Stream Classification For Tributary To The Manitowoc River Near The Village of St. Nazianz

By Dennis C. Weisensel

Introduction

Stream classification for tributary to the Manitowoc River in the St. Nazianz area was requested by Central Office. The classifications were conducted on two different dates as the stream classification requested by Central Office were requested at two different times. One stream classification survey was conducted on September 12, 1979, and the other stream classification was conducted on October 31, 1979. This report contains two maps which indicate the stream classification by color code. The first map contains the classification of streams done on September 12, 1979. The second map contains the stream classification which was conducted on October 31, 1979. There were six stations involved in the stream classification survey. Table 1 contains the dissolved oxygen and temperature readings with additional flows at some locations. Also attached to this report are pictures at the station locations 1-6 indicated.

The tributary to the Manitowoc River in the St. Nazianz area breaks into several branches. To clarify which branch I will be addressing I have designated alphabetic numbers to the various branches. The alphabetical numbers will go from A through E. These alphabetical numbers are located on the maps 1 and 2.

Results

Stream A was previously classified as noncontinuous intermediate variance. St. Nazianz's wastewater treatment facility currently discharges to stream A. Stream E was surveyed on September 12, 1979. Three stations were established on tributary E. The uppermost station was located at County Trunk C. The intermediate station was located at Baer Road and the third station was located at Carsten's Lake Road. The stream at County Trunk C station had a DO of 10.6 ppm and temperature of 11°C with a flow of .08 cfs. The stream was approximately 1-2 feet wide with depths of 6-10 inches. The stream contained natural stream bed and bank which were abundant with grassy vegetation along most portions of the waterway. Macroinvertebrates present were caddisfly, Baetidae, Heptageniidae, simulids and Gerridae. Cold temperatures and the continuous flow at the time of the survey indicated that the stream's origin was springs located above County Trunk C.

Baer Road is one-half mile north of County Trunk C. The dissolved oxygen at Baer Road was 9.6 ppm and temperature was 14°C. The flow at Baer Road was .135 cfs. The stream was two feet wide and 6-8 inches deep. The stream has a natural bank and bed which is heavily grassed with partial wooded areas. Macroinvertebrates present were Asellus, caddisfly, mayfly and Gerridae.

Carsten's Lake Road is located one mile north of County Trunk C. The stream at this location had a DO of 9.4 ppm with a temperature of 16°C. The flow at Carsten's Lake Road was .0936 cfs. The stream flows through wooded areas and it appears that it may have been dredged some time in the past. The channel is straight and the water is noticeably silty. This silty condition varied from the above stations which were very clear waters. Tributary A and E meet at Carsten's Lake Road.

Tributary D flows northerly into tributary C which flows easterly into the mainstem of the tributary to the Manitowoc River. Tributary D was examined at three locations; Baer Road, Greendale Road and County Trunk C. The stations established were numerically numbered 4, 5 and 6 respectively. Tributary D at Baer Road (station number 4) was approximately two feet wide and six inches deep. The waterway was grassed lined with agricultural practices occurring up to the banks of the waterway. The waterway was straight-lined indicating that it had been ditched or dredged in the past. Macroinvertebrates present at this location were mayfly, Asellus and caddisfly. The substrate of the stream was silt and muck. There were minnows noted at this location. The flow was .07 cfs on October 31, 1979.

The stream at station number 5 (Greendale Road) was approximately two feet wide and six inches deep. The stream was slow moving and no riffle pool relations were evident. Agricultural practices were occurring up to the banks of the stream and recent dredging had occurred in the area of the bridge. The stream downstream from the Greendale bridge flowed through a wooded type area. The substrate was silt and muck. Minnows were present at the station. The dissolved oxygen at the Greendale Road was 11.2 ppm and temperature was 11°C.

The tributary D at County Trunk C (station 6) had banks lined with grasses and sedges. The land upstream from County Trunk C is fallow land consistently of lowland type grasses and sedges. The land use downstream from County Trunk C is agricultural land and agricultural practices are taking place up to the stream banks. The dissolved oxygen at County Trunk C station was 10.2 ppm and the temperature was 10°C. The flow was .06 cfs. The stream flows underneath County Trunk C and flows for approximately 25 feet and then enters a drainage tile system. The stream bed after and downstream from the drainage tile collector is present and appears to have been dredged recently. The tile system discharges before Greendale Road where the stream returns to a surface water system. Macroinvertebrates present at County Trunk C (station number 6) were Hydropsyche and Gammarus.

Conclusion

The tributary on which the St. Nazianz's wastewater treatment facility discharges to (tributary A) has been classified previously as noncontinuous intermediate aquatic life variance. Tributary E is classified as continuous fish and aquatic life. This will include tributary E and the mainstem all the way to the Manitowoc River. Tributary C is classified as continuous fish and aquatic. Tributary B is classified as continuous fish and aquatic life. Tributary D which flows into tributary C is classified as continuous fish and aquatic life.

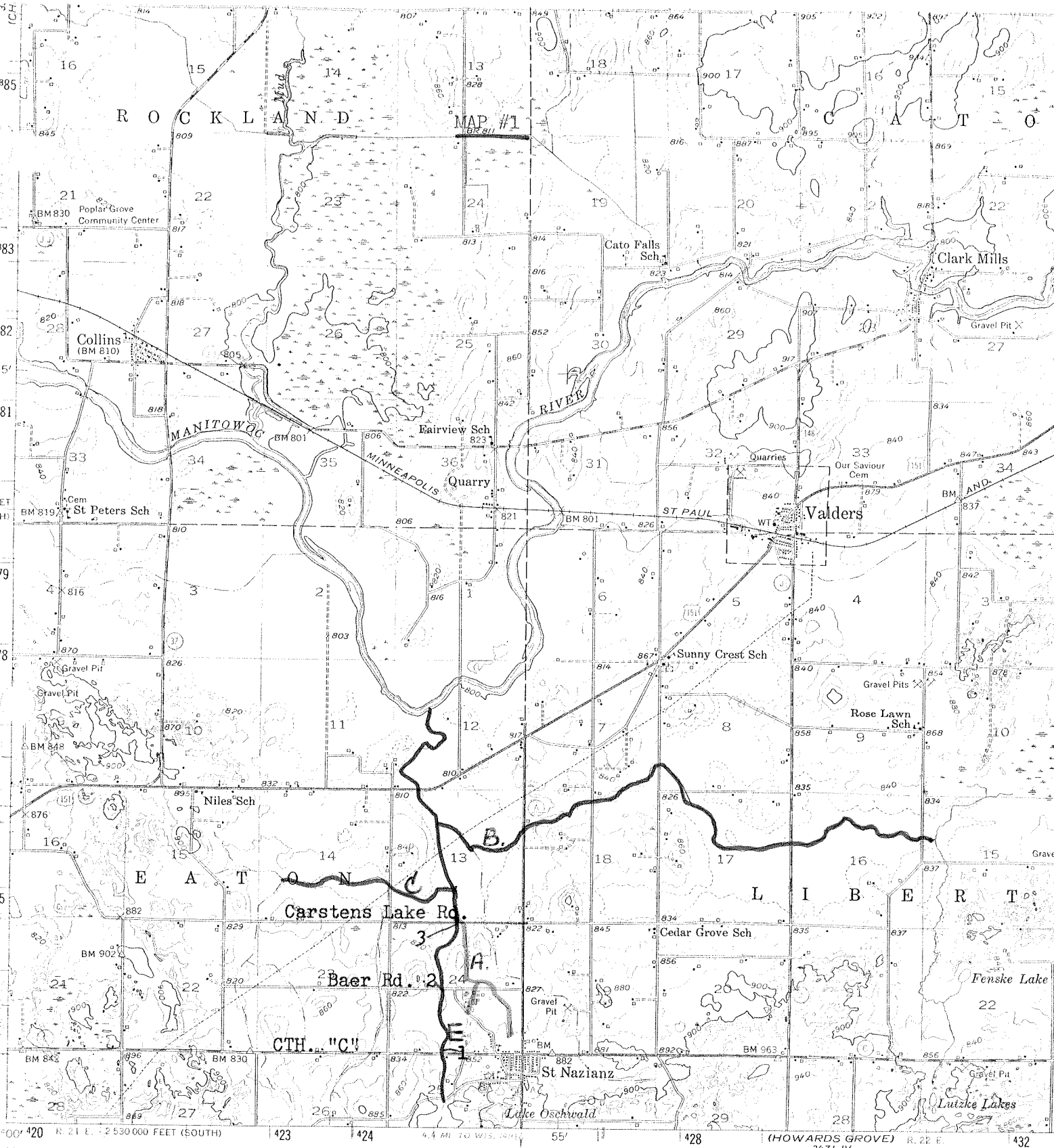
The classification of tributary E and the mainstem all the way to the Manitowoc River shall require a change in the Administrative Code for the entire sector of stream located in Section 13. That sector should be changed to be continuous fish and aquatic life. The tributaries of D and E exhibit characteristics of springfed waters. They contain minimal flows but the presence of macroinvertebrates in the streams indicate perpetually wet conditions or year round flows. Minnows were noted in tributary D as far up as station 5 and it is recognized that minnows may be migratory to this location.

DCW:ct
11/79

Table 1

Station No.	DO	Temperature	Flow
1	10.6	11°C	.08 cfs
2	9.6	14°C	.135 cfs
3	9.4	16°C	.0936 cfs
4			.07 cfs
5	11.2	11°C	
6	10.2	10°C	.06 cfs

DCW:ct
11/79



Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography from aerial photographs by Kelsh plotter and by planetable surveys 1954. Aerial photographs taken 1951

Polyconic projection. 1927 North American datum
10000-foot grids based on Wisconsin coordinate system, north and south zones

1000-meter Universal Transverse Mercator grid ticks, zone 16, shown in blue

Continuous Fish & Aquatic

Noncontinuous-intermediate

SCALE 1:62500

1 0 1 2 3

6000 9000 12000 15000 18

1 5 0 1 2 3 4

MN GN

0°37' 11 MILS

1½° 27 MILS

UTM GRID AND 1954 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

CONTOUR INTERVAL 20 FEET
DASHED LINES REPRESENT 10-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

FOR SALE BY U. S. GEOLOGICAL SURVEY, WASHINGTON, D. C. 20242
AND WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY, MADISON, WISCON
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUE

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Facing upstream

Facing downstream

Station #5

Facing upstream

Facing downstream

Station #6

Facing upstream

Facing downstream

CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date: September 18, 1979 File Ref: 3207

To: Central Office - Madison (M. Tusler)

From: Dennis C. Weisensel

Dennis C. Weisensel

SEP 19 1979

Subject: Stream Classification for a Tributary to the Manitowoc River Near the Village of St. Nazianz

A stream classification survey of a tributary to the Manitowoc River from the St. Nazianz area was conducted on September 12, 1979.

Results:

County Trunk "C" station had a D.O. of 10.6 ppm and temperature of 11°C with a flow of .08 C.F.S. The stream was 1'-2' wide with depths of 6"-10". Macroinvertebrate present were Caddisfly, Baetidae, Heptageniidae, Simulids and Gerridae. Cold temperatures indicate the stream's origin to be springs although none were located above County Trunk "C". The banks were abundant with grassy vegetation which shaded the entire stream bed.

Baer Road is ½ mile north of County Trunk "C". The D.O. was 9.6 ppm, temperature 14°C and a flow of .135 C.F.S. The stream was 2' wide and 6-8" deep. Macroinvertebrate present were Asellus, Caddisfly, Mayfly and Gerridae. The stream had natural heavily grassed banks with partial wooded areas.

Carsten Lake Road is located 1 mile north of County Trunk "C". The stream at this location has a D.O. of 9.4 ppm, temperature of 16°C and flow of .0936 C.F.S. The stream flows through a wooded area and may have been dredged 30 or 40 years ago. The channel is straight and the water is noticeably silted.

Remarks:

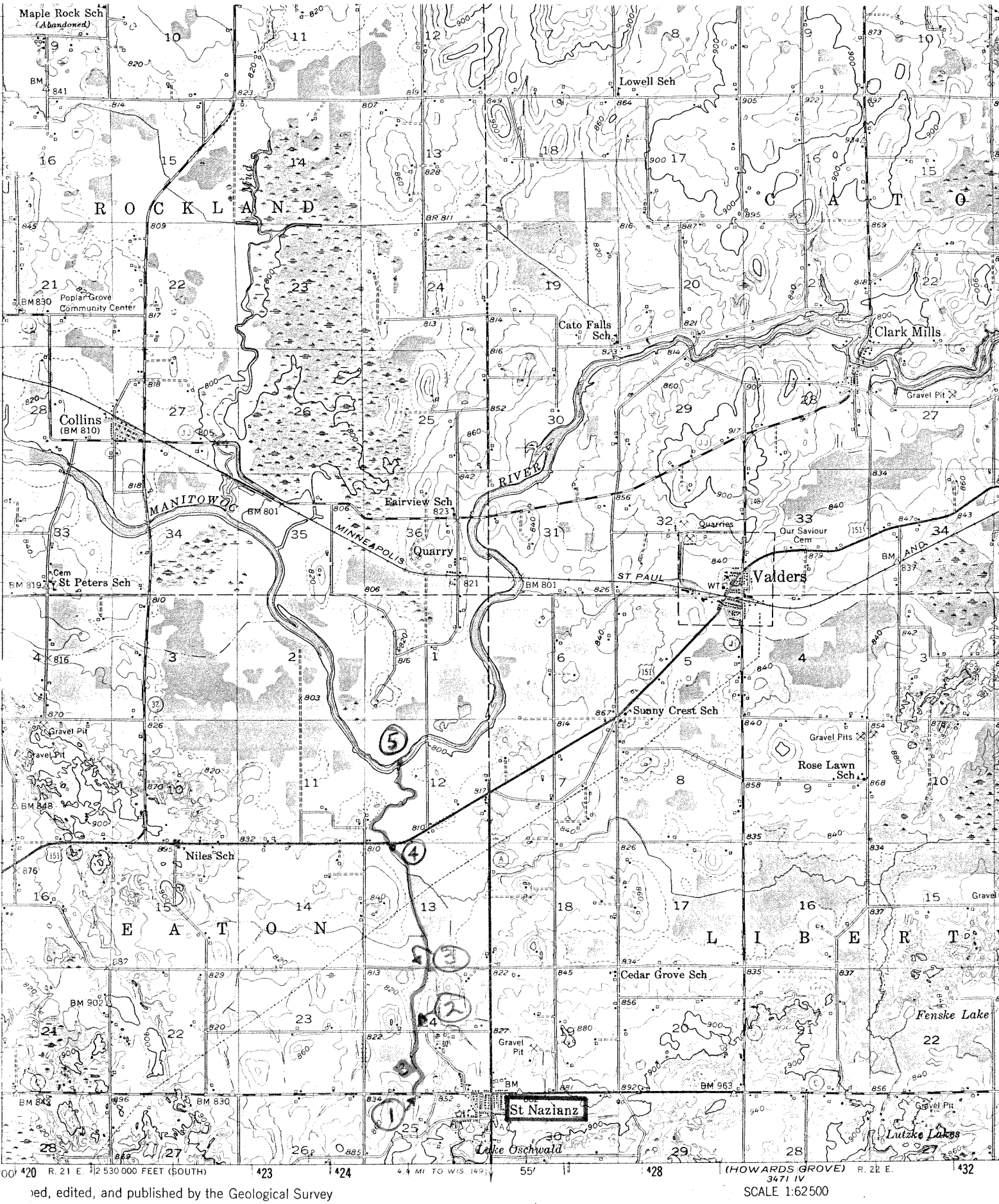
The tributary on which the St. Nazianz wastewater treatment facility discharges to meets the stream classified at the Carstens Lake Road location. The wastewater treatment plant tributary was classified as per a memo dated August 7, 1975 as continuous, intermediate aquatic life down to State Highway 151. The Administrative Code has the same reaches classified as non-continuous - intermediate aquatic life. In view of additional data gathered, a change in the classification is eminent.

Conclusion:

The tributary to the Manitowoc River located in the W½, Section 24, T. 18 N., R. 21 E., shall be continuous - fish and aquatic from its origin downstream to the Manitowoc River. This shall require a change in the Administrative Code for the entire sector of stream located in Section 13. That sector should be changed to be continuous - fish and aquatic. A formal report will follow at a later date.

DCW:sh

cc: Dave Hildreth
Jeff Haack



SCALE 1:62500

1 ½ 0 1 2 3

3000 0 3000 6000 9000 12000 15000 18

1 .5 0 1 2 3 4

CONTOUR INTERVAL 20 FEET
DASHED LINES REPRESENT 10-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

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Polyconic projection. 1927 North American datum
10,000-foot grids based on Wisconsin coordinate system, central and south zones

1000-meter Universal Transverse Mercator grid ticks, zone 16, shown in blue

MN
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0°37'
11 MILS
1½°
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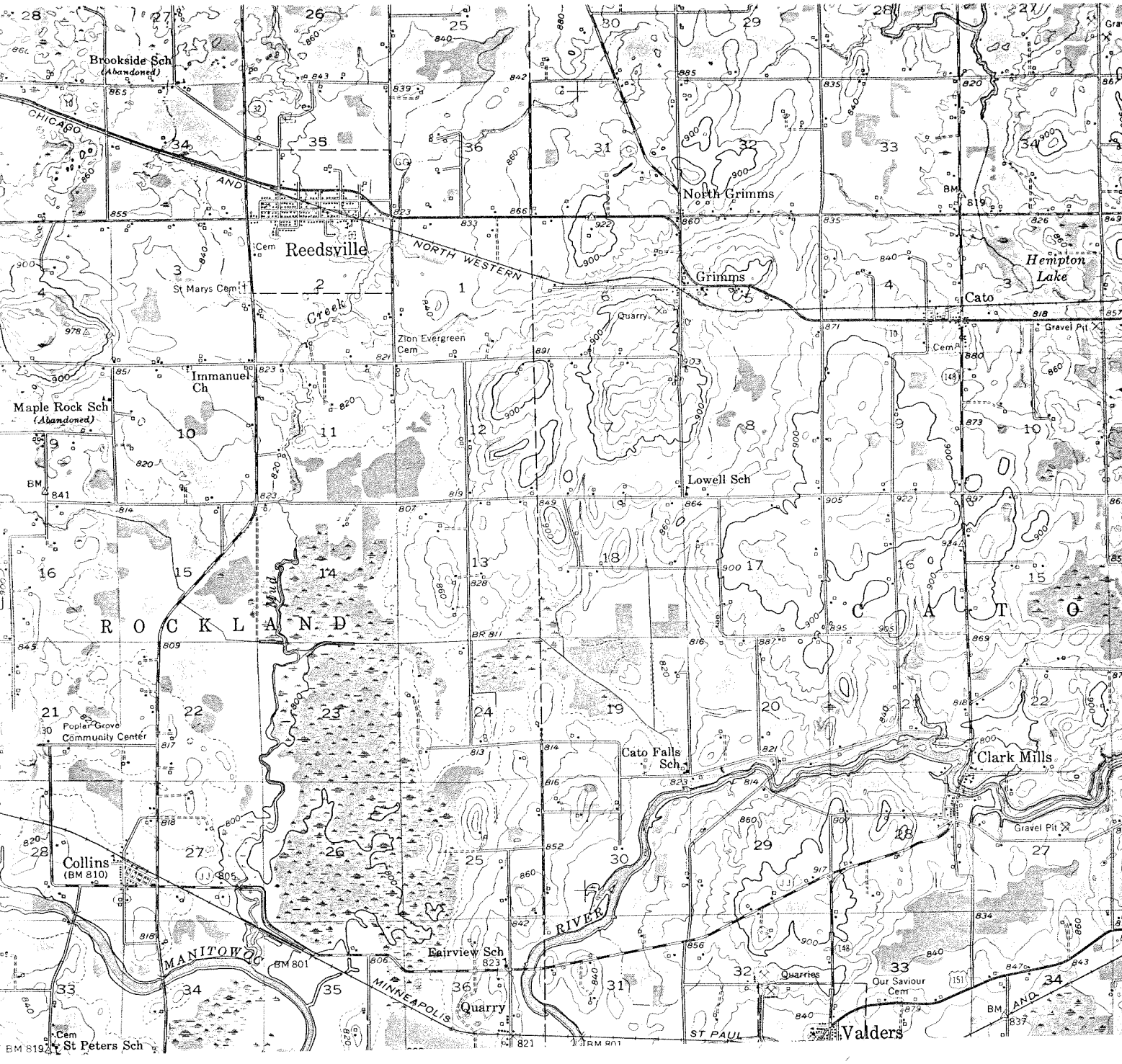
FOR SALE BY U. S. GEOLOGICAL SURVEY, WASHINGTON, D. C. 20242


Brookside Sch
(Abandoned)
CHICAGO AND NORTH WESTERN
Reedsville
Cem
St Marys Cem
Creek
Mud
North Grimms
Grimms
Quarry
Hempton Lake
Cato
Gravel Pit
Zion Evergreen Cem
Immanuel Ch
Maple Rock Sch
(Abandoned)
Lowell Sch
ROCKLAND
CATO
Poplar Grove Community Center
Cato Falls Sch
Clark Mills
Collins
(BM 810)
Fairview Sch
BM 801
MANITOWOC
MINNEAPOLIS
ST PAUL
RIVER
Quarry
Quarries
Our Saviour Cem
Valders
Cem
St Peters Sch
BM 819

St. Nazianz

Manitowoc County

Survey Date: 8-7-75

The effluent from the St. Nazianz STP is discharged to a tributary of the Manitowoc River. There is a small continuous flow always present upstream of the STP. Additional tributaries join the flow downstream.

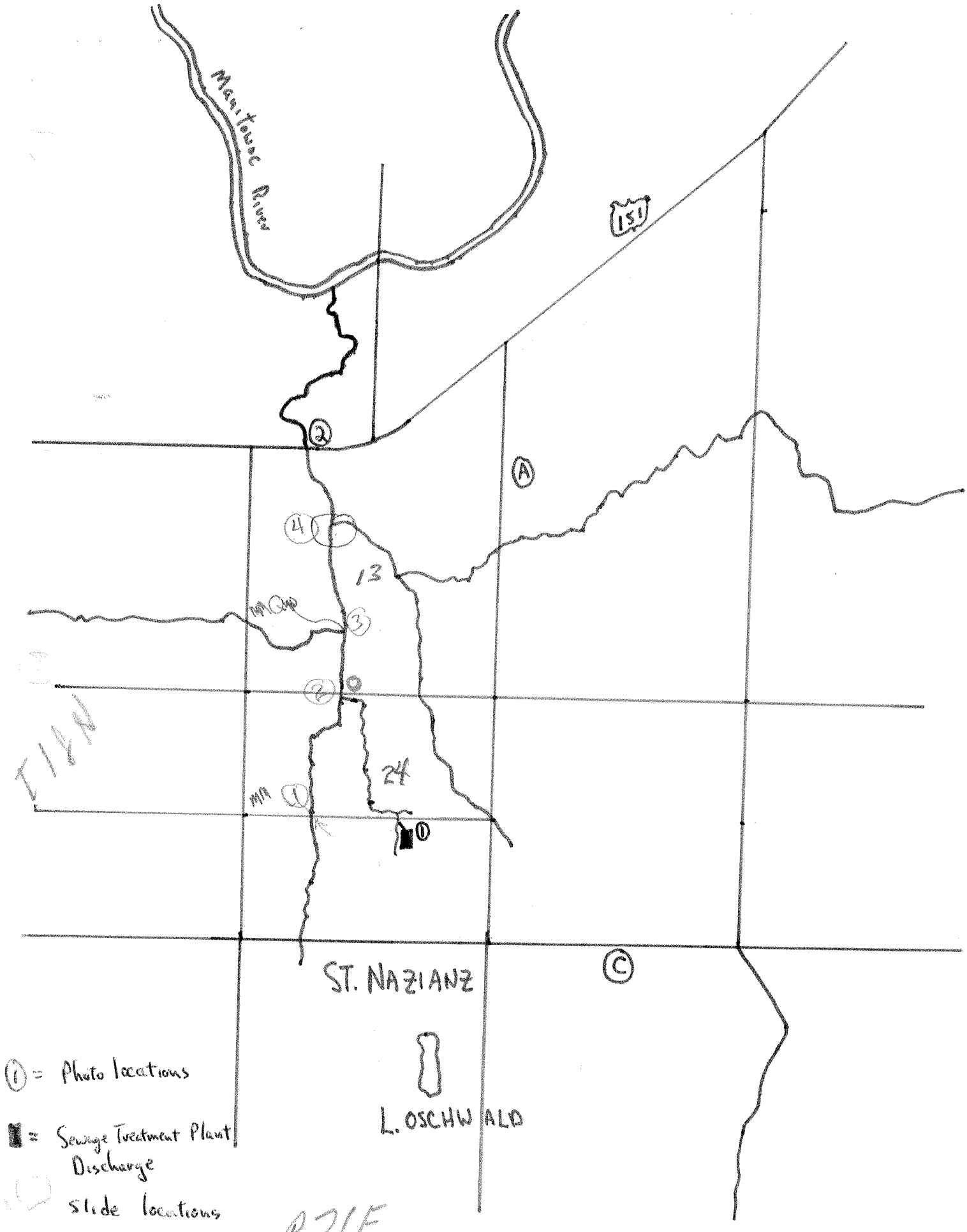
Recommendations

Continuous, intermediate aquatic life from STP to State Highway 151. Continuous, fish and aquatic life from State Highway 151 to Manitowoc River.

Robert B. Lucas
Environmental Engineer

Dennis C. Weisensel
District Biologist

RBL:DCW:sh


Manitowoc River
151
2
A
4
13
3
24
1
ST. NAZIANZ
C
L. OSCHWALD
T19N
R21E
① = Photo locations
= Sewage Treatment Plant Discharge
slide locations

St. Nazianz

#1 - STP Outfall

Streamflow from left

PROCESSED BY KODAK

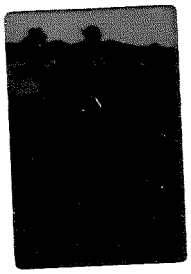
Kodak

Kodachrome
TRANSPARENCY

#2 Tributary

looking downstream

Kodachrome
TRANSPARENCY



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