

Region NER County Calumet Report Date May 1976 Classification LAL
 Water Body: Manitowoc River, N. Branch, Wetland tributary
 Discharger: Sherwood Sewage Treatment Plant

If stream is classified as Limited Forage Fish (LFF) or Limited Aquatic Life (LAL), check any of the following Use Attainability Analysis factors that are identified in the classification report:

- ☐ 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

Supporting Evidence in the report (include comments on how complete/thorough data is)

- ☐ Biological Data (fish/invert) None
- ☐ Chemical Data (temp, D.O., etc.) None
- ☐ Physical Data (flow, depth, etc.) None
- ☐ Habitat Description None
- ☐ Site Description/Map Report only says the STP flows into a non-continuous stream, which flows into a marsh.
- ☐ Other: _____

Historical Reports in file:

- ☒ 1976 Stream Classification for the Sherwood STP Receiving Stream (4 sentences long)
- ☒ Hand drawn map, USGS map, 4 photos.

Additional Comments/How to improve report:

- ☒ The marsh would be LAL, but its not clear whether the actual receiving stream should be designated as limited. Needs more information.

DRAFT PRELIMINARY STREAM CLASSIFICATION OF THE TRIBUTARY TO KANKAPOT CREEK, SHERWOOD WWTP TRIB AND ADJACENT WETLANDS

INTRODUCTION AND EVALUATIONS

The only Water Resources documented Stream Classification for Sherwood WWTP that I was able to find was a short Recommendation by Dennis Weisensel and Dan Uhl in 1976 stating the stream the Sherwood WWTP discharges to (I am calling this the Sherwood WWTP Trib. (SWT) for this study) to be non-continuous marginal for ¼ mile before entering a wetland. See Figure 1 for a Topo copy of the study area. I searched the Oshkosh Fish files and found no data on the SWT or the Trib. to Kankapot Creek it discharges to nor the adjacent wetland. This wetland according to the Sherwood Topo (1:24000) had a defined channel and traveled approximately 1.4 miles after the confluence with the SWT to where it splits to a drainage to the Trib. to Kankapot Cr. (TKC) and a Trib. to the North Branch of the Manitowoc R. (TNBM). Judging from the Hilbert Topo and size of each wetland and length of the TKC I conclude that a majority of the flow from the wetland goes to the TKC watershed. I conducted a general survey of this study area on Dec. 9, 2004 and visually estimated (from Elm Rd.) the diversion of drainage is about 60-70 % to the TKC and 30-40% to the TNBM. During this study I observed the sites listed in Table 1. This study consisted of visual observations at Sites TKC1-TKC5 from above HWY B down to below HWY 10, the SWT above and below the WWTP outfall and in Sherwood adjacent to the golf course, and wetland and TNBM at Elm Rd. I took several photos during this survey which are described in Table 2. The photos can be found with a copy of the Tables, Figure and this write-up in the Watershed Directory REIFM/Sherwood.

Site TKC1 can be considered a background for this study and was very descriptive regarding the biota of TKC and provides an excellent reference for downstream analyses. By carefully observing the rocks and sticks at TKC1 I noticed a quality population of macroinvertebrates dominated by the caddisfly Glossosoma sp (HBI of 0 indicating excellent water quality). I also found individuals of Pycnopsyche sp (HBI of 4 indicating very good water quality) and Baetid mayflies. The total population numbers were somewhat sparsely distributed (i. e. the rocks were not populated as heavily as I would have expected for the current flow conditions) indicating to me that this stream during summer low flow (though continuous) can get fairly low. However, the macroinvertebrate population (and in particular the existence of dominance of Glossosoma) indicate to me potential for a good coolwater regime which probably resulted from spring inflow from the steep terrain and karst topography (all typical of Calumet Co.-at least the central to southern parts and areas near L. Winnebago. I did not observe any minnows there but the water quality and habitat was sufficient for them to be there. I conclude this site to classify as LFF (with potential for DFAL-M) which needs to be further evaluated).

The TKC gradient reduced considerably below HWY B and then the channel flowed through a wetland that began above the confluence with SWT and extended to below Elm Rd. at TKC4. Elm Rd. appeared to inhibit flow of the wetland effluent (according to the WWTP Operator it can flood Elm Rd. during heavy runoff events). Above I estimated the flow split for the two watersheds at Elm Rd. A future study could estimate this further by doing stream flow measurements. I did not observe any fish at any of the 3 culverts on Elm Rd. (TNBM or TKC).

I evaluated the macroinvertebrate population of TKC below HSY 10 (TKC5) and though flow was good (similar to TKC1) I only found sow bugs and chironomids and in low numbers. This illustrated a dramatic decrease in water quality from the TKC1 reference site and was probably due to degraded conditions resulting from the wetland effects.

The wetland appeared to be dominated by cattails at all sites. At this time I cannot make anything more than general speculations on the type, quality and potential of the wetland associated with TKC and TNBM. It appeared to have the potential to receive large amounts of non-point source runoff from upstream higher gradient farm fields. The poor macroinvertebrate population at TKC5 indicated the D.O. to be significantly depressed at times. Also as I indicated above flows may get fairly low at times as well

and I assume the wetland may hold up a lot of water. It is my general judgement that that this wetland probably does have the potential to contain a good population of wetland caddisflies (e.g. Phryganeidae), chironomids and Odonata. It will probably take some light trapping with other methods of macroinvertebrate sampling to establish a baseline for the wetland macroinvertebrate population. This would be an important part of the study since this wetland apparently has a significant influence on TKC. Another way to say that is the wetland and TKC function together to differentiate the TKC downstream of the wetland.

The SWT had little flow above the WWTP outfall. I observed several rocks in a small riffle above the outfall and found to aquatic life. I conclude that the SWT above the outfall seldom (except during runoff) has water in it. This likelihood along with finding no aquatic life there indicates that it should be classified LAL above the outfall. I observed many minnows in the SWT immediately below the WWTP outfall. The Operator informed me that the flow from the plant is continuous throughout the year. The WWTP design average effluent flow was 0.259 MGD (0.4 cfs) I ballpark estimated the flow in the TKC at HWY B to be about 1.5 cfs. Accordingly the flow of TKC going into the wetland would be increase by about 25 % under normal flow conditions and higher (possibly 50 %) during low flow conditions. The flow at TKC5 appeared similar to TKC1. The flow at TNBM at Elm Rd. appeared to be about 75 % of that of TKC at HWY 10 indicating there were other significant hydraulic inputs to the wetland other than the WWTP. It must be noted there had been rainfall in the area during the previous 2 weeks to this survey so I consider flows to be above normal summer flows.

CONCLUSION

The TKC is LFF from the origin to HWY 10 (a distance of 5.9 miles). The SWT is LAL above the Sherwood WWTP and LFF below the WWTP down to the confluence with the TKC. During high flow runoff periods the wetland adjacent to the TKC and TNBM is not significantly affected by the effluent of the WWTP. During low flow periods the WWTP probably does maintain some significant hydraulics in the wetland. More data are needed to determine the potential of TKC and the adjacent wetland.

Gerdman, David A

From: Reif, Michael
Sent: Friday, December 10, 2004 9:30 AM
To: Haack, Jeffrey J.; Gerdman, David A; Graham, Joseph R; Reyburn, James R.; Fleming, Kari L.; Figiel, Diane; Nasir, Mulazim H
Cc: Boronow, George F; Vogen, Linda K; Reif, Michael; Bub, Laura A
Subject: RE: Sherwood WWTF -- WI-0031127

Jeff, I did a good preliminary stream class at Sherwood yesterday afternoon. I met with the Sherwood WWTP Operator, Gary, and checked several sites on the Trib. to Kankapot Cr. that the Sherwood WWTP Trib. discharges to and the WWTP Trib. I will be writing up my notes (hopefully by Monday) but I wanted to give you initial conclusions. Also the photos I took are on the Green Bay Common Drive under Reif Sherwood. There are too many to e-mail. I will have them in my Directory on the Madison Watershed Drive when I complete my notes. The classifications I determined are:

Trib. to Kankapot Cr. from Origin to HWY 10 is LFF (the upper reaches above HWY B have fairly high quality macroinvertebrates and that area may justify a coolwater DFAL-a full study is needed to determine that)

Sherwood WWTP Trib. from Sherwood WWTP Outfall to Confluence with Trib. to Kankapot Cr. is clearly LFF (lots of minnows) but made LFF by the continuous discharge from the Sherwood WWTP which looks to be of good quality.

The Sherwood WWTP Trib. above the Sherwood WWTP Outfall is clearly LAL.

Bub, Laura A

From: Reif, Michael
Sent: Wednesday, December 15, 2004 6:51 AM
To: Haack, Jeffrey J.; Gerdman, David A; Graham, Joseph R; Fleming, Kari L.; Figiel, Diane
Cc: Boronow, George F; Vogen, Linda K; Bub, Laura A
Subject: RE: Sherwood WWTF -- WI-0031127

Jeff, I concur regarding the WET monitoring since the Trib. to Kankapot Cr. is LFF. I do have a concern regarding the potential of the wetland. We don't have sufficient protocol for analyzing wetlands regarding macroinvertebrates which could be very useful in wetland determination (especially in regards to water quality inputs). Right now it is easy to tell that the wetland is very degraded due to the high dominance of cattails. I expect the sediment inputs are high from non-point sources. We should also evaluate the potential of the origin above HWY B in the Trib. to Kankapot Cr. and if in some years it can extend its quality a significant distance into the wetland part of the Creek. We also don't have knowledge regarding potential for season use if inputs are controlled.

-----Original Message-----

From: Haack, Jeffrey J.
Sent: Tuesday, December 14, 2004 1:48 PM
To: Reif, Michael; Gerdman, David A; Graham, Joseph R; Fleming, Kari L.; Figiel, Diane
Cc: Boronow, George F; Vogen, Linda K; Bub, Laura A
Subject: RE: Sherwood WWTF -- WI-0031127

In light of the fact that Michael has indicated that he thinks that the tributary to Kankapot Creek to which the Sherwood WWTF discharges, probably supports only LFF uses downstream to US Highway 10, a distance of approximately 6 miles from the outfall, I have changed my evaluation to recommend no WET monitoring at all.

-----Original Message-----

From: Reif, Michael
Sent: Monday, December 13, 2004 3:57 PM
To: Haack, Jeffrey J.; Gerdman, David A; Graham, Joseph R; Reyburn, James R.; Fleming, Kari L.; Figiel, Diane; Nasir, Mulazim H
Cc: Boronow, George F; Vogen, Linda K
Subject: RE: Sherwood WWTF -- WI-0031127

Jeff, a copy of the draft I wrote for the Sherwood Preliminary Stream Class in in my Madison Watershed Dir. at REIFM/Sherwood. Copies of the photos are also there. I will put the tables and figure for the report there tomorrow.

-----Original Message-----

From: Haack, Jeffrey J.
Sent: Thursday, December 02, 2004 3:43 PM
To: Gerdman, David A; Graham, Joseph R; Reif, Michael; Reyburn, James R.; Fleming, Kari L.; Figiel, Diane; Nasir, Mulazim H
Cc: Boronow, George F; Vogen, Linda K
Subject: Sherwood WWTF -- WI-0031127

Attached is a DRAFT evaluation of the need for WQBEL's for the Village of Sherwood WWTF, WPDES Permit No. WI-0031127, along with a map intended as an attachment.

<< File: Sherwood WQBEL.doc >>

<< File: Sherwood Map.doc >>

I've got a mess of these that I would like to get done by the end of the month, so **I am requesting any review comments within 2 weeks, before Monday, Dec. 20.**

David, please note that the DMR for the month of August 2004 is missing, from SWAMP anyway. I don't think it's critical to this evaluation, but it would have been nice to have the data. Also note that I have not included the Influent Phosphorus data for the month of October 2002. There is daily data in SWAMP - yeah, 31 results - and they're all less than 1.0 mg/L, with an average of 0.14 mg/L. That is simply unbelievable, especially in light of all the other influent data. And finally, with my recommendation for an effluent limit for Phosphorus, we don't need to require the Influent P monitoring. I don't mention that in my report but you may wish to make this change in the Fact Sheet.

Joe, I tried to clarify the "watershed" business. Does this make it understandable? (Nuthin's ever simple,

eh?)

Mike and Jim, I'm not sure which of you should review this so I'm sending it to both of you. There's two very important issues identified in this report. First is the fact that my files have no documentation about the stream classification. All that I've got to work with is what it says in s. NR 104.07. Can either of you shed any light on the point at which the classification as a "variance" water changes? See my comments to Diane Figiel below. Right now, it's only significant for the WET testing, but it could become a major issue in the future. And second, note the s. NR 103 issue that will need to be resolved for increasing the rated capacity of the WWTF. I don't know how, or who, but someone is going to have to ascertain whether the DNR approval of this increase will impact the wetlands, and whether the further requirements of s. NR 103 will need to be addressed.

Kari, note the comment above regarding stream classification. To deal with that unknown, I created two different scenarios, and basically "split the difference" for my monitoring recommendation. Note also my comment in the narrative relative to the "primary control/diluent." Do you concur?

Diane, I'm going to pester you for a peer review. I also want to request that you send me the file for the White Clover Dairy facility in Sherwood. This was previously owned and operated by AMPI. I have in my file for the Sherwood WWTF a Facilities Planning Limits memo prepared by Nasrin dated Jan. 29, 1993, in which it is stated that, "The marginal stream classification applies to a point one mile downstream of the wetland at the Highway 10 crossing. From there, six miles downstream to the Fox River, Kankapot Creek is classified as a limited forage fish community (intermediate stream)." I think that this is in error. This sounds like a description of some stream evaluation for the White Clover Dairy facility that does discharge about one mile upstream from Highway 10, to a tributary to Kankapot Creek. Maybe between what is in your files and what either Mike or Jim can tell me, we'll be able to get this straightened out. You may wish to confer with Laura Bub. And just so you know, I hope to be sending you several final draft WQBEL evaluations before Christmas. This is the third "first draft" sent out to staff for review since Monday. So sharpen up your pen!

Mulazim, I'm sending you a copy because of the "re-rating" issue as it relates to compliance with s. NR 103. It will not change the effluent limits at all, at least not until after s. NR 104 is revised. And I ain't holding my breath for that to happen.

Any and all comments will be appreciated, as usual!



Jeffrey J. Haack

Water Resources Engineer

Wisconsin Department of Natural Resources

(☎) phone: (920) 492-5811

(☎) fax: (920) 492-5913

(✉) e-mail: jeffrey.haack@dnr.state.wi.us

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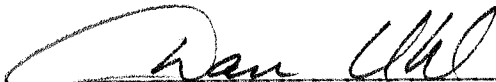
(✉) e-mail: jeffrey.haack@dnr.state.wi.us

VILLAGE OF SHERWOOD
SHERWOOD, CALUMET COUNTY

The Sherwood STP will discharge to a non-continuous stream which flows into a marsh. The stream enters the marsh approximately one-quarter mile downstream of the STP. The marsh does not appear to have a discharge point.

RECOMMENDATIONS

The receiving stream should be classified as non-continuous/marginal. The marsh should be classified as wetlands.



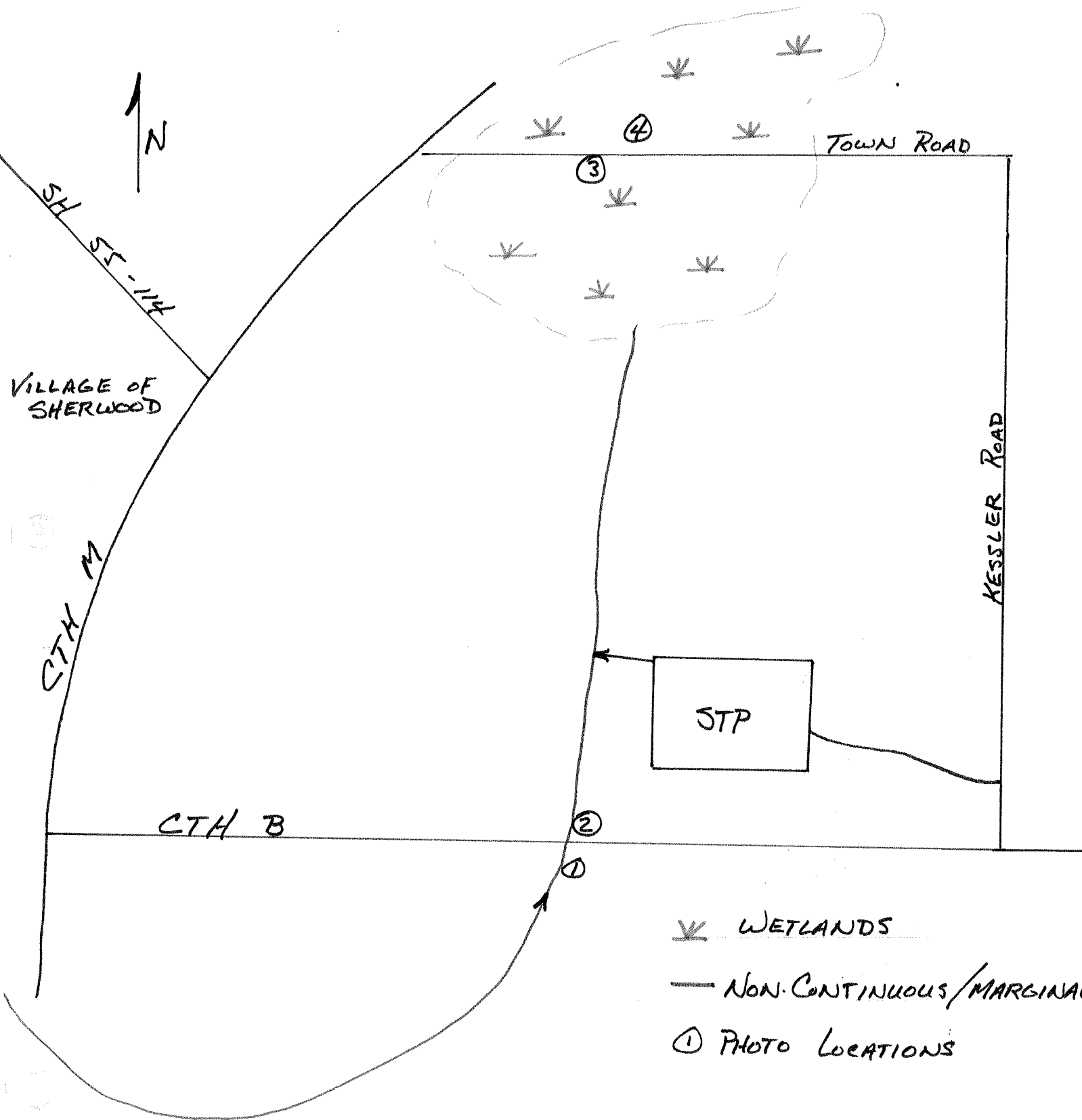
Dan Uhl



Dennis Weisensel

DU:jp

SHERWOOD STP 5-18-76



4/11 8-9-76

NEENAH QUADRANGLE

WISCONSIN

15 JTE SERIES (TOPOGRAPHIC)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

FEET (SOUTH)

SEYMOUR 21 MI.
KAUKAUNA 2 MI.

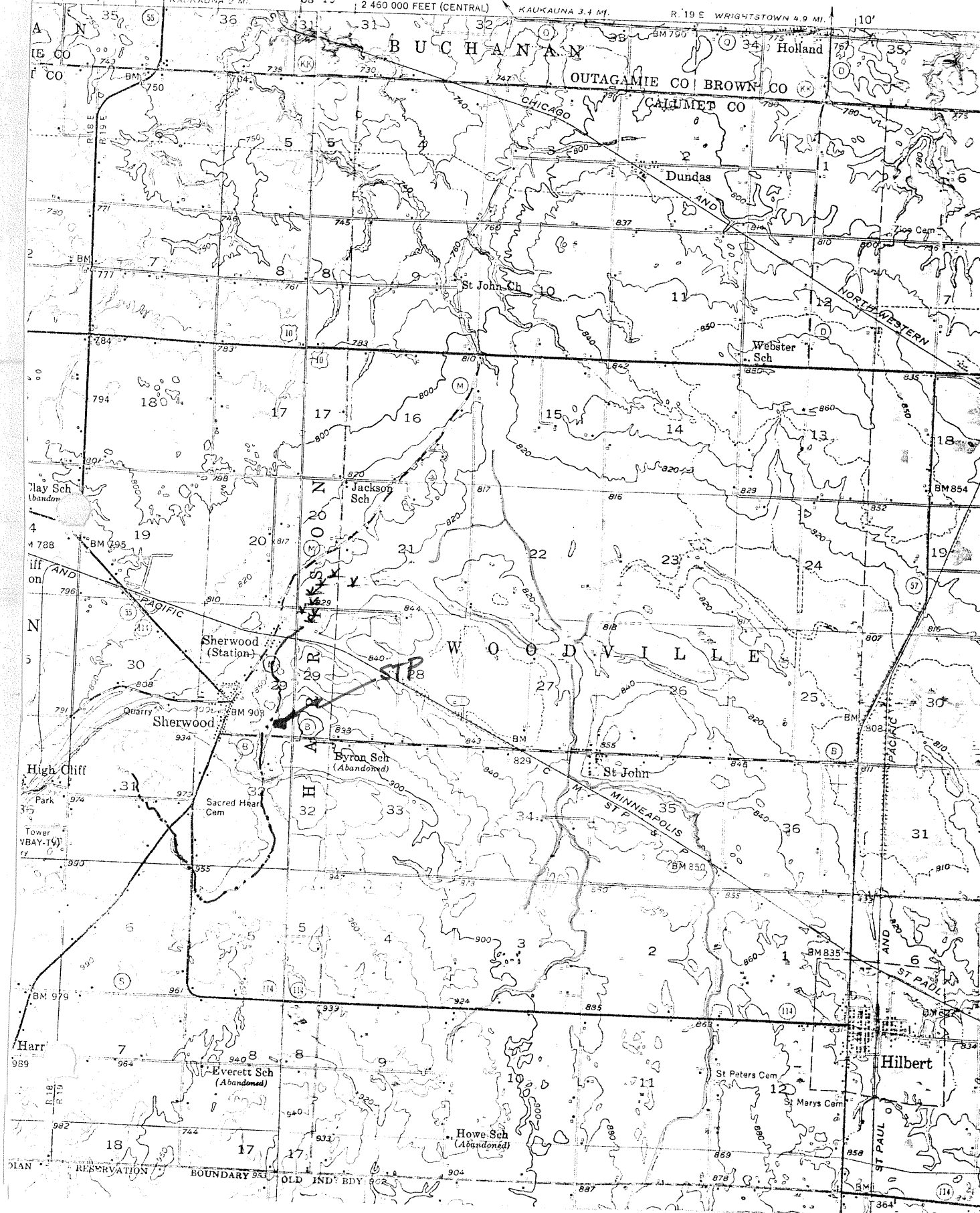
88°15'

2 460 000 FEET (CENTRAL)

KAUKAUNA 3.4 MI.

R. 19 E WRIGHTSTOWN 4.9 MI.

10'





#1 upstream view at
CTH "B"



#2 Downstream view
at CTH "B"



#3 Wetland view at
Town road bridge
looking upstream



#4 Wetland view at
Town road bridge
(downstream view)