

**FISH AND AQUATIC LIFE USE DESIGNATION
SUMMARY FORM**
(Attach supporting data sheets)

WATERBODY NAME Unnamed Tributary to the Grand River WBIC# 0163150

REGION NER GMU Upper Fox COUNTY Fond du Lac
Segment Shown on Markesan Quad. Map

Reference Site(s) None. The Tributary was evaluated from origin to mouth.
Attach class. form for ref. site/cond.

SEGMENT DESCRIPTION for Segment 1 of 1 (headwater = segment 1)

From: Tributary immediately above HWY 44 downstream _____ mi., km., ft., M.	lat/long N43°44'32" W 88° 52' 45"	tn, rng, ¼, ¼, section SW1/4, Sec. 30 T15N, R14E
To: Mouth of the Tributary at the Grand River	lat/long N43° 43' 58" W 88° 52' 58"	tn, rng, ¼, ¼, section NW1/4, Sec. 31 T15N, R14E

Attach site map and photos showing stream segment and discharge point

USE DESIGNATION INFORMATION:

New Classification LFF, Standards Review _____, Ref. Site _____, Date field work conducted/completed _____

Current FAL Use Designation LAL, Date 10/1/1976, Oct. 1993 (attach)

Existing FAL Use Based on current data LFF, Date Dec. 20, 2001

Recommended Attainable Use Designation LFF I am recommending LFF based on observations made during the Dec. 20, 2001 survey (see attached Stream Reclassification for the Fairwater Trib).

This Tributary meets the year around criteria specified in the Draft Use Guidance specifying a non-gamefish community dominated by individuals (numerically 75 to 100%) belonging to species that are tolerant to low dissolved oxygen. Brook Stickleback appear to be resident year around.

Seasonal Use Designation(s)/Dates With more data a seasonal FFAL Use may be designated for Johnny Darter spawning.

Interim Use Classification Option Use Designation NA

Other Applicable Uses: ORW _____, ERW _____, GL _____, GLS _____, Dr. Water Supply _____, Recreation _____, WL _____

Submitted By: Michael D. Reif	Date: March 2002
Reviewed By:	Date:
Approved Basin Leader:	Date:
WQS Sect. Chief:	Date:

Water Body Name Unnammed Tributary to the Grand River, WBIC# 0163150 Date March 2002

DISCHARGER INFORMATION:

Municipality/Company Village of Fairwater WWTF, Permit # 0021440

Outfall Location 3125 feet downstream from Tributary origin

Contact Person _____, Contact Date(s) _____

Did A Representative Observe Field Work? No , Yes _____,

Representative Name _____, Date(s) _____

Comments about facility, representative's observations, etc.:

Basis for use designation decision (List and briefly discuss key elements for the decision)

Supporting information for LFF

On Dec. 20, 2001 the Department evaluated the Fairwater Tributary from its origin above HWY 44 down to the mouth at the Grand River. Several individual Brook Stickleback we found which appear to be resident in the Tributary. A single Johnny Darter was found near the middle of the Tributary which may indicate residence, transient migration during higher flows and water quality and/or seasonal spawning. Seasonal Johnny Darter spawning is something that needs evaluation to determine if seasonal FFAL (April-June) Use Designation is a possibility.

Send final report to:

Facility Village of Fairwater WWTF Date: _____

Basin Wastewater Eng. Mark Stanek Date: _____

Limits Calculator: Jeff Haack Date: _____

Bureau of Endangered Resources when these species are present Date _____

Other interested parties (list) _____ Date: _____

Water Body Name Unnammed Tributary to the Grand River, WIBC#_0163150, Date__March 2002

LITERATURE REVIEW

1. Cite here and attach previous classification reports and use designations.
Weisensel, 1976. Village of Fairwater Water Treatment Facility
Dreher and Sesing, 1993. Fairwater Tributary to the Grand River. Triennial Standards Review.
2. Cite here and attach all previous studies and data associated with the water body that are applicable to use classification.
Department 2000 WPDES permit reissuance on-site biological review.
3. If applicable, cite here and attach a copy of the page from *Wisconsin Trout Streams* listing the stream as trout water.
NA
4. Cite here and attach any other literature applicable to the fish and aquatic life use designation.
5. If applicable, cite here and attach the interim use classification information, eligible _____, not eligible _____.

Summarize and interpret the literature available and how it relates to and supports the classification and the recommended use designation:

Water Body Name Unnamed Tributary to the Grand River, WIBC# 0163150, Date March 2002

FIELD ASSESSMENT DATA AND OBSERVATIONS

Assessment dates: _____ to _____

PHYSICAL/CHEMICAL DATA

SEGMENT LENGTH _____, DEPTH, AVG. 1" to 6" _____ MAX. 12" _____ AVG. WIDTH 3' _____

SEGMENT GRADIENT _____, VELOCITY _____

SUBSTRATE MATERIAL %silt _____ %sand _____ %gravel _____
%rubble _____ %organic _____ %other _____

NATURAL FLOW _____ cfs, (MEASURED _____, ESTIMATED _____).

Flow was high _____, normal _____, low _____, very low _____

Q7,2 flow _____, Q7,10 flow _____, estimated _____ or measured _____

EFFLUENT FLOW: 24 hr. average _____, measured _____, estimated _____
Design flow _____

TEMPERATURE _____, Instantaneous _____ or 24 hr. max. average _____
Date(s) measured _____

DISSOLVED OXYGEN:

Instantaneous _____ mg/L, time of day _____, Date _____

Recorded:

Minimum _____ mg/L

Range _____ mg/L to _____ mg/L

Dates / time measured: _____ to _____, total= _____ hrs.

CHEMICAL DATA COLLECTED:

None

BREIF INTERPRETATION/COMMENTS:

Water Body Name _____, WIBC# _____, Date _____

BIOLOGICAL DATA

FISH: Sampling date _____, Attach species list and IBI forms if applicable

Survey Location _____

Distance sampled _____ Sampling Gear _____

No. of species _____, Total fish _____,

Intol. species _____, Total fish _____, % Intolerant _____

endangered or other special category species _____

Warm B species _____, Total no. _____

MACROINVERTEBRATES: Sampling date _____, HBI/FBI _____

Survey location(s) _____

Sampling Procedure _____

< 100 organisms found, list dominant genera, numbers and HBI values:

> 100 organisms found, attach taxonomy bench sheet or other analyses:

OTHER BIOLOGICAL DATA/OBSERVATIONS:

INTERPRETATIONS BASED ON EXISTING FISH AND AQUATIC LIFE COMMUNITY:

Water Body Name _____, WIBC# _____, Date _____

HABITAT - Not Conducted (General Observations Made)

Procedure _____

Habitat rating _____, attach habitat rating forms

Significant problems affecting use attainment:

low flow _____ sedimentation _____

bank erosion _____ ditching _____

fish cover _____ depth _____

Other _____

WATERSHED DATA AND OBSERVATIONS

AREA

Approximate size _____ acres / sq. miles

Land use: % crop land _____, % pasture _____, % forest _____,

% grass land _____, % urban _____, % wetland _____,

No. feedlots/barn yards near stream _____

Other NPS _____

Is this watershed currently or proposed to receive NPS management under a State, Federal or local organization? yes _____, no _____. List dates and explain:

Discuss NPS impacts and controllability, and NPS relationship to fish and aquatic life existing and attainable uses. Include factors such as bank erosion, land cover/use near stream, gully erosion, barn yards, etc. (attach additional sheets if required):

FAIRWATER TRIBUTARY

TO THE GRAND RIVER

TRIENNIAL STANDARDS REVIEW

OCTOBER 1993

RICHARD DREHER / MARK SESING

SOUTHERN DISTRICT

BUREAU OF WATER RESOURCE MANAGEMENT
WISCONSIN DEPARTMENT OF NATURAL RESOURCES

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INTRODUCTION

After an on-site evaluation and review of information relating to stream habitat, water quality, and stream biology, it is recommended that the Fairwater Tributary to the Grand River remain classified Limited Aquatic Life, LAL(f). Low natural stream flow, in-place pollutants, and irretrievable cultural alterations all suggest no classification upgrade.

GENERAL DESCRIPTION, HABITAT, AND STREAM BIOLOGY

Fairwater Tributary is a low-gradient warmwater stream located southwest of the town of Fairwater in southwestern Fond du Lac County (see map). It flows past Fairwater's stabilizing lagoons where two ponds are used to expose wastewater to nature and cleans it by natural filtering and settling. The water is then discharged seasonally.

The normal width of the stream averages less than 1.0 m with depths averaging less than 0.3 m. Channelization throughout most of the stream's route limits available habitat for fish and other aquatic wildlife. The tributary can't be considered much more than just a shallow ditch (photo 1).

The stream's substrate is characterized by fine inorganic silt. Sedimentation is up to a couple inches deep in most segments and embeddedness is 100% throughout the entire tributary (photo 2). No gravel or sandy areas exist generating no riffled sections. Instream cover, such as boulders and logs, are also absent limiting available habitat.

The riparian area is dominated by wetland grasses (photo 3). There are no wooded or brushy areas to provide any overhead canopy. Instream vegetation has most likely been smothered by the high amount of siltation and no aquatic macrophytes are present.

Low flows also limit the stream's biological potential. The low flow causes decreased depths which restrict the creek to only very shallow pools (<0.4 m) and increases the potential for elevated water temperatures during summer months.

Erosion and non-point source pollution impacts are significant within the Fairwater Tributary. Agricultural practices such as cattle access directly to the stream and row cropping around the creek causes both siltation and nutrient influxes. The erosion impacts are noticeable throughout the entire stream's course causing both the high degree of embeddedness and lack of instream vegetative cover.

Backpack electroshocking on September 28, 1993, revealed a very limited forage fish community. Within a 150 foot segment of the stream, sticklebacks, stonerollers, bluntnose minnows, and a sunfish were found (table 1). The area shocked was only about 200 meters from the Grand River, which suggests the forage fish found were transient and moved upstream from the river. The tributary itself does nothing to support fish reproduction and growth. The relative location of the tributary to the Grand River makes the tributary appear to support greater biological uses than it actually does, but in fact, the stream's extreme degradation limits any biological potential.

Based on the obvious conditions and irretrievable cultural changes to the area and the tributary, it is recommended that the stream use classification remain Limited Aquatic Life, LAL(f).



Photo 1 - Channelization and lack of instream vegetation limit the tributary's biological potential.



Photo 2 - Sedimentation is severe within the stream with embeddedness 100%. No riffled sections exist.



Photo 3 - Wetland grasses dominate the area. Very little overhead canopy is present.

Fairwater Tributary - Fish Shocking
Sept. 28, 1993 - Mark Sesing/Rick Dreher

NUMBER FOUND

brook stickleback	12
central stoneroller	5
sunfish	1
bluntnose minnow	10

* Fish shocking was conducted in a 150 foot section of Fairwater Tributary below the stabilizing ponds.

TABLE 1

Stream FAIRWATER Reach Location From WWTP discharge AREA/500' down Reach Score/Rating 243
 County Fond du Lac Date 9/28/93 Evaluator DREHER Classification LAL Poor

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: 59 184

Column Scores E 59 + G 184 = 243 = Score

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

Village of Fairwater Wastewater Treatment Facility

Fond du Lac County

Wastewater Receiving Stream Classification

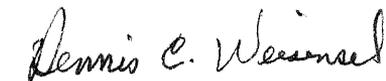
Survey Date: 10-1-76

The Village of Fairwater operates a two-cell stabilization lagoon wastewater treatment facility. Effluent from the second lagoon flows west down a 100 foot ditch to a drainage ditch along agricultural fields. It then flows south for 300 feet to the Grand River. Effluent from the wastewater treatment plant is not chlorinated.

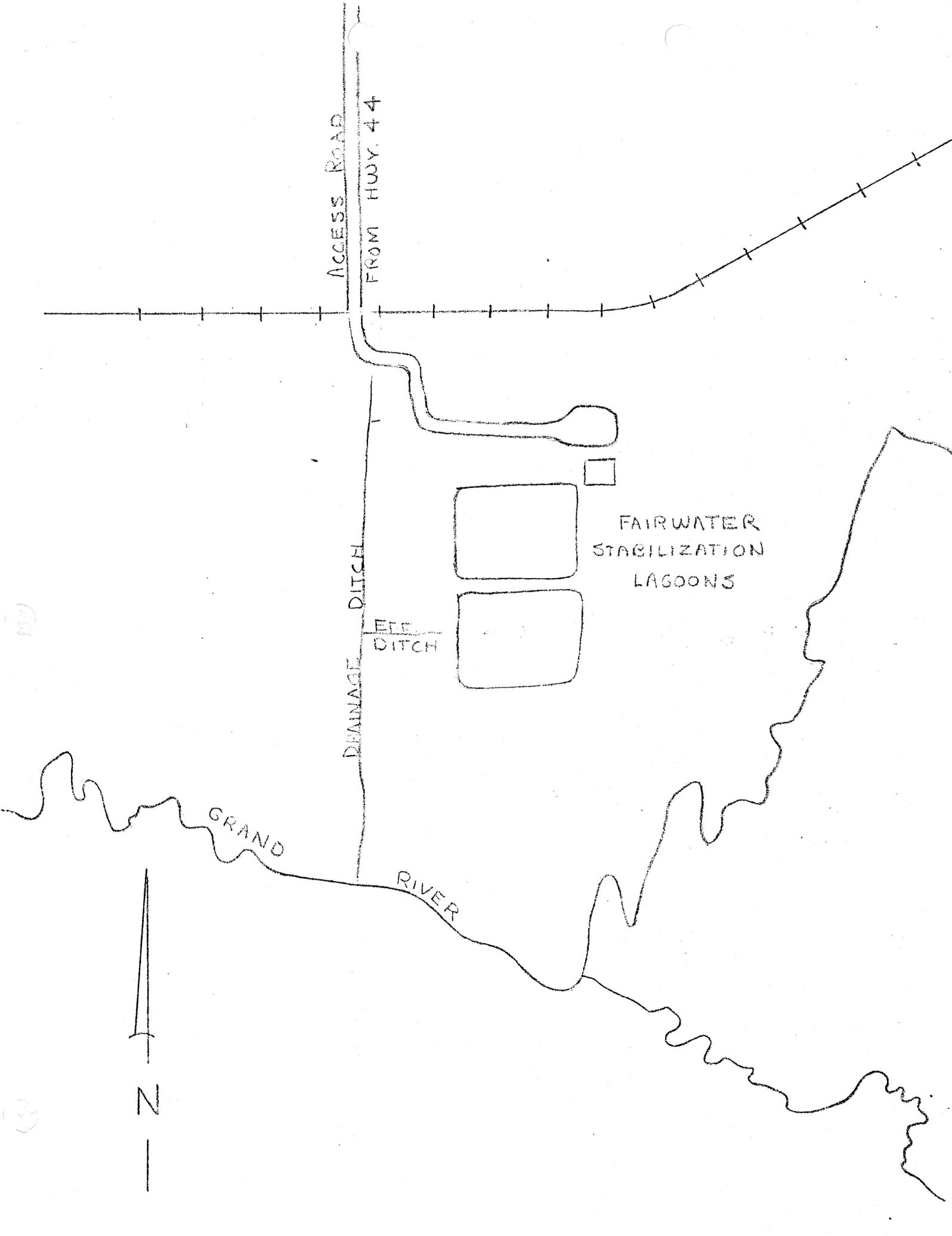
Recommendations

The two ditches shall be classified as non-continuous marginal surface waters. The Grand River is classified as a continuous fish and aquatic life stream.


James L. Mazanet
District Engineer


Dennis C. Weisensel
District Biologist

JLM:DCW:sh





Discharge Ditch Looking
West



Agricultural Drainage
Ditch Looking North



Agricultural Drainage Ditch
Looking South Towards
Grand River



Grand River Upstream of Agricultural
Drainage Ditch



Grand River Downstream of Agricultural
Drainage Ditch