

ENVIRONMENTAL PROTECTION AGENCY

ROCKY MOUNTAIN-PRAIRIE REGION

REGION VIII

RED RIVER OF THE NORTH BASIN

DECEMBER 4, 1972

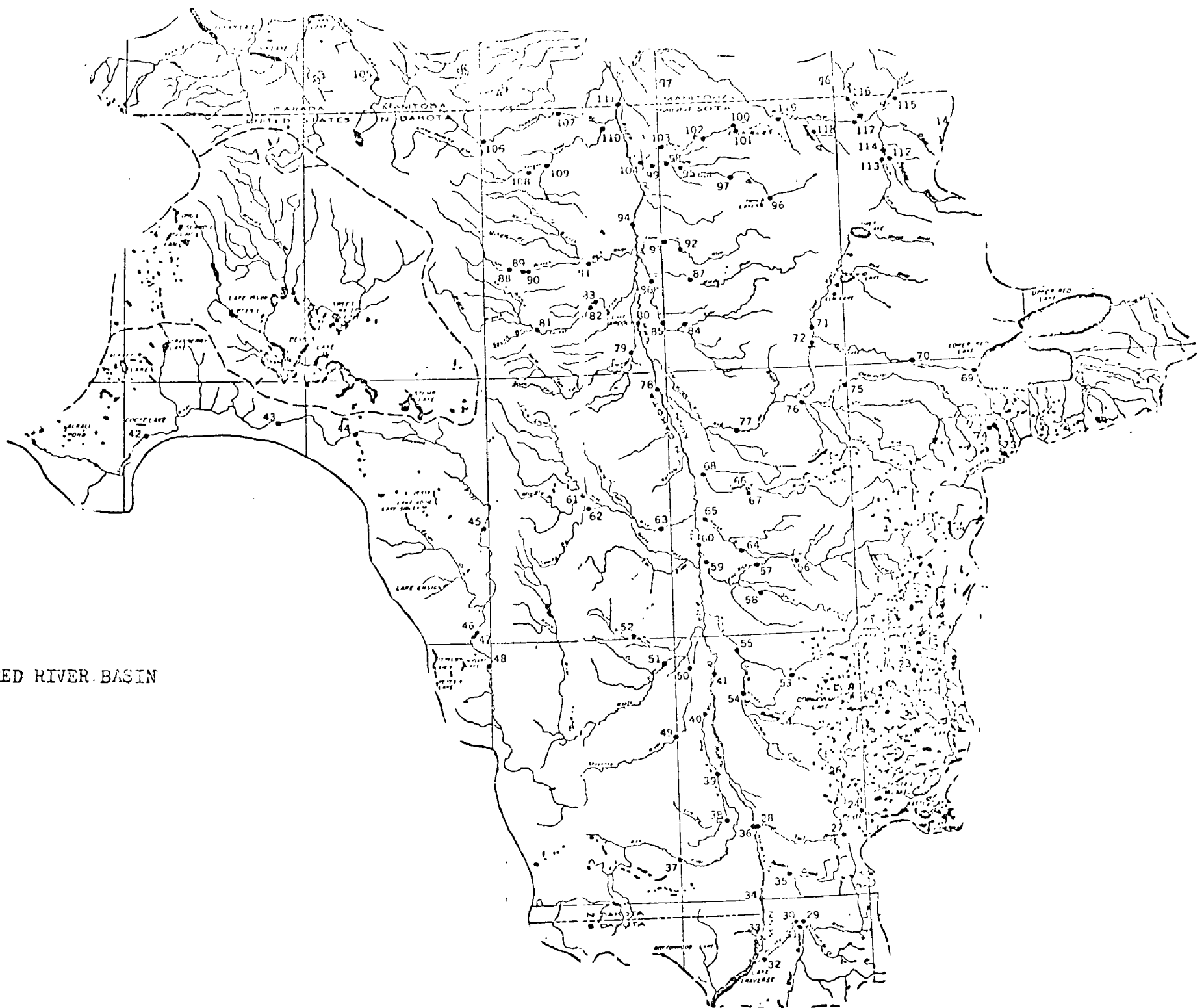
RED RIVER

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SECTION A

Narrative



RED RIVER - FIGURE 9

I. Priority Area Identification

The Red River of the North River Basin encompasses portions of the States of North Dakota, Iowa and Minnesota and the Dominion of Canada. The area of primary effort for Region VIII in this Accomplishment Plan falls entirely within the State of North Dakota. Just considering the mainstem of the Red River which borders Minnesota and North Dakota, and three major tributaries (Red Lake River in Minnesota, and the Sheyenne and Park Rivers in North Dakota), approximately 955 river miles are traversed. Seven hundred and eighty-two of these miles fall under North Dakota's jurisdiction. The entire basin covers approximately 38,000 square miles.

II. Problem Assessment

The Red River Basin involves three States, two EPA Regional Jurisdictions, and drains into Canada. Consequently, the problem includes institutional constraints and relations on an International, interstate, and inter-regional level. As a result, the effort is fragmented and the water pollution problem is not addressed with the full amount of resources that are available.

- a. Although the North Dakota population is relatively small, 247,000 people in 1970, the limited availability of quality water supplies, the general widespread nature of the pollution problem and the international aspects combine to make this an important priority area.
- b. Of the 782 river miles in North Dakota, 280 are estimated to be out of compliance with North Dakota's water quality standards some time during the water year.
- c. The major industrial pollution in this basin results from the operations of sugar beet mills.
- d. In 1965 an Enforcement Conference was convened in order to address the water quality problems in the Red River. The Conference made several recommendations regarding large municipal and industrial dischargers, including the four sugar beet mills. The recommendations of this Conference as they relate to North Dakota are reflected in this Basin Accomplishment Plan.

e. The North Dakota standards and implementation schedule are adequate. However, there is a problem of differing standards at the Minnesota-North Dakota state line that must be resolved.

f. All major waste sources are presently under a schedule of improvement and compliance so the main effort is directed toward seeing that the schedules are maintained. However, due to the diversity of wastes sources and the levels of nutrient loadings, full compliance with water quality standards is not assured.

g. Water quality surveys and plant effluent and discharge point stream monitoring will be carried out to determine if additional nutrient removal by point sources is required. Otherwise, no additional treatment needs are identified at this time.

Another significant problem is the discharging of waste-water effluent under ice thus causing an oxygen depletion. In North Dakota, all the municipal systems except for Fargo, hold their effluent through the winter and discharge during the Spring and Fall months. Fargo is in the process of constructing a 580-acre lagoon which will provide storage of its effluent through the winter. American Crystal Sugar at Drayton is constructing a recycling unit whereby the majority of its effluent will not reach the stream system.

Because most dischargers release their wastes during Spring and Fall which are also the times of peak sugar beet processing, a large slug loading is experienced upon the river system at these times. Proposed surveys in this plan should provide the additional information needed to determine the stream effects of this practice and any necessary recommendations for remedies. Special problems may also come as a result of the low flows at reduced velocities that prevent the river from being adequately flushed, thus, nutrient balance and siltation may be more troublesome than in most other cases.

h. The Basin covers part of three states, and the Dominion of Canada, thus there are some interstate and international relations questions to be considered.

i. Since the Basin also cuts across two EPA regions, Regions V and VIII, and Region V has not designated the Red River Basin as a priority basin, special coordination needs to be developed to assure proper water quality management in the area.

II. Agency and/or Operational Objectives

It is EPA's objective to insure instream water quality standards are not violated. The Regional office is utilizing (1) North Dakota State's effluent requirements for municipal dischargers and (2) EPA/Industry commitments as criteria for reaching this objective*. These criteria are:

Municipal WWTP 25 mg/l BOD₅ in effluent
 30 mg/l TSS in effluent

Sugar Beet Industry BOD₅ = 5#/Ton sliced beets processed
 Fecal Coliform = 75×10^6 /Ton sliced
 beets processed

By FY 75, the BOD₅ effluent requirements will be met by North Dakota. An additional reduction of 356# TSS will be needed in FY 76 in order to maintain compliance with the criterion. These conclusions apply to North Dakota's portion of the pollution loading since no effluent criteria have been established for industries in Minnesota.

Projected reductions to be realized by FY 73 and 74 are:

	FY 73	FY 74
BOD ₅	60794 #/Day	65248 #/Day
TSS	13420 #/Day	58456 #/Day

The DFIC Survey to be completed June 73 should reveal whether or not recent improvements to several wastewater treatment plants in the basin have resulted in water quality improvements.

IV. Approach

The objectives outlined above will be achieved through the following program elements and their listed activities:

1. Refuse Act Permits (3B2124) - obtain commitments* to reduce pollution loadings from several key industries.
2. Municipal Waste Treatment Construction Grants (2B8164) - help finance the construction of several new wastewater treatment plants and wastewater treatment plant improvements which will increase plant efficiency or solve some other water quality problem.
3. Water Quality Planning (2B3149) - approve a comprehensive water quality management plan which will provide guidance for effective management of the water quality.
4. O&M, Water Quality Monitoring, Water Pollution Source Surveillance and Water Quality Enforcement (2B8163), (2B2147), (2B2148), (3B1123) - assess impact of improvements and carry out implementation schedules.

*These commitment actions will be immediately converted to permit actions under the new legislation as soon as guidelines are available.

5. Environmental Impact Statements Review (2B6117) - assure that responsibilities assigned to EPA via the NEPA are observed and environmental quality maintained and protected.

SECTION B

Basin Load Summary

DATE 5/75
STORET Minor Basin
ID No. 0701
Region VIII
State(s) ND-DUTCH

Name of Basin Red River of the North

1. Area covered:

Entire Basin

2. Water quality objectives:

Parameter	(a) Current criteria (see WQS) mg/l	(b) EPA Objective: Minimum Acceptable Ambient Level (See Table 4) mg/l	(c) Actual Level at Worst Time of Yr. (See Table 2) mg/l	Accuracy (% +) (Regional est.) + %
BOD ₅ -25 mg/l	} effluent stds	same as current		ml
TSS -30 mg/l		criteria		
DO 5.0 mg/l		}		
Total Coliform - 5000/100 ml		Stds. for instream	.9 mg/l 90,000.100 ml.	2% 2%

3. Estimated pollution load--all sources (average FY 72):

	Load (See Table 4) pounds/day	Accuracy (% ±) ± %
BOD ₅	80283	10%
TSS	83517	10%

4. Estimated pollution load reduction required to meet EPA water quality objectives derived from 2(c) - 2(b):

	Required Reduction (≤ of Table 4) pounds/day	Accuracy (% ±) ± %
BOD ₅	67810	10%
TSS	64675	10%

5. Reduction firmly committed by FY 72 and prior year actions:

	Year of Actual Reduction			
	FY 73	FY 74	FY 75	FY 76
BOD ₅	1bs/day 60794	1bs/day 65248	1bs/day 65248	1bs/day 65248
TSS	13420	58456	58456	58456

6. Additional reductions to be obtained by FY 73 and FY 74 commitments:

	Year of Actual Reduction				(See Table 4)
	FY 73	FY 74	FY 75	FY 76	
BOD ₅	1bs/day	1bs/day	1bs/day	1bs/day	*To be negotiated with industry.
TSS			2750*	2750	
			9730	9730	

Increases in pollution discharges expected:

		Year of Actual Increase			
		<u>FY 73</u>	<u>FY 74</u>	<u>FY 75</u>	<u>FY 76</u>
		lbs/day	lbs/day	lbs/day	lbs/day
BOD ₅		136	272	408	544
TSS		570	1140	1710	2280

8. Total reductions to be obtained--sum of 5 and 6 above:

		Year of Actual Reduction			
		<u>FY 73</u>	<u>FY 74</u>	<u>FY 75</u>	<u>FY 76</u>
		lbs/day	lbs/day	lbs/day	lbs/day
BOD ₅		60794	65248	67998	67998
TSS		13420	58456	68186	68186

9. Total reductions required--sum of 4 and 7 above:

		Year of Actual Reduction			
		<u>FY 73</u>	<u>FY 74</u>	<u>FY 75</u>	<u>FY 76</u>
		lbs/day	lbs/day	lbs/day	lbs/day
BOD ₅		67946	68082	68218	68354
TSS		65245	65815	66380	66950

10. Year in which minimum acceptable water quality levels are to be achieved--compare 8 and 9 above:

TSS - FY 75 BOD₅ - need additional commitment of 356# during FY 76
(To be determined prior to FY 76).

11. If figures for items 2 through 7 above are not available, please provide estimate of when they will become available through monitoring and other activities:

Are items 3, 5, and 6 above derived from detailed discharger inventories?

The best available.

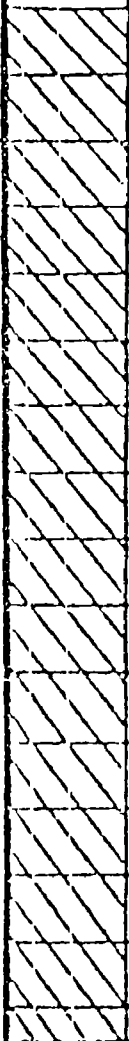
12. Key pollutants, if any, for which a weight or other quantity measure is not appropriate:

(Note special problems and comments).

Figure 10 - Continued

SECTION C

Planned Accomplishments

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Element c. <input type="checkbox"/> Geo. Area			2. Program Sub-Element Title Regional Administrator		3. Sub-Element No. 5T1214	4. Sheet No. 1 of 1
			5. Geographical Area Title Red River of the North		6. Geo. Area Code 0701	7. Priority
8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS			
	1	Nov. 72	Meet with Regional Administrator of Region V to develop a working			
			agreement between the two Regions to accomplish a total basin WQM			
			strategy.			
	12. FY 1973		13. FY 1974		14. Prepared by & Date	
a. 016		b.		9-22-72 JA		16. Approved for RPIO

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

PAGE 2.

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Elem. c. <input type="checkbox"/> Geo. Area			2. Program Sub-Element Title		3. Sub-Element No. 2B3149		4. Sheet No. 1 of 3	
			5. Geographical Area Title		6. Geo. Area Code 0701		7. Priority	
3. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS					
	1	June 76	Bring about the integration of North Dakota's and Minnesota's Water Quality Management Plan through inter-agency cooperation.					
			.5 .6					
	2	June 76	Review and monitor development of the Water Quality Management Plan to fulfill the requirements of 40CFR 35.					
			.4 .8					
	3	June 76	Assist North Dakota in the basin planning activities for the Red River of the North.					
			.5 .6					
	4	July 73	Review and approve Water Quality Management Plan for Red River of the North including Fargo SMSA					
			1.0 .6					
	5	May 74	Assess impact of new legislation upon Water Quality Management Planning and the Facilities Management Grants Program.					
			.50 .50					
	6	Sep 73	Work with Region V, HUD, N.D., Minnesota and Fargo-Moorhead SMSA to set up areawide planning organization.					
			50 .7					
	7	Oct 73	Model the Red River of the North using a Simplified Math Model.					
			1.0 1.0					
	8	Oct 73	Review the results of DFIC's proposed Water Quality Survey of the Red River and recent wastewater treatment plant improvements.					
			0 .40					
12. FY 1973			13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date	
a. b.			a. b.		TA 9-25-72		16. Approved for RPIO	

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

PAGE 3.

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Elem. c. <input type="checkbox"/> Geo. Area		2. Program Sub-Element Title Water Quality Planning		3. Sub-Element No. 2B3149		4. Sheet No. 2 of 3			
5. Geographical Area Title Red River of the North		6. Geo. Area Code 0701		7. Priority					
3. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS						
	9	June 76	Review and coordinate State Program Plans with Water Quality Management plans and construction grants program.					.5	.5
	10		Review and process seven construction grant applications to determine their compliance with water quality management plans					.6	1.3
		Feb. 73	a. Amenia WWTP						
		June 75	b. Fargo Interceptor						
		June 75	c. Grafton Interceptor						
		June 75	d. Grand Forks Interceptor						
		June 75	e. Valley City Interceptor						
		June 75	f. Wahpeton Interceptor						
		June 75	g. West Fargo Interceptor						
	11	June 76	Participate in seven preapplication meetings (See Table 3).					.2	.6
	12	June 76	Assess environmental impact of BOR's Garrison Diversion Project.					.2	.4
	13		Evaluate the water quality effects of 4 proposed COE projects within the Red River Basin.					0	0
		June 76	a. Kindred Reservoir; b. Twinn Valley; c. Park River; and d. Crookston Reservoirs.						
12. FY 1973		13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date		16. Approved for RPIO	
a.	b.	a.	b.	TA 9-25-72					

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

Page 4

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Element c. <input type="checkbox"/> Geo. Area		2. Program Sub-Element Title Water Quality Planning		3. Sub-Element No. 2B3149		4. Sheet No. 3 of 3	
		5. Geographical Area Title Red River of the North		6. Geo. Area Code 0701		7. Priority	
8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS				
	14	JUN 76	Influence N.D. and following municipalities to provide nutrient removal, if such a need is determined.				
			a. Fargo, N.D. - WWTP 0 .3				
			b. Grafton, N.D. - WWTP Imp. 0 .3				
			c. Wahpeton, N.D. - WWTP Imp. 0 .0				
			d. Valley City, N.D. - WWTP Imp. 0 0				
	15	JUN 73	Encourage State and municipalities to expedite plant construction .05 .2				
12. FY 1973		13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date	
a. .50	b.	a. .75	b.			16. Approved for RPIO	

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

PAGE 5

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Element c. <input type="checkbox"/> Geo. Area		2. Program Sub-Element Title MUNICIPAL WASTE TREATMENT CONSTRUCTION GRANTS		3. Sub-Element No. 2B8162	4. Sheet No. 1 of 3
5. Geographical Area Title Red River of the North		6. Geo. Area Code 0701		7. Priority	
8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS		
	1		Conduct preapplication meetings for 7 projects listed on 1 and 5 year needs list (See Table 3)		
		Feb 73	a. Amenia WWTP (1 year needs list) .2 0		
		June 75	b. Fargo Interceptor (5 year needs list)		
		June 75	c. Grafton Interceptor (5 year needs list)		
		June 75	d. Grand Forks Interceptor (5 year needs list)		
		June 75	e. Valley City Interceptor (5 year needs list)		
		June 75	f. West Fargo Interceptor (5 year needs list)		
		June 75	g. Grafton Interceptor (5 year needs list) .0 .6 (3 of 6)		
	2		Complete the processing of construction grant applications and grant awards for 13 projects (See Table 3)		
		Aug 72	a. Valley City WWTP Imp. .3 0		
	June 73	b. Abercrombie WWTP 1 0			
	Aug 73	c. Grafton WWTP Imp. 1.2 1.2			
	Aug 73	d. Wahpeton WWTP Imp. .3 .5			
12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date
a.	b.	a.	b.		

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

PAGE

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Element c. <input type="checkbox"/> Geo. Area		2. Program Sub-Element Title Municipal Waste Treatment Construction Grants		3. Sub-Element No. 288162		4. Sheet No. 2 of 3	
		5. Geographical Area Title Red River of the North		6. Geo. Area Code 0701		7. Priority	
8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS				
		Sep 73	e. Fargo WWTP	.1	1.0		
		Oct 73	f. Fargo Water Filtration	.1	1.2		
		Oct 73	g. Amenia WWTP	1	1.2		
		Jun 76	h. Fargo Interceptor	0	3.0		
		Jun 76	i. Grafton Interceptor	(3 of 6)			
		Jun 76	j. Grand Forks Interceptor				
		Jun 76	k. Valley City Interceptor				
		Jun 76	l. Wahpeton Interceptor				
		Jun 76	m. West Fargo Interceptor				
	3	Feb 74	Work with State to improve the quality and frequency of inspections and				
			O&M surveys	.3	.3		
	4	Oct 73	Review DFIC's report that results from their survey of several WWTP's along the				
		main stem of the Red River	0	.25			
5	Jun 76	Use State program plans to coordinate administration of construction grants					
			1.25	1.25			
12. FY 1973		13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date	
16. Approved for RPIO							

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

PAGE 7

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Element c. <input type="checkbox"/> Geo. Area		2. Program Sub-Element Title Municipal Waste Treatment (Construction Grants)		3. Sub-Element No. 2B8162	4. Sheet No. 3 of 3
		5. Geographical Area Title Red River of the North		6. Geo. Area Code 0701	7. Priority
3. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS		
	6	June 76	Update 1 and 5 year needs list .3 .3		
	7		Influence ND and the following municipalities to provide nutrient removal if such a need is determined.		
		June 76	a. Fargo, North Dakota - WWTP		
		June 76	b. Grafton, North Dakota - WWTP Imp		
		June 76	c. Wahpeton, North Dakota - WWTP Imp		
		June 76	d. Valley City, North Dakota - WWTP Imp		
	8		Encourage state and municipalities to expedite plant construction. .05 0		
12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date
a. .50	b.	a. .90	b.		

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

PAGE 8

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Element c. <input type="checkbox"/> Geo. Area		2. Program Sub-Element Title REGIONAL MANAGEMENT		3. Sub-Element No. 5T1214		4. Sheet No. 1 of 1	
		5. Geographical Area Title Red River of the North		6. Geo. Area Code 0701		7. Priority	
3. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS				
	1	Nov 72	Encourage national funding of an environmental film to be used				
			in Region VIII .25 0				
	2	June 76	Distribute to the news media items on environmental issues relating				
			to the Red River Basin .5 .5				
	3	June 76	Determine whether 7 construction grant projects satisfy the				
			Equal Employment Act requirements .25 .75				
12. FY 1973		13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date	
a. .08	b.	a. 1.0	b.			16. Approved for RPIO	

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

PAGE 9

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Element c. <input type="checkbox"/> Geo. Area			2. Program Sub-Element Title Construction Grants Adm.		3. Sub-Element No. 2B8316		4. Sheet No. 1 of 1	
5. Geographical Area Title Red River of the North			6. Geo. Area Code 0701		7. Priority			
3. Code	9. No.	10. Sched Date of Comp.	11. Process seven new applications and complete seven others PLANNED ACCOMPLISHMENTS					
	1	Aug 73	a. Valley City WWTP Imp		.2	.1		
		Oct 73	b. Park River Interceptor		.1	.0		
		Apr 74	c. Fargo WWTR		.3	.1		
		Apr 74	d. Fargo Water Treatment	OLD	.3	.1		
		May 74	e. Abercrombie WWTP		.3	.1		
		May 74	f. Wahpeton WWTP Imp.		.3	.1		
		Jun 74	g. Grafton WWTP Imp.		.3	.1		
		May 74	h. Amenia WWTP		.2	.1		
		Jun 76	i. Fargo Interceptor		.0	.5		
		Jun 76	j. Grafton Interceptor		.0	.5		
		June 76	k. Grand Forks Interceptor	NEW	0	.5		
		Jun 76	l. Valley City Interceptor		0	.1		
		Jun 76	m. Wahpeton Interceptor		0	.2		
		June 76	n. W. West Fargo Interceptor		0	.5		
	12. FY 1973			13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date
a. .16			b.		a. .25		b.	
Planned Accomplishments								

PLANNED ACCOMPLISHMENTS SCHEDULE

PAGE 10

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Element c. <input type="checkbox"/> Geo. Area		2. Program Sub-Element Title O & M		3. Sub-Element No. 2B8163		4. Sheet No. 1 of 2	
		5. Geographical Area Title Red River of the North		6. Geo. Area Code 0701		7. Priority	
3. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS				
	1		Conduct 14 O & M inspections of completed or to be completed WWTP (See Table 3)				
		Aug 73	a. Valley City WWTP Improvements	.0	.30		
		Apr. 74	b. Fargo WWTP	0	.30		
		Apr. 74	c. Fargo Water Filtration	0	.30		
		May 74	d. Amenia WWTP	0	.30		
		May 74	e. Abercrombie WWTP	0	.30		
		May 74	f. Wahpeton WWTP Improvements	0	.30		
		Jun 74	g. Grafton WWTP Improvements	0	.30		
		Oct 74	h. Park River Interceptor Ext. Force Main & Lift Station	.30	0		
		Jun 76	i. Fargo Interceptor " " " " " "				
		Jun 76	j. Grafton Interceptor " " " " " "				
		Jun 76	k. Grand Forks Interceptor " " " " " "				
		Jun 76	l. Valley City Interceptor " " " " " "	.0	1.00	(3 of 6)	
		Jun 76	m. Wahpeton Interceptor " " " " " "				
		Jun 76	n. West Fargo Interceptor " " " " " "				
12. FY 1973		13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date	
a.	b.	a.	b.				

Planned Accomplishments

PAGE 11

Planned Accomplishments

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Elem. c. <input type="checkbox"/> Geo. Area		2. Program Sub-Element Title Water Pollution Source Surv.		3. Sub-Element No. 2B2148		4. Sheet No. 1 of 1	
5. Geographical Area Title Red River of the North		6. Geo. Area Code 0701		7. Priority			
3. Code	9. No. of Comp.	10. Sched Date	11. PLANNED ACCOMPLISHMENTS				
	1		Conduct monitoring study of 4 wastewater treatment plants if needed to determine the impacts of improvements upon water quality.				
		May 74	a. Fargo WWTP	0	.25		
		Oct 75	b. Fargo Water Treatment	0	0		
		Oct 74	c. Grafton WWTP Imp	0	0		
		Oct 74	d. Wahpeton WWTP Imp.	0	0		
	2	June 76	Obtain water quality data to be imputed into STORET.	.75	.75		
12. FY 1973		13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date	
a. 06	b.	a. .08	b.	TA 9-22-72		16. Approved for RPIO	

PLANNED ACCOMPLISHMENTS SCHEDULE

PAGE 7

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Element c. <input type="checkbox"/> Geo. Area		2. Program Sub-Element Title Refuse Act Permits		3. Sub-Element No. 3B2 124		4. Sheet No. 1 of 4	
		5. Geographical Area Title Red River of the North		6. Geo. Area Code 0701		7. Priority	
8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS				
	1		USDI Valley City National Fish Hatchery				
		May 73	a. Obtain committment to minimize pollution load .4 0				
	2		Pillsbury-Grand Forks				
		July 74	a. Meet with company & State to develop DS stds. 0 1.0				
		Dec 74	b. Develop effluent concentrations for plant through RAPP 0 0				
		Feb 75	c. Obtain a committment letter				
	3		Minnkota Power Coop - Grand Forks				
		March 73	a. Continue meetings with company to develop effluent standards 1.0 0				
		May 73	b. Obtain committment letter .4 0				
	June 76						
12. FY 1973		13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date	
16. Approved for RPIO							
a. See last page		b.		TA 9/21/72			

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

PAGE .

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Element c. <input type="checkbox"/> Geo. Area		2. Program Sub-Element Title Refuse Act Permits		3. Sub-Element No. 3B2124		4. Sheet No. 2 of 4			
		5. Geographical Area Title Red River of North		6. Geo. Area Code 0701		7. Priority			
8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS						
	4		Otter Tail Power Co. - Wahpeton						
		June 73	a. Develop effluent criteria through RAPP				.4 0		
		Sept 73	b. Obtain committment letter				0 .6		
	5		USDI Baldhill Dam Nat'l Fish Hatchery - Valley City						
		May 73	a. Obtain committment to minimize pollution load				.4 0.		
	6		American Crystal Sugar, Drayton						
		March 73	a. Meet with company to resolve conflict over BODs std				.90 0		
		June 73	b. Obtain another committment letter				.30 0		
12. FY 1973		13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date		16. Approved for RPIO	
a. See last page.		b.		TA-21-72					


Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

PAGE 15

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Elem. c. <input type="checkbox"/> Geo. Area		2. Program Sub-Element Title Refuse Act Permits		3. Sub-Element No. 3B2124		4. Sheet No. 3 of 4			
		5. Geographical Area Title Red River of the North		6. Geo. Area Code 0701		7. Priority			
8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS						
	7		Armour Food - West Fargo						
		Feb 73	a. Negotiate with company to have them use the city sewer				.90 0		
		June 73	b. Obtain commitment letter				.20 0		
	8								
		Jan 73	a. Continue negotiations with company to define effluent criteria				.4 0		
		Mar 73	b. Obtain commitment letter				0 .60		
	9	Jun 73	Review the water quality management plan for Red River Basin and Fargo-Moorhead SMSA					.4 0	
	10	June 75	Establish a joint monitoring system with Region V to assess impacts of RAPP activities in Minnesota portion of Red River Basin. Continue program.					0 5.0	
11		American Crystal Sugar, Moorhead							
	May 73	a. Meet with Region V, Minnesota and industry to agree upon effluent limitations				1.0 0			
12. FY 1973		13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date		16. Approved for BPIO	
a. See last page.		a. b.							

Planned Accomplishments

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Element c. <input type="checkbox"/> Geo. Area			2. Program Sub-Element Title Refuse Act Permits		3. Sub-Element No. 3B2124		4. Sheet No. 4 of 4			
5. Geographical Area Title Red River of the North			6. Geo. Area Code 0701		7. Priority					
3. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS							
	11	July 74	b. Obtain commitment letter (Work with Region V)						1	0
	12		American Crystal Sugar, E. Grand Forks							
		May 73	a. Meet with Region V, Minnesota, and industry to agree upon effluent							
			limitations						1.0	0
		July 74	b. Obtain commitment letter (Work with Region V)						1	0
	13		American Crystal Sugar, Crookston							
		May 73	a. Meet with Region V, Minnesota, and industry to agree upon effluent							
			limitations						1.0	0
		July 74	b. Obtain commitment letter (Work with Region V)						1	0
		June 75	c. Monitor stream and effluent to detect pollution levels						0	0
	14	Sept 73							2.0	1.0
	15	June 76								1.6
	16	June 76	Data Processing of Permits						1.0	2.2
	12. FY 1973		13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date		16. Approved for RPO	
a. 1.0	b.	a. 1.0	b.	T.A. 9-25-72						

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

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1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Element c. <input type="checkbox"/> Geo. Area		2. Program Sub-Element Title Environmental Impact		3. Sub-Element No. 2B6117		4. Sheet No. 1 of 1			
		5. Geographical Area Title Red River of the North		6. Geo. Area Code 0701		7. Priority			
3. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS						
	1	JUN 73	Review contents of Water Quality Management plans for Red River Basin and Fargo-Moorhead SMSA .3 .3						
	2	JUN 76	Evaluate environmental assessment for the water quality management plans, Red River Basin and Fargo-Moorehead SMSA & 7 construction grant applications 1.5 1.0						
			a. Amenia WWT						
			b. Fargo Interceptor						
			c. Grafton Interceptor						
			d. Grand Forks Interceptor						
			e. Valley City Interceptor						
			f. Wahpeton Interceptor						
			g. West Fargo Interceptor						
	3	JUN 76	Coordinate with Bureau of Reclamation in the development of the EIS for the Garrison Reservoir Water Project. .3 .3						
12. FY 1973		13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date		16. Approved for RPIO	
a. .18	b.	a. .11	b.	TA 9-25-72					

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

PAGE

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Element c. <input type="checkbox"/> Geo. Area		2. Program Sub-Element Title Water Quality Standards		3. Sub-Element No. 2B1143		4. Sheet No. 1 of 1	
		5. Geographical Area Title Red River of the North		6. Geo. Area Code 0701		7. Priority	
8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS				
	1	OCT 73	Provide standards input to water quality model, develop & use model				1.2 2.0
	2	JUN 73	Review N.D. standards and determine need for changing the use				
			classifications. Check compatibility with Minnesota Water				
			Quality Standards and pending legislation.				.5 0
12. FY 1973		13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date	
a. .15		b. .16		TA 9-22-72		16. Approved for RPIO	

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

PAGE 20

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Element c. <input type="checkbox"/> Geo. Area			2. Program Sub-Element Title Water Quality Info. System		3. Sub-Element No. 2B2146	4. Sheet No. 1 of 1
			5. Geographical Area Title Red River of the North		6. Geo. Area Code 0701	7. Priority
3. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS			
/	1	Oct 72	Retrieve WQ data for math model .15 0			
	2	Jun 76	Input water quality data to STORET and retrieve water quality data for the basin when requested. 1.0 .15			
	3	Jun 76	Update 1 and 5 year needs list .3 .3			
12. FY 1973		13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date
a. .12	b.	a. .15	b.	TA 9-22-72		16. Approved for RPIO

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Element c. <input type="checkbox"/> Geo. Area			2. Program Sub-Element Title Water Quality Enforcement		3. Sub-Element No. 381123		4. Sheet No. 1 of 1		
5. Geographical Area Title Red River of the North			6. Geo. Area Code 0701		7. Priority				
3. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS						
	1	JUN 73	Review Water Quality Management Plan for the Red River Basin and Fargo-Moorhead SMSA. .3 .0						
	2		Influence N.D. and the following municipalities to provide nutrient removal if such a need is determined.						
		JUN 75	a. Fargo, N.D. - WWTP 0 .2						
		"	b. Grafton, N.D. - WWTP Imp. 0 .15						
		"	c. Wahpeton, N.D. - WWTP Imp. 0 0						
		"	d. Valley City, N.D. - WWTP Imp. 0 0						
	3	SEP 74	Reconvene Enforcement Conference & Publish Report 5.0 3.0						
	4	JUN 76	Follow-up on recommendations coming from the enforcement Conference. 0 2.5						
	5	JUN 73	Follow-up on the compliance schedule of Fargo's 180-day notice .30 .2						
	6	JUN 76	Determine necessity of enforcement action for Drayton and other possible potential 180-day notices (e.g. Drayton) 1.5 1.4						
	12. FY 1973		13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date		16. Approved for RPIO
a.	b.	a.	b.	TA 9-22-72					

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

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Planned Accomplishments

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Elem. c. <input type="checkbox"/> Geo. Area		2. Program Sub-Element Title Technical Support & Assist.		3. Sub-Element No. 2B5154	4. Sheet No. 1 of 1
		5. Geographical Area Title Red River of the North		6. Geo. Area Code 0701	7. Priority
8. Code	9. No. of Comp.	10. Sched Date	11. PLANNED ACCOMPLISHMENTS		
/	1	June 73	Coordinate with and assist DFIC in a stream survey that is intended to see if in-stream water quality has improved as a result of improvements to certain wastewater treatment plants. 0.5 0		
	2	June 74	Supplement the DFIC Survey to determine the water quality impact of subsequent actions for improving water quality. 0 4.0		
	3	June 74	Conduct a water quality survey to determine a nutrient balance of the Red River System. 0 10		
	4	June 73	Review Water Quality Management Plan for Red River Basin and Fargo-Moorhead SIISA. .3 0		
12. FY 1973	13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date	16. Approved for RPIO
a. 04	b.	a. 1.2	b. IA 9-22-72		

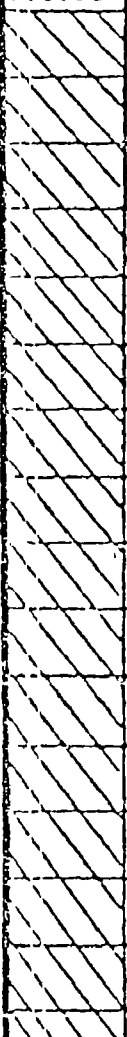
Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

PAGE 24

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Element c. <input type="checkbox"/> Geo. Area		2. Program Sub-Element Title Water Quality Monitoring		3. Sub-Element No. 2B2147	4. Sheet No. 1 of 1
		5. Geographical Area Title Red River of the North		6. Geo. Area Code 0701	7. Priority
8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS		
/	1	FEB 73	Supplement O&M effort to assure effective monitoring of the Water Quality		
			Impact of WWTP improvements and/or construction. .2 .0		
	2	JUN 76	Work with Enforcement and Permits Branches to effectively monitor effluent		
			discharged from industrial sources. .0 2.5		
12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date
a. .02	b.	a. .21	b.	J.A. - 9-22-72	

Planned Accomplishments

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Element c. <input type="checkbox"/> Geo. Area			2. Program Sub-Element Title Manpower Planning		3. Sub-Element No. 2B7161		4. Sheet No. 1 of 1		
5. Geographical Area Title Red River of the North			6. Geo. Area Code 0701		7. Priority				
8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS						
	.1	June 76	Work with State on developing manpower planning function			.2	.2		
	.2	June 76	In-house manpower planning - employment and training project			.5	.5		
12. FY 1973		13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date		16. Approved for RPIO	
a. .06	b.	a. .06	b.	TA 9-22-72					

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

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1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Elem. c. <input type="checkbox"/> Geo. Area			2. Program Sub-Element Title Direct training - Water		3. Sub-Element No. 287160		4. Sheet No. 1 of 1		
			5. Geographical Area Title Red River of the North		6. Geo. Area Code		7. Priority		
8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS						
	1	June 76	Assist O&M (2B8163) on the inspections of completed municipal wastewater facilities projects (14)						
			.05 .45						
	2	APR 74	a. Fargo WWTP						
			0 .05						
		APR 74	b. Fargo Water Treatment						
			0 .05						
		JUN 74	c. Grafton WWTP Imp.						
			0 .05						
		OCT 72	d. Park River Interceptor						
			.05 0						
		MAY 74	e. Amenia WWTP						
			0 .05						
		MAY 74	f. Abercrombie WWTP						
			0 .05						
		MAY 74	g. Wahpeton WWTP Imp.						
		0 .05							
	AUG 73	h. Valley City WWTP Imp.							
		0 .05							
	JUN 76	i. Fargo Interceptor							
	JUN 76	j. Grafton Interceptor							
	JUN 76	k. Grand Forks Interceptor							
		0 .15							
	JUN 76	l. Valley City Interceptor							
		(3 of 6)							
	JUN 76	m. Wahpeton Interceptor							
	JUN 76	n. W. Fargo Interceptor							
12. FY 1973		13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date		16. Approved for BPIO	
a. .004		b. .04		T.A. 9-22-72					

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

PAGE :

1. Type of Plan a. <input type="checkbox"/> Sub-Element b. <input type="checkbox"/> Part. Sub-Elem. c. <input type="checkbox"/> Geo. Area		2. Program Sub-Element Title Operator Training - Water		3. Sub-Element No. 287158		4. Sheet No. 1 of 1	
		5. Geographical Area Title Red River of the North		6. Geo. Area Code 0701		7. Priority	
8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS				
/	-1	Dec 72	Monitor training course in Wahpeton		.3	0	
	2	Jul 73	Monitor training course in Grand Forks		.3	0	
	-3	June 76	Continue training support in Red River		.4	1.0	
	-4	June 76	Coordinate Field Study Training Program		.1	.1	
12. FY 1973		13. FY 1974		14. Prepared by & Date		15. Reviewed by & Date	
a. .09	b.	a. .09	b.	TA 9-22-72			
				16. Approved for RPIO			

Planned Accomplishments

REGION VIII HALF, 1972

BASIN: Red River of the North

PREPARED BY: Terry Anderson

General Engineer

TEL. _____

(Name)

(Title)

APPROVED BY: _____

(Name)

(Title)

(Initials)

MILESTONES

 DATE MILESTONE
ATTAINED or TO BE
ATTAINED

LIST ANY MISSING OR INADEQUATE PREPARATIONS AND INDICATE FOR EACH PERIOD IN CURRENT STATUS. DISCUSS THOSE NEEDING HEADQUARTERS ATTENTION, INCLUDING REASONS, CORRECTIVE MEASURES, AND IMPLICATIONS FOR FUTURE PROGRESS. USE SUPPLEMENTARY SHEETS AS NECESSARY.

CRITICAL WQ DATA OBTAINED No

Instream Water Quality needs to be correlated more closely with those times when discharges are permitted.

CRITICAL EFFLUENT DATA OBTAINED NO

North Dakota requires holding of waste during ice cover. However, insufficient data exists that identifies what sludge loadings occur during discharge.

NECESSARY MODELING COMPLETED NO

OCT 1972

Model is underway.

 100% FULLY DEVELOPED PLANS FOR AREA
APPROVED AND NO REVISIONS NEEDED NO

JULY 1, 1973

Water Quality Management Plan on schedule - money and time will prevent detail analysis of all waste sources.

 STATE PRIORITIES FOR 1 & 5 YEAR NEEDS
CONFORMED WITH ACCOMPLISHMENT PLAN YES

 EFFLUENT GUIDELINES FOR CRITICAL SOURCES
AVAILABLE NO

Need effluent guidelines for Armour Food and Union Stockyards in W. Fargo, Minnkota Power Coop in Grand Forks, and Otter Tail Power Co. in Warrenton.

 WQ CRITERIA COVERING ALL CRITICAL PARAMETERS
IN AREA APPROVED AND NO REVISIONS NEEDED YES

Changes will be needed if national policy will be to upgrade all streams to recreational classification.

 USE DESIGNATIONS AND NONDEGRADATION
STATEMENTS FOR AREA WATERS YES
APPROVED AND NO REVISIONS NEEDED

 IMPLEMENTATION SCHEDULES COVERING THE AREA'S
DISCHARGERS APPROVED AND CONFORMED WITH
ACCOMPLISHMENT PLAN YES

1965 Enforcement Conference established the dates.

SECTION D

Point Source Loads & Locations

RIVER BASIN RED
WASTEWATER SOURCE American Crystal Sugar-Drayton
RIVER MILE 205.4 Red
PV/PN 9/1

TABLE 1

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73,74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	19 MGD Ave. 76 MGD Max.	7.5 MGD Ave. 63 MGD Max.	11.5 MGD Ave. 12.5 MGD Max.								None, Recycle				11.5 MGD. Ave. 12.5 MGD Ave.				7.5 MGD Ave. 63 MGD Max				
PH	7.6																						
Temp, °F	46 Min. 72 Max. 5																						
BOD ₅	415 mg/l; 65,794#/Day	63,044#/Day	60794				2750								60794		2750		63,044#/Day				3
TDS	1078 mg/l; 170,906#/Day																						3
TSS	102 mg/l; 16,171#/Day	13,420#/Day	13420												13420				13,420#/Day				3
NH ₃ -N	15.20 mg/l; 2410#/Day																						
Org-N	ND																						
Total-N	ND																						
Total-P	ND																						
Fecal Coli.	Not Reported ND		May 75 x 10 ⁶ /Ton												75 x 10 ⁶ /Ton								
Total Coli.	Not Reported ND																						
Grease & Oil	NA																						
Toxic Metals	NA																						
Sulfides	0.65 mg/l																						
Other Toxics																							
			(1)	(2)	(3)		(4)		(5)		(6)		(7)										9

COMMENTS

Type of Facility - Sugar Beet

Design P.E.

Present P.E.

Effluent Requirements

1. BOD₅ = 0.5#/Ton sliced beets - EPA requirements.

2. Fecal coliform = 75 x 10⁶/ton of sliced beets - EPA requirements; or 41 x 10¹⁰/day over intake

3.

Type Sewer (Combined or Separate)

RIVER BASIN Red
 WASTEWATER SOURCE Armour Food-West Fargo
 RIVER MILE 25.1 Sheyenne River
 PV/PN 7/2

TABLE 1

P/P/PH 7/2		2017 Onyiah River																PV						
Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)					
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76		
Flow, MGD	.017	No obj. as yet. Probable connect to San. Sewer.	Will locate exact location of discharge to sewer.				None				Est. 10% (.0017)				N/A				N/A					
PH	7.6																							
Temp, °F	45 W 68 S																							
BOD ₅	54 mg/l; 5.4#/day																						.5 #/day	
TDS	1597 mg/l 159.7 #/day																						15.9 #/day	
TSS	26 mg/l, 2.6 #/day																						.26 #/day	
NH ₃ -N	1.0 mg/l 0.10 #/day																						.01 #/day	
Org-N	N/D																							
Total-N	N/D																							
Total-P	1.63 mg/l .16 #/day																						.016 #/day	
Fecal Coli.	115																						11.5 #/day	
Total Coli.	19,300																						1,9300/day	
Grease & Oil	84 mg/l, 8.4 #/day																						8#/day	
Toxic Metals	N/A																							
Other Toxics	N/A																							
(1)		(2)	(3)				(4)				(5)				(6)				(7)				7	

COMMENTS:

- Type of Facility
- Design P.E.
- Present P.E.
- Effluent Requirements
 - 1.
 - 2.
 - 3.

Type Sewer (Combined or Separate)

RIVER BASIN Red
WASTEWATER SOURCE Fargo (Construction underway) WWTP
RIVER MILE 441 Red
PV/PN 6.5/3

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits				Total Reduction				PV		
			73	74	75	76	73	74	75	76	73	74	75	76	(3)	+	(4)	(2)	+	(5)	73	74	75	76	
Flow, MGD	10 MGD Design 7.0																								
PH	N/D																								
Temp, °F	N/D																								
BOD ₅ 12000#/D	3500 #/Day	2044 #/day	2300 #/day (74)								19.2	19.2	19.2	19.2	2300	2300	0	C	2063	19.2	19.2	19.2			3.0
TDS	N/D																								.5
TSS /14040#/D	4200 " "	2449 "	2449 #/day (74)								22.6	22.6	22.6	22.6	2449	2449	0	0	2472	22.6	22.6	22.6			3.0
NH ₃ -N	N/D																								
Org-N	N/D																								
Total-N	N/D																								
Total-P	N/D																								
Fecal Coli.	N/D																								
Total Coli.	N/D																								
Grease & Oil	N/A																								
Toxic Metals	N/A																								
Other Toxics	N/A																								
			(1)	(2)	(3)	(4)	(5)	(6)	(7)																6.5*

COMMENTS:
Type of Facility - Trickling Filter followed by lagoons (580 acres)
Design P.E. 85,000 (yr.2000)
Present P.E. 53,365
1130 PE/Yr. = 192.1 #BOD₅/Day, Q = .11 mgd. increase/yr. BOD incr. = 19.2#/day
Effluent Requirements 1972 1973 1974 1975 1976
1. 25 mg/l - BOD - 1456#/d 1479#/d 1501#/d 1524#/d 1547#/d
2. 30 mg/l - SS - 1751#/d 1775#/d 1801#/d 1832#/d 1860#/d
3. Q = MOD 7.11 7.22 7.33 7.44
Type Sewer (Combined or Separate)
*This project is a special exception because of enforcement proceedings.

RIVER BASIN Red
WASTEWATER SOURCE Union Stockyards-W. Fargo
RIVER MILE 25.1 Sheyenne River
PV/PN 6/4

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.917	1.0									10%												
PH	8.3	6.5 to 8.5																					
Temp, °F	41 w 69 s		None				None								None								
BOD ₅	10 mg/l 782 #/day	572 #/day																					
TDS	1293 9900										78 78 78 78 990 990 990 990								650 78 78 78 990 990 990 990				1 1
TSS	460 5000	4,750 #/day									500 500 500 500				4750 #/day				5250 500 500 500				1
NH ₃ -N	6 54.6										5 5 5 5								5 5 5 5				3
Org-N	N/D																						
Total-N	N/D										1.3 1.3 1.3 1.3								1.3 1.3 1.3 1.3				
Total-P	1.8 13.85																						
Fecal Coli.	360/100 ml.																						
Total Coli.	965/100 ml.	5000/100 ml.																					
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						

COMMENTS: (1) Lat. 46-50-45 Long. 46-53-30
Type of Facility Holding sen washing, trough washing, water trough
Design P.E. ran over.
Present P.E.
Effluent Requirements
1.
2.
3.
Type Sewer (Combined or Separate)

Company and EPA are currently working on commits.
Better conservation practices should decrease waste loads.

RIVER BASIN Red
WASTEWATER SOURCE Fargo, N.D. Water Filtration Plant
RIVER MILE 441 Red
PV/PN 5/5

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	14.0																						
PH	7.0																						
Temp, °F	N/D																						DNA
BOD ₅	0																						
TDS	N/D																						DNA
TSS	40,000 #/day	36,500 #/day	40,000 #/day				0	0	0	0	0	0	0	0	0	0	0	0	40,000 #/day				5.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						DNA
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				5.0

COMMENTS:
Type of Facility - Sludge handling facilities for water filtration plant.
Design P.E. - 53,365
Present P.E. - 35,000
Effluent Requirements
1.
2. 30 mg/l SS-3500 #/day
3.
Type Sewer (~~Combined~~ or Separate)

RIVER BASIN Red
WASTEWATER SOURCE Minnekota Power Coop. Grand Forks
RIVER MILE Red 298 Red
PV/PN 5/5

TABLE I

RIVER MILL		Red 296	Red	Total Commits																Total Reduction								PV
PV/PN	5/5			FY 72 Commits				FY 73, 74 Commits				Expected Incr.				(3) + (4)				(2) + (5)								
Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.		73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76					
Flow, MGD	30 mgd											No increase unless plant expands fac.													1			
PH	8																											
Temp, °F	60 w 85 s							None																				
BOD ₅	6 mg/l 1500 #/day																											
TDS	200 mg/l, 50,000 #/day			0	0	0	0	0	0	0	0					0	0	0	0	0	0	0	0	3				
TSS	20 mg/l, 5,000 #/day	4980 #/day		0	0	0	0	0	0	4980	0					0	0	4980	0	4980	0	0	0	1				
NH ₃ -N	0.2 mg/l 50 lb/day																											
Org-N	N/D																											
Total-N	N/D																											
Total-P	0.2 mg/l 50 #/day																											
Fecal Coli.	N/A																											
Total Coli.	N/D																											
Grease & Oil	N/A																											
Toxic Metals	N/A																											
Other Toxics	N/A																											
		(1)	(2)	(3)				(4)				(5)				(6)				(7)				5				

COMMENTS:
Type of Facility - Lat. 47-56-25 Long. 97-2-40, steam-electric plant.
Design P.E.
Present P.E.
Effluent Requirements
1.
2.
3.
Type Sewer (Combined or Separate)

RIVER BASIN Red
WASTEWATER SOURCE Otter Tail Power Co. Wahepton
RIVER MILE Red 545.2 Red
PV/PN 5/5

TABLE I

PV/PN		5/5		Reg State Res		Total Commits		Total Reduction		PV													
Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				(3) + (4)				(2) + (5)				
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	14.3	No EPA Obj. developed as of 9/13.	None								No increase unless plant size is incr.				N/A				N/A				1
PH	8.4																						3
Temp, °F	45 w 90 s																						1
BOD ₅	7 mg/l--833 #/day																						
TDS	210 mg/l--250,000 #/day																						
TSS	6 mg/l--714 #/day																						
NH ₃ -N	.18 mg/l 21 #/day																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						
																							(1)

COMMENTS:
Type of Facility - Steam-Electric Plant Lat. 46-17-18 Long. 96-36-03
Design P.E.
Present P.E.
Effluent Requirements
1.
2.
3.
Type Sewer (Combined or Separate)

RIVER BASIN Red
WASTEWATER SOURCE Pillsbury-Grand Forks
RIVER MILE Red 298 Red
PV/PN 3/6

TABLE I

PV/PN		3/6	Total Commits																Total Reduction								PV
Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				(3) + (4)				(2) + (5)								
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76					
Flow, MGD	0.23	No EPA objective	None				None				No increase expected.				N/A				N/A				1				
PH	8.1																						1				
Temp, °F	68°F																						1				
BOD ₅	20 mg/l																										
	37.2 #/day																										
TDS	4848 mg/l																										
	9160 #/day																										
TSS	10 mg/l																										
	19.1 #/day																										
NH ₃ -N	.44 mg/l																										
	.75 #/day																										
Org-N	N/D																										
Total-N	N/D																										
Total-P	.026 mg/l																										
	.050 #/day																										
Fecal Coli.	N/D																										
Total Coli.	N/D																										
Grease & Oil	N/A																										
Toxic Metals	N/A																										
Other Toxics	N/A																										
			(1)	(2)				(3)				(4)				(5)				(6)				(7)	3		

COMMENTS:
Type of Facility Lat. 47-56-40
Design P.E. Long. 97-03-20
Present P.E. Water used for air conditioner cooling only.
Effluent Requirements
1.
2.
3.
Type Sewer (Combined or Separate)

RIVER BASIN Red
WASTEWATER SOURCE USDI Valley City National Fish Hatchery, Valley City
RIVER MILE Sheyenne River 248 Valley City
PV/PN 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) - (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	10.9 x 10 ⁶ gal/yr.																						
PH	7.9																						
Temp, °F	39 W 85 S																						
BOD ₅	4 mg/l .96#/day	No objective.	None				None				No increase unless size is increased.				None				None				1
TDS	0.1 mg/l - .02#/day																						.5
TSS	.14 mg/l - .0336 #/day																						1
NH ₃ -N	0.75 mg/l - .18 #/day																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	0.40 mg/l - .096 #/day																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:
Type of Facility Fish Hatchery Lat. 46-57-45
Design P.E. . Long. 98-01-45
Present P.E. .
Effluent Requirements
1.
2.
3.
Type Sewer (Combined or Separate)

RIVER BASIN Red
WASTEWATER SOURCE USDI-Baldhill Dam National Fish Hatchery-Valley City
RIVER MILE Sheyenne River 248 Valley City
PV/PN 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	11.5 x 10 ⁶ gal/yr.																						
PH	~8.4																						
Temp, °F	39 w 85 s																						
BOD ₅	6 mg/l .15 #/day	No objectives.																					1
TDS	0.1 .02 #/day																						.5
TSS	25 mg/l - 6.55 #/day																						1
NH ₃ -N	0.06 mg/l - .015 #/day																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	0.20 mg/l - .0525 #/day																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:

Type of Facility Fish Hatchery Lat. 47-02, Long. 098-05 Discharge is intermittent.

Design P.E.

Present P.E.

Effluent Requirements

1.

2.

3.

Type Sewer (Combined or Separate)

RIVER BASIN Red
WASTEWATER SOURCE Abercombie (plant new under construction)
RIVER MILE 501 Red
P/PN 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) - (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.096																						
PH	7																						
Temp, °F	N/D																						
BOD ₅ 44.2	132.6 #/day (150 mg/l)	112.8 #/day	118.8	0	0	0	0	0	0	0	0	0	0	0	118.8	0	0	0	112.8	0	0	0	1.0
TDS																							0.5
TSS 520	156 #/day 190 mg/l	132 #/day	143.4	0	0	0	0	0	0	0	0	0	0	0	143.4	0	0	0	132	0	0	0	1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:

Type of Facility Lagoons (3 acres)
Design P.E. 350 - 1990
Present P.E. 260 - 1990
Effluent Requirements
1. 25 mg/l - BOD - (208) - 19.8 #/day
2. 30 mg/l - SS - (2502) - 24.0 #/day
3.
Type Sewer (~~Combined~~ or Separate)

RIVER BASIN Red
 WASTEWATER SOURCE Amenia
 RIVER MILE 426 (R.R. - confluence w/Rush River)
 PV/PN 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.011																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	17 #/day	14.7 #/day	0	15.0	0	0	0	0	0	0	0	0	0	0	15.3	0	0	0	14.7	0	0	0	1.0
TDS	N/D																						0.5
TSS	20#/day	17.2 #/Day	0	18	0	0	0	0	0	0	0	0	0	0	18	0	0	0	17.2	0	0	0	1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						DNA
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:

Type of Facility - Present facilities - septic tanks, proposed future facilities - 2-cell waste stabilization lagoon system.

Design P.E. - 150

Present P.E. - 100

Effluent Requirements

1. 25 mg/l - BOD - (208) - 2.3 #/day

2. 30 mg/l - SS - (256.2) - 2.8 #/day

3.

Type Sewer (~~Combined~~ or Separate) No storm sewer.

RIVER BASIN Red
WASTEWATER SOURCE Cavalier (assume 90% removal)
RIVER MILE 196 Rush R. to Red to mouth
PV/PH 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.48 mgd																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	70.5 #/day (18 mg/l)	0			0				0		48 #/day (est.)				0				Do not exceed effluent allowances.				1.0
TDS	N/D																						0.5
TSS	82.5 #/day (22 mg/l)	0			0				0		50 #/day (est.)				0								1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5.

COMMENTS:

Type of Facility - 2-cell waste stabilization lagoon system (15.5 acres)
Design P.E. 1830 - 1992 (24.9 PE/Yr) lineal incremental growth
Present P.E. 1381
Effluent Requirements
1. 25 mg/l - BOD - 208 - 99.9
2. 30 mg/l - SS - 250.2 - 120.0 #/day
3.
Type Sewer (~~Combined~~ or Separate)

No significant impact. Is not developed in Tables III & IV.
Code 1 will be used to indicate this fact on remainder of table.

11/11/77 Red
 WASTEWATER SOURCE Drayton
 RIVER FILE 208 Red
 PV/PH 2.5/7

TABLE 1

RIVER FILE 208 Red										Total Commits										Total Reduction										PV
PV/PH 2.5/77										(3) + (4)										(2) + (5)										
Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.																			
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76								
Flow, MGD	.33																													
PH	N/D																													
Temp, °F	N/D																													
BOD ₅	55.8 #/day (20.3 mg/l)	0			0				0		.15	.15	.15	.15		0				0				1.0						
TDS	N/D																							.5						
TSS	65.7 #/day 24 mg/l	0			0				0		.17	.17	.17	.17		0				0				1.0						
NH ₃ -N	N/D																													
Org-N	N/D																													
Total-N	N/D																													
Total-P	N/D																													
Fecal Coli.	N/D																													
Total Coli.	N/D																													
Grease & Oil	N/D																							DNA						
Toxic Metals	N/A																													
Other Toxics	N/A																							2.5						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)											

COMMENTS:

Type of Facility - 10 acre - 2 cell lagoon system
 Design P.E. 1250 ultimate (1990) $\frac{155}{88} = 8.6$ PE/Yr - 1.5 #/day
 Present P.E. 1095

CODE 1

Effluent Requirements

1. 25 mg/l - 208 - 68.6 #/day - 1976 load to stream does not exceed 68.6 #/day
2. 30 mg/l - 250.2 - 82.5 #/day - 1976 load to stream does not exceed 82.5 #/day
- 3.

Type Sewer ~~(Combined)~~ Separate)

RIVER BASIN Red
 WASTEWATER SOURCE Fairmount
 RIVER MILE 462 Red
 PV/PN 2.577

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.12																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	21.0 #/day 20 mg/l	0		0				0				0				0				0			1.0
TDS	N/D																						.5
TSS	27.7 #/day 27 mg/l	0		0				0				0				0				0			1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						2.5
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				

COMMENTS:

Type of Facility - Lagoon system, 2 cells (5.20 acres)
 Design P.E. 612 - 1992
 Present P.E. 462 } 8.3 PE/Yr
 Effluent Requirements
 1. 25 mg/l - BOD - 25.5 #/day
 2. 30 mg/l - SS - 30.9 #/day
 3.
 Type Sewer (Combined or Separate)

CODE 1

RIVER BASIN Red
 WASTEWATER SOURCE Grafton
 PUMP FILE 220 R.Park to Red to mouth
 PV/PH 2.577

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	5.7 MGD																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	1740 #/day	555 #/day	570	0	0	0	0	0	0	0	Negligible				570	0	0	0	555	0	0	0	1.0
TDS	N/D																						.5
TSS	2088 #/day	666 #/day	666	0	0	0	0	0	0	0	Negligible				666	0	0	0	666	0	0	0	1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:

Type of Facility 2.5 acre aerated lagoon followed by 2 x 70 (140 acres) lagoon cells - grant 1972 - pretreatment of industrial waste.
 Design P.E. 33,000 466 PE/Yr. = .047 mgd or population projection 5663-1970 to 6550-1970 assume no individual growth.
 Present P.E. 24,600 Qinc/Yr. BOD₅ inc. = 44 PE or 7.5 #/day Qinc - 4400 GPD
 Effluent Requirements BOD stream = .75 #/day

1. 25 mg/l BOD - 1185 #/yr.
2. 30 mg/l SS - 1425 #/Yr.
- 3.

Type Sewer (XXXXXX or Separate)

RIVER MILE 298 Red
 RIVER MILE 298 Red
 RIVER MILE 298 Red

TABLE 1

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				IPV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	9.6										#/Day												
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	1992 #/day (25 mg/l)	0		0				0			37.5	37.5	37.5	37.5	0				Based on pop. incr. and hydraulic incr. BOD & SS eff. req. will not be violated.				1.0
TDS	N/D																						1.5
TSS	2340 #/day (29 mg/l)	0		0				0			45.0	45.0	45.0	45.0	0								1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:
 Type of Facility Waste stabilization lagoon system (600 acres) - the assump. is that proj. on 5-yr. needs list is extension of sewer system.
 Design P.E. 54,000 - 1992
 Present P.E. 39,008 - 1972] 750 P.E./Yr. Qinc - 075 MGD/Yr. @ 25 mg/l, BOD to stream - 37.50
 Effluent Requirements BOD stream = 37.50 #/day
 1. 25 mg/l BOD - 1995 #/day
 2. 30 mg/l SS 2400 #/day
 3. *BOD in Stream (Cap) 1973 1974 1975 1976
 2043.6 #/d. 2088 #/d. 2133 #/d. 2175 #/d.
 BOD from plant 2028 #/d. 2087 #/d. 2102 #/d. 2145 #/d.
 SS will follow the same pattern, just factor figures.
 Type Sewer (Separate)

RIVER BASIN Red
WATER SOURCE Grand Forks Air Force Base
RIVER MILE 298 Red
PV/PH 2.5/7

TABLE I

PV/PH 2.5/77		WATER TREATMENT PLANT																PV					
Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	3.3																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	537 #/day	0			0				0					0*									1.0
TDS	N/D																						.5
TSS	630 #/day	0			0				0					0*									1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)			(3)				(4)					(5)				(5)			(7)		

COMMENTS:

Type of Facility - Waste stabilization lagoon system (total 80 acres).
Design P.E. 10500 Anticipate no future increase in population.
Present P.E. 10500

Effluent Requirements

1.	25 mg/l - BOD	(684#/day)
2.	30 mg/l - SS	(825#/day)
3.		

Type Sewer ~~(Combined or~~ Separate)

CODE 1

*Population increases assumed to be constant.

RIVER BASIN Red
WASTEWATER SOURCE Hillsboro
RIVER MILE 319 - confluence with R.R.of North & Goose
PV/PN 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.36																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	66.6 #/day (22.2 mg/l)	0			0				0					Negligible			0				0		1.0
TDS	N/D																						.5
TSS	80.1 #/day (26.0 mg/l)	0			0				0					Negligible			0				0		1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:

Type of Facility - 2 cell waste stabilization lagoon system (17 acres)

Design P.E. 2000 - 1990 project

Present P.E. 1335

Effluent Requirements

1. 25 mg/l - BOD - (75 #/day)

2. 30 mg/l - SS - (90#/day)

3.

Type Sewer ~~(Combined)~~ Separate)

CODE 1

.2% linear increase in population (1960-1970) and pollution load .04#/day BOD₅ for FY 73
.05#/day SS for FY 73

PLANT: Red

WASTEWATER SOURCE: Lisbon

RIVER MILE: 441 - confluence of R.R. of North & Sheyenne R.

P/P/R: 2.5/7

TABLE 1

P/P/PH 2.5/77		441 compliance of RW of Kothi & Shajeeha R.												Total Commits				Total Reduction				PV	
Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				(3) + (4)				(2) + (5)				
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.18																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	99.0 #/day (22 mg/l)	0			0				0					negligible			0				0		1.0
TDS	N/D																						.5
TSS	108 #/day (26 mg/l)	0			0				0					negligible			0				0		1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:

Type of Facility - Waste stabilization lagoon system (est. 22 acres) no data available).

Design P.E. - 2500

Present P.E. - 1800] 1,938 #/day - BOD to stream Qinc/day/yr - .21 MGD BOD inc./yr to stream = 1.938# but inc. in Q = .21 MGD

Effluent Requirements .25 mg/l BOD eff. std. is not violated (increase = 1 mg/l)

1. 25 mg/l - BOD - (111#/day)

2. 30 mg/l - SS - (135#/day)

3.

Type Sewer (~~Combined~~ ~~xxx~~ Separate)

CODE 1

RIVER BASIN Red
 WASTEWATER SOURCE Park River (City)
 RIVER MILE 220 - confluence of Red River and P.R.
 PV/PN 2.5/7

TABLE 1

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.51																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	105 #/day (25 mg/l)	0			0				0				0				0				0		1.0
TDS	N/D																						.5
TSS	123 #/day (29 mg/l)	0			0				0				0				0				0		1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						2.5
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				

COMMENTS.

Type of Facility - 1-acre aerated cell followed by a 20-acre cell and a 10-acre cell.
 Design P.E. - 3500 - (1990 popl proj. = 2200) Expected Increase \approx 0
 Present P.E. - 1750

Effluent Requirements

1. 25 mg/l - BOD - (105#/day)
2. 30 mg/l - SS - (127.5 #/day)
- 3.

Type Sewer ~~(Connected to)~~ Separate

RIVER BASIN Red
WASTEWATER SOURCE Pembina
RIVER MILE 158
PV/PN 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.18																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	35.7 #/day (24 mg/l)	0			0				0		.25		.25	.25					0	0	0	0	1.0
TDS	N/D																						.5
TSS	42 #/day (28 mg/l)	0			0				0		.25	.25	.25	.25					0	0	0	0	1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						2.5
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				

COMMENTS:

Type of Facility - Waste stabilization lagoon system (23 acres)
Design P.E. - 2300
Present P.E. - 700

Effluent Requirements

1. 25 mg/l BOD - 37.5 #/day
2. 30 mg/l SS - 450 #/day
- 3.

Type Sewer ~~(Combined or~~ Separate)

CODE 1

Population increased 1.8% per year during 1960-1970 decade.
Assume expected increase \approx 0.

RIVER MILE 2.5/7
 WASTE WATER SOURCE Wahpeton
 RIVER MILE 549 Red
 PV/PB 2.5/7

TABLE 1

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	3.0																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	2091 #/day	1467 #/day	0	1467	0	0					negligible				0	1467	0	0	1467	0	0	0	1.0
TDS	N/D																						.5
TSS	2510 #/day	1760 #/day	0	1760	0	0					negligible				0	1760	0	0	1760	0	0	0	1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:

Type of Facility - aerated lagoon followed by waste stabilization lagoon system (70 acres).

Design P.E. - 16500

Present P.E. - 10400 (overloaded, Population - 7000 - present lagoon capacity)] .340 P.E./Yr. inc. = 17.4#/day to stream BOD Q/Yr. - .09

Effluent Requirements

BOD inc. = neg.

1. 25 mg/l BOD - (624 #/day)

2. 30 mg/l SS - (750 #/day)

3.

CODE 1

Type Sewer (Combined or Separate)

RIVER BASIN Red
WASTEWATER SOURCE Walhalla
RIVER MILE 196 confluence with Pembina and Red River of North
PV/PN 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.39																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	75.0 #/day (23 mg/l)	0			0				0		.25	.25	.25	.25			0				none needed		1.0
TDS	N/D																						.5
TSS	88.5 #/day (27 mg/l)	0			0				0		.30	.30	.30	.30			0				none needed		1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:

Type of Facility - Two-cell waste stabilization lagoon (18.9 acres)

Design P.E. - 2460

Present P.E. - 1471

Effluent Requirements

1. 25 mg/l - BOD - (81 #/day)

2. 30 mg/l - SS - (97.5 #/day)

3.

Type Sewer (Combined or Separate)

CODE 1

.3% population increase per year during 1960-1970.

RIVER NAME Red
 WASTE WATER SOURCE West Fargo-Sheyenne River
 RIVER MILE Sheyenne 23.1
 PV/PRI 2.5/7 Future project consists of the addition to the sewer system.

TABLE 1

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	3.42																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	302.1 #/day	0			0				0								0				0		1.0
TDS	N/D																						.5
TSS	354.0 #/day	0			0												0				0		1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:

Type of Facility - Waste stabilization lagoons (168 acres).
 Design P.E. - 24,609 (6,759 domestic + 17,850 industrial).] Increase in load due to population is offset by increase in
 Present P.E. - 5929 Q due to population.
 Effluent Requirements
 1. 25 mg/l - BOD - 711 #/day.
 2. 30 mg/l - SS - 855 #/day.
 3.
 Type Sewer ~~(Combined)~~ Separate)

RIVER BASIN Red
 WASTEWATER SOURCE Valley City (New project is for the con-
 RIVER MILE 248.0 Sheyenne struction of force M.
 PV/PN 2.577 and lift station)

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	2.13																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	399 #/day (23 mg/l)	0		0			0				0				0				0				1.0
TDS	N/D																						.5
TSS	469.5 #/day (27 mg/l)	0		0			0				0				0				0				1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						2.5
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				

COMMENTS:

Type of Facility - 3 cell waste stabilization lagoon (117 acres)

Design P.E. 13800

Present P.E. 7843

Effluent Requirements

1. 25 mg/l BOD - 444 #/day

2. 30 mg/l SS - 532.5 #/day

3.

Type Sewer ~~(Combined)~~ Separate)

] 297 PE/Yr. BOD to system = 15.15 #/day/year Qin - .09 BOD to stream/y - 22 mg/l.

RIVER MILE 438 Red
 WASTEWATER SOURCE American Sugar, Moorhead, Minn.
 RIVER MILE 438 Red
 PV/PH 7/2

TABLE 1

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	10 MGD																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	118,000																						3
TDS	N/D																						3
TSS	12,500																						
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				7

COMMENTS:
 Type of Facility
 Design P.E.
 Present P.E.
 Effluent Requirements

Region V is responsible for Administering EPA programs in Minnesota.

- 1.
- 2.
- 3.

Type Sewer (Combined or Separate)

WASTE TREATMENT BASIN Red
 WASTEWATER SOURCE American Crystal, Crookston, Minn.
 RIVER MILE 53 Red Lake
 PV/MILE 7/2

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	5 MGD																						
PH	N/D																						
Temp, °F.	N/D																						
BOD ₅	125,000 #/d.																						3.0
TDS	N/D																						.5
TSS	25,200 #/d.																						3.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						.5
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				7.0

COMMENTS:

Type of Facility -

Design P.E.

Present P.E.

Effluent Requirements

1.

2.

3.

Type Sewer (Combined or Separate)

Region V is responsible for administering EPA programs in Minnesota.

RIVER BASIN Red
WASTEWATER SOURCE American Crystal-E. Grand Forks, Minn.
RIVER MILE 293 Red
PV/PN 7/2

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	4.5																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	75,000 #/day																						3
TDS	N/D																						.5
TSS	2600 #/day																						3
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						2.5
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				7.0

COMMENTS:

Type of Facility

Design P.E.

Present P.E.

Effluent Requirements

1.

2.

3.

Type Sewer (Combined or Separate)

Region V is responsible for Administering EPA programs, in Minnesota.

RIVER BASIN Red
 WASTEWATER SOURCE Ada, Minnesota
 RIVER MILE Marsh River-Red
 PV/PN 2.577

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.186																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	35#/day	0			0				0				0				0				0		1.0
TDS	N/D																						.5
TSS 41	41#/day	0			0				0				0				0				0		1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						DNA
Toxic Metals	N/A																						
Other Toxics	N/A																						2.5
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				

COMMENTS:

Type of Facility - Secondary TF

Design P.E. 4600

Present P.E. 1860

Effluent Requirements

1. 39#/day BOD₅ (25 mg/l)

2. 47#/day TSS (30 mg/l)

3.

Type Sewer (Combined or Separate)

CODE 1

] based on BOD increase = hydraulic increase - there is no expected increase in loading to stream.

RIVER BASIN Red
WASTEWATER SOURCE Bagley, Minnesota
RIVER MILE Clearwater - Red Lake
PV/PH 2.5/7

TABLE 1

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.13																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	26 #/day	0		0			0				0				0				0				1.0
TDS	N/D																						.5
TSS	30 #/day	0		0			0				0				0				0				1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						DNA
Toxic Metals	N/A																						
Other Toxics	N/A																						2.5
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				

COMMENTS:

Type of Facility - Secondary Trickling Filter

Design P.E. 1300

Present P.E. 1250

Effluent Requirements

1. 27#/day BOD

2. 32#/day SS

3.

Type Sewer (Combined or Separate)-Information not available

CODE 1

RIVER BASIN Red
WASTEWATER SOURCE Baineville, Minn.
RIVER MILE Willow-Deerhorn-Buffalo-Red
PV/PN 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.15																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	30 #/day	0		0			0				0				0				0				1.0
TDS	N/D																						.5
TSS	35 #/day	0		0			0				0				0				0				1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						DNA
Toxic Metals	N/A																						
Other Toxics	N/A																						2.5
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				

COMMENTS:

Type of Facility - Secondary Activated Sludge
Design P.E. - 1560
Present P.E. - 1480
Effluent Requirements

1. 31#/day BOD
2. 37#/day SS
- 3.

Type Sewer (Combined or Separate) - Information not available

CODE 1

RIVER BASIN Red
WASTEWATER SOURCE Breckenridge, Minn.
RIVER MILE Red River
PV/PN 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.35																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	70 #/day	0			0				0				0				0				0		1.0
TDS	N/D																						.5
TSS	86 #/day	0			0				0				0				0				0		1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						DNA
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:

Type of Facility - TF
Design P.E. 5000
Present P.E. 3800
Effluent Requirements
1. 73 #/day BOD₅
2. 88264 #/day SS
3.

CODE 1

Type Sewer ~~(Combined)~~ (Separate)

RIVER BASIN Red
WASTEWATER SOURCE Crookston, Minn.
RIVER MILE Red Lake River-Red River 53
PV/PH 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	2.31																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	450 #/day	0			0				0				0				0				0		1.0
TDS	N/D																						.5
TSS	525 #/day	0			0				0				0				0				0		1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						DNA
Toxic Metals	N/A																						
Other Toxics	N/A																						2.5
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				

COMMENTS:

Type of Facility - Secondary stabilization pond.

Design P.E. - 14,394

Present P.E. - 7,700

Effluent Requirements

1. 480 #/day BOD

2. 570 #/day SS

3.

Type Sewer (~~Combined~~ Separate)

CODE 1

RIVER BASIN Red
WASTEWATER SOURCE E. Grand Forks, Minnesota
RIVER MILE Red River 29.3
PV/PH 2.5/7

TABLE 1

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	2.25																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	20.5 mg/l 387 #/day	0			0				0				0				0				0		1.0
TDS	N/D																						.5
TSS	25 mg/l 465 #/day	0			0				0				0				0				0		1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						DNA
Toxic Metals	N/A																						
Other Toxics	N/A																						2.5
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				

COMMENTS:

Type of Facility - 2nd Stabilization Pond

Design P.E. - 14000
Present P.E. 7600] The effluent quality should remain the same assuming that the BOD increases at a rate of 17#/c/d and the hydraulic flow increases at a constant rate (100 g/d/c)

Effluent Requirements

1. 25 mg/l - 468#/day
2. 30 mg/l - 561#/day
- 3.

Type Sewer (~~Combined~~ or Separate)

CODE 1

RIVER BASIN Red
 WASTE WATER SOURCE Fosston, Minn.
 RIVER MILE Poplar River-Sand Hill-Red River
 PV/PN 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)			
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76
Flow, MGD	8.19																					
PH	N/D																					
Temp, °F	N/D																					
BOD ₅	858 #/day	0		0			0				0				0				0			1.0
TDS	N/D																					.5
TSS	1395 #/day	0		0			0				0				0				0			1.0
NH ₃ -N	N/D																					
Org-N	N/D																					
Total-N	N/D																					
Total-P	N/D																					
Fecal Coli.	N/D																					
Total Coli.	N/D																					
Grease & Oil	N/A																					DNA
Toxic Metals	N/A																					
Other Toxics	N/A																					2.5
	(1)	(2)	(3)				(4)				(5)				(6)				(7)			

COMMENTS:

Type of Facility - 2nd Trickling Filter, waste stabilization ponds.
 Design P.E. - 27,000 Population increase to BOD and SS loading of stream will
 Present P.E. - 12,443] be offset by increase in hydraulic loading.

Effluent Requirements

1. 25 mg/l 1710#/day
2. 30 mg/l 2070 #/day
- 3.

CODE 1

Type Sewer (Combined ~~or~~ Separate)

RIVER BASIN Red
 WASTEWATER SOURCE Fosston, Minn.
 RIVER HILL Poplar River-Sand Hill-Red River
 PV/PR 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	1.45																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	9000 #/day	8700 #/day								8700 #/day					8700 #/day				8700 #/day				1.0
TDS	N/D																						.5
TSS	10500 #/day	10136 #/day								10136 #/day					10136 #/day				10136 #/day				1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						DNA
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:

Type of Facility - Pre-aeration basin followed by WSP, assume 2500 ppm potato waste which makes up .9 MGD (est.)

Design P.E. - 2170 (information very incomplete. This is only estimate. They are

Present P.E. - 1684] scheduled to do something about 2 x flow overload in 1974).

Effluent Requirements

1. 25 mg/l - BOD - 300#/day
2. 30 mg/l - 55 - 364.35 #/day
- 3.

Type Sewer (Combined or Separate)

RIVER BASIN- Red
 WASTEWATER SOURCE Frazee, Minn.
 RIVER MILE Otterton-Red
 PV/PH 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.3																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	60 #/day	0			0				0				0				0				0		1.0
TDS	N/D																						.5
TSS	69 #/day	0			0				0				0				0				0		1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:

Type of Facility - 2nd Stabilization pond
 Design P.E. 600
 Present P.E. 500
 Effluent Requirements
 1. 63 #/day BOD
 2. 75 #/day SS
 3.
 Type Sewer (Combined or Separate)

CODE 1

RIVER BASIN Red
 WASTEWATER SOURCE Hallock, Minn.
 RIVER MILE Middle Fork of Two Rivers-Red
 PV/PH 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.15																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	30 #/day	0			0				0				0				0				0		1.0
TDS	N/D																						.5
TSS	35 #/day	0			0				0				0				0				0		1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						DNA
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:

Type of Facility - 2nd trickling filter
 Design P.E. 2900
 Present P.E.
 Effluent Requirements
 1. 31 #/day BOD
 2. 37 #/day SS
 3.
 Type Sewer (~~XXXXXX~~ Separate)

CODE 1

RIVER BASIN Red
WASTEWATER SOURCE Mahnomen, Minn.
RIVER MILE Wild Rice River-Red
PV/PH 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.39																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	78 #/day	0			0		0				0				0				0				1.0
TDS	N/D																						.5
TSS	90 #/day	0			0		0				0				0				0				1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						DNA
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:

Type of Facility - Sec. Stabilization pond.

Design P.E. 1500

Present P.E. 1300

Effluent Requirements

1. 81 #/day BOD

2. 96 #/day SS

3.

Type Sewer (~~Combined~~ ~~and~~ ~~sewage~~ Separate)

CODE 1

UPPER MAIN Red
 WASTEWATER SOURCE Hawley, Minnesota
 RIVER MILE Buffalo-Red
 PV/PW 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.39																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	78 #/day	0			0				0				0				0				0		1.0
TDS	N/D																						.5
TSS	90 #/day	0			0				0				0				0				0		1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						DNA
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:
 Type of Facility - 2nd Stabilization Pond
 Design P.E. 3000
 Present P.E. 2500
 Effluent Requirements
 1. 81 #/day BOD
 2. 96 #/day SS
 3.
 Type Sewer (C/XXX)XXXX
 (C/XXX)XXXX Separate)

CODE 1

RIVER BASIN Red
 WASTEWATER SOURCE Moorhead, Minn.
 RIVER MILE Red River
 PV/PH 2.5/7

TABLE I

WASTEWATER SOURCE <u>Moorhead, Minn.</u>		RIVER MILE <u>Red River</u>		PV/PN <u>2.5/7</u>																					
Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV		
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76			
Flow, MGD	2.7																								
PH	N/D																								
Temp, °F	816 #/day	0			0				0				0				0			0			1.0		
BOD ₅	N/D																					.5			
TDS	960 #/day	0			0				0				0				0			0			1.0		
TSS	N/D																								
NH ₃ -N	N/D																								
Org-N	N/D																								
Total-N	N/D																								
Total-P	N/D																								
Fecal Coli.	N/D																								
Total Coli.	N/D																								
Grease & Oil	N/A																					DNA			
Toxic Metals	N/A																								
Other Toxics	N/A																					2.5			
		(1)	(2)		(3)				(4)				(5)				(6)				(7)				

COMMENTS:

Type of Facility - Activated Sludge
 Design P.E. 75,000
 Present P.E. 46,000 (including ind. flow)
 Effluent Requirements
 1. 1190 #/day BOD
 2. 1420 #/day SS
 3.
 Type Sewer (~~Combined~~ or Separate)

CODE 1

RIVER MILE Red
 WASTEWATER SOURCE Pelican Rapids
 RIVER MILE Pelican River
 PV/PW 2.5/7

TABLE 1

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.15																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	30#/day	0		0			0				0				0				0				1.0
TDS	N/D																						.5
TSS	35 #/day	0		0			0				0				0				0				1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						DNA
Toxic Metals	N/A																						
Other Toxics	N/A																						2.5
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				

COMMENTS:

Type of Facility - 2nd Trickling Filter

Design P.E. 1600

Present P.E. 1350

Effluent Requirements

1. 31 #/day

2. 37 #/day SS

3.

Type Sewer (Combined or Separate)

CODE 1

RIVER BASIN Red
WASTEWATER SOURCE Roseau, Minn.
RIVER MILE Roseau River-Red in Canada
PV/PN 2.5/7

TABLE I

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.114																		8	8	8	8	
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	120 #/day	0		0				0				0				0				0			1.0
TDS	N/D																						.5
TSS	150 #/day	0		0				0				0				0				0			1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						DNA
Toxic Metals	N/A																						
Other Toxics	N/A																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				2.5

COMMENTS:

Type of Facility - Primary Imhoff
Design P.E. 3500
Present P.E. 2300
Effluent Requirements
1. 237 #/day BOD
2. 285 #/day SS
3.
Type Sewer (~~Combined~~ or Separate)

CODE 1

RIVER BASIN Red
WASTEWATER SOURCE Red Lake Falls, Minn.
RIVER MILE Clearwater R.-Red Lake-Red River
PV/PN 2.5/7

TABLE 1

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.42																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	51 #/day	0			0				0					0				0					1.0
TDS	N/D																						.5
TSS	63 #/day	0			0				0					0				0					1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						DNA
Toxic Metals	N/A																						
Other Toxics	N/A																						2.5
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				

COMMENTS:

Type of Facility WSP - secondary
Design P.E. 1700
Present P.E.
Effluent Requirements
1. 87 #/day BOD
2. 105 #/day SS
3.
Type Sewer (~~Combined~~ or Separate)

CODE 1

PWT PLAN Red
 WWTWATER SOURCE Thief River Falls
 RIVER RILL Red Lake River-Red River
 PWTN 2.5/7

TABLE 1

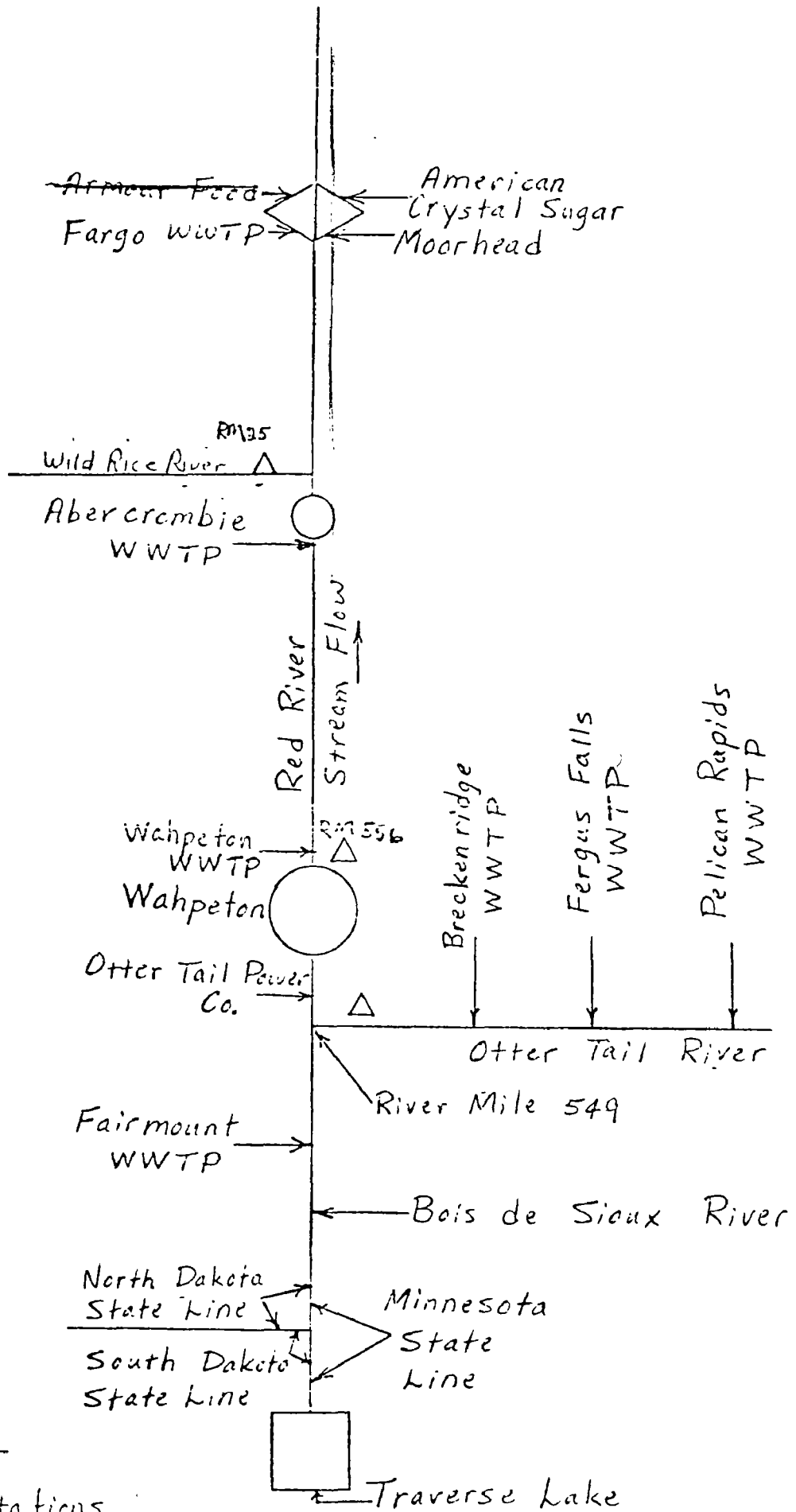
Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73, 74 Commits				Expected Incr.				Total Commits (3) + (4)				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD	.65																						
PH	N/D																						
Temp, °F	N/D																						
BOD ₅	130 #/day	0				0				0				0				0					1.0
TDS	N/D																						.5
TSS	152 #/day	0				0				0				0				0					1.0
NH ₃ -N	N/D																						
Org-N	N/D																						
Total-N	N/D																						
Total-P	N/D																						
Fecal Coli.	N/D																						
Total Coli.	N/D																						
Grease & Oil	N/A																						DNA
Toxic Metals	N/A																						
Other Toxics	N/A																						2.5
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				

COMMENTS:

Type of Facility - 2nd Tricking Filter
 Design P.E. 12800
 Present P.E. 10700
 Effluent Requirements
 1. 135 #/day BOD
 2. 162 #/day SS
 3.

Type Sewer (Combined or Separate)

CODE 1

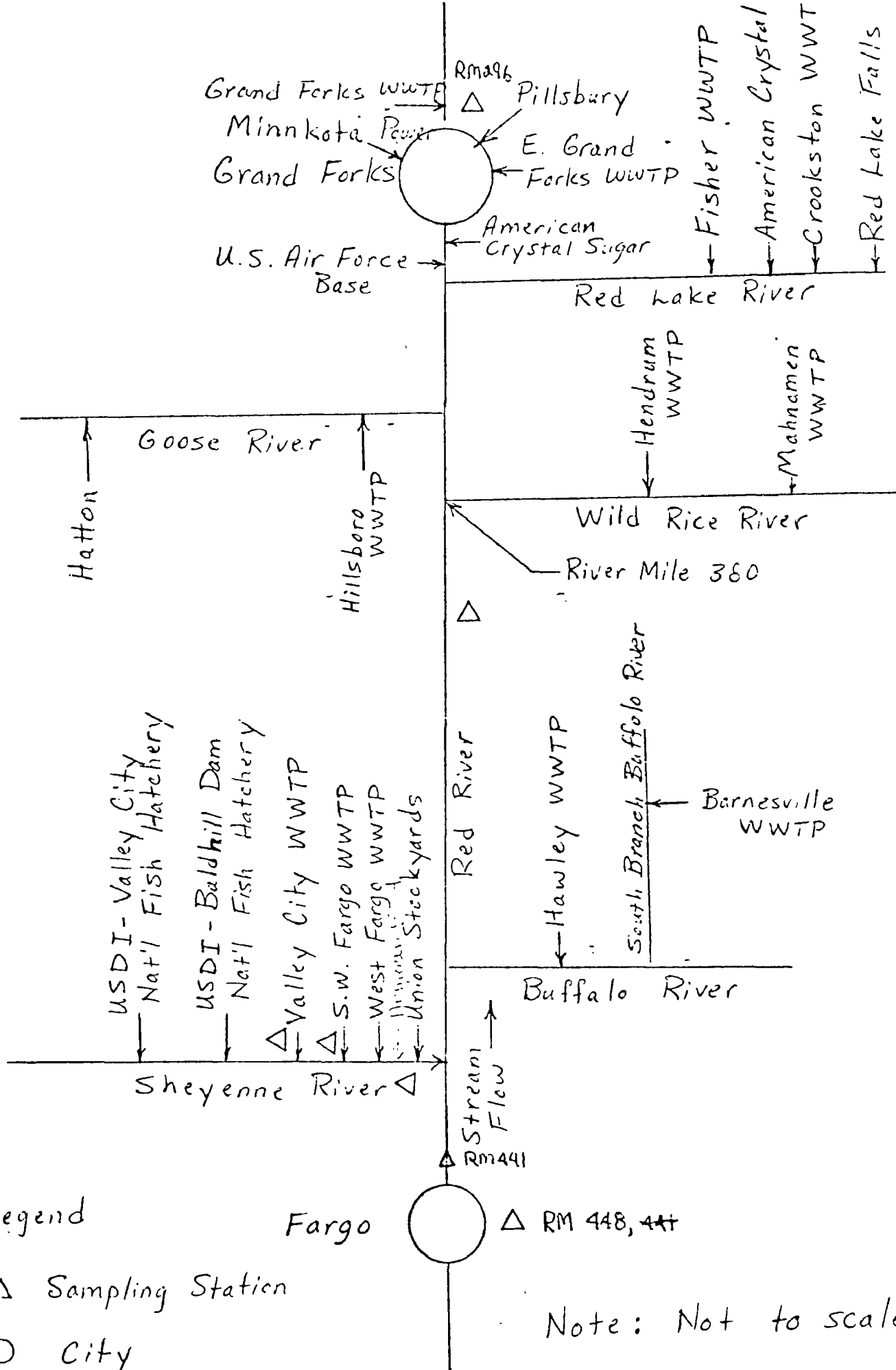


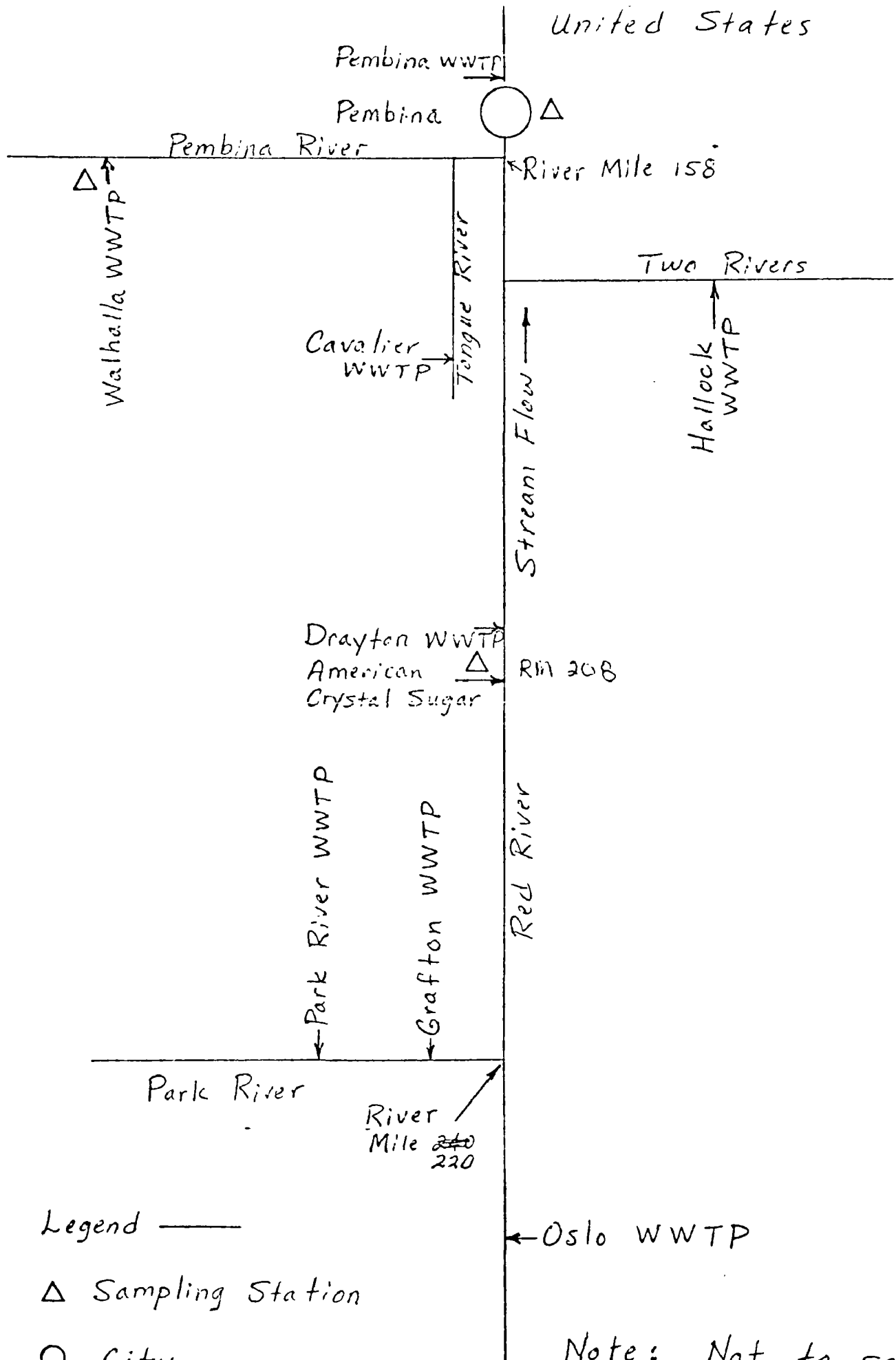
Legend —

Sampling Stations

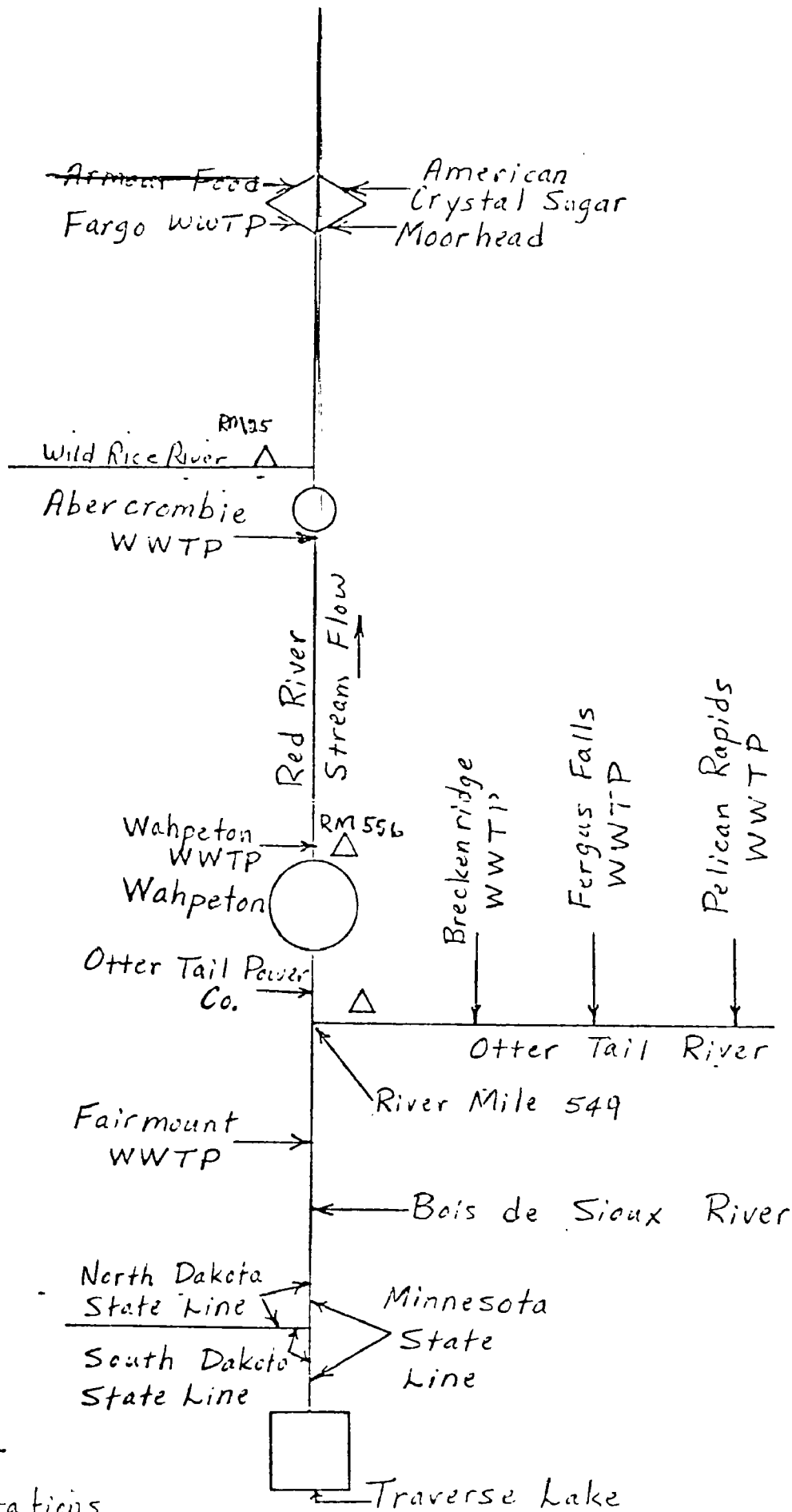
○ City

Note: Not to scale





Note: Not to scale



- Legend —
- △ Sampling Stations
 - City

Note: Not to scale

POLLUTION SOURCES WITH $PV \geq 3$

	<u>PV</u>
1. American Crystal Sugar (Drayton)	9.0
2. Armour Food - Fargo	7.0
3. American Crystal Sugar, Crookston	7.0
4. American Crystal Sugar, Moorhead	7.0
5. American Crystal Sug, E. Grand Forks	7.0
6. Fargo WWTP - Fargo	6.5
7. Union Stockyards - West Fargo	6.0
8. Fargo Water Filtration Plant (Fargo)	5.0
9. Minnkota Power Corp. (Grand Forks)	5.0
10. Otter Tail Power Co. (Wahpeton)	5.0
11. Pillsbury Corp - Grand Forks	3.0

SECTION E

Ambient W.Q. Status

CITY BAS ACCOMPLISHMENTS: ANNUAL WQ ACCOMPLISHMENTS REPORT

ACN VIII

CALENDAR YEAR 1972

DATE SUBMITTED Sep. 1972

PREPARED BY Terry L. Anderson General Engineer
(Name) (Title)

TEL.

APPROVED BY: (Name) (Title) (Initials)

AREA	POPULATION	RIVER MILES OR AREA EQUIVALENT FOR LAKES, ESTUARIES, ETC.			
		MEETS STANDARDS (MILES AND/OR AREA)	NOT AT STANDARDS (MILES AND/OR AREA)	BASIN TOTALS (MILES AND/OR AREA)	
				RIVER MILES	AREA IN Total Basin
TOTALS :-					
1. FRIEDRICH BASINS					
IN REGION					
SR Red River mainstem only		152	240	392	
Shewano Tributary		280	25	305	
SR Red Lake Tributary		120	53	173	
Park Tributary		70	15	85	
SR	ND 247,000 Minn. 261,000 Tot. 508,000	622*	333*	955*	ND 19170 Sq. Mi. Minn. \approx 1/2 total % total = 38340 sq
*Estimates - also exclude all tributaries where a water pollution problem was not detected.					
				P -- OF --	

Page 1 of 3

Data from STORET

WATER SOURCES AND R.M.	BASIC PARAMETERS - MG/L WHERE APPLICABLE												
	FLOW	PH	TEMP °C XXXX	DO	TDS	TSS	NH ₃ -N	TOTAL P	MEAN VALUE ONLY (FECAL) (TOTAL) FACT.	GREASE & OIL	TOXIC METALS /mg/l	BOD 5-Day	SPS. BASE FLOW
Bois De Sioux River 68-72		6.8	0.0	5.2	200	-	-	-	44 MFM-FCBR	-	1.5		
Wahpeton 380012 (ND)		8.0	9.6	9.9	452				3382 MFIMENDO		3.9		
Red River (69-72)	15	6.0	0.0	5.5	232		0 0	.1	250 MFM-FCBR		.8		
Wahpeton 05051510 (EPA-USGS)	442	8.1	9.5	9.8	311		.2 .2	.2	3560 MFIMENDO		2.7		
Red River (68-72)		7.0	0.0	4.9	284				3265 MFM-FCBR		1.3		
Fargo 380002 (ND)		7.8	9.9	8.6	414				90960 MFIMENDO		7.0		
Red River (69-72)	15	7.1	0.0	2.3	282		0 0	.3	2400 MFM-FCBR		3.1		
Below Fargo 05054020 (EPA-USGS)	606	8.0	9.8	8.1	384		1.3 .5	1.5	27080 MFIMENDO		8.4		
Red River (69-70)		7.6	0.0	8.7		2.0	0 0	.3	4230 MPNECMED		.9		
Oslo, Minn. RRRR 274 (Minn.)		8.0	2.4	10.4		33.8	.2 .2	.4	15180 MPN COMP		2.9		
Red River (67-72)	742	7.2	0		208		0	.03			15		
Grand Forks 05082500 (USGS)	4780	7.7	8.2		330		.3	.03					
Red River (68-72)		7.2	0	3.2	320			.2	41 MFM-FCBR		1.1		
Grand Forks 380003 (ND)		7.9	9.1	9.0	533			.5	3970 MFIMENDO		3.4		
Red River (69-70)		7.1	0.0	0.9		2.0	0 0	.4	11100 MPNECMED		1.4		
Perley, Minn. 260505 (Minn.)		7.9	2.5	7.3		18.2	.7 .5	.7	47400 MPN COMP		7.5		

TABLE II - AMBIENT WATER QUALITY AT NEAREST DOWNSTREAM MONITORING STATION

PAGE 2 of 3

Red River of the North Basin

BASIC PARAMETERS - MG/L WHERE APPLICABLE													
	FLOW	PH	TEMP °C	DO	TDS	TSS	NH ₃ -NO ₃	TOTAL P	MEAN VALUE ONLY (FECAL) (TOTAL) FACT.	GREASE & OIL	TOXIC METALS mg/l	BOD 5-Day	STDS. BASE FLOW
WATER SOURCES AND R.M.											19/2		
Red River <i>KM 28</i> (68-72)		7.0	0		320			.1	190 MFM-FGBR			0.3	
380004		7.8	9.2		455			.3				2.6	
Drayton, N.D. (ND)		8.7	25.0		800			.5	6300 MFIMENDO			5.7	
Red River <i>KM 58</i> (68-72)		6.5	0	6.1	285			.1	122 MFM-FGBR			0.4	
380005		7.8	9.0	9.6	485			.3				2.9	
Pembina, N.D. (ND)		8.7	24.5	14.3	1040			.9	1430 MFIMENDO			10.0	
Wild Rice River <i>KM 25</i> (67-72)	.05	7.1	0		110		0	Phos-D					
05053000	227	7.9	10.8		1080		.2	.1					
Abercrombie (USGS)	9260	8.6	25.0		2840		1.9	.3 .6					
Wild Rice River <i>KM 90</i> (68-72)		7.4	0.0	6.2	560			.6	10 MFM-FGBR			3.4	
380006		7.9	7.4	9.9	962			.6				5.7	
Cayuga, N.D. (ND)		8.3	24.0	11.9	1880			.6	343 MFIMENDO			10.3	
Otter Tail, <i>KM 1</i> (64-69)		7.2	.5	6.1	290	12	0 0	.1	1730 MPNECMED	.5	Arsenic	1.5	
RROT-1		7.8	15.5	8.7	333	73	.1 .2	.2		.5	5.0	3.2	
1 Mile from Mouth (Minn)		8.6	26.7	13.6	380	230	.4 1.0	.4	2470 MPN CONF	.5		4.8	
Sheyenne River <i>KM 6</i> (69-72)	30	7.1	0	3.0	260		0	.1			Arsenic	.5	
05060600	420	8.0	9.6	8.2	600		.5	.4			0.0	3.8	
Near Harwood, N.D. (USGS)	3200	8.6	24.5	13.6	965		1.3	1.0			7.4 20	25.0	
Sheyenne <i>KM 100</i> (68-72)		6.9	0	5.0	310			.2	400 MFM-FGBR			1.4	
380007		7.9	9.5	10.1	630			.4				4.1	
Lisbon, N.D. (ND)		8.8	24.0	15.4	1840			1.4	4000 MFIMENDO			16.0	
Sheyenne <i>KM 100</i> (67-72)	16	7.3	0.0		293		0	Phos-D			0		
05058700	290	7.8	8.4		555		1.4	.1			20.3		
Lisbon, N.D. (USGS)	4270	8.4	28.0		820		6.7	.3					

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Red River of the North Basin

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SECTION F

Tactical Solutions

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

PAGE 1

RED RIVER BASIN - SUMMARY

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - NOS)			
		INITIATION	COMPLETION		FY 73	FY 74	FY 75	FY 76
<p>About half of the Red River Basin falls within Minnesota which is under the jurisdiction of EPA Region V. Three of the largest dischargers in the basin are located in Minnesota. They are American Crystal Sugar at Crookston, E. Grand Forks and Moorhead. There are about 20 municipalities with populations larger than 1000 which discharge their treated municipal wastes to the Red River Basin. Some of these receiving waters are primary recreation areas.</p> <p>To date, our contacts with Region V and the Minnesota State Department of Health have not yielded the information we need to adequately assess the water quality problems for the entire basin and to develop an accomplishment plan strategy that will manage the water quality of the entire basin.</p> <p>Although Region VIII does not propose to develop work loads for Region V, the general needs in the Minnesota portion of the Basin have been included herein in order to provide a complete picture of the problem.</p>	(1) Meet with the Regional Administrator for Region V and come to an agreement which will inculcate a working relationship between the two regions for all programs in the Red River Basin. (Management Division-R.A.'s Office)	NOV 72	NOV 72	5T1214 Reg. V	.2			
	(2) Inventory all point sources of water pollution in the Minnesota portion of the Red River Basin.	OCT 72	DEC 72	Reg. V				
	(3) Analyze the water quality impact of each source and assign an allowable waste load to each.	JAN 73	FEB 73	Reg. V				
	(4) Obtain commitment letters from industry which bind the industry to a specified loading limitation to be accomplished through an implementation schedule.	MAR 73	JAN 74	Reg. V		1.0		
	(5) Assess the discharge practices of wastewater treatment plants in Minnesota and recommend alternative methods which would improve water quality throughout the discharge period.	OCT 72	MAY 73	Reg. V				
	(6) Review Minnesota water quality standards to determine their adequacy in light of pending legislation and compatibility with North Dakota's standards.	MAY 73 MAY 73	JUN 73 JUN 73	Reg. V 2B1143	.5			
	(7) Influence North Dakota to conduct meaningful O&M studies and sampling program for wastewater treatment plants in the basin. (A&W DIV Program Support and Program Planning Branches) (S&A Div.-Surveillance and Tech. Support Br.)	JAN 73 " " " "	FEB 74 " " FEB 73	2B8163 2B8162 2B2147	.2 .3 .2	.2 .3 -	- - -	- - -

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

PAGE 2

RED RIVER BASIN SUMMARY - Continued

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - MOS)			
		INITIATION	COMPLETION		FY 73	FY 74	FY 75	FY 76
<p>During winter months, the majority of the Red River of the North is covered with ice. As a result, the DO and coliform concentrations in the river do not meet state standards. To improve this condition, several industrial and municipal wastewater treatment plants have been or are being expanded and upgraded. However, some of these projects are behind schedule.</p> <p>The Denver Field Investigations Center (DFIC) is committed to a water quality survey covering previously sampled stations on the Red River during 1965 and 1969-1970. Through a comparison of results from earlier studies, this study should determine whether the expected improvement in water quality has occurred as a result of the upgrading of wastewater treatment facilities at Fargo, N.D. Moorhead, Minnesota, and Abercrombie, N.D.</p> <p>The DFIC survey will take place prior to the completion of all new construction and therefore, an additional water quality survey will be required to document compliance with standards.</p>	(8) Establish a joint monitoring system of in-stream water quality effluent discharges. (Enforcement Div.-Permits and Enforcement Branches)	OCT 73	JUN 76	3B2124 2B2147	- - -	5.0 2.5	1.0 1.0	
	(1) Encourage state and municipalities to expedite plant construction. (A&W Division - Planning Branch and Municipal Wastewater Branch)	JUL 72	JUN 73	2B3149 2B8162	.05 .05	.2		
	(2) Coordinate with DFIC on this survey so that appropriate action may be taken if expected improvements do not materialize. Any necessary follow-up may include Q&M surveys, operator training or upgrading of facilities. (S&A Division - Technical Support Branch)	DEC 72	JUN 73	2B5154	0.5	0	0	0
	(3) Perform water quality survey and make comparative analysis with the 1965, 1969-1970, and 1972-1973 studies. (S&A Division-Technical Support Branch)	DEC 73	JUN 74	2B5154	0	4	0	0
	(4) Initiate a comprehensive stream and effluent survey to determine a nutrient balance in the Red River of the North. Suggest recommendations for a control program as required by an analysis of survey results. Control programs recommended may include agricultural runoff control or nutrient removal by point sources. (Technical Support Branch-S&A Division)	SEP 73	JUN 74	2B5154	0	10	0	0

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

PAGE 3

RED RIVER BASIN SUMMARY - Continued

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - MOS)			
		INITIATION	COMPLETION		FY 73	FY 74	FY 75	FY 76
A recommendation of the 1965 Conference concerning pollution of the Red River of the North was that nutrient concentrations in the river should be determined and sources located to prevent excessive algae growth and subsequent water quality degradation. Nutrients are thought to enter the river from point sources (industry and municipalities) as well as non-point sources (agriculture).	(5) Review N.D. water quality criteria and use classifications to determine their adequacy and resolve differences between N.D. and Minnesota.	May 73	Jun 73	2B1143	See Page 1, Subtask 6.			
	(6) Obtain data from the collecting agency, code and insert into STORET system, and review program. Also, make on-site inspections to verify discharges. (S&A-Surveillance Branch)	SEP 72	JUN 76	2B2146 2B2148	1	1.5	2.	2
Also, the Red River Basin is characteristic in that low flows are common and waste discharges generally occur during spring and fall. North Dakota water quality standards do not apply for DO during the processing season for agricultural products if flows fall below the lowest 10% of all monthly flows of record for either the months of April or May. This DO Standard is not identical to Minnesota but each applies to the main stem of the Red River.	(7) Analyze the water quality of the Basin using a simplified math model. The model will reflect water quality throughout the basin based upon low flow, waste loading, instream water quality standards, and existing in-stream water quality. (A&W Div.-Program Planning Branch). Update in FY 74.	SEP 72	OCT 73	2B3149	1.0	1.0		
	(8) Utilize DFIC's proposed survey and S&A's survey to see what improvements are being made in the water quality as wastewater control facilities are put into operation and to determine the effects of spring discharge on water quality. (A&W Division-Program Planning-Planning-Program Support Branches)	SEP 73	OCT 73	2B8162 2B3149 2B4153		.25 .40 .25		
A significant amount of water quality data is continuously being gathered at Federal, State, and other sampling stations in the Red River Basin. Additionally, situations occasionally arise when further data and/or onsite inspection is required for verification of discharges. All available data is not readily available for use in analyzing water quality needs or improvements.	(9) Reconvene the Enforcement Conference and publish report.	FEB 73	SEP 74	3B1123 3B1124	5.0 2.0	3.0 1.0		
	(10) Follow-up on the recommendations coming forth from the Enforcement Conference.	SEP 74 SEP 74	JUN 76 JUN 76	3B1123 3B1124	0 0	2.5 1.6	1.5 .8	1.0 .8
Several treatment facilities are being designed to hold treated wastes during the winter and discharge them during the following spring.	(11) Follow-up on the compliance schedule of Fargo's 180-day notice.	SEP 72 SEP 72	JUN 73 JUN 73	3B1123 2B8102	.30 .15	.2 .1		

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

PAGE 4

RED RIVER BASIN SUMMARY-Continued

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - MOS)			
		INITIATION	COMPLETION		FY 73	FY 74	FY 75	FY 76
Fargo is under a 180-day notice to construct a holding lagoon to provide winter storage of their effluent. An investigation of the Drayton WWTP will be conducted to determine whether an enforcement action is needed.	(12) Determine the necessity of an enforcement action against Drayton and/or other municipalities/industries.	SEP 72	JUN 76	3B1123	1.5	1.4	1.4	1.4

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

RED RIVER BASIN - SUMMARY Continued

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - MOS)			
		INITIATION	COMPLETION		FY 73	FY 74	FY 75	FY 76
Fully developed water quality management plans are being developed for the Red River Basin and Fargo-Moorhead SMSA by North Dakota and Minnesota. Little coordination has been established between the two states, Region V and Region VIII. Existing legislation calls for the approval of fully developed water quality management plans by July 1, 1973. New legislation extends this date to July 1974 and requires that areawide planning agencies be designated to conduct water quality planning. North Dakota does not have the planning capability to fulfill the desired role set forth in the new legislation.	(1) Establish inter-region inter-state and inter-community cooperation and coordination for developing an integrated water quality management plan for the Red River Basin to be conducted on a continuing basis. (A&W Division-Program Planning Branch)	NOV 72	JUN 76	2B3149 Reg. V	.5	.6	.3	.3
	(2) Monitor the progress of the water quality management plans to assure adequate coverage and detail which will satisfy the requirements of 40CFR35. (A&W Division-Program Planning Branch)	SEP 72	JUN 76	2B3149 Reg. V	.4	.8	.3	.3
	(3) Provide assistance to North Dakota and Minnesota as it is needed to fulfill the basin planning requirements. (A&W Division-Program Planning Branch)	SEP 72	JUN 76	2B3149 Reg. V	.5	.6	.4	.3
	(4) Review of the Basin Plan for the Red River of the North and the Metropolitan Plan for Fargo-Moorhead on an intra-agency basis. Assure consistency with Minnesota portions.	APR 73	JUL 73	2B3149	.9	.4		
		APR 73	JUN 73	2B6117	.3			
		APR 73	JUN 73	3B1123	.3			
		APR 73	JUN 73	3B2124	.4			
		APR 73	JUN 73	2B5154	.3			
		APR 73	JUN 73	Reg. V				
	(5) Approve the water quality management plans for the Red River Basin and the Fargo-Moorhead SMSA.	JUL 73	JUL 73	2B3149	.1	.2		
	(6) Assess impact of new legislation upon Water Quality Management planning and Facilities Management Grant Program.	SEP 73	MAY 73	2B3149	.5	.5		
	(7) Work with Region V, HUD, States, and Fargo-Moorhead SMSA to plan the best strategy for creating districts that could do water quality management planning under the new legislation. (A&W Div.-Program Planning Br.)	JUN 73	SEP 73	2B3149	.50	.7		

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

RED RIVER BASIN SUMMARY - Continued

RED RIVER BASIN SUMMARY - Continued

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - MOS)			
		INITIATION	COMPLETION		FY 73	FY 74	FY 75	FY 76
<u>American Crystal Sugar - Drayton, N.D.</u> Past discharges of flume water have created excessive organic and solids loading. At the last formal meeting with EPA on June 29, 1972, ACS agreed to operate a closed flume system for the 72-73 campaign in order to reduce the BOD ₅ loading. RAPP guidelines limit BOD ₅ to 0.5 lb/ton of sliced beet. ACS believes that this is an unrealistic figure because spray irrigation would have to be used exclusively to meet the requirements. Therefore, they feel 1.0 lb/ton represents the best practicable treatment. The plant uses total containment during winter months and utilizes the "spring flush" technique to drain their lagoons. No discharge under ice cover is permitted under EPA guidelines.	(1) Continue to meet with company to settle disagreement on BOD ₅ loading limitation. (2) Obtain additional commitment letter.* (3) Monitor stream and effluent to detect pollution levels. (Enforcement Div.-Enforcement and Permits Branches.)	SEP 72 MAR 73 SEP 73	MAR 73 JUN 73 MAR 75	3B2124 3B2124 3B2123 3B2123	.9 .30 .30 .2			0.05
<u>American Crystal Sugar, Moorhead, Minn.</u> ACS at Moorhead is a major contributor of BOD ₅ and TSS to the Red River. However, Region V is responsible for working with this company to establish an effluent requirement that will be compatible with in-stream water quality criteria. To date, such a limitation has not been established.	(1) Meet with Region V, State of Minnesota, and industry to agree upon effluent limitations (should be uniform with other Sugar Beet Mills). (2) Obtain a commitment letter from the industry (3) Monitor jointly the effluent and in-stream water quality to determine impact of and compliance with commitments. *These commitment actions will be converted immediately into permit actions under the new legislation as soon as guidelines are available.	APR 73 MAY 73 JUL 74	MAY 73 JUL 74 JUN 75	3B2124 Reg. V 3B2123 3B2124 Reg. V 3B2123 Reg. V	1.0 .10 .10 .2			

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

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RED RIVER BASIN SUMMARY, Continued

RED RIVER BASIN SUMMARY, continued

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - MOS)			
		INITIATION	COMPLETION		FY 73	FY 74-	FY 75	FY 7
<u>American Crystal Sugar, E. Grand Forks, Minn.</u> ACS at E. Grand Forks is a major contributor of BOD ₅ and TSS to the Red River. However, Region V is responsible for working with this company to establish an effluent requirement that will be compatible with in-stream water quality criteria. To date, such a limitation has not been established.	(1) Meet with Region V, State of Minnesota, and industry to agree upon effluent limitations (should be uniform with other Sugar Beet Mills). (2) Obtain a commitment letter from the industry.* (3) Monitor jointly the effluent and instream water quality to determine impact of and compliance with commitments.	APR 73	MAY 73	3B2124 Reg. V	1.0			
		MAY 73	JUL 74	3B2123 3B2124 Reg. V	.10 .10			
		JUL 74	JUN 75	3B2123 Reg. V			.2	
<u>American Crystal Sugar, Crookston, Minn.</u> ACS at Crookston is a major contributor of BOD ₅ and TSS to the Red Lake River, a large tributary of the Red River. However, Region V is responsible for working with this company to establish an effluent requirement that will be compatible with instream water quality criteria. To date, such a limitation has not been established.	(1) Meet with Region V, State of Minnesota, and industry to agree upon effluent limitations (should be uniform with other Sugar Beet Mills). (2) Obtain a commitment letter from the industry* (3) Monitor jointly the effluent and instream water quality to determine impact of and compliance with commitments.	APR 73	MAY 73	3B2124 Reg. V	1.0	1.0		
		MAY 73	JUL 74	3B2123 3B2124 Reg. V	.10 .1			
		JUL 74	JUN 75	3B2123 Reg. V			.2	

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

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RED RIVER BASIN SUMMARY- Continued

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - MOS)			
		INITIATION	COMPLETION		FY 73	FY 74-	FY 75	FY 7
<u>Armour Food-West Fargo, N.D.</u> A dye test study by EPA on March 29, 1972, established that some of the waste discharges from the processing operation reach the Sheyenne River instead of being routed to the Fargo Industrial Park sewage treatment facility. Armour has discovered a cross connection in the sewer lines and a collapsed sewer line on the stream bed to be responsible for the discharge. The company will either install a septic tank with an underground disposal field or make a new connection to the industrial park facility. EPA is encouraging the latter alternative.	(1) Negotiate with company and encourage a sanitary sewer hook-up.	OCT 72	FEB 73	3B2124	.90			
	(2) Obtain commitment letter and follow-up with inspection.*	MAR 73	JUN 73	3B2123 3B2124	.20			
	(3) Monitor stream and effluent to detect pollution levels.	JUN 73	AUG 73	3B2123		.2		
<u>Fargo, N.D. - Wastewater Treatment Plant</u> Located on Red River of the North. Project consists of improvements to the wastewater treatment facilities. Present population approximates 53,000 and a future population of 85,000 is projected for 1992. Currently, the city wastewater is treated by a trickling filter plant which provides approximately 65% reduction of BOD and SS. A six-cell, 580-acre waste stabilization lagoon system is presently under construction to provide further reduction, or tertiary treatment of municipal wastes discharged into the Red River of the North. Nutrient removal is not required at this time.	(1) Finalize construction, inspection, put plant into operation. (Air & Water Div.- Municipal Waste Water Branch)	SEP 72	SEP 73	2B8162	.1	1.0		
	(2) O&M Inspection.	APR 74 " "	APR 74 " "	2B8163 2B7160		.30 .05		
	(3) Monitoring of in-stream water quality impact. (if needed). Surveillance & Analysis)	APR 74	MAY 74	2B2148		.25		
	(4) If it is determined that nutrient removal is required based on the water quality surveys and analyses by S&A & DFIC, influence State and municipality to modify existing facilities** to provide for removal through construction grants aid. (S&A MWW Planning)	APR 74 JUL 74 Jul 74	JUN 76 JUN 76 JUN 76	3B1123 2B8162 2B3149	.2		.2 .2 .2	.2 .2 .2
**Permits for municipal facilities will be used to meet these needs as required.								

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS
RED RIVER BASIN SUMMARY - Continued

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - MOS)			
		INITIATION	COMPLETION		FY 73	FY 74	FY 75	FY 76
<u>Union Stockyards - Fargo</u> The stockyards have liquid waste treatment facilities constructed under a Federal research, development and demonstration grant and placed into operation in April 1971. Normal operation routes all wastes to the two-cell lagoon. But, during the winter months, there is no significant pen drainage or track washing. Watering trough overflow combines with the domestic effluent from the septic tank and is bypassed to the river, eliminating the use of a lift station. The organic loading is low (20 mg/l) and would presumably not benefit from treatment in the lagoon system. An acceptable treatment of wastes during winter months is being investigated. Complete winter retention might be achieved by decreasing water trough overflow.	(1) Continue with negotiations and determine effluent requirements. Encourage the company to use better water conservation practices.	AUG 72	JAN 73	3B2124	.4			
	(2) Obtain letter of commitment.*	JAN 73	MAR 73	3B2123 3B2124		.30 .60		
	(3) Monitor Stream and effluent to detect pollution levels. (Enforcement Div.--Enforcement and Permits Branches)	JAN 74	JAN 75	3B2123			.25	
<u>Fargo, N.D. - Water Treatment Plant</u> Project consists of improvements to the sludge handling facilities of the water treatment plant. Currently, 40,000 lbs/day of suspended solids (lime sludge) is being deposited in the Red River. Project is currently out for bids and when construction is complete 40,000 lbs/day of inert dried lime sludge will be deposited in the Fargo Sanitary Landfill.	(1) Award contract, finalize construction, inspection, put plant into operation. (Air & Water Div. - Municipal Waste Water Branch)	SEP 72	OCT 73	2B8162	.1	1.2		
	(2) O&M Inspection (Air and Water Div.-Municipal Waste Water Branch)	APR 74 APR 74	APR 74 APR 74	2B8163 2B7160		.30 .05		
	(3) Monitoring (if needed by S/A)	SEP 74	OCT 74	2B2148			.30	

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS
RED RIVER BASIN SUMMARY - Continued

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - MOS)			
		INITIATION	COMPLETION		FY 73	FY 74	FY 75	FY 76
<u>Minnekota Power Coop., Inc. - Grand Forks</u> Lignite or oil is burned to produce steam for this 21,500 kw electrical generation plant. The plant normally on cold stand-by operational basis and has not been used continuously for more than five days in the past eight years. Expected operation is 700 hrs. per year. However, during operation, the discharge is high in total solids concentration. Permits has obtained a letter of commitment from the company concerning another plant outside this basin. Effort will now be shifted to this Grand Forks plant.	(1) Continue meetings with company to develop satisfactory effluent requirements-RAPP Program.	JUN 72	MAR 73	3B2124	1.0			
	(2) Obtain commitment letter.*	MAR 73	MAY 73	3B2123 3B2124	.4 .4			
	(3) Monitor effluent and stream after remedial measures are complete. (Enforcement Div.--Enforcement and Permits Branches)	JUN 73	JUN 76	3B2123		.4	.05	.03
<u>Otter Tail Power Company - Wahepton</u> Cooling water used in this steam generation electric plant is discharged directly to the Red River. The increase in dissolved salts and thermal degradation impose a threat to the water quality. The COE transferred a copy of their discharge permit to EPA on March 8, 1972. There have been no formal meetings with personnel from this plant as yet to improve the quality of their effluent. Permits anticipates active correspondence to begin late 1972.	(1) Develop effluent criteria through RAPP. Program.	DEC 72	JUN 73	3B2124	.4			
	(2) Obtain Commitment letter.*	JUN 73	SEP 73	3B2123 3B2124		.3 .6		
	(3) Monitor effluent and stream to detect pollution levels. (Enforcement Div.-Enforcement and Permits Branches)	OCT 73	JUN 75	3B2123			0.05	

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

RED RIVER BASIN SUMMARY - Continued

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - MOS)			
		INITIATION	COMPLETION		FY 73	FY 74	FY 75	FY 76
<u>USDI Baldhill Dam National Fish Hatchery - Valley City, N.D.</u> The COE Permit dated October 5, 1971 describes the hatchery operation as hatching and rearing various species of sport fishes in warm water ponds, feeding the fish on organisms generated through a natural food chain in the rearing ponds. An organic pollution problem is possible from the discharges of fish fecal materia and unused food. To date, no formal contacts have been made with Bureau of Sport Fisheries concerning their conservation practices. Inter-agency cooperation will be obtained to safeguard each agency's interests.	(1) Obtain commitment from Game and Fish to observe conservation practices to minimize pollution load.* (2) Monitor effluent and stream to detect potential pollution load. (Enforcement Div.-Enforcement and Permits Branches)	FEB 73	MAY 73	3B2124	.40			
		JUN 74	JUN 74	3B2123		.40		
<u>USDI Valley City National Fish Hatchery, Valley City, N.D.</u> The COE Permit dated October 5, 1971 describes the hatchery operation as hatching and rearing various species of sport fishes in warm water ponds, feeding the fish on organisms generated through a natural food chain in the rearing ponds. An organic pollution problem is possible from the discharges of fish fecal material and unused food. To date, no formal contacts have been made with Bureau of Sport Fisheries concerning their conservation practices. Inter-agency cooperation will be obtained to safeguard each agency's interests.	(1) Obtain commitment from Game and Fish to observe conservation practices to minimize pollution load.* (2) Monitor effluent and stream to detect potential pollution load. (Enforcement Div.-Enforcement and Permits Branches)	FEB 73	MAY 73	3B2124 3B2123	.40 .40			
		JUN 73	JUN 74	3B2123		.40		

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

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RED RIVER BASIN SUMMARY-Continued

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - MOS)			
		INITIATION	COMPLETION		FY 73	FY 74-	FY 75	FY 76
<u>Pillsbury Food - Grand Forks, N.D.</u> A COE discharge permit was forwarded to our office on April 17, 1972 for the discharge of air conditioner cooling water to the Red River. The discharge is high in dissolved salts. As yet there is no State standards for DS concentrations; therefore, meeting will be initiated in an attempt to establish a workable DS guideline. All sanitary wastes are diverted to the municipal STP.	(1) Meet with company and State official and develop a DS Standard. (2) Develop effluent concentrations for plant through RAPP program. (3) Obtain commitment letter.* (4) Monitor stream to detect pollution levels. (Enforcement Div.-Enforcement and Permits Branches)	JUL 73 JUL 74 DEC 74 FEB 75	JUL 74 DEC 74 FEB 75 FEB 76	3B2124 3B2124 3B2123 3B2123	0 	1.0 	 0.2 0.15 0.15	 0.05
<u>Grafton, N.D.</u> Located on the middle fork of the Park River which is a tributary to Red River of the North. The present population is approximately 6000 and a 1990 design forecast of 7000 is expected. The City is currently serviced by a two-cell waste stabilization lagoon which is organically overloaded. The treatment project as proposed in the grant application consists of a 2.25 aerated pre-treatment lagoon to treat the organic overload modifications to existing master lift station, and a new lift station with forced main. Plans and specifications currently being prepared. Nutrient removal not required.	(1) Process grant application, make grant, review plans and specifications, begin construction. (Air & Water--Municipal Waste Water Branch) (2) Finalize construction, inspection, put plant into operation. (Air and Water Div.-Municipal Waste Water Branch) (3) O&M Inspection. (Air and Water Div.-Municipal Waste Water Branch) (4) Monitoring (if needed by S/A). (5) If it is determined that nutrient removal is required based on the water quality surveys and analyses by S&A and DFIC, influence the State and municipality to modify facilities to provide for removal through construction grants aid.** (S&A, MWW, Planning).	SEP 72 AUG 73 JUN 74 OCT 74 MAY 74 JUL 74 " "	OCT 72 AUG 73 JUN 74 OCT 74 JUN 75 JUN 75 " "	2B8162 2B8162 2B8163 2B7160 2B2148 3B1123 2B8162 2B3149	1.2 	 1.2 .25 .05 	 	 .30 .2 .2 .2

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

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RED RIVER BASIN SUMMARY - Continued

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - MOS)			
		INITIATION	COMPLETION		FY 73	FY 74-	FY 75	FY 76
<u>Wahpeton, N.D.</u> Located on Red River of North. Present population approximates 7100 people with 4500 students attending a local college. The projected 1992 design population will equal 16,500 people: At present, the waste load from the community is handled by a two-cell waste stabilization lagoon and is organically overloaded. The proposed project will consist of the addition to the existing lagoon system of an aerated cell. The aerated cell will considerably reduce the organic load to the lagoon system. Project is currently out for bids. Nutrient removal not included.	(1) Continue processing construction oriented activities, contract award, finalize construction, inspection, put plant expansion into operation. (Municipal Waste Water Branch-Air & Water Div.)	SEP 72	AUG 73	2B8162	.3	.5		
	(2) O&M Inspection. (Air and Water Div.-Municipal Waste Water Branch)	MAY 74 " "	MAY 74 " "	2B8163 2B7160		.30 .05		
	(3) Monitoring if necessary by S/A.	OCT 74	OCT 74	2B2148			.3	
	(4) If nutrient removal is required based on the water quality surveys and analyses by S&A and DFIC, influence the State and municipality to provide for removal through construction grant aid. (S&A, MWW, Planning). **	JUL 74 " " " "	JUN 75 JUN 76 JUN 76	3B1123 2B8162 2B3149			.3 .2 .2 .2	.2 .2
<u>Abercrombie, N.D.</u> Located on the Red River of the North. The 1970 population is listed at 260 with 350 people projected for 1990. Currently the town is served by septic tanks and cesspools. The town is presently planning a sewer system and has requested a construction grant for a lift station with force main and a two-cell waste stabilization lagoon system. A construction grant has been processed and plans and specifications are currently being prepared.	(1) P&S review, contract award, finalize construction, put plant into operation and inspection of facilities. (A&W Div.-Municipal Waste Water Branch)	SEP 72	JUN 73	2B8162	1.0			
	(2) O&M Inspection (A&W Div.-Municipal Waste Water Branch)	MAY 74 " "	MAY 74 " "	2B8163 2B7160		.30 .05		

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

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RED RIVER BASIN SUMMARY-Continued

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - MOS)			
		INITIATION	COMPLETION		FY 73	FY 74-	FY 75	FY 76
<u>Park River, N.D.</u> Located on the South Branch of the Park River which is tributary to the Red River of the North. The 1970 population in Park River by official census was 1,680, and by the year 1990 a population of 2,200 is anticipated. The present treatment facilities consist of a one-acre aerated lagoon followed by one 20 and one 10-acre waste stabilization ponds operated in series. The present project consists of a lift station with force main which services an annexed area previously utilizing septic tanks. Construction on project is essentially complete.	(1) O&M Inspection. (Air & Water Div.-Municipal Waste Water Branch)	SEP 72 " "	OCT 72 " "	2B8163 2B7160	.30 .05	-		
<u>Amenia, N.D.</u> Located on the Rush River which is tributary to Red River of the North. The town presently is served by septic tanks and cesspools. The 1970 population was reported as 100 people with a 1990 population of 150 people expected. The proposed project will consist of a sewage collection system and a two-cell waste stabilization lagoon operated in series.	(1) Pre-application review and conference. (Air and Water Div.-Municipal Wastewater Branch, Planning Branch) (2) Processing of grant application, grant offer, P&S review, contract award, finalize construction, put plant into operation and inspection. (Air and Water Div.-Municipal Waste Water Branch) (3) O&M Inspection. (A&W Div.-Municipal Waste Water Branch)	FEB 73 " " APR 73 MAY 74 " "	FEB 73 " " OCT 73 MAY 74 " "	2B8162 2B3149 2B8162 2B8163 2B7160	.2 .2 1.0 .30 .05		1.2	

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

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RED RIVER BASIN SUMMARY-Continued

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - MOS)			
		INITIATION	COMPLETION		FY 73	FY 74	FY 75	FY 76
<u>Valley City, N.D.</u> Located on the Sheyenne River which is tributary to Red River of the North. The 1970 city population was reported at 7,843 with the 1970 project area population recorded at 52. The 1992 projected city population is 10,000 with 100 people to be served by the project area. The project will consist of a lift station and force main to handle waste contributions from an area previously unsewered. Ultimate treatment of sewage will be provided by a two-cell waste stabilization lagoon system.	(1) Continue processing construction activities, put plant into operation, inspection. (A&W Div.-Municipal Waste Water Branch) (2) O&M Inspection. (A&W Div.-Municipal Waste Water Branch) (3) If nutrient removal is required based on the water quality surveys by S&A and DFIC, influence State and municipality to provide for removal through construction grant aid. (S&A, MWW, Planning).	AUG 72 AUG 73 JUL 74 " "	AUG 72 AUG 73 JUN 75 " " " "	2B8162 2B8163 2B7160 2B1123 2B8162 2B3149	.3			
<u>Five-Year Needs List</u> Currently, there are six projects on the North Dakota 5-year needs list which are in the Red River of the North drainage basin. They are as follows: 1) Fargo, N.D. 2) Grafton, N.D. Extension 3) Grand Forks, N.D. of 4) Valley City, N.D. Interceptor 5) Wahpeton, N.D. Systems 6) West Fargo	(1) Pre-application review and conference. (Air and Water-Municipal Waste Water Branch, Water Quality Planning) (2) Processing of application, grant offer, P&S review, contract award, construction, inspection, put plant into operation. (A&W-Municipal Waste Water Section) (3) O&M Inspection. (Air and Water Div.-Municipal Waste Water Branch) (4) Provide for nutrient removal as noted pre-viously on a case-by-case basis.	JUN 74 JUN 74 JUN 75 JUN 75 JUN 75	JUN 75 JUN 75 JUN 76 JUN 76 JUN 76	2B8162 2B3149 2B8162 2B8163 2B7160		.6 .6	.6 .6	
here are no new treatment needs of major significance in the basin foreseen at this time with the possible exception of nutrient removal.						3.0	3.0	
						1.00 .15	1.00 .15	

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

RED RIVER BASIN SUMMARY-Continued								
SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - NOS)			
		INITIATION	COMPLETION		FY 73	FY 74	FY 75	FY 76
	(7) Assess impact of new legislation upon the Facilities Management Grants Program. (A&W Division-Program Planning Branch)	APR 73	MAY 73	2B3149	.25			
<hr/>								
<u>State Program Plan:</u> Yearly, the EPA reviews and assesses North Dakota's water program. A State Program Plan is submitted to EPA as a requirement to obtain supplemental funding from EPA for the State's program. The program plan contains information which can assist other EPA operations.	(1) Coordinate State Program Plans with Basin water quality management planning and construction grants (i.e., one and five year needs list, implementation schedule, standards, program reviews). (A&W Division-Program Planning, Program Support Branches)	OCT 72	JUN 76	2B3149	.5	.5	.4	.4
		OCT 72	JUN 76	2B8162	.25	.25	.25	.25
		OCT 72	JUN 76	2B4153	.25	.25	.2	.2
	(2) Update one and five year needs list.	OCT 72	JUN 76	2B8162	.3	.3	.3	.3
		OCT 72	JUN 76	2B4153	.3	.3	.3	.3
		OCT 72	JUN 76	2B2146	.3	.3	.3	.3
	(3) Approve North Dakota State Program Plan	SEP 72	JUN 76	2B4153	1.0	1.0	1.0	.0
<hr/>								
<u>Construction Grants Administration:</u> For each new municipal wastewater facilities grant application, about one man-month is spent processing the application for administrative purposes.	(1) Process seven new applications and complete seven others. (See page 9 of Figure 7)	SEP 72	JUN 76	2B8316	2.0	3.0	3.0	3.0
<hr/>								
<u>EIS Reviews:</u> Environmental assessments are written for each construction grant project and each water quality management plan. They need to be reviewed to determine whether an EIS will be needed or a negative declaration can be issued.	(1) Review two water quality management plans and seven construction grant applications.	SEP 72	JUN 76	2B6117	1.5	1.0	1.0	1.0

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

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RED RIVER BASIN SUMMARY - Continued

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - NOS)			
		INITIATION	COMPLETION		FY 73	FY 74	FY 75	FY 76
<u>Planning Review of Construction Grant Applications:</u> Too often construction grant applicants are not fully aware of the planning aspects of the proposed project. Also, it is a Federal regulation (40CFR601) that planning criteria be met prior to offering a grant.	(1) Review construction grant applications for conformance to water quality management plan, compliance to water quality standards, and environmental impact. (A&W Division-Program Planning Branch)	SEP 72	JUN 76	2B3149	.6	-1.3	1.0	.5
<u>Public demand for environmental news:</u> The success of the environmental program in Region VIII is dependent upon public backing and awareness. Also, public cooperation helps EPA fulfill its regulatory responsibilities. As of yet, we have not gained the full backing of the people we represent (e.g. the majority do not know that we exist).	(1) Keep the public aware of EPA activities and environmental problems within the Red River Basin via the news media. (2) Encourage Headquarters to finance the cost of producing documentary film on water quality management of rivers in the Rocky Mountain Region which would include the Red River of the North. (Management Division-Public Affairs).	SEP 72	JUN 76	5T1214	.5	.5	.5	.5
		SEP 72	NOV 72	5T1214	.25	-	-	-
<u>Manpower and Training:</u> O&M of wastewater treatment plants determine whether or not plant efficiency will be maintained at their design level. Most wastewater treatment plant operators are not educated to operate plants correctly. Consequently, training needs to be provided which will fill this gap.	(1) Monitor 5(g)1 training course for approx. 20 WWTP operators in Wahpeton, N.D. area. (2) Monitor 5(g)1 training course for approx. 15 WWTP operators in Grand Forks, N.D. area. (3) Continue training support in Red River of the North area. (4) Coordinate Field Study Training Program for wastewater treatment plant operators. (5) Work with State on developing manpower planning function. (6) In-house manpower planning-employment and training project.	SEP 72	DEC 72	2B7158	0.3	-	-	--
		JAN 73	JUN 73	2B7158	0.3	-	-	-
		SEP 72	JUN 76	2B7158	0.4	1	1	1
		SEP 72	JUN 76	2B7158	0.1	0.1	0.1	0.1
		SEP 72	JUN 76	2B7161	0.2	0.2	0.2	.2
		SEP 72	JUN 76	2B7161	0.5	0.5	0.5	.5

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

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RED RIVER BASIN SUMMARY - Continued

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES		PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - MOS)			
		INITIATION	COMPLETION		FY 73	FY 74	FY 75	FY 76
(1) The Garrison Reservoir Water Project will result in water being diverted to the Red River Basin for irrigation purposes. (projected for 1978)	(1) Assess the water quality impact of the proposed project and work with the Bureau of Reclamation to minimize the deleterious effects during the remaining interim planning stages. (A&W Division-Program Planning Branch)	SEP 72	JUN 76	2B3149	.2	.4	.4	.4
(2) Authorized COE reservoir on Sheyenne River near Kindred, N.D.								
(3) Authorized COE reservoir on Wild Rice River near Twinn Valley, Minn.	(2) Coordinate with the Bureau of Recreation in the development and/or review of the EIS for each project. (A&W Division-Program Planning Branch)	JAN 73	JUN 76	2B6117	.3	.3	1.0	1.5
(4) Proposed COE reservoir on Pembina River near Park River, N.D.								
(5) Proposed COE reservoir on Red Lake River near Crookston, Minn.	(3) Evaluate the effects of each COE project's induced flow regulation on accomplishment plant objectives. Work with COE to minimize the deleterious effects during the remaining interim planning stages. (Program Planning Branch-A&W Division)	JUL 74	JUN 76	2B3149	-	-	1.0	2.0
Major water resources such as these affect water quality in the basin. Precaution must be taken to minimize the environmental detriments resulting from each project.								
Each project that uses Federal monies for construction must be cleared under the Equal Employment Act.	(1) Determine whether 7 construction grant projects satisfy the Equal Employment Act requirements.	SEP 72	JUN 75	5T1214	.25	.75	.75	
Each Refuse Act Permit must be processed and put on the computer for retrieval and inter-office use.	(1) Process Permit Applications and Set up data bank.	SEP 72	JUN 76	3B2124	1.0	2.2	2.0	2.0

SECTION G

Point Source Reductions Required

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: American Crystal Sugar, Drayton

[illegible]

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: American Crystal Sugar, E. Grand Forks

[illegible]

TABLE 11 - WATER QUALITY IMPROVEMENT THROUGH COMPLETION OF ACTION ITEMS

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: American Crystal Sugar, Moorhead, Minnesota

[illegible]

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: American Crystal Sugar, Crookston, Minn.

[illegible]

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: Fargo WWTP

[illegible]

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: Union Stockyards, West Fargo

[illegible]

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: Fargo Water Filtration Plant

[illegible]

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: Armour Food - West Fargo

[illegible]

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: Otter Tail Power Co., Wahpeton

*Standard changes during agricultural products processing season.
If the flows fall below the average of the lowest 10%
of all monthly flows of record for either the months of April or May,
whichever is lower, then the D.O. Standard does not apply.

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: Minnkota Power Coop. - Grand Forks

[illegible]

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: Pillsbury-Grand Forks

*Standard changes during agricultural products processing season.
If the flows fall below the average of the lowest 10%
of all monthly flows of record for either the months of April or May,
whichever is lower, then the D.O. Standard does not apply.

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: USDI-Baldhill Dam Nat'l Fish Hatchery, Valley City

[illegible]

TABLE 12 - WATER QUALITY IMPROVEMENT THROUGH COMPLETION OF ACTION ITEMS

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: USDI Nat'l Fish Hatchery, Valley City

[illegible]

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: Abercombe WWTP

[illegible]

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: Amenia

[illegible]

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: Wahpeton Wastewater Treatment Plant

[illegible]

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: Grafton, N.D. - Park River - Red River

[illegible]

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: Fosston, Minnesota

[illegible]