Reviewed by LBaub Date 2/2004

Region WCR **County** Wood **Report Date** 11/2000 **Classification** LAL

Water Body: Mill Creek

Discharger: Marshfield WWTP & Foremost Foods Marshfield

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)

_____ Chemical Data (temp, D.O., etc.)

_____ Physical Data (flow, depth, etc.)

_____ Habitat Description

✓ Site Description/Map

✓ Other: photos

Historical Reports in file:

11/27/2000 - M. Hazuga

1970s - Robert Derksen, et al.

Additional Comments/How to improve report:

- LAL b/c effluent ditch (default)

* need to change reach description & dischargers in DB.

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: November 27, 2000

FILE REF: [Click **here** and type file ref.]

TO: Greg Searle
Paul Laliberte
Marshfield File
Foremost Farms Marshfield File

FROM: Mark Hazuga Mark Hazuga

SUBJECT: Classification of Mill Creek and tributaries

The description of the Mill Creek classification should be changed to " All of Mill Creek upstream from the confluence with a tributary in the SW SW T24N R4E Sec 1 and headwater tributaries of Mill Creek within Marshfield". The stream classification would be Limited Aquatic Life. This classification would include the discharges from Marshfield, Hewitt and Foremost Farms in Marshfield.

According to the December 16, 1994 effluent limits document for Foremost Farms – Marshfield, the classification of an unnamed tributary to Mill Creek that receives the discharge from Foremost Farms is identified as Limited Aquatic Life. For the time being, this classification is appropriate since the classification of Mill Creek at the confluence with this unnamed tributary is officially listed as Limited Aquatic Life in NR 104 and the classification does not change to Fish and aquatic life for 15 miles downstream of Marshfield.

Form 1100-1

Item Tom Bishaw Minutes of

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
Madison, Wisconsin

NOV 14 1979

ITEM RECOMMENDED FOR NATURAL RESOURCES BOARD AGENDA

TO THE SECRETARY: Anthony S. Earl Date November 2, 1979

FROM: Carl J. Blabaum

SUBJECT: Authorization to conduct public hearing on proposed revision of Chapter NR 104, Wis. Adm. Code, pertaining to the water quality standard for Mill Creek downstream from the City of Marshfield.

1. To be presented at November Board meeting by Carl Blabaum.

2. Appearances requested by the public:

Name	Representing whom?
None	

3. Reference materials to be used:
   a) Attachment 1 - Proposed Amendment to NR 104
   b) Attachment 2 - Summary Report on Water Quality Standards for Mill Creek
   c) Attachment 3 - Maps of Mill Creek

4. Summary:

On September 27, 1979, the U.S. Environmental Protection Agency informed the Department of Natural Resources that the most recent classification of Mill Creek below the City of Marshfield was being disapproved. They recommended that the classification of the creek that was promulgated in the Wisconsin Administrative Code in October, 1976, be reinstated. In response, the Department is proposing to amend the Mill Creek classification with slight modifications which account for more recent information about the stream. The effect of this action would be to require the City of Marshfield to begin planning to upgrade existing wastewater treatment facilities.

5. Recommendation: That the Natural Resources Board authorize the Department to hold a hearing concerning revisions to NR 104.

APPROVED:

[signature] 10-7-79
Mr. Kroehn Administrator Date

[signature]
Mr. Damon ~~Administrator~~ Deputy Secretary Date

Author [signature] 11/7/79
Secretary Earl

Signed:

[signature]
Carl J. Blabaum, Director
Bureau of Water Quality

DHS:jm
cc: Judy Scullion - ADM/5
Attachment

cc: Derksen
Martini
Mattbey
Uso
→ Bob Smith

ATTACHMENT 2

Summary Report on Water Quality
Standards for Mill Creek

In January, 1978, the Natural Resources Board approved a modification to the water quality standards for Mill Creek downstream from the City of Marshfield. Since that time the modification has been published in the Administrative Code and forwarded to the U.S. Environmental Protection Agency for approval. Over the past 18 months the Department and EPA have exchanged a series of correspondences and conducted meetings regarding this issue. EPA informed the Department on September 27, 1979 that the water quality standards for Mill Creek approved by the Natural Resources Board in January, 1978, were being disapproved. They recommended that the City of Marshfield be required to construct additional waste treatment facilities prior to discharging to Mill Creek.

To have a proper perspective of the water quality standards issue as related to Mill Creek, the following brief history is provided:

September, 1968 - Water quality standards for intrastate waters are adopted. Mill Creek is exempt from meeting any dissolved oxygen standard from Marshfield almost to the Wisconsin River. (Approximately 35 miles)

October, 1973 - Water quality standards are revised. No standard is applied upstream from county highway "E". (Approximately 6 miles) Downstream from this point to the Wood-Portage county line (11 miles) the dissolved oxygen standard is 2 mg/l. Fish and aquatic life standards apply from this point downstream.

October, 1976 - Water quality standards are revised establishing a "small stream" variance process. Mill Creek upstream from the first town road above highway "E" is classified an effluent ditch. A 2 mg/l dissolved oxygen standard applies. Downstream from this point to county highway "K" (4 miles) Mill Creek has an intermediate aquatic life classification. A 3 mg/l dissolved oxygen criterion and a 3 mg/l (summer) and 6 mg/l (winter) total ammonia nitrogen criterion applies. Fish and aquatic life standards apply downstream.

July, 1978 - In response to a request by the City of Marshfield that the water quality related effluent limitations associated with the above water quality standards were too costly, the classification of Mill Creek is revised and the dissolved oxygen criterion for the "marginal" use category (including effluent ditches) is reduced from 2 mg/l to 1 mg/l. The effluent ditch classification is extended to county highway "K" and the intermediate aquatic life segment is deleted. (Note: Due to a publication error, the formal submittal of this action to EPA was not made until November, 1978.)

March, 78/July,78 - The Department proposes to modify Marshfield's WPDES permit with revised final effluent limitations corresponding to the amended water quality standards. In both cases EPA objects to the proposed modification.

September, 1978 - In response to a presubmittal of information on the impending Mill Creek reclassification EPA indicates they ". . . will not look favorably on any proposed downgrading of Mill Creek based on evidence to date."

January, 1979 - EPA, in responding to DNR's formal submittal of the Mill Creek reclassification, implies that insufficient information has been presented to support the downgrading. They request additional scientific data and justification for economic hardship in support of the reclassification. They also request additional information be provided before approval of the dissolved oxygen criterion can be approved. (DNR responds in February.)

March, 1979 - At a meeting of DNR and EPA staffs, EPA suggests that the latest submittal of information is still inadequate. EPA indicates that more detailed information is needed and a specific request is being prepared.

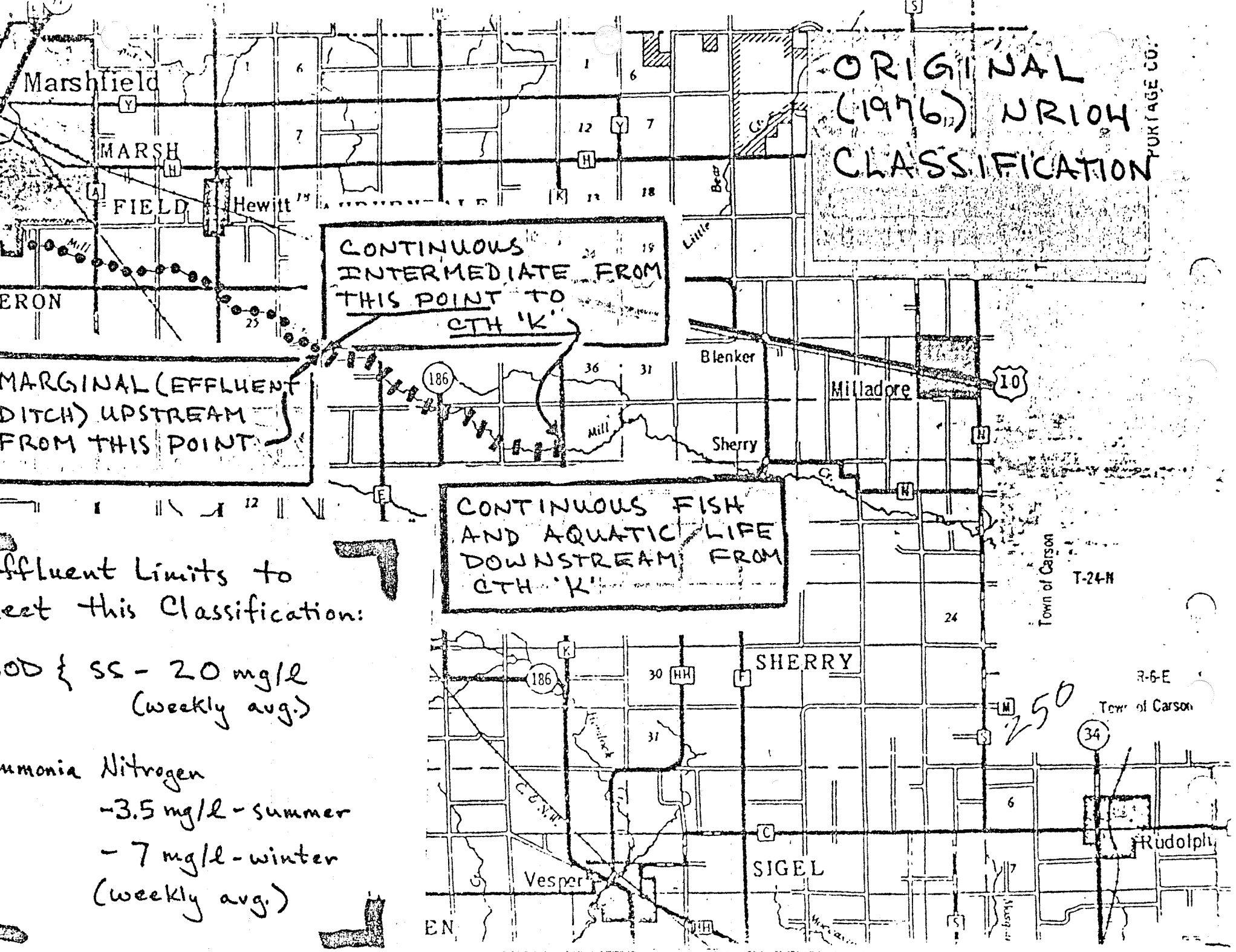
June, 1979 - As a follow-up, EPA indicates that they do not agree with the classification change based on information submitted to date. With respect to economics, EPA says that economic hardship for Marshfield must be demonstrated in the context of a generalized procedure. They again state that the dissolved oxygen criterion revision cannot be supported based on the described uses of the marginal classification. Information on the effluent setting process is submitted to EPA.

ATTACHMENT 1

Proposed Amendment to NR 104,
The Water Quality Standard for Mill Creek

Amend NR 104.08(2), Table 6, item 10 as follows:

Surface Water (facility affected)	Reach Description	Hydrologic Classification	Applicable Criteria(1)	Effluent Limitations(2)
10. Mill Creek (Marshfield)	Mill Creek upstream from ~~CTH 'K'~~ CTH 'E'	Effluent Ditch	II	~~0~~ Effluent Limits Determined by Waste Assimilation Study
	Mill Creek from CTH 'E' to 0.1 mile downstream from CTH 'K'	Continuous	I	



ffluent Limits to
eet this Classification:

OD { SS - 20 mg/l
(weekly avg.)

mmonia Nitrogen
-3.5 mg/l - summer
- 7 mg/l - winter
(weekly avg.)

August, 1979 - Mr. Earl meets with Mr. McGuire and other EPA staff. EPA agrees to provide a formal response to the additional information which has been supplied.

September, 1979 - EPA says that ". . . the DNR Board must reestablish this classification for Mill Creek in order to issue a WPDES permit consistent with the wasteload allocation." The classification they refer to is that which was initially established in October, 1976 and the allocation they request is one which will require nitrification treatment facilities and perhaps effluent filtration.

In response to the U.S. Environmental Protection Agency's request, the Department proposes to modify NR item 10 of Table 6, NR 104.08(2) of the Wisconsin Administrative Code. The proposed modification is not exactly as promulgated in October, 1976. Based upon more recent information concerning the characteristics of the creek, a minor modification to that 1976 classification is proposed. In addition, no amendment to the dissolved oxygen criterion (1 mg/l) for marginal waters is being proposed at this time. The existing,1976 and the currently proposed classification amendment are as follows:

CURRENT CLASSIFICATION

Surface Water (facility affected)	Reach Description	Hydrologic Classification	Applicable Criteria(1)	Effluent Limitations(2)
10. Mill Creek (Marshfield)	Mill Creek upstream from CTH 'K'	Effluent Ditch	II	B

1976 CLASSIFICATION

10. Mill Creek (Marshfield)	Mill Creek upstream from town road above	Effluent Ditch	II	Effluent Limits Limits to
	Mill Creek from above road to CTH "K"	Continuous	I	be determined

PROPOSED CLASSIFICATION

10. Mill Creek (Marshfield)	Mill Creek upstream from CTH "E".	Effluent Ditch	II	Effluent Limits determined by waste assimilation study
	Mill Creek from CTH "E" to 0.1 mile downstream from CTH "K"	Continuous	I	

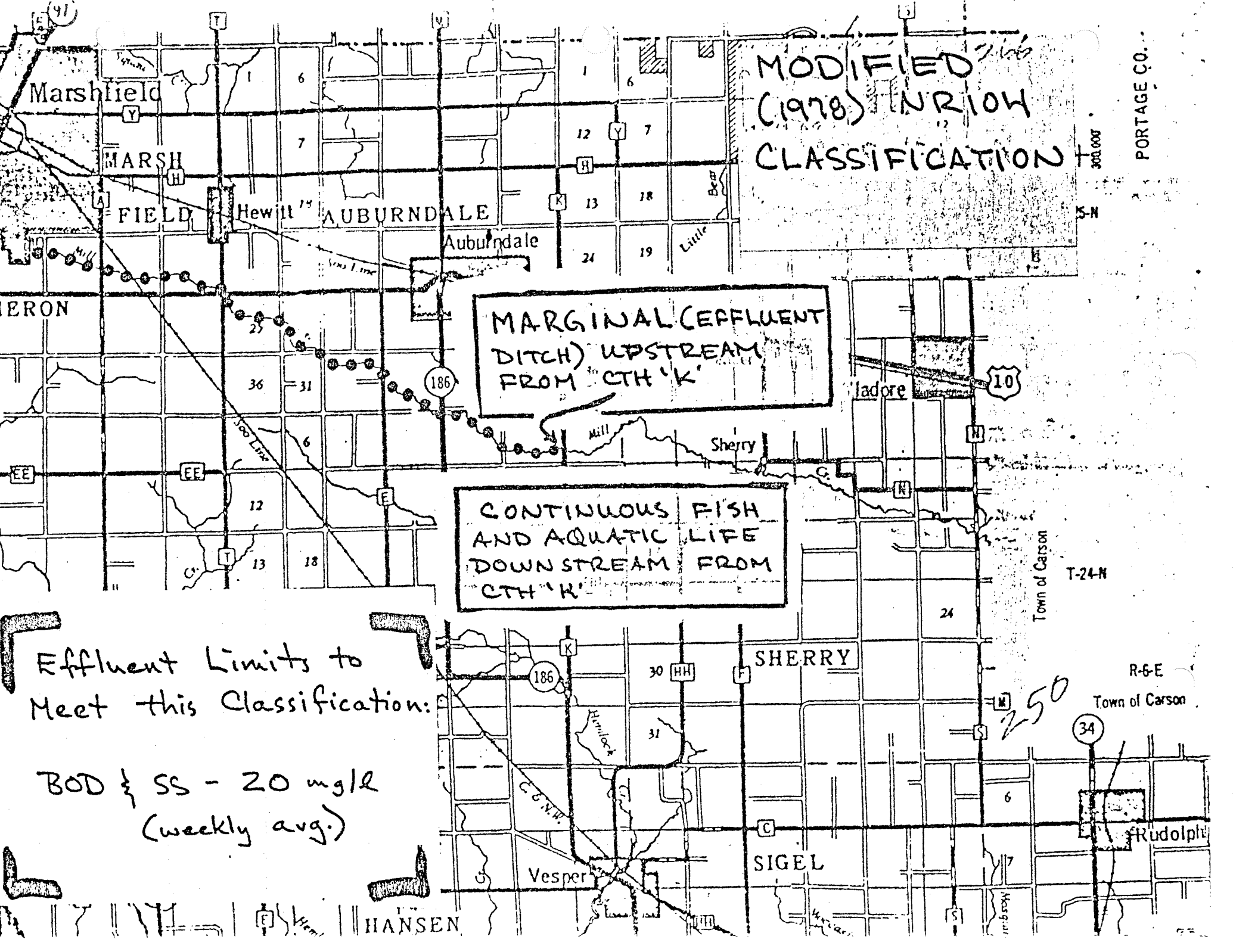
The effluent limitations required to meet the stream classification are the following:

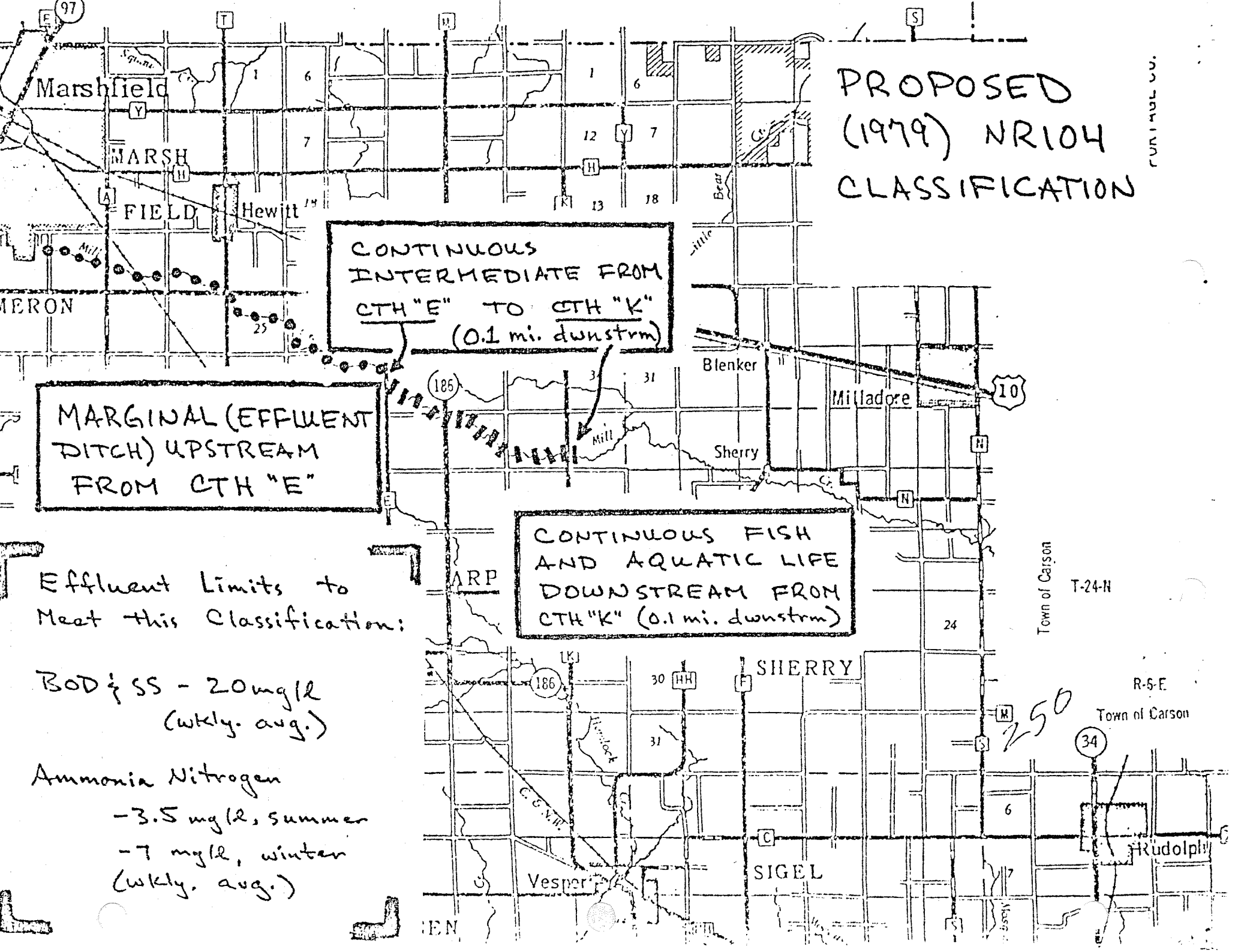
Parameter	May 1-Sept 30	Oct 1-April 30
BOD_5 (wkly ave)	20 mg/l	30 mg/l
Suspended Solids (wkly ave)	20 mg/l	30 mg/l
Ammonia Nitrogen (daily max)	3.5 mg/l	7.0 mg/l
Dissolved Oxygen (daily min)	6 mg/l	6 mg/l
pH	6.0 to 9.0	6.0 to 7.5

Although EPA requests that the City of Marshfield be instructed to begin facilities planning (Step 1) work to achieve such limits, they make the following statement with respect to funding the Step 2 and Step 3 portions of this project:

> ". . . EPA headquarters is conducting intensive reviews of projects involving advanced waste treatment and advanced secondary treatment. Because of this, it is not possible for us (EPA-Region V) to make a conclusive finding as to the adequacy of information supporting the effluent limits for the purpose of grant support . . . It may also be necessary to obtain further verification to support filters if proposed to meet the 20-20 effluent limit."

EPA's action with respect to this classification, therefore, does not guarantee federal construction funding support for the advanced treatment portion of a City of Marshfield wastewater treatment plant.


MODIFIED (1978) NR104 CLASSIFICATION
MARGINAL (EFFLUENT DITCH) UPSTREAM FROM CTH 'K'
CONTINUOUS FISH AND AQUATIC LIFE DOWNSTREAM FROM CTH 'K'
Effluent Limits to Meet this Classification:
BOD & SS - 20 mg/l (weekly avg.)
Marshfield
MARSH FIELD
Hewitt
AUBURNDALE
Auburndale
Sherry
Iadore
SHERRY
SIGEL
Vesper
Rudolph
HANSEN
PORTAGE CO.
Town of Carson
T-24-N
R-6-E
250


PROPOSED (1979) NR104 CLASSIFICATION
CONTINUOUS INTERMEDIATE FROM CTH "E" TO CTH "K" (0.1 mi. dwnstrm)
MARGINAL (EFFLUENT DITCH) UPSTREAM FROM CTH "E"
CONTINUOUS FISH AND AQUATIC LIFE DOWNSTREAM FROM CTH "K" (0.1 mi. dwnstrm)
Effluent Limits to Meet this Classification:
BOD & SS - 20 mg/l (wkly. avg.)
Ammonia Nitrogen
-3.5 mg/l, summer
-7 mg/l, winter
(wkly. avg.)
Marshfield
MARSH FIELD
Hewitt
Blenker
Milladore
Sherry
SHERRY
SIGEL
Vesper
Rudolph
Town of Carson
T-24-N
R-5-E
Town of Carson
250

MARSHFIELD, WOOD COUNTY

Wastewater Receiving Stream Classification

The existing and the future reconstructed municipal wastewater treatment plant is and will be located at Vine Avenue and 29th Street, adjacent to Mill Creek, approximately .75 mile from the creek's origin. The main outfall from the existing plant discharges to the creek at approximately the 1.25 mile point. During periods of wet weather, the present plant utilizes a second outfall, which, in part, bypasses the system with the wastewater receiving only disinfection treatment. This second outfall is located adjacent to Vine Avenue. The reconstructed wastewater treatment plant will have a single outfall located adjacent to Washington Avenue approximately at the 1.75 mile point.

Above Washington Avenue where new outfall will be located

Mill Creek originates at the southern limits of the City of Marshfield. The flow at the origin is from the outfall of a storm sewer serving approximately 1/3 of the City's runoff and from overflow of two cooling water ponds. From the storm sewers to just beyond 29th Street, the Creek passes through an urban area with a $7Q_{10}$ of 0.01 cfs. Below 29th Street and above the 1.25 mile point, the City maintains six water supply wells, all located south of the Creek. The present sewage treatment plant is located ~~below~~ above the city wells. Downstream, the lands adjacent to Mill Creek are vegetated wet lands or agricultural. Records indicated that in the 1920s, Mill Creek was ditched from the origin to the Town road above County Trunk "E", approximately 11 miles downstream (if a creek actually existed at that time).

Storm sewer outfall, headwaters of Mill Creek

Downstream from storm sewer outfall

Marshfield sewer treatment plant bypass

Upstream of Marshfield sewer treatment plant outfall

The discharge from the Village of Hewitt's stabilization pond treatment facility discharges to Mill Creek at approximately the 3.1 mile point.

West of Stadt Road

Town road above County Trunk Highway "E"

Mill Creek does not appear to be able to support a fish population above County Trunk Highway "K".

Downstream from County Trunk Highway "K"

There are no other feasible streams capable of assimilating Marshfield's sewage treatment plant effluent in close proximity to Marshfield.

Recommendations: Mill Creek, from the outlet of Mill pond to the Town road above County Trunk Highway "E", shall be classified as an effluent ditch. Below this Town road to County Trunk Highway "K", Mill Creek shall be classed as a continuous stream with an intermediate aquatic life subclassification. From County Trunk Highway "K" downstream, the Creek shall be classed as a continuous stream with a fish and aquatic life subclassification.

District survey team: Robert Derksen, Environmental Engineer; Art Ensign, Staff Specialist (Fish); Ron Yockim, Water Pollution Biologist; and Robert Young, Engineering Technician.

Marshfield, Wood County

The Marshfield STP discharges to Mill Creek with a low flow of 0.01 cfs. Mill Creek has as its headwaters a pond in Wildwood Park, about 1 mile above the treatment plant. The upper reaches of Mill Creek above CTH "E" were once excavated. It now appears to be a modified stream rather than a "ditch". Mill Creek flows through a semi-agricultural region with intermittent wooded and lowland areas. Fish are present and ducks nest along the stream, according to surface water reports. Mill Creek should be classified "Ag 2a". Squaw Creek, Beaver Creek and the east branch of the Yellow River are other streams within a 2-mile radius of Marshfield.

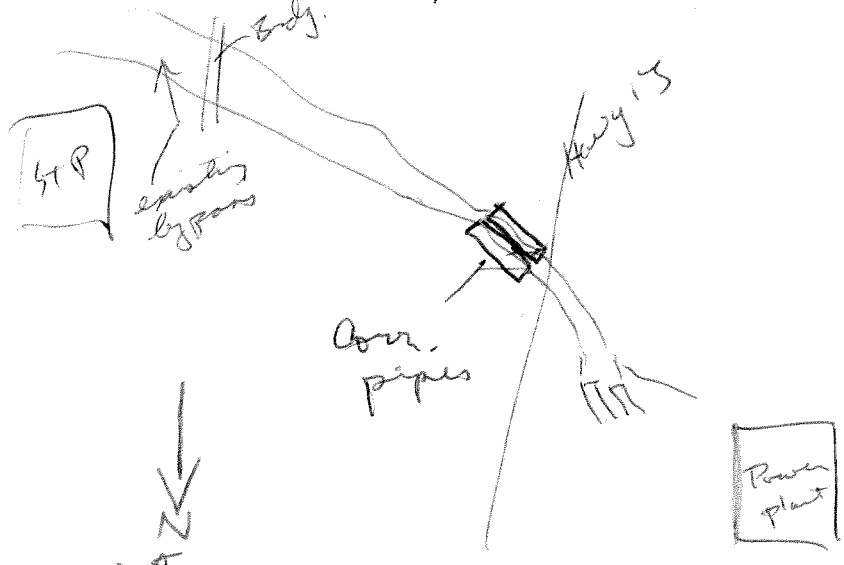

MARSHFIELD
CAMERON
AUBURN
MARATHON CO
WOOD CO
Claypit
Dodge Sch
(Abandoned)
City View Sch
Gravel Pit
Radio Tower
(WDLB)
St Joseph's
Hospital
Grant Sch
Madison
Sch
Columbus
High Sch
High
Sch
Jefferson Sch
Fairground
Wildwood
Park
Sewage Disposal
Evergreen Hill
Sch
Hillside Sch
(Abandoned)
Gravel Pits
County Asylum
Hewitt
MINNEAPOLIS ST PAUL AND SAULT STE MARIE
University of Wisconsin
Experimental Farm
Marshfield
Airport
Auburndale
Cem
White Oak Sch
(Abandoned)
Webster Sch
Cameron Pride
Sch
Mill Creek Grove
Sch
Mill Creek
Trinity Cem
Trinity Ch
Far View Sch
Richfield Ch
Long Sch
Shady Nook Sch
Town Hall
Woodland Echo Sch
North Arpin Ch
BM 1296
BM 1257
BM 1241
BM 1222
BM 1207
BR 1134
BR 1147
BR 1242
BR 117A

MILL CREEK, MANSFIELD 7/24/75

BRIDGE at STP
6-8 feet wide
6-8" deep.

Just upstream - twin large corrugated culverts under steel building.

Twin Corr. pipe storm sewer outlets at power plant.



At effluent outfall, remnants of ditching present stream 10-12 feet wide, somewhat stagnant water moderately deep.

New plant outfall to come in at town road below city.
at this town road stream is wide rather fast moving ~~~~ riffle in 100 feet downstream, no ditching remnants lowland area below the city.

7/24/75

2nd trib RD below USH 10 - stream is fairly wide w/ fair amount of weeds. water nearly stagnant looking w/ little velocity

at CTH T above USH 10 - stream is narrow banks grown w/ grasses. fairly deep. noticeable velocity. Stream condition look like Cont.

CTH E - stream takes on more appearance of natural rather than straight - wide and shallow w/ rooted aquatics throughout the stream bed.

CTH K - stream appears to be recovering much algae present (nutrients now being used), diverse insect population, grasses to the stream edge, physically meanders.

7/25/75

look at Complete list of municipalities for showing which ones are FSAL etc.

Notes By Schuttpelz