

FILE

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

LEGAL NOTICE NUMBER: 94M-3993 DATED: February 10, 1994

PUBLIC NOTICE TO RENEW A PERMIT REGULATING A MUNICIPAL WASTEWATER TREATMENT PLANT DISCHARGE

Under Wisconsin Law, all wastewaters discharged to surface waters (lakes, rivers, streams, wetlands, etc.) or discharged to the groundwater by seepage through the soil must be regulated by this Department through Wisconsin Pollutant Discharge Elimination System (WPDES) permits.

PERMIT NUMBER: WI-0028941-5

MUNICIPALITY: Town of Knight Sanitary District, Iron Belt, WI 54536

FACILITY WHERE DISCHARGE OCCURS: Town of Knight Wastewater Treatment Plant, Lagoon Road, northwest of Iron Belt, Wisconsin

WASTEWATER IS DISCHARGED TO: An effluent ditch to Cemetery Creek in Iron County

WHY A PERMIT IS NEEDED: The Sanitary District owns and operates a wastewater system to treat wastes generated from homes and businesses in the community. The system is designed to treat 32,000 gallons per day, and consists of two stabilization ponds operated in series. In the ponds, naturally-occurring bacteria break down organic matter in the waste, until it is clean enough to discharge. Treated wastewater (called effluent) discharged to the creek must meet the minimum standards for quality (effluent limitations) specified in this permit. The Sanitary District must perform all of the monitoring required under the permit to assure that these limits are met.

The Sanitary District has met the terms and conditions of the previous permit. It is the Department's intention to renew the permit for another term. The present permit was issued on March 31, 1981 and expired on September 30, 1985. The proposed new permit expiration date will be December 31, 1998. Appropriate discharge limitations, monitoring requirements, and reporting conditions will be included in the permit. Here is more information on new requirements and changes that are being proposed:

1. The present collection and treatment system is quite old and may need replacing. During wet weather, the old collection lines allow clear water (rainwater, groundwater, and building foundation drainage) to enter the treatment system, so that the volume entering the ponds can be greater than they were originally designed to handle. More stringent effluent limitations may also be needed to protect the water quality of Cemetery Creek. The Sanitary District must start planning for collection and treatment system improvements. A schedule of compliance is being included in the permit requiring planning for upgrading.
2. During the first year of the permit term, the Sanitary District will have to take samples to determine the level of phosphorus discharged to the ditch to Cemetery Creek. In 1992, Wisconsin Administrative Code NR 217 was passed to control the addition of phosphorus to surface waters from point sources (municipal and industrial treatment systems). When present in excess amounts, phosphorus contributes to nuisance weed growths in rivers and lakes. Improvements to the treatment plant may need to include a method for phosphorus control in the discharge.

3. Requirements for approved landspreading of sludge are being added to the permit, in the event that inert or organic solids ever accumulate in the ponds to the point where they need to be removed.

This is the opportunity for interested citizens to comment on the requirements of the permit. Here are some steps to follow to get more information or express concerns on the permit:

1. Call or write to the Department Permit Drafter who prepared this notice. Here's the phone number and address:

Kathy Bartilson, Environmental Specialist, Wisconsin Department of Natural Resources, Northwest District Headquarters, P.O. Box 309, Spooner, WI 54801; 715/635-4053

2. Review the official Department files used in preparing the permit. This information is available at the address listed above, or from the Area Staff responsible for supervising operations at this facility. Here is the Area Contact's address and phone number:

Charles Olson, Wisconsin Department of Natural Resources, Brule Area Headquarters, Box 125, Brule, WI 54820 715/372-4866

Information on file for this permit may be inspected and copied at either address above, Monday through Friday (except holidays), between 9:00 a.m. and 3:30 p.m. Reasonable costs will be charged for copies of information in the file other than the public notice and briefing memo.

3. Submit formal written comments to the Permit Drafter listed above in step 1. All comments or suggestions received from members of the public and interested government agencies will be used (along with other information on file) in making a final decision regarding the permit. To be considered, comments must be received by the Department no later than 30 days after the publication date of this notice. Where designated as a reviewable surface water discharge permit, the U.S. Environmental Protection Agency is allowed up to 90 days to submit comments or objections regarding this permit determination.
4. Further action: An informational meeting may be held if response to this notice indicates significant public interest or controversial issues. This meeting would be an informal question and answer session to discuss the issues raised. Also, a formal public hearing can be requested under sec. 147.13, Wis. Stats. if a petition requesting a hearing is received from 5 or more persons. Requests for a public hearing should be sent to the permit drafter listed above and should state the following: the name and address of the person(s) requesting the hearing; the interest in the proposed permit of the person(s) requesting the hearing; the reasons for the request; and the issues proposed to be considered at the hearing.

NAME AND ADDRESS OF PUBLISHING NEWSPAPER: IRON COUNTY MINER, BOX 8, HURLEY WI 54534

Proposed Permit

PERMIT TO DISCHARGE UNDER THE
WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of Chapter 147, Wisconsin Statutes, the

TOWN OF KNIGHT SANITARY DISTRICT

is permitted to discharge from a facility located on

LAGOON ROAD
IRON BELT, WISCONSIN

to AN EFFLUENT DITCH TO CEMETERY CREEK IN IRON COUNTY

in accordance with the effluent limitations, monitoring requirements and other conditions set forth in this permit.

This permit shall become effective on the date of signature.

This permit to discharge shall expire at midnight, DECEMBER 31, 1998.

The permittee shall not discharge after the date of expiration. If the permittee wishes to continue to discharge after this expiration date an application shall be filed for reissuance of this permit in accordance with the requirements of Chapter NR 200, Wis. Adm. Code, at least 180 days prior to this expiration date.

State of Wisconsin Department of Natural Resources
For the Secretary

By _____

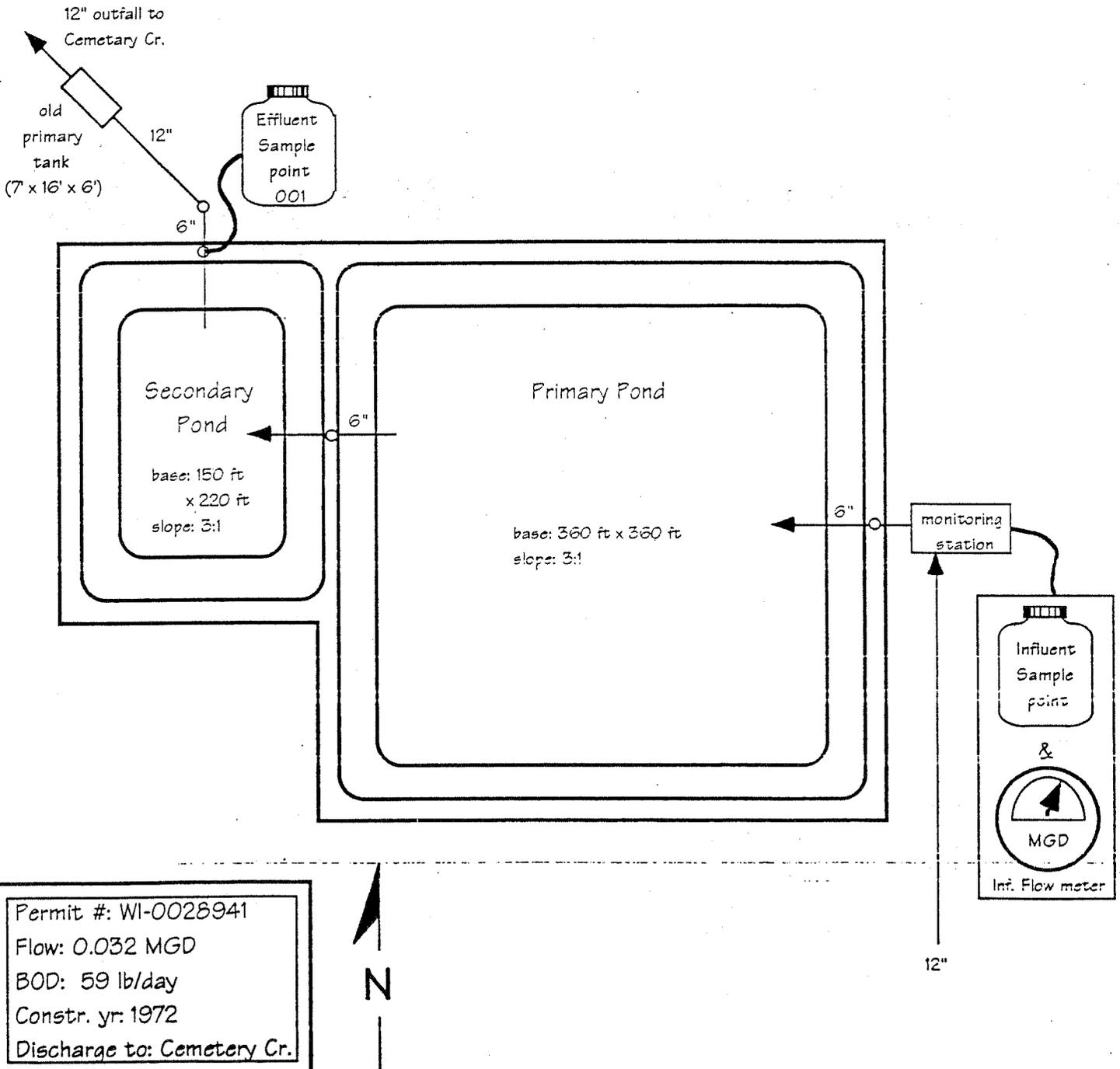
William H. Smith
District Director

Dated _____

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Knight Sanitary District Wastewater Treatment Plant



PART I: MONITORING REQUIREMENTS AND LIMITATIONS

A. INFLUENT MONITORING REQUIREMENTS

Effective term: Influent monitoring is required from the effective date of this permit until December 31, 1998.

Sampling point: Samples shall be taken from the Parshall flume in the flow monitoring building.

PARAMETERS	UNITS	<u>MONITORING REQUIREMENTS</u>	
		Sample Frequency	Sample Type
Flow ¹	MGD	Continuous	
BOD ₅	mg/l	2x Monthly	Grab
Suspended Solids	mg/l	2x Monthly	Grab

¹ The wastewater volume received at the treatment plant, and any bypassed flow, shall be monitored continuously.

PART I: MONITORING REQUIREMENTS AND LIMITATIONS

B. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS:
Fill and Draw Discharge

Outfall 001: The Town of Knight Sanitary District is authorized to discharge to an effluent ditch to Cemetery Creek via Outfall 001. Fill and draw discharges are authorized during April through October annually.

Effective term: Monitoring is required and limitations apply from the effective date of this permit until December 31, 1998.

Sampling point: Samples shall be taken from the effluent control structure at the end of Pond 2.

Disinfection: Effluent disinfection is not required if the effluent is stored within the treatment system for at least 180 days. As an interim measure, if wastewater is discharged during the months of May through September, fecal coliform monitoring will be required. Since Cemetery Creek is a recreational water, disinfection may be required in the future.

These limitations are subject to change. New limits must be developed during planning for a new facility. This permit will be modified or reissued to include the new limits after they are developed.

EFFLUENT PARAMETERS	EFFLUENT LIMITATIONS				MONITORING REQUIREMENTS	
	Monthly Average	Weekly Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Flow	-	-	-	0.192 MGD ¹	Daily	Total Daily ²
BOD ₅ ^{3,4}	30 mg/l	45 mg/l	-	-	2x Monthly	Grab
Suspended Solids ^{3,4}	30 mg/l	45 mg/l	-	-	2x Monthly	Grab
pH	-	-	6.0 s.u.	9.0 s.u.	2x Monthly	Grab
Dissolved Oxygen	-	-	4.0 mg/l	-	2x Monthly	Grab
Phosphorus ⁵	-	-	mg/l	-	2x Monthly	Grab
Fecal Coliform ⁶	-	-	#/100ml	-	2x Monthly	Grab

- 1 The Brule Area Wastewater Staff must be notified at least 7 days prior to an anticipated discharge. The pond contents shall be sampled prior to any discharge to assure that adequate stabilization has taken place. Fill and draw discharges must take place over 30 to 60 days to prevent hydraulic and organic overloading of the receiving water. The maximum daily flow limit is equal to 6 times the facility design flow (0.032 MGD) and is based on discharging 180 days' stored wastewater over a 30-day period.
- 2 The total daily discharge may be estimated based on the change in pond volume over 24 hours, or other representative method.
- 3 The discharge of visible or floating solids is prohibited in other than trace amounts. Also, removal of 85% of the influent BOD₅ and suspended solids levels is required on a 30-day average basis.

PART I: MONITORING REQUIREMENTS AND LIMITATIONS

C. REPORTING REQUIREMENTS

Monitoring results obtained during each month shall be summarized and reported on a WPDES Discharge Monitoring Report (DMR) Form #3200-28, postmarked no later than the 15th day of the following month. The original and district copies of the DMR form shall be submitted to the address given below. The facility copy is to be retained for your records.

Monitoring reports shall be signed by a principal executive officer, a ranking elected official, or other duly authorized representative.

If any parameter is monitored more frequently than required by this permit, the results of such monitoring shall be included on the DMR.

Sampling and laboratory testing procedures shall be performed in accordance with Chapters NR 218 and NR 219, Wis. Adm. Code.

All reports required in Parts I and II of this permit shall be submitted to:

Wisconsin Department of Natural Resources
Environmental Quality Section-Permits
Northwest District Headquarters
P.O. Box 309
Spooner, WI 54801

PART II: SPECIAL REPORT REQUIREMENTS

A. COMPLIANCE MAINTENANCE ANNUAL REPORTS

Compliance Maintenance Annual Reports (CMAR) shall be submitted by March 31 of each year. They are to be completed on a form provided by the Department and contain information obtained over each calendar year regarding the wastewater treatment and conveyance system. The CMAR shall be completed and signed by a duly authorized representative. In the case of a publicly owned treatment works, a resolution from the municipality's governing body shall accompany the CMAR.

B. SLUDGE MANAGEMENT REQUIREMENTS

The Sanitary District shall contact the Northwest District Sludge Management Specialist prior to recycling/disposing of any sludge. SLUDGE MAY NOT BE APPLIED TO LAND OR DISPOSED OF AT A LICENSED SANITARY LANDFILL WITHOUT A WRITTEN APPROVAL LETTER OR FORM 3400-122 FROM THE DEPARTMENT. Analysis of sludge characteristics is required prior to disposal.

All sludge management activities shall be conducted in compliance with the Municipal Sludge Management Code, Wisconsin Administrative Code NR 204. A violation of NR 204 constitutes a violation of this permit.

If sludge is to be land applied, a Landspreading Site Evaluation Form 3400-53 shall be submitted to the Department for the proposed land application site. The Department will evaluate the proposed site for acceptability and will either approve or deny use of the proposed site. If the site is approved, a written approval letter or Landspreading Approval Form 3400-122 will be issued by the Department. All conditions attached to the approval letter or Form 3400-122 must be complied with pursuant to NR 204.07. A violation of the standard or special conditions of approval constitutes a violation of this permit. If the sludge is to be disposed of at a licensed sanitary landfill the Sanitary District must also obtain written approval from the Department.

All raw grit and screenings shall be disposed of at a properly licensed solid waste facility or picked up by a licensed waste hauler. If the facility or hauler are located in Wisconsin, then they must be licensed under NR 500-520.

PART III. SCHEDULE OF COMPLIANCE

A. FACILITY IMPROVEMENTS - *The Sanitary District must begin planning for treatment system upgrading according to the following schedule:*

TASK OR REPORT REQUIRED	DATE DUE
1. Retain a Consultant for System Evaluation and Design	June 30, 1994
2. Submit a Sewer System Evaluation Study Report	December 31, 1996
3. Submit a Schedule of Further Work to be Accomplished and Dates for Completion	June 30, 1997

The above reports shall be submitted to:

Wisconsin Department of Natural Resources
WPDES Permits - Municipal
101 S. Webster Street
P.O. Box 7921
Madison, WI 53707-7921

PART IV: GENERAL CONDITIONS

1. Duty to comply. The permittee shall comply with all conditions of the permit. Any permit noncompliance is a violation of the permit and is grounds for enforcement action, permit revocation or modification, or denial of a permit reissuance application.
2. Permit actions. As provided in s. 147.03, Stats., after notice and opportunity for a hearing the permit may be modified or revoked and reissued for cause. If the permittee files a request for a permit modification, revocation or reissuance, or a notification of planned changes or anticipated noncompliance, this action by itself does not relieve the permittee of any permit condition.
3. Property rights. The permit does not convey any property rights of any sort, or any exclusive privilege. The permit does not authorize any injury or damage to private property or any invasion of personal rights, or any infringement of federal, state or local laws or regulations.
4. Inspection and entry. The permittee shall allow an authorized representative of the Department, upon the presentation of credentials, to:
 - a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records are required under the conditions of the permit;
 - b. Have access to and copy, at reasonable times, any records that are required under the conditions of the permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under the permit; and
 - d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance, any substances or parameters at any location.
5. Recording of results. For each effluent measurement or sample taken, the permittee shall record the following information:
 - a. The date, exact place, method and time of sampling or measurements;
 - b. The individual who performed the sampling or measurements;
 - c. The date the analysis was performed;
 - d. The individual who performed the analysis;
 - e. The analytical techniques or methods used; and
 - f. The results of the analysis.
6. Records retention. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit for a period of at least 3 years from the date of the sample, measurement, report or application. The Department may request that this period be extended by issuing a public notice to modify the permit to extend this period.
7. Signatory requirement. All applications, reports or information submitted to the Department shall be signed for a corporation by a responsible corporate officer including a president, secretary, treasurer, vice president or manager; and for a municipality by a ranking elected official; or other person authorized by one of the above and who has responsibility for the overall operation of the facility or activity regulated by the permit. The representative shall certify that the information was gathered and prepared under his or her supervision and based on inquiry of the people directly under his or her supervision that, to the best of his or her knowledge, the information is true, accurate and complete.
8. Compliance schedules. Reports of compliance or noncompliance with interim and final requirements contained in any compliance schedule of the permit shall be submitted in writing within 14 days after the schedule date, except that progress reports shall be submitted in writing on or before each schedule date for each report. Any report of noncompliance shall include the cause of noncompliance, a description of remedial actions taken and an estimate of the effect of the noncompliance on the permittee's ability to meet the remaining schedule dates.
9. Transfers. A permit is not transferable to any person except after notice to the Department. In the event of a transfer of control of a permitted facility, the prospective owner or operator shall file a new permit application and shall file a stipulation of permit acceptance with the Department WPDES permit section. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and to reflect the requirements of ch. 147, Stats.
10. Proper operation and maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of the permit. The wastewater treatment facility shall be under the direct supervision of a state certified operator as required in s. NR 108.06(2). Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training as required in ch. NR 114 and adequate laboratory and

process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

11. Duty to mitigate. The permittee shall take all reasonable steps to minimize or prevent any adverse impact on the waters of the state resulting from noncompliance with the permit.
12. Duty to provide information. The permittee shall furnish the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking or reissuing the permit or to determine compliance with the permit. The permittee shall also furnish the Department, upon request, copies of records required to be kept by the permittee.
13. Planned changes. All permittees shall provide adequate advance notice to the Department of the following changes. This written notice shall provide information on the quality and quantity of effluent introduced into the POTW, and any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
 - a. Any new introduction of pollutants into a POTW from an indirect discharger which would be subject so s. 147.02, Stats, if it were directly discharging those pollutants; and
 - b. Any substantial change in the volume or character of pollutants being introduced into the POTW by a source introducing pollutants into the POTW at the time of permit issuance.
14. Prohibited wastes. Under no circumstances may the introduction of wastes prohibited by s. NR 211.10 be allowed into the waste treatment system. Prohibited wastes include those:
 - a. Which create a fire or explosion hazard in the treatment work;
 - b. Which will cause corrosive structural damage to the treatment work;
 - c. Solid or viscous substances in amounts which cause obstructions to the flow in sewers or interference with the proper operation of the treatment work;
 - d. Wastewaters at a flow rate of pollutant loading which are excessive over relatively short time periods so as to cause a loss of treatment efficiency; or
 - e. Changes in discharge volume or composition from contributing industries which overload the treatment works or cause a loss of treatment efficiency.
15. Pretreatment. The permittee shall require any industrial user of the permitted facility to meet pretreatment standards established under s. 147.07(2), Stats., and to provide records or reports, or all information related to compliance with pretreatment standards.
16. Unscheduled bypassing. Any unscheduled diversion or bypass of wastewater at the treatment work or collection system is prohibited except in the following cases:
 - a. An inadvertent bypass resulting from equipment damage or temporary power interruption;
 - b. An unavoidable bypass necessary to prevent loss of life or severe property damage; or
 - c. A bypass of excessive storm drainage or runoff which would damage any facilities necessary for compliance with the effluent limitations and prohibitions of the permit. In the event of an unscheduled bypass, the permittee shall immediately notify the Department district office by telephone within 24 hours after an occurrence. In addition, the permittee shall notify the Department by letter within 5 days after each such unscheduled diversion or unscheduled bypass. The written notification shall at a minimum include reasons for such unscheduled bypass including dates, length of bypass and steps taken or planned to correct and eliminate such occurrences.
 - d. Discharges reported under this provision are not authorized by this permit and the Department may initiate legal action regarding such discharges. Such action is authorized by Section 147.29, Wis. Stats.
17. Scheduled bypassing. Any construction or normal maintenance which results in a bypass of wastewater from a treatment system is prohibited unless authorized by the Department in writing. If the Department determines that there is significant public interest in the proposed action, the Department may schedule a public hearing or notice a proposal to approve the bypass. Each request shall specify the following minimum information:
 - a. Proposed date of bypass;
 - b. Estimated duration of the bypass;
 - c. Alternatives to bypassing; and
 - d. Measures to mitigate environmental harm caused by the bypass.
18. Unscheduled sludge removal. Any disposal of grit, screenings, scum, sludges or other solids generated as a result of wastewater treatment processes shall be prohibited unless such disposal is authorized by a WPDES permit or other Department license or approval.

RECEIVED

MAR -7 1989

NORTHWEST DISTRICT
HEADQUARTERS

CORRESPONDENCE / MEMORANDUM STATE OF WISCONSIN

DATE: March 2, 1989

FILE REF: 3200

TO: Kathy Bartilson, NWD
Jane Malischke, NWD

FROM: Jim Schmidt - WR/2

SUBJECT: Comments on Reissuance of WPDES Permit for Iron Belt
(Town of Knight)

The purpose of this memo is to express my concurrence with the comments expressed by Jane Malischke in her January 24, 1989 memo on Iron Belt. As you are no doubt aware, I have expressed similar concerns over the adequacy of Iron Belt's secondary limits in the past, in fact my 7/30/85 memo is cited in your memo. I agree that even at the design flow of 0.032 mgd, secondary limits are inadequate, so now that Iron Belt exceeds that flow it is obvious that more stringent limits are necessary. Since I cannot speak for the original determination of secondary limits back in January, 1981 because I wasn't in the section yet, I can only guess as to what those limits were based on. I have noted instances where secondary limits were automatically given to seasonal fill-and-draw discharges regardless of the site-specific water quality situations, that was probably more of a result of a time crunch on permits (now there's something you never see any more!!!!!!!) than any individual staff errors, but I'm only speculating based on other experiences with permit determinations from 1980 and 1981.

I could ramble on forever about historical limit calculations, but what we need to do is decide how to proceed from here. Obviously there is some work to be done to correct this situation without imposing any additional hardship upon the community and the Department. One thing that may be worth considering is how long Iron Belt has until the design life of the existing plant expires. If that time is soon it may be prudent for DNR to go ahead and recalculate the limits based on whatever the appropriate flow is, but if there's still a long time before upgrading is absolutely necessary we need to consider if it is appropriate to consider changing limits at this stage. As for now, I'll stand behind my previous (1985) calculations and Jane's interpretation of them. It's obviously a very delicate situation, but at least we don't have a concern here over toxics (I have no problem with the disinfection and toxic screening recommendations). Keep me posted, especially if there's anything you need us to do down here.

CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date: January 24, 1989

File Ref: 3200

To: Kathy Bartilson

From: Jane Malischke 

Subject: REISSUANCE OF IRON BELT WPDES PERMIT (TOWN OF KNIGHT)

I have reviewed the information we have regarding the effluent limitations, disinfection requirements, and toxics screening recommendations for the Iron Belt WPDES permit. Following are our comments regarding the reissuance of the permit:

1. Effluent limitations. The secondary limits in the existing permit are not adequate to protect discharge to Cemetery Creek. I understand the discharge is to a ditch tributary to Cemetery Creek, however, effluent limits to protect the creek are needed at this facility. To establish effluent limits, we will need an accurate discharge flow figure. The current discharge pattern involves holding from December through March, and continuous discharge from April through November. Influent flows are well over design (0.032 MGD) which leads me to assume discharge volumes over the eight month discharge period are in excess of the design 0.32 MGD. A run through the 26 lb. rule (actually 13 lb. rule due to the trout water) results in a BOD₅ limit of 12 mg/l at 0.07 MGD (which is the maximum recorded with the influent flow meter). It is evident that limits more stringent than secondary will be needed for a discharge from the Iron Belt WWTP. However, until an accurate design flow is established, we can only speculate as to what the limits may be. Effluent limits for a fill and draw discharge have also been calculated (Jim Schmidt memo of 7/30/85) based on the 0.032 MGD design flow so are not accurate for flows exceeding that design figure.
2. Disinfection. Seasonal effluent disinfection will be necessary at Iron Belt if a continuous discharge operation is used. Disinfection is required to maintain the fish and aquatic life, recreational use classification of Cemetery Creek. If the facility provides 180 days of detention, no disinfection would be necessary.
3. Toxic Screening. Because there are no industrial contributors to the Iron Belt system, no toxic screening is necessary.

If you have any questions, let me know.

cc: Duane Schuettpelz - WR/2
Chuck Olson - Brule

0289\WR8N0004.JCM

CORRESPONDENCE/MEMORANDUM

RECEIVED

STATE OF WISCONSIN

ROUTE TO:	Address	Name	Att'n.	Initial & Route
1.	Northwest District	D. Jacobson	James Lund	JL/acc
2.			M. Michelson	MM/111
3.	GEF 2 Logans / 5	J. Karl	K. Lantieri	DLR
4.	GEF 2 WQE / 2		M. Tueler	
5.	WW/2, GEF II (last)	Brenda Hagman		

SUBJECT: Modification Request
 Apparent Violation
 Effluent Limits
 (Other)

For (Entity) Knight
 Permit No. WI - 0028941 - 4 Mod. No.: 1

FROM: Brenda Hagman

FOR: Gloria McCutcheon, MWW Sect.
 Paul Didier, IWW Sect.

Date: 12-10-81

SECTION A: Remarks by Initiator

Proposed Public Notice Attached

Recently Pence complained to the Department about inequities in effluent limits between its permit and those in Knight's permit. Knight has less stringent limits we can not change the limits in Knight's permit because the letter (attached) clarifying limits was written after December 31, 1980. However, some changes are necessary. We can add a flow monitoring requirement to the effluent and require sampling for ammonia-nitrogen.

SECTION B: District Recommendation - Respond within 7 days of receipt and route on

Agree w/parameters added - Effluent limits, D.O. is req'd to be 6ppm in trout streams and 7ppm during spawning. BOD and SS sampling frequency could be increased to weekly. This would make the weekly avg. of 45mg/l a credible parameter. Or, remove the weekly avg. from the permit. Jim has - The receiving water is the ditch, not the trout stream. Thus D.O. limit of 4.0 and 6.0. To determine all parameters be sampled 2 times per week. Add the effluent flow monitoring requirement (87 via difference with same device as same with flow). Will any effluent parameters be required? Submit flow only if pH weekly.

Richard (Signature) 1/14/82 Date

SECTION C: IWW/MWW Recommendation - Respond within 7 days of receipt and route on

At the time effluent limits were being reevaluated (pre 12/31/80), all the information I had showed the Knight system operating on a fill and draw basis. Since then (Dec. '81), I found out that for periods of the year they also have a continuous discharge. After the pond fill the influent flow will equal the effluent flow. The average influent flow is about 0.1 cfs. The Q_{7,10} is between 0.06 and 0.25 cfs. If the discharge occurs during a warm dry period, (over)

Wase Tueler (Signature) 1/19/82 Date

SECTION D: Enforcement Recommendation - Respond within 7 days of receipt and route on

No Objection to Modification based upon satisfactory review to construction
 Deny Modification Request
 Comments on Reverse

Michael J. Michelson (Signature) 12/23/81 Date
 Enforcement Specialist
John LaFontaine (Signature) Date
 Bureau of Legal Services Date

ADDITIONAL COMMENTS:

SECTION A:

and D.O. (without limits) The permit is written for continuous discharge when actually there are two major discharges/year and a small amount of discharge continuously previous to the drawdowns. I suggest the permit remain a continuous discharge and add a footnote on conditions during drawdown. Requirements to monitor ammonia-nitrogen and DO is also included. I removed the footnote on reevaluation of limits.

Upon receipt of your comments I will follow through on a public notice. Mark Tustin will prepare a response to Pence.

SECTION B:

SECTION C:

then there is likely to be DO problems in Cemetery Creek (especially if the effluent is up around 30 mg/l BOD).

During ice cover, ammonia levels will rise to about 30 mg/l. If the draw down occurs in early spring, toxic ammonia conditions are likely to exist in Cemetery Creek.

The proposed permit changes are largely cosmetic changes. If the Department wishes to protect Cemetery Creek, Knight's permit should be modified so that the spring discharge does not occur until the ammonia levels drop and a continuous discharge does not ~~occur~~ occur during July, August, or September.

SECTION D:

Is the department going to require limitations for NH_3N D.O. at some later date? What is the reason for just monitoring these parameters? Is it because of the C.W. local cutoff date 12/31/80? The representative sampling location for this discharge could affect the results substantially. Is anyone preparing a response to Don Pitt about permit modification? They are going to have to obtain a dissolved oxygen meter and begin weekly sampling of NH_3N .

B. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

SIGNED
3/31/81

KNIGHT (Edon Dept)

Part I. Page 3 of 3
WPDES Permit No. WI-0028941-a

During the period beginning on the effective date of this permit and lasting until September 30, 1985 the permittee is authorized to discharge from outfall serial number 001.

Samples taken in compliance with the monitoring requirements specified below shall be taken at representative locations.

There shall be no discharge of visible or floating solids in other than trace amounts.

During any 30 consecutive days, the average effluent concentrations of BOD₅ and of total suspended solids shall not exceed 15% of the average influent concentrations, respectively.

EFFLUENT PARAMETERS	EFFLUENT LIMITATIONS					MONITORING REQUIREMENTS	
	Quantity-kg/day(lbs/day)			Other Limitations (Specify Units)		Sample Frequency	Sample Type
	Average ¹	Maximum	Minimum	Average	Maximum		
BOD ₅ (monthly)	3.6(8)	-	-	30 mg/l	-	2xMonthly	grab
BOD ₅ (weekly)	5.4(12)	-	-	45 mg/l	-	2xMonthly	grab
Suspended Solids (monthly)	3.6(8)	-	-	30 mg/l	-	2xMonthly	grab
Suspended Solids (weekly)	5.4(12)	-	-	45 mg/l	-	2xMonthly	grab
pH (daily)	-	-	6.0	-	9.0	weekly	grab

¹Based on a design flow of 0.032 MGD.

²As part of the national policy to reevaluate all effluent limitations more stringent than secondary treatment levels, the Department will be conducting a review of the wasteload allocation process which was used to establish these effluent limitations. Based on this review, this permit will be modified if it is determined that either more or less stringent limitations are appropriate to maintain water quality standards.

Date: January 6, 1981

File Ref: 3200

→ To: Rick Schuff

From: Tom Harpt

Subject: Town of Knight (Iron Belt) - Effluent Limitations

The Town of Knight owns and operates an STP serving primarily Iron Belt, Wisconsin (located in Iron County). Effluent from this lagoon system (operated on a fill and draw basis) discharges to Cemetery Creek via 500' of ditch. Cemetery Creek is classified as a trout stream. Effluent limits below are based on the following data.

Data

mean monthly Q_{10} = .45 cfs (Oct.)
mean monthly Q_{10} = .84 cfs (April)

design flow = .032 MGD influent
semi annual discharge = .19 MGD (.3 cfs)

Effluent Limits

BOD₅ and SS - secondary
pH(s.u.) 6-9
NH₃-N 10 mg/l fall (weekly ave.)
NH₃-N 15 mg/l spring (weekly ave.)
D.O. - 4.0 mg/l min.

cc: C. Ledin - WW/2
R. Pope - WW/2
GIA
Northwest District

February 5, 1979

Central Office - Madison

3200

(Steve Skavronek)

Ted Smith

Effluent Criteria Determination Study - Iron Belt, November 2, 1978

The Iron Belt two-cell lagoon is operated on a fill and draw basis. The established drawdown schedule calls for removal of the stop planks in three stages, on October 15, November 1, and November 15. Arrangements were made with the operator to assure that the planks would be removed November 1, but due to other problems in the village, the second stage of the drawdown was not begun until 12:00 o'clock on the day of the study. Before 12:00 o'clock on November 2, there was no flow out of the lagoon except for leakage.

The Iron Belt lagoon discharges via several hundred feet of pipe and several hundred feet of ditch to Cemetery Creek within one-half mile above the confluence of Cemetery and Alder Creeks (see attached map).

Flow was measured in the effluent ditch and in Cemetery Creek above the ditch. The conditions in Alder Creek above Cemetery Creek precluded accurate flow measurement. Alder Creek flow was measured at the first town road, approximately 3.5 miles upstream. The study data are attached.

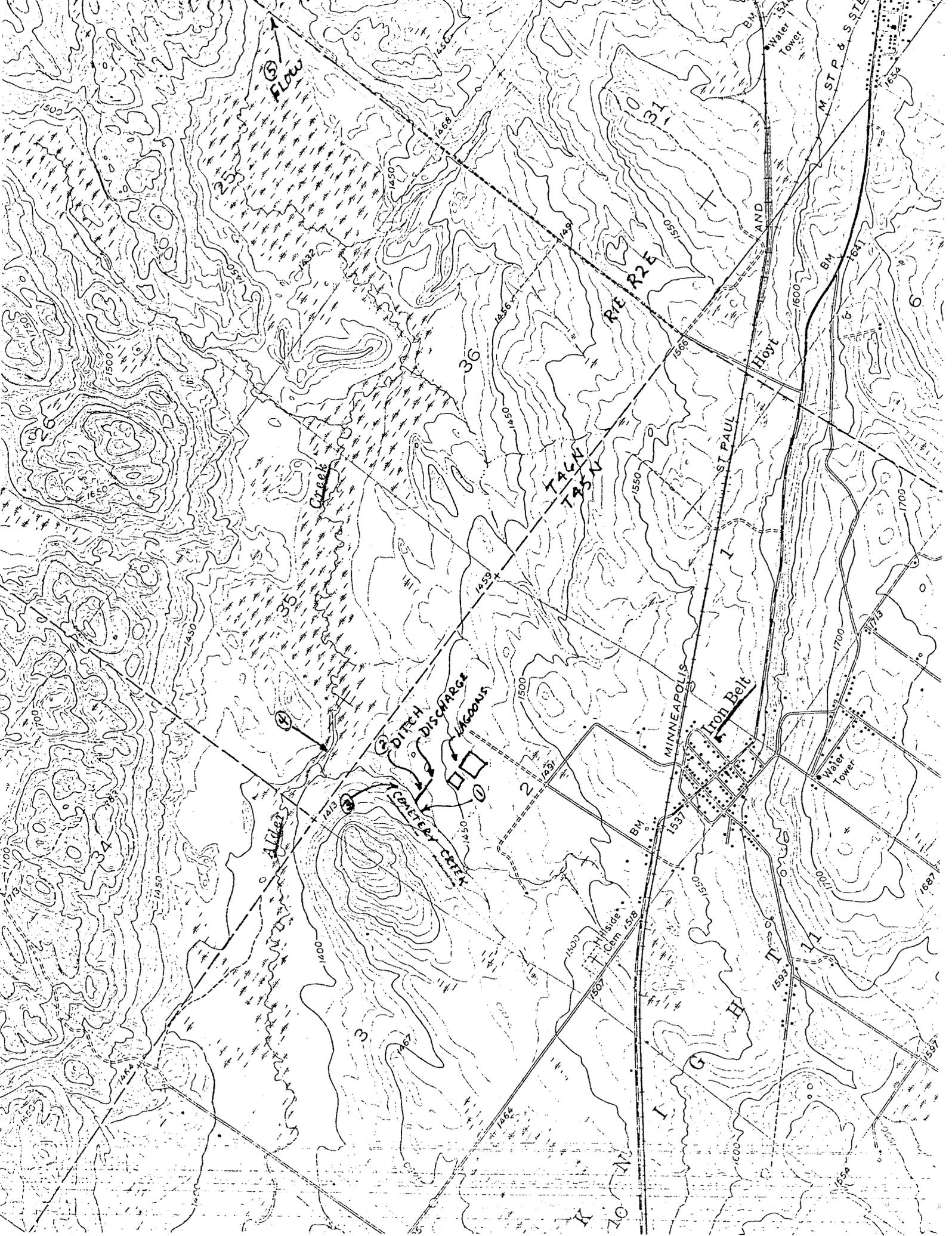
TS:cw

cc: Chuck Olson
J. L. Rieckhoff

Attach.

EFFLUENT CRITERIA DETERMINATION STUDY
 IRON BELT - 2 NOV 78

LOCATION	FLOW Ft^3/S	TEMP $^{\circ}\text{C}$	pH	mg/l				
				D.O.	BOD ₅	ORG-N	NH ₃ -N	NO ₂ +NO ₃ -N
① CEMETERY CR. - UPSTREAM	.37	5.3	7.4	11.2	1.8	0.2	0.02	0.09
② EFFLUENT DITCH	.47	6.0	7.3	10.6	5.5	1.2	0.39	0.49
③ CEMETERY CR. - MIX			7.5		2.9	0.6	0.17	0.26
④ ALDER CREEK (ABOVE CEMETERY CR.)		5.0	6.5	7.9	1.8	0.6	<0.02	<0.02
⑤ ALDER CREEK (TOWN RD. ABOVE)	.45							



SURVEY IRON BELT - CEMETERY CR. Modified WLA.

DATE 9 JUNE 77

STA. NO.	LOCATION	TIME	DEPTH	TEMP °C	D.O.	pH	SAMPLES COLLECTED - REMARKS
I-B	EFFLUENT DITCH 30 YDS. ABOVE CR.	12:30	0	16.4	6.1	7.2	BOD, N-Sum, SS BACTI FLOW
C-1	CEMETERY CR. ABOVE DITCH	13:00	0	11.1	10.5	7.4	BOD, N-Sum, SS BACTI FLOW
	MIX	13:30		13.2	9.8		
	50 yds below	13:31		13.3	9.6		
	80	13:33		12.5	9.9		
C-2	120	13:40	0	12.5	9.8	7.4	BOD, N-Sum, SS BACTI FLOW
							several small feeders below ditch

SURFACE WATER QUALITY RECORD

Source: Cemetery Co. - Iron Belt Year: 1977

DATE	<u>9 June 77</u>	<u>C-1</u>	<u>C-2</u>	<u>IB</u>															
<u>BACTERIOLOGICAL</u> MPFCG/100 ml.		<u>10</u>	<u>20</u>	<u><10</u>															
<u>026</u> BOD-5 Tot.		<u>1.5</u>	<u>2.9</u>	<u>8.4</u>															
<u>097</u> pH (su) Lab.																			
<u>138</u> Tot. Solids																			
<u>107</u> Vol. Tot. Solids																			
<u>106</u> Susp. Solids		<u>3</u>	<u>5</u>	<u>18</u>															
<u>109</u> Vol. Susp. Solids																			
<u>100</u> Tot.-P																			
<u>136</u> Sol.-P																			
<u>058</u> Tot. Org-N		<u>0.4</u>	<u>0.4</u>	<u>1.8</u>															
<u>056</u> Ammonia-N		<u>.03</u>	<u>.05</u>	<u>.07</u>															
<u>045</u> NO ₂ - N + NO ₃ - N		<u>.10</u>	<u>.12</u>	<u>.21</u>															
<u>002</u> Tot. Alkalinity (as CaCO ₃)	<u>NO₂ - N</u>			<u>.04</u>															
<u>035</u> Chlorides	<u>NO₃ - N</u>			<u>.17</u>															
<u>043</u> Color (su)																			
<u>114</u> Conductivity (μmhos)																			
<u>068</u> Hardness (as CaCO ₃)																			
<u>119</u> Turbidity (JTU)																			
<u>FIELD DATA</u>																			
Temp.		<u>11.1</u>	<u>12.5</u>	<u>16.4</u>															
D. O.		<u>10.5</u>	<u>9.8</u>	<u>6.1</u>															
pH (su.)		<u>7.4</u>	<u>7.4</u>	<u>7.2</u>															

Bacti analyses per 100 ml. - pH in standard units.

STREAM <i>Iron Belt STP Effluent Ditch</i>	COUNTY <i>Iron</i>	LOCATION OF STREAM		
		Township <i>43N</i>	Range <i>1E</i>	Section <i>2</i>
				Forty <i>SW NW</i>

ESTIMATED WATER STAGE IN FEET:	<input type="checkbox"/> Above <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Below	REFERENCE POINT FOR LEVELS
--------------------------------	--	----------------------------

CONDITIONS AFFECTING MEASUREMENTS --- Wind, bottom, ice, etc.	TEMPERATURE WATER <i>16.4 °C</i>
---	-------------------------------------

INSTRUMENT --- Name and number <i>MARSH MCGIBBES</i>	EXACT LOCATION OF MEASUREMENT ON STREAM <i>30 Yds above Country Creek</i>
---	--

OBSERVER <i>TED SMITH & LARRY PERRY</i>	DATE <i>9 JUNE 77</i>	TIME OF DAY <i>12:30</i>
--	--------------------------	-----------------------------

Distance from Bank	Depth	Depth of Observation <i>4 ft from bottom</i>	Revolutions	Time in Seconds	Velocity			Area of Section			Discharge
					At Point	Mean in Vertical	Mean in Section	Area of Section	Mean Depth	Width	
<i>0</i>	<i>0</i>										
<i>.17</i>	<i>.12</i>						<i>.16</i>		<i>.12</i>	<i>.24</i>	<i>.02</i>
<i>.35</i>	<i>.12</i>						<i>.95</i>		<i>.12</i>	<i>.18</i>	<i>.02</i>
<i>.53</i>	<i>.09</i>						<i>.45</i>		<i>.09</i>	<i>.26</i>	<i>.01</i>
<i>.70</i>	<i>0</i>										

SUMMARY	<i>.65</i>		<i>.084</i>	<i>.11</i>	<i>.70</i>	<i>.05</i>
(over)	Mean Velocity		Area of	Mean Depth	Total Width	Discharge

STREAM: Cemetery Cr. COUNTY: Iron LOCATION OF STREAM: Township: Range: Section: Forty:

ESTIMATED WATER STAGE IN FEET: 0.7' Above Normal Below

REFERENCE POINT FOR LEVELS

estimate

CONDITIONS AFFECTING MEASUREMENTS --- Wind, bottom, ice, etc.

TEMPERATURE WATER

very rocky bottom, flow somewhat turbulent

INSTRUMENT --- Name and number

EXACT LOCATION OF MEASUREMENT ON STREAM

Just below outfall ditch from Iron Belt STP

OBSERVER

DATE

TIME OF DAY

L. Damman M. Michaelson

9/23/76

10:00

Distance from Bank	Depth	Depth of Observation	Revolutions	Time in Seconds	Velocity		Area of Section			Discharge
					At Point	Mean in Vertical	Mean in Section	Area of Section	Mean Depth	
.25	.20						.6		.5	.0660
.75	.15						.7		"	.0525
1.25	.15						.9		"	.0675
1.75	.13						.78		"	.0507
2.25	.20						.15		"	.0500
2.75	.30						.35		"	.0525
3.25	.35						.25		"	.0438
3.75	.30						.29		"	.0435
4.25	.30						.40		"	.0600
4.75	.15						.20		"	.0150
5.00	bank									

SUMMARY

(over)

Mean

Area

Mean

Total

Discharge

5' 46.05

IRON BELT, IRON COUNTY

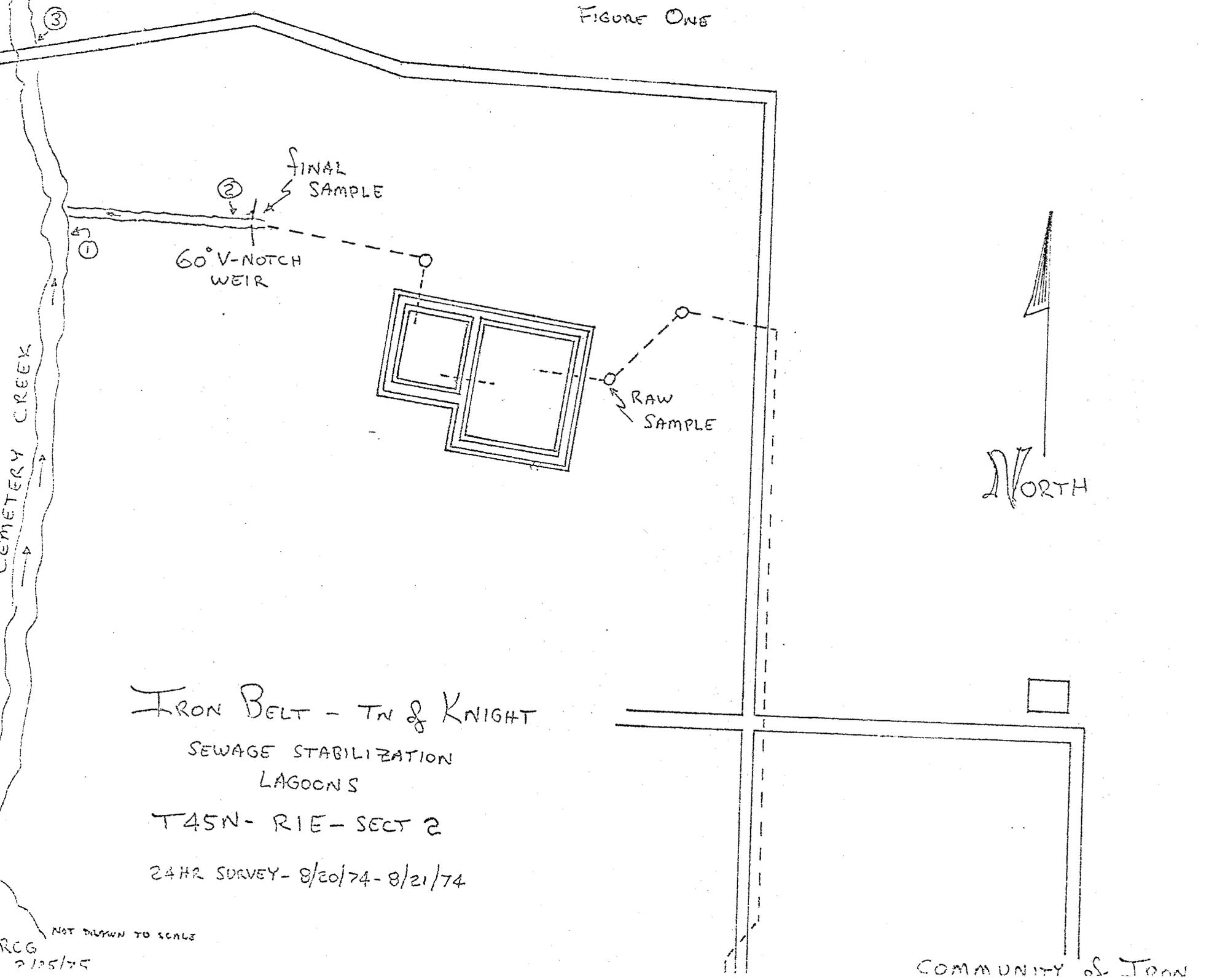
The community of Iron Belt (Town of Knight) operates a two-cell sewage stabilization lagoon system to treat municipal wastewaters. The effluent from the secondary cell is conveyed via several hundred feet of pipe to a 500 ft. long, open ditch which connects to Cemetery Creek.

Cemetery Creek is classified as a Class ^{II} trout stream with a population of naturally producing brook trout and sculpins.

Recommendation:

The 500 ft. channel leading from the sewer pipe outfall to Cemetery Creek shall be classified as an effluent ditch. Cemetery Creek shall be classified as a continuous stream with fish and aquatic life sub-categorization. Any effluent limits imposed to maintain "fish and aquatic life" standards shall be imposed at the point where the effluent ditch enters Cemetery Creek.

FIGURE ONE



CEMETERY CREEK

FINAL SAMPLE
60° V-NOTCH WEIR

RAW SAMPLE

NORTH

IRON BELT - TN & KNIGHT

SEWAGE STABILIZATION LAGOONS

T45N - R1E - SECT 2

24 HR SURVEY - 8/20/74 - 8/21/74

NOT DRAWN TO SCALE

RRCG
2/25/75

COMMUNITY of IRON

TOWN OF KNIGHT - IRON BELT

TO: Files
FROM: Larry Prenn
DATE: September 21, 1991
SUBJECT: Point Source Evaluation
Cemetery Creek at Iron Belt

Summary:

Cemetery Creek is currently classified as a recreational use stream that has the capacity to support a cold water, fish and aquatic life community. The classification is appropriate and should remain unchanged. Current effluent standards appear to be protective of this classification.

Description:

Originating from a wetland in the SW 1/4 of Sec. 2, T45N, R1E, Cemetery Creek flows to the north for a distance of 1.9 miles before joining Alder Creek. Cemetery Creek is a small class II trout stream for its entire length, while at the point of confluence, Alder Creek is recognized as Class I trout water.

A two-cell stabilization lagoon located in the NW 1/4 of Sec. 2 discharges effluent through several hundred feet of underground pipe before reaching an exposed concrete structure where the effluent then flows for another 400 feet in an open ditch to the creek. The point of discharge to the creek is 0.6 miles above the confluence with Alder Creek.

Except for the presence of one small trailer, the area downstream of the confluence with the effluent ditch is all wild and thickly wooded. Alder growth dominates the streambank vegetation, and in many areas forms a thick, tangled canopy over the creek. Instream habitat is composed mainly of boulders, rubble, gravel, and sand, providing the material to create numerous riffles and instream diversions.

Water Chemistry

Water Chemistry information is presented in an attachment at the end of this summary. On September 25, 1991 effluent was sampled at the concrete structure (IB1), and in the open ditch just prior to entry into Cemetery Creek (IB2). Cemetery Creek was sampled above the confluence with the ditch (IA), at a trail crossing approximately 750 feet downstream of the effluent ditch (ID1), and at a point just above the confluence with Alder Creek (ID2).

Dissolved oxygen levels in Cemetery Creek did not vary at any of the three stations and were close to 90% saturation. BOD₅ levels for Cemetery Creek were all low. A slight elevation in BOD₅ at the first station (ID1) downstream of the effluent ditch was recorded, but showed recovery at the second downstream station (ID2).

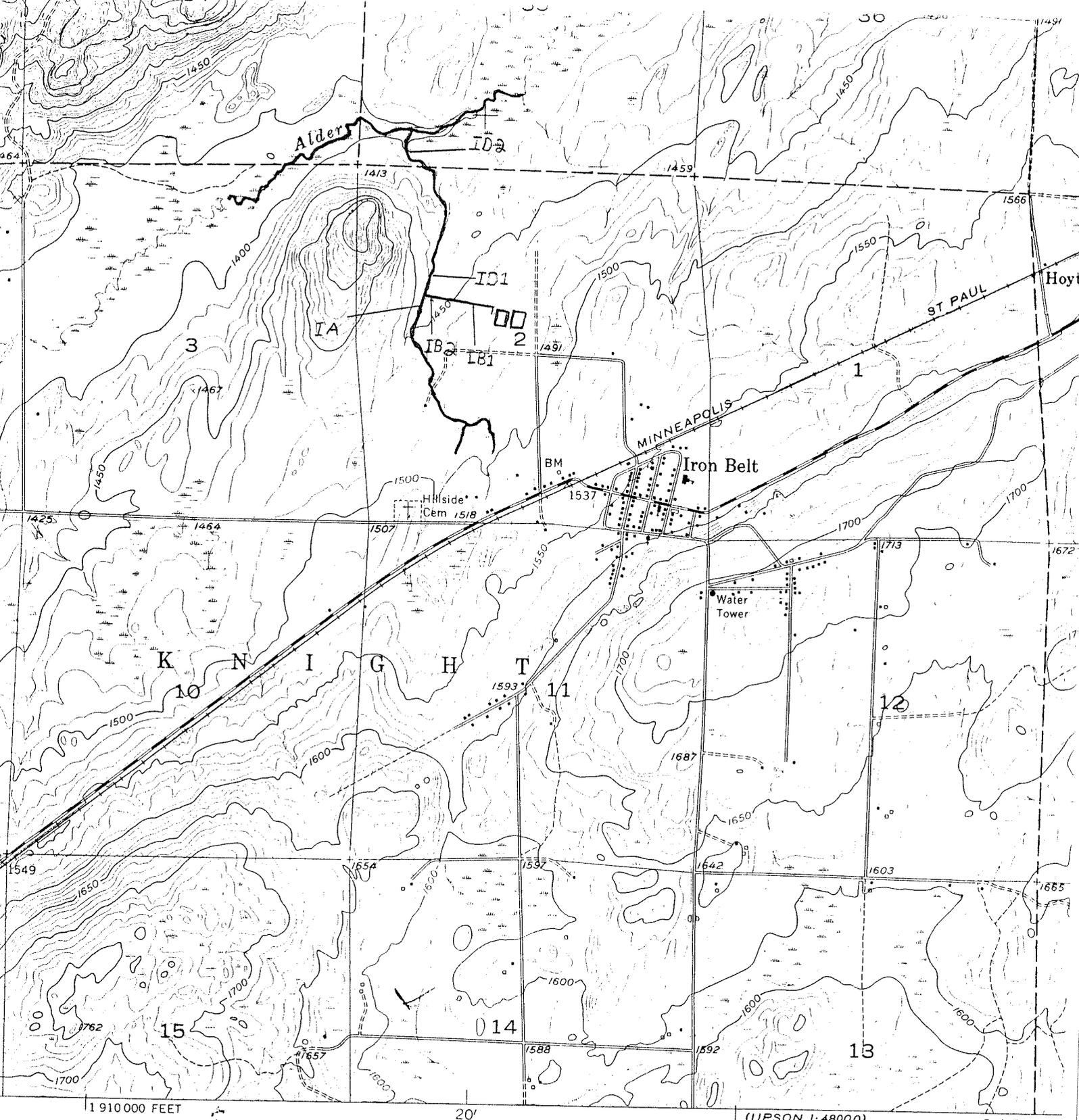
Effluent flow in the ditch at IB2 was estimated at 0.6 cfs. At ID1 streamflow was measured at 2.6 cfs.

Biological Assessment:

Macroinvertebrates were collected at station IA and ID2 for the compilation of a Family Biotic Index. Derived FBI values of 2.91 and 3.10 respectively for the two stations are indicative of excellent water quality with no apparent organic pollution problem. In addition to the excellent water quality rating, the invertebrate community sampled at the two sites exhibits characteristics of diversity and sensitivity. Stonefly nymphs are present, and mayfly nymphs and caddis larvae are very common. Invertebrate field and bench information is attached at the end of the summary.

Physical Assessment

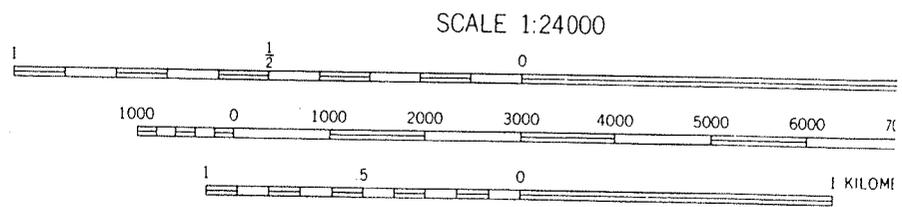
Stream habitat rating places sites IA and ID2 in a borderline good to excellent category. Out of thirteen rating items, eleven are scored as excellent. Rating items scored otherwise relate to average depth of pools and average depth of riffles. These two limitations in habitat are due to the natural smallness and the hard bottom character of the stream, and do not detract from the aesthetic quality present.



...ed by the Geological Survey

...s by Kelsh plotter
 ... Field check 1956
 ... in American datum
 ... in coordinate system, north zone
 ... Mercator grid ticks,

APPROXIMATE MEAN DECLINATION, 1956



CONTOUR INTERVAL 10 FEET
 DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
 FOR SALE BY U. S. GEOLOGICAL SURVEY, WASHINGTON 25, D. C.

SURVEY Point Source Evaluation - Iron Belt

DATE Sept 21, 1991

SA. No.	LOCATION	TIME	DEPTH	TEMP °C	D.O.	pH	SAMPLES COLLECTED - REMARKS
ED2	Cemetery Creek above confluence w/ Alder Cr.	11:00	0	7.8	10.0	-	Chem Nutri Bacti Inverts + Habitat Rating
ED1	Cemetery Cr at Rd Xing	12:00	0	8.0	10.1	-	Chem Nutri Bacti Flow
EB2	Effluent ditch just above Cemetery Cr	12:15	0	10.0	6.7	-	Chem Nutri Bacti Est Flow 2x13x1 = .6 cfs
EA	Cemetery Cr just above Effluent Ditch	12:30	0	8.2	10.1	-	Chem Nutri Bacti Inverts + Habitat Rating
EB1	Effluent Ditch at Concrete Structure	13:30	0	10.0	6.2	-	Chem Nutri

Department of Natural Resources

INTRA-DEPARTMENT

MEMORANDUM

..... Spooner

Station

Date... December 2, 1976

IN REPLY REFER TO: 3200

TO: Anthony S. Earl

FROM: Lowell G. Hansen

SUBJECT: Surface Water Classification (NR 104) - Iron Belt, Iron County.

The Village of Iron Belt (Town of Knight), located in northern Iron County, operates a two cell stabilization lagoon system for the treatment of municipal wastewater. The lagoon effluent is conveyed, via several hundred feet of pipe, to a 500 foot long open ditch. The ditch discharges to Cemetery Creek 4/10 mile above its confluence with Alder Creek.

Cemetery Creek is classified as Class II trout water for its entire length. Alder Creek is Class I trout water.

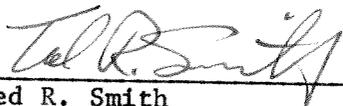
A map and photographs are attached.

RECOMMENDATION

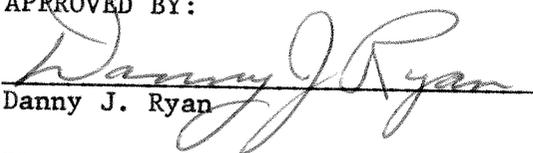
The "wastewater effluent channel" (NR 104.02 (1)(d)), constructed to convey treated wastewater to Cemetery Creek, shall be categorized as "marginal surface water" (NR 104.02 (3)(b)).

Cemetery Creek and Alder Creek shall be classified as "continuous streams" (NR 104.02 (1)(f)) and shall meet fish and aquatic life standards (NR 102.02), including the standards for trout streams (NR 102.02 (3)(e)).

By


Ted R. Smith

APPROVED BY:


Danny J. Ryan

Date

12/14/76

TRS:cw

NOTED:

Date



DISCHARGE
SEWAGE LAGOONS

MINNEAPOLIS

Iron Belt (77)

Water Tower

SCALE
1:24,000

RJE RJE



IRON BELT

Second cell of sewage lagoon system - looking west towards discharge area. (1975)



IRON BELT

End of discharge pipe from sewage lagoon in wooded wetland northwest of lagoon. (1975)



IRON BELT

Effluent channel - looking west from end of discharge pipe towards Cemetery Creek. (1975)

IRON BELT, IRON COUNTY

The community of Iron Belt (Town of Knight) operates a two-cell sewage stabilization lagoon system to treat municipal wastewaters. The effluent from the secondary cell is conveyed via several hundred feet of pipe to a 500 ft. long, open ditch which connects to Cemetery Creek.

Cemetery Creek is classified as a Class I trout stream with a population of naturally producing brook trout and sculpins.

Recommendation:

The 500 ft. channel leading from the sewer pipe outfall to Cemetery Creek shall be classified as an effluent ditch. Cemetery Creek shall be classified as a continuous stream with fish and aquatic life sub-categorization. Any effluent limits imposed to maintain "fish and aquatic life" standards shall be imposed at the point where the effluent ditch enters Cemetery Creek.