

Region NOR County Barton Report Date 11/1980 Classification LAR

Water Body: Hay River Tributary

Discharger: Stella Cheese (aka Twin Town Cheese)

**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:

**Historical Reports in file:**

11/1980 - David Jacobsen

**Additional Comments/How to improve report:**

Low flow is identified as limiting factor -- there is minimal data to support this. more data would be useful to clearly justify classification.

few cheese curds, styrofoam fragments, and a slight growth of aquatic fungus on dead leaves were observed in the thin sheet of flowing water on the apron. A second flow of water (estimated 0.2 gallons/minute (gpm)) was leaking from the upper casing of a washwater holding tank approximately 15 feet east of the apron and joined the culvert flow on the apron.

Below the cheese factory the stream bed became well defined with a substrate of small rock and silt. Flow was undetectable except at pool ends and was estimated to be 0.02 cfs. The pooled water was grey and had a strong dairy waste odor. No aquatic macrophytes were present. Heavy growths of planktonic algae were present and mats of filamentous algae covered the exposed stream bed. Stream bank vegetation consisted of some cattails and grasses. At site 2 the stream bed is broad, shallow, and has little slope. Cropland bordered the downstream reach to within 50 feet on each side with sparse vegetation between the crop (corn) and the stream.

At site 3 the stream is narrow and well defined, less than one foot wide and inches deep, with a flow that was estimated to be less than that at site 2. A barnyard is located approximately 200 yards upgradient of the stream on a gentle slope with active pasture between and surrounding the stream. Some cattails were present near the culvert pool and heavy algae growth was present in the water and on exposed rocks. A few sludgeworms were observed.

The stream at site 4 consisted of pooled water with dry "riffle" areas between. The stream bed passes the edge of a dairy farm barnyard and through a heavily pastured, steeply sloped reach to site 5.

At site 5 the stream consisted of intermittently connected pools and the topography changes to a rolling glacial moraine character. No intensive land use is apparent.

Site 6 is located approximately 0.1 mile above the confluence with the Hay River. Flow was measured at 0.31 cfs and appeared to originate in springs and seep areas in the reach above the town road. A gravel pit is in active use on both sides of the stream for approximately 0.25 mile upstream with obvious potential for siltation in this area. Algae and iron bacteria were observed but no aquatic macrophytes were present. Minnows were present but only two aquatic insects were found. The stream appeared more permanent in nature.

#### Discussion/Summary

Low flow appears to be the most extreme limiting factor to a diverse aquatic community in the stream. It is felt that without a discharge originating at the cheese plant the stream would be predominately dry to the area just above site 6. USGS flow estimates for this stream at the NW $\frac{1}{4}$ , Section 7, T33N, R13W, are a Q $_{7,10}$  of 0.0 cfs to 0.04 cfs.

## CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date: November 3, 1980 File Ref: 3200  
(Mark Tusler)

To: Central Office - Madison

From: David A. Jacobson *DAJ/TJS*

Subject: Twin Town Cheese Factory, Inc. Stream Classification

Recommendation

The unnamed tributary to the Hay River receiving a discharge from Twin Town Cheese Factory, Inc., shall be classified noncontinuous (NR 104.02(1)(e)) and be placed in the variance category of marginal surface waters (NR 104.02(3)(b)) from the point of waste discharge to the town road located in the NE $\frac{1}{4}$ , Section 8, T34N, R13W. The reach from the town road to the confluence with the Hay River shall be classified continuous (NR 104.02(1)(f)) and shall meet the standards for fish and aquatic life (NR 104.01(2)). The Hay River shall meet the standards for fish and aquatic life (NR 104.01(2)).

Supporting Description

Existing pollutants: Twin town Cheese Plant currently operates a spray irrigation wastewater disposal system. A newly completed system will consist of one oxidation pond and four storage ponds. Surface water runoff has in the past contributed to high strength wastes entering the stream. Potential nonpoint sources of pollution to the stream include cropland runoff, two dairy farm operations, and a gravel pit.

Field observations: A field inspection by NWD personnel was made on October 8, 1980. Seven sites were looked at beginning upstream of the cheese plant.

The 1950 Turtle Lake USGS 15 minute quadrangle (copy attached) shows the stream as intermittent and originating approximately .5 mile above the cheese plant. At site 1 (see figure 1), the stream bed was poorly defined, no flowing nor standing water was present, and the vegetation in and around the dry water course was primarily terrestrial. The upstream land use is primarily cropland.

At the time of the inspection, the first detectable flow originated within the rectangular concrete culvert exiting the cheese plant. The flow was a trickle (estimated 0.02 cubic feet/sec (cfs)) over a concrete apron which apparently also serves as a vehicle crossing. A

Debris and vegetation showed evidence of occasional higher flows with water levels two feet to four feet higher possible.

During periods of low flows, it is felt that the isolated pools of water would show extreme variations in dissolved oxygen (D.O.) concentration due to algal production/respiration and temperature extremes. The D.O. concentration will probably frequently drop below 3 mg/l.

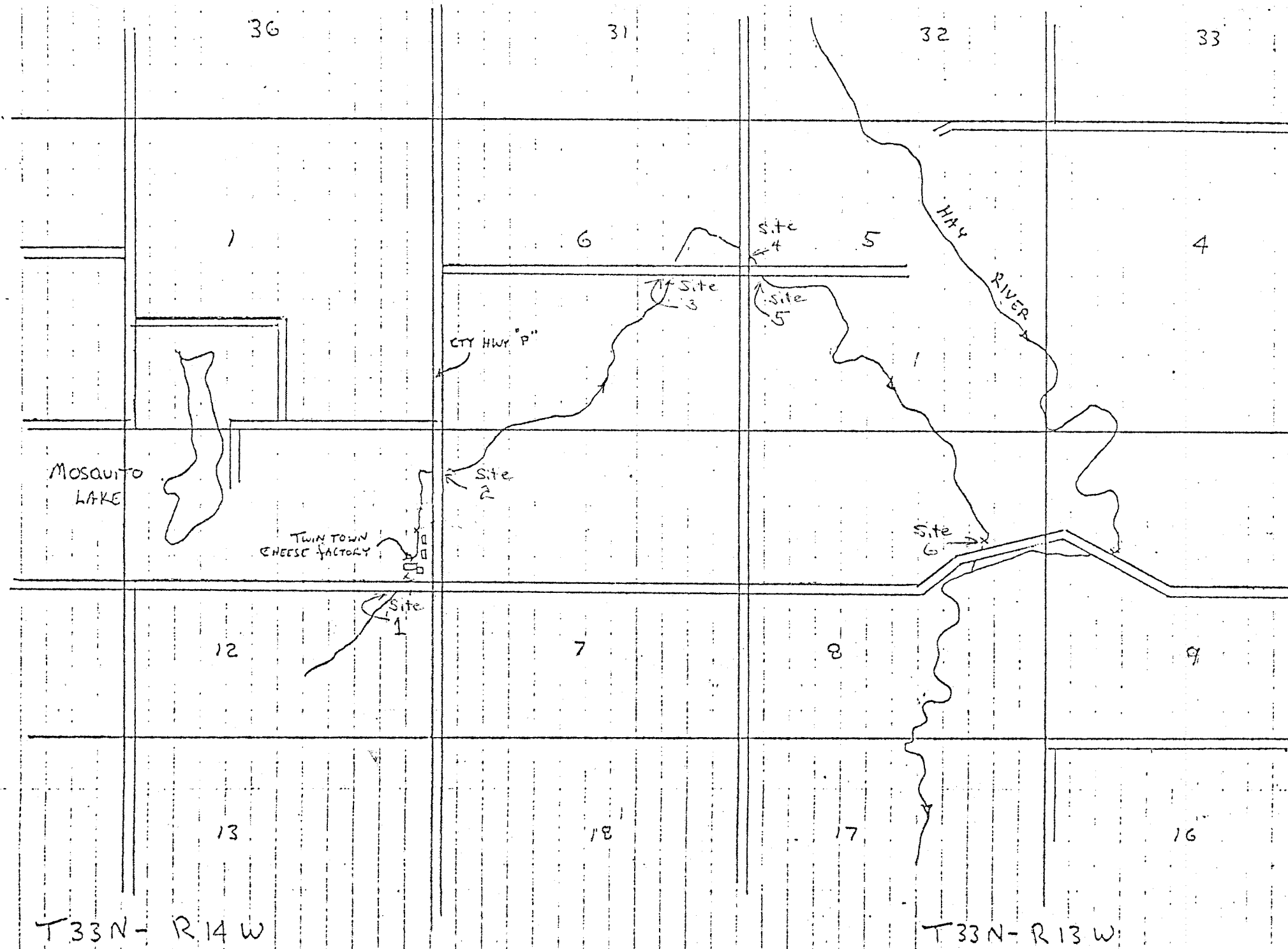
Because of natural stream characteristics, the noncontinuous, marginal variance category of NR 104 best classifies the stream above site 6. Below site 6 flow appears to be more permanent, and fish and aquatic life standards should apply. The evaluating team feels the proposed discharge of up to 100,000 gpd condensate water may improve instream conditions provided the D.O. concentration is not depressed substantially below 3 mg/l.

The field observations were made by a water quality biologist and an environmental specialist. The district surface water unit surveillance unit leader, environmental engineer, area fish manager, and local fish manager, were consulted about the classification.

Attachments

FJK:mj

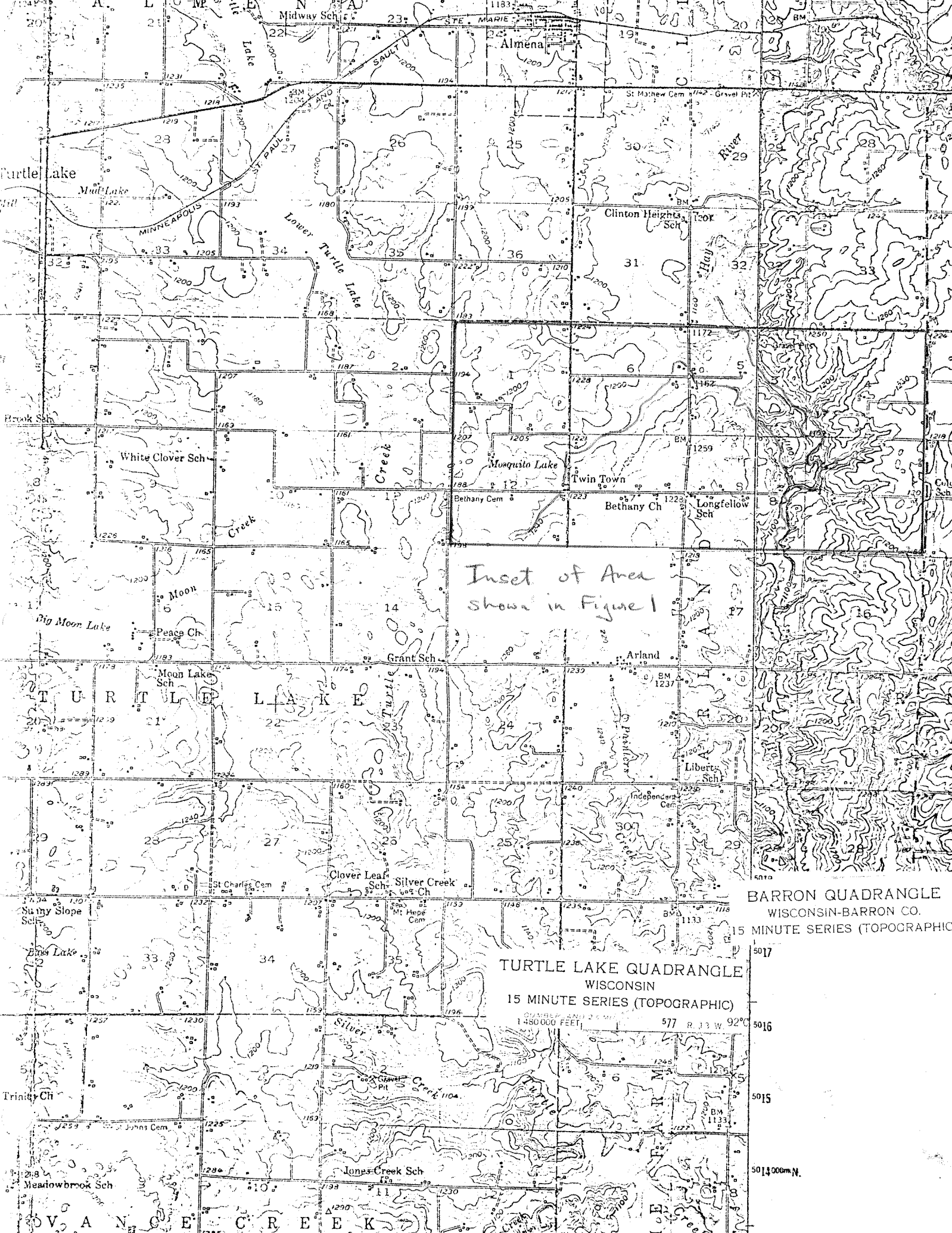
cc: Sue Bangert - WW/2



T33N - R14W

T33N - R13W

FIGURE ONE



Inset of Area  
shown in Figure 1

BARRON QUADRANGLE  
WISCONSIN-BARRON CO.  
15 MINUTE SERIES (TOPOGRAPHIC)

TURTLE LAKE QUADRANGLE  
WISCONSIN  
15 MINUTE SERIES (TOPOGRAPHIC)

SCALE 1:480,000 FEET

577 R. 13 W. 92°

5017  
5016  
5015  
5014000m N

OVANOE CREEK