enlargement of channel or point bars. 6	Some new increase in bar formation, mostly from coarse gravel. 9	Moderate deposition of new gravel and coarse sand on old and some new bars. 15	Heavy deposits of fine material, increased bar development. 18
Bottom Scouring and Deposition	Less than 5% of the bottom affected by scouring and deposition. 4	5-30% affected. Scour at constrictions and where grades steepen. Some deposition in pools. 8	30-50% affected. Deposits and scour at obstructions, constrictions and bends. Some filling of pools. 16	More than 50% of the bottom changing nearly year long. Pools almost absent due to deposition. 20
Bottom Substrate/ Available Cover	Greater than 50% rubble, gravel or other stable habitat. 2	30-50% rubble, gravel or other stable habitat. Adequate habitat. 7	10-30% rubble, gravel or other stable habitat. Habitat availability less than desirable. 17	Less than 10% rubble gravel or other stable habitat. Lack of habitat is obvious. 22
Avg. Depth Riffles and Runs	Cold >1' 0 Warm >1.5' 0	6" to 1' 6 10" to 1.5' 6	3" to 6" 18 6" to 10" 18	<3" 24 <6" 24
Avg. Depth of Pools	Cold >4' 0 Warm >5' 0	3' to 4' 6 4' to 5' 6	2' to 3' 18 3' to 4' 18	<2' 24 <3' 24
Flow, at Rep. Low Flow	Cold >2 cfs 0 Warm >5 cfs 0	1-2 cfs 6 2-5 cfs 6	.5-1 cfs 18 1-2 cfs 18	<.5 cfs 24 <1 cfs 24
Pool/Riffle, Run/Bend Ratio (distance between riffles ÷ stream width)	5-7. Variety of habitat. Deep riffles and pools. 4	7-15. Adequate depth in pools and riffles. Bends provide habitat. 8	15-25. Occasional riffle or bend. Bottom contours provide some habitat. 16	>25. Essentially a straight stream. Generally all flat water or shallow riffle. Poor habitat. 20
Aesthetics	Wilderness characteristics, outstanding natural beauty. Usually wooded or un-pastured corridor. 8	High natural beauty. Trees, historic site. Some development may be visible. 10	Common setting, not offensive. Developed but uncluttered area. 14	Stream does not enhance aesthetics. Condition of stream is offensive. 16
Column Totals:	<u>6</u>	<u>8</u>	<u>76</u>	<u>124</u>

Column Scores E _____ +G _____ +F _____ +P _____ = 214 = Score

<70 = Excellent, 71-129 = Good, 130-200 = Fair, >200 = Poor

Stream _____ Reach Location Downstream from 1st Turn Rd Wolf Hwy 53 Reach Score/Rating _____
 County Chip Date _____ Evaluator L. Libberle Classification _____

Rating Item	Category				
	Excellent	Good	Fair	Poor	
Watershed Erosion	No evidence of significant erosion. Stable forest or grass land. Little potential for future erosion. <u>8</u>	Some erosion evident. No significant "raw" areas. Good land mgmt. practices in area. Low potential for significant erosion. <u>10</u>	Moderate erosion evident. Erosion from heavy storm events obvious. Some "raw" areas. Potential for significant erosion. <u>14</u>	Heavy erosion evident. Probable erosion from any run off. <u>16</u>	
Watershed Nonpoint Source	No evidence of significant source. Little potential for future problem. <u>8</u>	Some potential sources (roads, urban area, farm fields). <u>10</u>	Moderate sources (small wetlands, tile fields, urban area, intense agriculture). <u>14</u>	Obvious sources (major wetland drainage, high use urban or industrial area, feed lots, impoundment). <u>16</u>	
Bank Erosion, Failure	No evidence of significant erosion or bank failure. Little potential for future problem. <u>4</u>	Infrequent, small areas, mostly healed over. Some potential in extreme floods. <u>8</u>	Moderate frequency and size. Some "raw" spots. Erosion potential during high flow. <u>16</u>	Many eroded areas. "Raw" areas frequent along straight sections and bends. <u>20</u>	
Bank Vegetative Protection	90% plant density. Diverse trees, shrubs, grass. Plants healthy with apparently good root system. <u>6</u>	70-90% density. Fewer plant species. A few barren or thin areas. Vegetation appears generally healthy. <u>9</u>	50-70% density. Dominated by grass, sparse trees and shrubs. Plant types and conditions suggest poorer soil binding. <u>15</u>	<50% density. Many raw areas. Thin grass, few if any trees and shrubs. <u>18</u>	
Lower Bank Channel Capacity	Ample for present peak flow plus some increase. Peak flow contained. W/D ratio <7. <u>8</u>	Adequate. Overbank flows rare. W/D ratio 8-15. <u>10</u>	Barely contains present peaks. Occasional overbank flow. W/D ratio 15-25. <u>14</u>	Inadequate, overbank flow common. W/D ratio >25. <u>16</u>	
Lower Bank Deposition	Little or no enlargement of channel or point bars. <u>6</u>	Some new increase in bar formation, mostly from coarse gravel. <u>9</u>	Moderate deposition of new gravel and coarse sand on old and some new bars. <u>15</u>	Heavy deposits of fine material, increased bar development. <u>18</u>	
Bottom Scouring and Deposition	Less than 5% of the bottom affected by scouring and deposition. <u>4</u>	5-30% affected. Scour at constrictions and where grades steepen. Some deposition in pools. <u>8</u>	30-50% affected. Deposits and scour at obstructions, constrictions and bends. Some filling of pools. <u>16</u>	More than 50% of the bottom changing nearly year long. Pools almost absent due to deposition. <u>20</u>	
Bottom Substrate/ Available Cover	Greater than 50% rubble, gravel or other stable habitat. <u>2</u>	30-50% rubble, gravel or other stable habitat. Adequate habitat. <u>7</u>	10-30% rubble, gravel or other stable habitat. Habitat availability less than desirable. <u>17</u>	Less than 10% rubble gravel or other stable habitat. Lack of habitat is obvious. <u>22</u>	
Avg. Depth Riffles and Runs	Cold >1' 0 Warm >1.5' 0	6" to 1' 0 10" to 1.5' 0	6 3" to 6" 6 6" to 10"	18 <3" 18 <6"	24 24
Avg. Depth of Pools	Cold >4' 0 Warm >5' 0	3' to 4' 0 4' to 5' 0	6 2' to 3' 6 3' to 4'	18 <2' 18 <3'	24 24
Flow, at Rep. Low Flow	Cold >2 cfs 0 Warm >5 cfs 0	1-2 cfs 0 2-5 cfs 0	6 .5-1 cfs 6 1-2 cfs	18 <.5 cfs 18 <1 cfs	24 24
Pool/Riffle, Run/Bend Ratio (distance between riffles ÷ stream width)	5-7. Variety of habitat. Deep riffles and pools. <u>4</u>	7-15. Adequate depth in pools and riffles. Bends provide habitat. <u>8</u>	15-25. Occasional riffle or bend. Bottom contours provide some habitat. <u>16</u>	>25. Essentially a straight stream. Generally all flat water or shallow riffle. Poor habitat. <u>20</u>	
Aesthetics	Wilderness characteristics, outstanding natural beauty. Usually wooded or un-pastured corridor. <u>8</u>	High natural beauty. Trees, historic site. Some development may be visible. <u>10</u>	Common setting, not offensive. Developed but uncluttered area. <u>14</u>	Stream does not enhance aesthetics. Condition of stream is offensive. <u>16</u>	

Column Totals: 6 8 76 124

Column Scores E _____ +G _____ +F _____ +P _____ = 214 = Score

<70 = Excellent, 71-129 = Good, 130-200 = Fair, >200 = Poor

CLASSIFICATION OF A TRIBUTARY TO DUNCAN CREEK
FLOWING THROUGH BLOOMER, CHIPPEWA COUNTY
LOWER CHIPPEWA RIVER BASIN
(BIG STONE INCORPORATED)

EVALUATION DATE: 6/12/85

By Paul LaLiberte

D. Schuettpelz - wem:

*Fair classification.
Potential?*

AUG 14 1985

An unnamed tributary to Duncan Creek flowing through Bloomer, Wisconsin, was evaluated to determine the appropriate surface water classification for setting effluent limits as specified in NR 104, Wisconsin Administrative Code. A cannery owned by Big Stone Inc. of Chaska, Minnesota, and located on the north end of the City of Bloomer, discharges non-contact, chlorinated cooling water to the stream. Discharge monitoring reports for the facility indicate the presence of chlorine and BOD₅ (<10 mg/l) in the cooling water effluent, which flows during the canning season at 20,000 to 40,000 gpd.

The stream is indicated on a U.S.G.S. map as having continuous flow starting at a point about 700 feet upstream from the cannery. On the date of the survey, with dry conditions prevailing, flow was observed well upstream from this point, possibly a full mile. The stream is about 2 miles long and has about a 2 square mile watershed. The stream probably has a Q_{7,10} near zero. The U.S.G.S map indicates a fork of the stream to the north, which is no longer present. Topography is generally quite flat.

The stream can be divided into 2 reaches based on land use. Above Bloomer, the stream flows through cropland and pastures with no cover other than bank grasses. The stream substrate is primarily silt, clay, and detritus with significant growths of terrestrial and aquatic vegetation in the channel. Floating scum has accumulated in several places which appears to be a combination of rotting vegetation and manure. Field spreading of manure was in progress in the area at the time. Some tiling and draining of the adjacent farmland has occurred. The stream appears to have been straightened at several sites at least once. A significant amount of refuse was in the stream (boards, boots, wire, dead birds, etc.). The reach was obviously impacted by agricultural activities.

The reach of the stream within the city limits is often contained by concrete walls and receives much of the city's storm water runoff. Some cover is provided by trees and buildings. The stream substrate is primarily shifting sand with only a few rock riffles. Some urban refuse is in the stream.

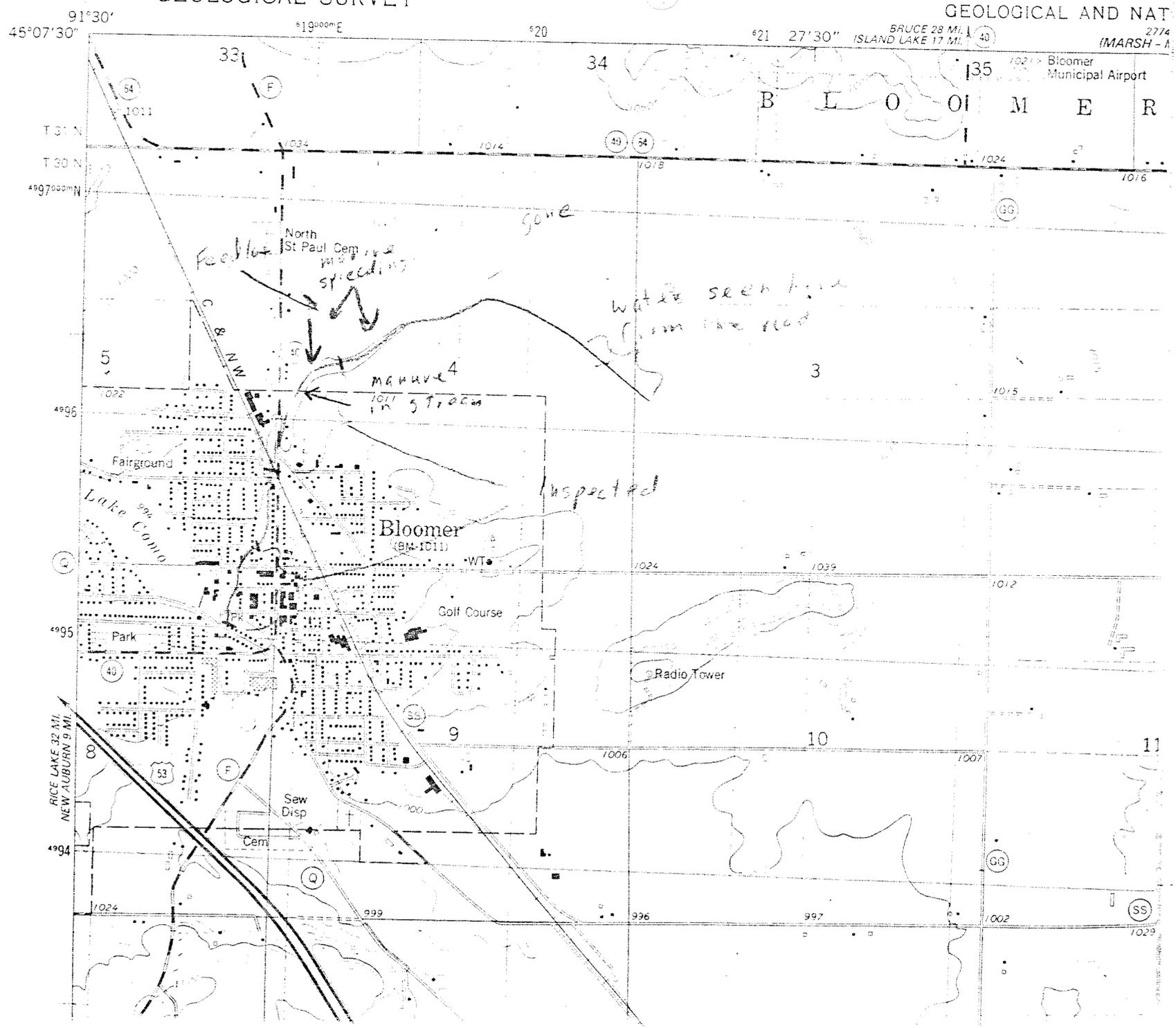
A D-frame net was used to survey stream biology. Collections from the upstream agricultural reach contained very few aquatic organisms including brook stickleback, isopods, chironomidae, and simuliidae. Insufficient specimens were collected for application of the Hilsenhoff biotic index for this reach. However, the reach evidently did not have an abundant, healthy aquatic community. The best riffle available in the downstream, urban reach was sampled and had a biotic index of 4.37 indicating very good water quality (using Hilsenhoff's 1985 revision). These results indicate that in the few locations where good aquatic habitat is available, a healthy macroinvertebrate population can be supported with the majority of the stream supporting a limited, non-diverse aquatic community. The overall habitat rating of the stream is poor. Animal waste handling practices may be impacting the water quality in the upstream reaches with the sources being diffuse and intermittent.

Early morning stream DO and temperature readings were taken during the survey and revealed DO of 8-9.5 mg/l and a temperature of 7-10°C. Stream DO was 78% of saturation at a site in the city and 66% just upstream from the cannery outfall.

RECOMMENDED CLASSIFICATION

For its entire length, the Bloomer tributary should be classified as capable of supporting intermediate aquatic life (use class D). Effluent limits for the present discharge at Big Stone Inc. should conform, where appropriate, to those included in NR 104.02(3)(a), Wisconsin Administrative Code. Specifically, a chlorine limit of 0.5 mg/l is needed. In addition, a temperature limit of 120°F should be applied.

cc: Darrell Solberg → Duane Schuettpelz - WRM/2 Tom Roberts
PLT196



Stream Bloomer Trib Durcon Cr Reach Location entire Reach Score/Rating Poor
 County Chip Date 6-12-85 Evaluator Laliberte Classification _____

Rating Item	Category			
	Excellent	Good	Fair	Poor
Watershed Erosion	No evidence of significant erosion. Stable forest or grass land. Little potential for future erosion. 8	Some erosion evident. No significant "raw" areas. Good land mgmt. practices in area. Low potential for significant erosion. 10	Moderate erosion evident. Erosion from heavy storm events obvious. Some "raw" areas. Potential for significant erosion. 14	Heavy erosion evident. Probable erosion from any run off. 16
Watershed Nonpoint Source	No evidence of significant source. Little potential for future problem. 8	Some potential sources (roads, urban area, farm fields). 10	Moderate sources (small wetlands, tile fields, urban area, intense agriculture). 14	Obvious sources (major wetland drainage, high use urban or industrial area, feed lots, impoundment). 16
Bank Erosion, Failure	No evidence of significant erosion or bank failure. Little potential for future problem. 4	Infrequent, small areas, mostly healed over. Some potential in extreme floods. 8	Moderate frequency and size. Some "raw" spots. Erosion potential during high flow. 16	Many eroded areas. "Raw" areas frequent along straight sections and bends. 20
Bank Vegetative Protection	90% plant density. Diverse trees, shrubs, grass. Plants healthy with apparently good root system. 6	70-90% density. Fewer plant species. A few barren or thin areas. Vegetation appears generally healthy. 9	50-70% density. Dominated by grass, sparse trees and shrubs. Plant types and conditions suggest poorer soil binding. 15	<50% density. Many raw areas. Thin grass, few if any trees and shrubs. 18
Lower Bank Channel Capacity	Ample for present peak flow plus some increase. Peak flow contained. W/D ratio <7. 8	Adequate. Overbank flows rare. W/D ratio 8-15. 10	Barely contains present peaks. Occasional overbank flow. W/D ratio 15-25. 14	Inadequate, overbank flow common. W/D ratio >25. 16
Lower Bank Deposition	Little or no enlargement of channel or point bars. 6	Some new increase in bar formation, mostly from coarse gravel. 9	Moderate deposition of new gravel and coarse sand on old and some new bars. 15	Heavy deposits of fine material, increased bar development. 18
Bottom Scouring and Deposition	Less than 5% of the bottom affected by scouring and deposition. 4	5-30% affected. Scour at constrictions and where grades steepen. Some deposition in pools. 8	30-50% affected. Deposits and scour at obstructions, constrictions and bends. Some filling of pools. 16	More than 50% of the bottom changing nearly year long. Pools almost absent due to deposition. 20
Bottom Substrate/ Available Cover	Greater than 50% rubble, gravel or other stable habitat. 2	30-50% rubble, gravel or other stable habitat. Adequate habitat. 7	10-30% rubble, gravel or other stable habitat. Habitat availability less than desirable. 17	Less than 10% rubble gravel or other stable habitat. Lack of habitat is obvious. 22
Avg. Depth Riffles and Runs	Cold >1' 0 Warm >1.5' 0	6" to 1' 6 10" to 1.5' 6	3" to 6" 18 6" to 10" 18	<3" 24 <6" 24
Avg. Depth of Pools	Cold >4' 0 Warm >5' 0	3' to 4' 6 4' to 5' 6	2' to 3' 18 3' to 4' 18	<2' 24 <3' 24
Flow, at Rep. Low Flow	Cold >2 cfs 0 Warm >5 cfs 0	1-2 cfs 6 2-5 cfs 6	.5-1 cfs 18 1-2 cfs 18	<.5 cfs 24 <1 cfs 24
Pool/Riffle, Run/Bend Ratio (distance between riffles ÷ stream width)	5-7. Variety of habitat. Deep riffles and pools. 4	7-15. Adequate depth in pools and riffles. Bends provide habitat. 8	15-25. Occasional riffle or bend. Bottom contours provide some habitat. 16	>25. Essentially a straight stream. Generally all flat water or shallow riffle. Poor habitat. 20
Aesthetics	Wilderness characteristics, outstanding natural beauty. Usually wooded or un-pastured corridor. 8	High natural beauty. Trees, historic site. Some development may be visible. 10	Common setting, not offensive. Developed but uncluttered area. 14	Stream does not enhance aesthetics. Condition of stream is offensive. 16

Column Totals: _____

Column Scores E 0 + G 0 + F 59 + P 184 = 243 = Score

<70 = Excellent, 71-129 = Good, 130-200 = Fair, >200 = Poor

MACROINVERTEBRATE FIELD SAMPLING DATA

Form 3200-52 4-81

BASIN: _____

STREAM: 7 COUNTY Chap

SAMPLE NO. _____

PRIMARY STATION NO. _____

LOCATION: 1/4, 1/4, S, T, N, R

WATERSHED _____

DATE: 06/12/85
mo day yr.

Blauner Trib to Duncan Cr
@ mouth

BIOTIC INDEX: _____

Chemical Sample? yes no

06:10 TIME (24 hr)

AT SAMPLE SITE: 15 AVG. WIDTH (ft)

9.5 DO (mg/l)

3 AVG. DEPTH (ft)

9 TEMP (°C) Sat = 11.6

____ AVG. VELOCITY (measured fps)

____ pH (s.u.) 7.0

4 EST. VELOCITY (fps) 1. very slow (.2); 2. slow (.2-.5); 3. moderate (.5-1.5); 4. fast (1.5)

____ CONDUCTIVITY (umhos)

SAMPLED HABITAT: 1. Riffle 2. Run 3. Pool best substrate in entire stream

SAMPLER: 1. D Frame Net 2. Artificial Substrate 3. Other _____

SUBSTRATE AT SITE LOCATION (%):

____ Bedrock 40 Rubble (2 1/2 - 10" dia.) 20 Sand _____ Clay _____ Muck
____ Boulders (10" dia.) 20 Gravel (1/10 - 2 1/2" dia.) _____ Silt _____ Detritus _____ Debris & Vegetation

SUBSTRATE SAMPLED (%): SAME AS ABOVE OR

____ Bedrock _____ Rubble (2/12 - 10" dia.) _____ Sand _____ Clay _____ Muck
____ Boulders (10" dia.) _____ Gravel (1/10 - 2 1/2" dia.) _____ Silt _____ Detritus _____ Debris & Vegetation

AQUATIC VEGETATION: 0 % of Total Stream Channel at Sample Site

OBSERVED INSTREAM CONDITIONS AT SAMPLING SITE LIMITING W.Q.

	not present	slight	moderate	significant	Comments
Sludge Deposits	n	sl	m	s	not at immediate sample site - artificial riffle
Silt & Sediment Deposits	n	sl	m	s	
Turbidity	n	sl	m	s	
Chlorine or Toxic Scour	n	sl	m	s	
Macrophytes	n	sl	m	s	
Filamentous Algae	n	sl	m	s	
Planktonic Algae	n	sl	m	s	
Slimes	n	sl	m	s	
Iron Bacteria	n	sl	m	s	
	n	sl	m	s	

FACTORS WHICH MAY BE AFFECTING SAMPLING SITE

degree of influence:	General Watershed			At Site direct impact	Comments
	not present	possible	important		
Livestock Pasturing	np	pos	imp	di	concrete banks
Barnyard Runoff	np	pos	imp	di	
Cropland Runoff	np	pos	imp	di	
Tile Drains	np	pos	imp	di	
Septic Systems	np	pos	imp	di	
Streambank Erosion	np	pos	imp	di	
Channel Ditching & Straightening	np	pos	imp	di	
Downstream Impoundment	np	pos	imp	di	
Upstream Impoundment	np	pos	imp	di	
Low Flow	np	pos	imp	di	
Wetlands	np	pos	imp	di	
Urban Runoff	np	pos	imp	di	
Construction Runoff	np	pos	imp	di	
Point Source (specify type)	np	pos	imp	di	
Other (specify)	np	pos	imp	di	

PERCEIVED WATER QUALITY: 1. Excellent 2. Good 3. Fair 4. Poor 5 Very Poor

SAMPLE TRACKING INFORMATION

Time Spent Collecting Sample (minutes) 5 Replicate #'s 0 Dates Artificial Sampler In _____ Out _____
 Sampler Collector Laliberte Sorter Lalib Identifier _____
 Date _____ Date 6-12-85 Date _____

picked 11 squares

MACROINVERTEBRATE FIELD SAMPLING DATA

Form 3200-52 4-81

BASIN: _____

STREAM: Blower Run COUNTY Chip

SAMPLE NO. _____

PRIMARY STATION NO. _____

LOCATION: _____ 1/4, _____ 1/4, S _____, T _____ N, R _____

WATERSHED _____

DATE: 06/12/85
no day yr.

above the city

BIOTIC INDEX: _____

Chemical Sample? yes no

06:30 TIME (24 hr)

AT SAMPLE SITE: 12' AVG. WIDTH (ft)

8.1 DO (mg/l) SAT = 12.2

.25 AVG. DEPTH (ft)

2 TEMP (°C)

_____ AVG. VELOCITY (measured fps)

_____ pH (s.u.)

or
_____ EST. VELOCITY (fps) 1. very slow (2); 2. slow

_____ CONDUCTIVITY (umhos)

(.2-.5); 3. moderate (.5-1.5); 4. fast (1.5)

SAMPLED HABITAT: 1. Riffle 2. Run 3. Pool

SAMPLER: 1. D Frame Net 2. Artificial Substrate _____ 3. Other _____

SUBSTRATE AT SITE LOCATION (%):

_____ Bedrock _____ Rubble (2 1/2 - 10" dia.) 10 Sand _____ Clay _____ Muck
_____ Boulders (10" dia.) _____ Gravel (1/10 - 2 1/2" dia.) 80 Silt _____ Detritus 10 Debris & Vegetation

SUBSTRATE SAMPLED (%): SAME AS ABOVE OR/

_____ Bedrock _____ Rubble (2/12 - 10" dia.) _____ Sand _____ Clay _____ Muck
_____ Boulders (10" dia.) _____ Gravel (1/10 - 2 1/2" dia.) _____ Silt _____ Detritus 100 Debris & Vegetation

AQUATIC VEGETATION: 30% of Total Stream Channel at Sample Site

Elodea Terrestriale

OBSERVED INSTREAM CONDITIONS AT SAMPLING SITE LIMITING W.Q.

	not present	slight	moderate	significant	Comments
Sludge Deposits	n	sl	m	<u>s</u>	mouline
Silt & Sediment Deposits	n	sl	m	<u>s</u>	
Turbidity	n	sl	<u>m</u>	<u>s</u>	
Chlorine or Toxic Scour	<u>n</u>	sl	m	s	Algal
Macrophytes	n	sl	m	<u>s</u>	
Filamentous Algae	n	sl	m	<u>s</u>	
Planktonic Algae	n	sl	m	<u>s</u>	
Slimes	n	sl	m	<u>s</u>	
Iron Bacteria	n	<u>sl</u>	m	<u>s</u>	
				<u>s</u>	

FACTORS WHICH MAY BE AFFECTING SAMPLING SITE

degree of influence:	General Watershed			At Site	Comments
	not present	possible	important	direct impact	
Livestock Pasturing	np	pos	imp	<u>di</u>	
Barnyard Runoff	np	pos	imp	<u>di</u>	
Cropland Runoff	np	pos	imp	<u>di</u>	
Tile Drains	np	pos	imp	<u>di</u>	
Septic Systems	np	<u>pos</u>	imp	<u>di</u>	
Streambank Erosion	np	pos	imp	<u>di</u>	
Channel Ditching & Straightening	np	pos	imp	<u>di</u>	
Downstream Impoundment	<u>np</u>	pos	imp	di	
Upstream Impoundment	<u>np</u>	pos	imp	di	
Low Flow	np	pos	imp	<u>di</u>	
Wetlands	np	<u>pos</u>	imp	<u>di</u>	
Urban Runoff	<u>np</u>	pos	imp	di	
Construction Runoff	np	<u>pos</u>	imp	di	
Point Source (specify type)	<u>np</u>	pos	imp	di	
Other (specify)	<u>np</u>	pos	imp	di	

PERCEIVED WATER QUALITY: 1. Excellent 2. Good 3. Fair 4. Poor 5. Vary Poor

SAMPLE TRACKING INFORMATION

Time Spent Collecting Sample (minutes) 60 Replicate #'s _____
 Sampler Collector Caliberne Sorter _____ Identifier _____
 Date _____ Date _____ Date _____

not preserved - see back

