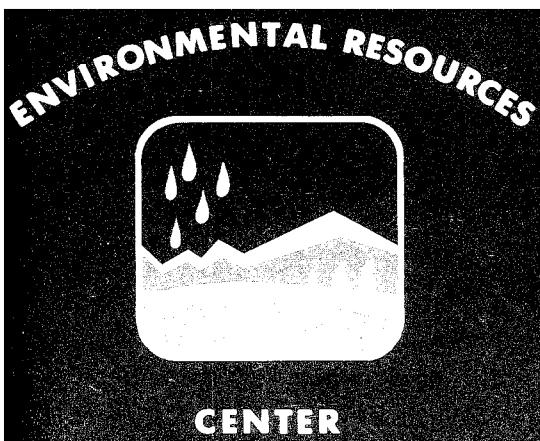


SURVEILLANCE DATA
PLAINS SEGMENT OF
THE CACHE LA POUFRE RIVER
COLORADO
1970-1977

by
S. M. Morrison

January 1978



Colorado State University
Fort Collins, Colorado

Colorado Water Resources Research Institute
Information Series
No. 25

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S. M. Morrison
Project Leader
Department of Microbiology

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COLORADO WATER RESOURCES RESEARCH INSTITUTE
Environmental Resources Center
Colorado State University
Fort Collins, Colorado 80523

Norman A. Evans, Director

FOREWORD

This data is being presented as an Information Series Report from the Environmental Resources Center of Colorado State University rather than as a research type of report. No interpretations of the data are made nor are conclusions drawn. It is hoped that the data will serve as working information for a wide variety of persons who are interested and concerned with the quality of the Poudre River. It is especially hoped that the data will serve as a working tool for the many people who are charged with the planning and development, the economic viability, the decision making and environmental regulation in this important area of the State, and who must be concerned with maintaining the water quality of the Poudre River. An additional goal of this work was to establish a model of intensive monitoring of a discrete segment of a stream so that accurate data may be obtained for long range projections with a minimal error factor.

The assistance of Dr. George Post, Professor of Fishery and Wildlife Biology, and of Mr. Kirke L. Martin, Researcher in the Department of Microbiology, is gratefully acknowledged. Field, laboratory, and clerical work of the several staff people and graduate students who collected these continuous data is much appreciated.

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TABLE OF CONTENTS

	<u>Page</u>
Foreword	i
List of Tables	iv
Index - Water Quality Parameters	vi
Analytical Methods	viii
Map of Study Site (Fig. 1)	xi
Introduction and Scope	1
Tables 1 through 27	6

LIST OF TABLES

	Page
TABLE 1 - AIR TEMPERATURE °C	6
2 - WATER TEMPERATURE °C	9
3 - pH	12
4 - DISSOLVED SOLIDS BY CONDUCTIVITY	15
5 - DISSOLVED SOLIDS BY FILTERABLE RESIDUE	18
6 - TURBIDITY	19
7 - SETTLEABLE RESIDUE	22
8 - SUSPENDED RESIDUE	25
9 - DISSOLVED OXYGEN (D.O.)	28
10 - BIOCHEMICAL OXYGEN DEMAND (BOD ₅)	31
11 - ORTHO-PHOSPHATE (o-PO ₄)	34
12 - TOTAL PHOSPHORUS (Total-P)	37
13 - TOTAL KJELDAHL NITROGEN (TKN).	39
14 - AMMONIA NITROGEN (NH ₃ -N)	41
15 - NITRATE NITROGEN (NO ₃ -N)	44
16 - SULFATE (SO ₄).	45
17 - CHLORIDES (Cl)	47
18 - ALKALINITY	48
19 - FECAL COLIFORMS.	49
20 - TOTAL COLIFORMS.	51
21 - STANDARD PLATE COUNT 30°C	54
22 - STANDARD PLATE COUNT 20°C	56
23 - CALCIUM (Ca)	58
24 - MAGNESIUM (Mg)	59
25 - POTASSIUM (K).	60

List of Tables. Cont.

	Page
26 - SODIUM (Na)	61
27 - SUMMARY OF FISH DATA	62

INDEX - WATER QUALITY PARAMETERS

	Page
Air Temperature, Table 1	6
Alkalinity, Table 18	48
Ammonia Nitrogen, Table 14	41
Bacteria	
Fecal Coliforms, Table 19	49
Standard Plate Count 20°C, Table 22	56
Standard Plate Count 30°C, Table 21	54
Total Coliforms, Table 20	51
Biochemical Oxygen Demand, Table 10	31
BOD, Table 10	31
Calcium, Table 23	58
Chlorides, Table 17	47
Coliforms	
Fecal, Table 19	49
Total, Table 20	51
Conductivity, Table 4	15
Dissolved Oxygen, Table 9	28
Dissolved Solids	
By Conductivity, Table 4	15
By Filterable Residue, Table 5	18
Fecal Coliforms, Table 19	49
Filterable Residue, Table 5	18
Fish, Summary of Data, Table 27	62
Kjeldahl, Total Nitrogen, Table 13	39
Magnesium, Table 24	59
Nitrate Nitrogen, Table 15	55
Nitrogen	
Ammonia, Table 14	41
Kjeldahl, Table 13	39
Nitrate, Table 15	44
Ortho-Phosphate, Table 11	34

INDEX, Cont.

Oxygen		
	Biochemical Demand, Table 10	31
	Dissolved, Table 9	28
pH, Table 3		12
Phosphate, Ortho, Table 11		34
Phosphorus, Total, Table 12		37
Plate Count		
	Standard 20°C, Table 22	56
	Standard 30°C, Table 21	54
Potassium, Table 25		60
Residue		
	Filterable, Table 5	18
	Settleable, Table 7	22
	Suspended, Table 8	25
Settleable Residue, Table 7		22
Sodium, Table 26		61
Standard Plate Count		
	20°C, Table 22	56
	30°C, Table 21	54
Sulfate, Table 16		45
Summary of Fish Data, Table 27		62
Suspended Residue, Table 8		25
Temperature		
	Air, Table 1	6
	Water, Table 2	9
TKN, Table 13		39
Total Coliforms, Table 20		51
Total Kjeldahl Nitrogen, Table 13		39
Total Phosphorus, Table 12		37
Turbidity, Table 6		19
Water Temperature, Table 2		9

ANALYTICAL METHODS

- TABLE 1 - AIR TEMPERATURE °C
Standard Methods for Water, 14th ed. (4)
- TABLE 2 - WATER TEMPERATURE °C
Standard Methods for Water, 14th ed. (4)
- TABLE 3 - pH
Electrometric Method
Standard Methods for Water, 14th ed. (4)
- TABLE 4 - DISSOLVED SOLIDS BY CONDUCTIVITY
Specific Conductance, using an empirical factor of
0.85; Dissolved Solids, mg/l = Specific Conductance
x 0.85
Standard Methods for Water, 14th ed. (4)
- TABLE 5 - DISSOLVED SOLIDS BY FILTERABLE RESIDUE
Standard Methods for Water, 14th ed. (4)
- TABLE 6 - TURBIDITY
April, 1970 - December, 1973
Turbidity as Formazin Turbidity Units were determined
by conversion of Optical Density measurements
Standard Methods for Water, 13th ed. (3)
January, 1974 - present
Formazin Turbidity Units were determined directly using
a photoelectric turbidimeter
Standard Methods for Water, 14th ed. (4)
- TABLE 7 - SETTLEABLE RESIDUE
Standard Methods for Water, 14th ed. (4)
- TABLE 8 - SUSPENDED RESIDUE
Total Nonfilterable Residue Method
Standard Methods for Water, 14th ed. (4)
- TABLE 9 - DISSOLVED OXYGEN (D.O.)
April, 1970 - December, 1972
Azide modification of Iodometric Method
Standard Methods for Water, 14th ed. (4)
January, 1973 - present
Polarographic Method
Standard Methods for Water, 14th ed. (4)
- TABLE 10 - BIOCHEMICAL OXYGEN DEMAND (BOD₅)
April, 1970 - December, 1972
Azide modification of Iodometric Method
Standard Methods for Water, 14th ed. (4)

Methods, cont.

- January, 1973 - present
Polarographic Method
Standard Methods for Water, 14th ed. (4)
- TABLE 11 - ORTHO-PHOSPHATE (o-PO_4)
April, 1970 - June, 1971
Aminonaphtholsulfonic Acid Method
Standard Methods for Water, 12th ed. (2)
- July, 1971 - December, 1975
Vanadomolybdophosphoric Acid Colorimetric Method
Standard Methods for Water, 14th ed. (4)
- January, 1976 - present
Ascorbic Acid Method
Standard Methods for Water, 14th ed. (4)
- TABLE 12 - TOTAL PHOSPHORUS (TOTAL - P)
October, 1973 - December, 1975
Persulfate Digestion and Vanadomolybdophosphoric
Acid Method
Standard Methods for Water, 14th ed. (4)
- January, 1976 - present
Persulfate Digestion and Ascorbic Acid Method
Standard Methods for Water, 14th ed. (4)
- TABLE 13 - TOTAL KJEHDAHL NITROGEN (TKN)
Nesslerization Colorimetric Method
Standard Methods for Water, 14th ed. (4)
- TABLE 14 - AMMONIA NITROGEN ($\text{NH}_3\text{-N}$)
April, 1970 - December, 1972
Direct Nesslerization Method
Standard Methods for Water, 14th ed. (4)
- January, 1973 - present
Distillation Method with Nesslerization
Standard Methods for Water, 14th ed. (4)
- TABLE 15 - NITRATE NITROGEN ($\text{NO}_3\text{-N}$)
April, 1974 - September, 1974
Brucine Method
Standard Methods for Water, 14th ed. (4)
- October, 1974 - present
Cadmium Reduction Method
Standard Methods for Water, 14th ed. (4)
- TABLE 16 - SULFATE (SO_4)
Turbidimetric Method
Standard Methods for Water, 14th ed. (4)

Methods, cont.

- TABLE 17 - CHLORIDES (Cl)
Argentometric Method
Standard Methods for Water, 14th ed. (4)
- TABLE 18 - ALKALINITY
Potentiometric Titration Method
Standard Methods for Water, 14th ed. (4)
- TABLE 19 - FECAL COLIFORMS
Membrane Filter Procedure
Standard Methods for Water, 14th ed. (4)
- TABLE 20 - TOTAL COLIFORMS
Membrane Filter Procedure
Standard Methods for Water, 14th ed. (4)
- TABLE 21 - STANDARD PLATE COUNT 30°C
Membrane Filter Procedure
Standard Methods for Dairy, 11th ed. (1)
- TABLE 22 - STANDARD PLATE COUNT 20°C
Membrane Filter Procedure
Standard Methods for Dairy, 11th ed. (1)
- TABLE 23 - CALCIUM (Ca)
Atomic Absorption Spectroscopy
Standard Methods for Water, 14th ed. (4)
- TABLE 24 - MAGNESIUM (Mg)
Atomic Absorption Spectroscopy
Standard Methods for Water, 14th ed. (4)
- TABLE 25 - POTASSIUM (K)
Atomic Absorption Spectroscopy
Standard Methods for Water, 14th ed. (4)
- TABLE 26 - SODIUM (Na)
Atomic Absorption Spectroscopy
Standard Methods for Water, 14th ed. (4)
- TABLE 27 - SUMMARY OF FISH DATA
All fish were collected using common electroshocking techniques.
April, 1970 - August, 1972
All captured fish were speciated, counted and their length measured.
November, 1972 - present
The fish were separated into species, counted and species were weighed *en masse* to determine percent biomass.

FIGURE 1.
MAP OF STUDY SITES

Site Description:

Site 1 - At Lions Park on Overland Trail near LaPorte.

Site 2 - On Harmony Road, one mile east of I-25.

Site 3 - At Colorado 392, bridge west of Windsor.

Site 4 - Approximately 3.5 miles southeast of Windsor.

Fish Site SCC - Upstream part of Martinez Park, Ft. Collins.

Fish Site 1 - Above Ft. Collins, #2 Sewage Plant, north of Drake Road.

Fish Site 1A - Directly west of rest area on west side of I-25.

Fish Site 2 - At Colorado 392, bridge west of Windsor.

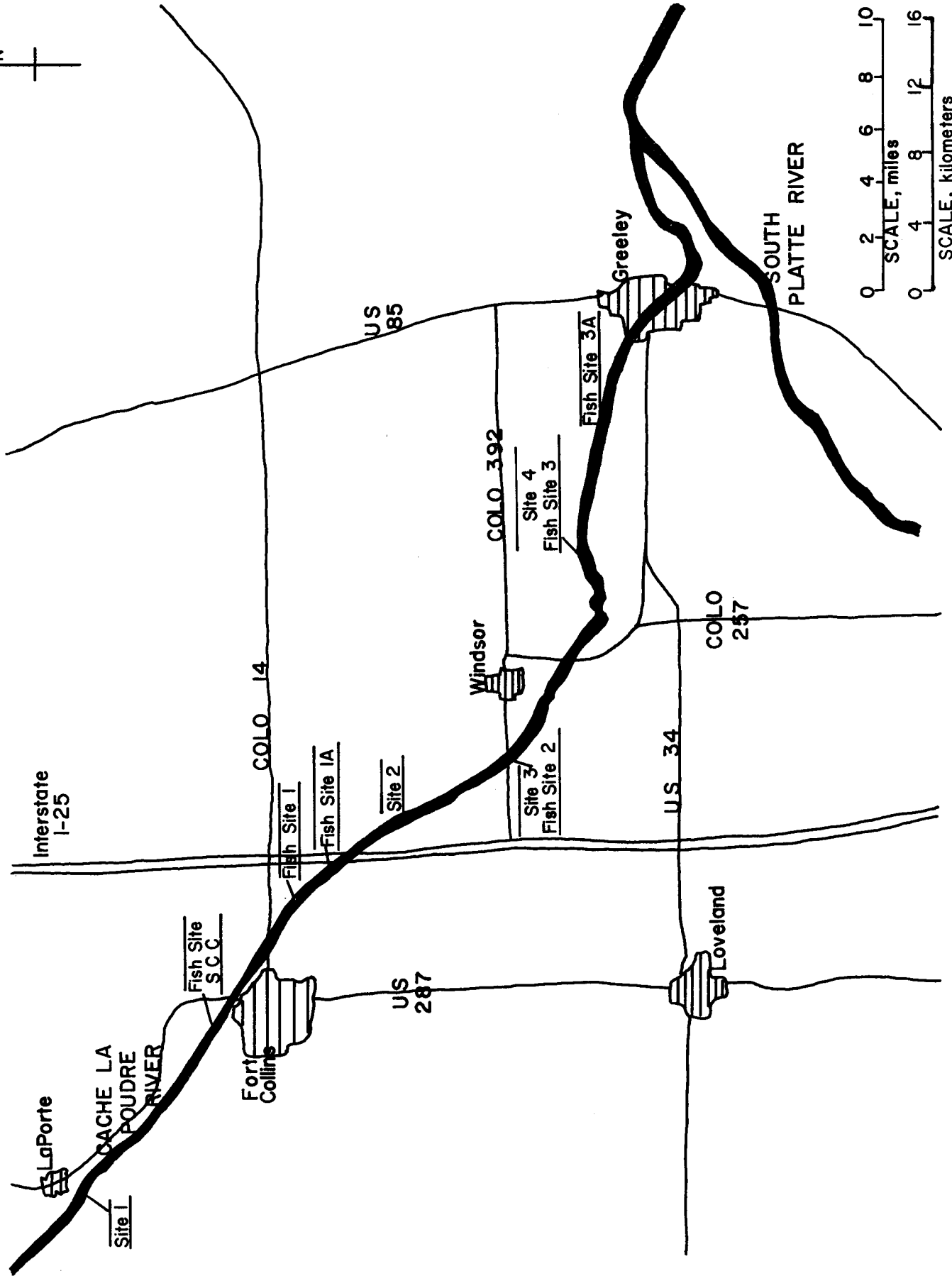
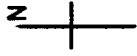
Fish Site 3 - Approximately 3.5 miles southeast of Windsor.

Fish Site 3A - 0.25 mile above bridge on Weld County Road-31, directly west of the Davis Rodeo Arena.

Methods, cont.

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INTRODUCTION AND SCOPE

In the late 1960's, when it appeared that the Cache La Poudre Valley, particularly the 20 mile river reach from LaPorte eastward, was about to undergo some dramatic changes, we considered what might be done to collect quantitative data that would document changes that occurred in the quality of the river. This was a time when considerable discussion was underway on a national program for water pollution control but the specific program and clean water laws had not been promulgated and no guidelines were available.

This stretch of the river had been primarily an agriculturally-oriented, low-human-population-density area with only higher-education-oriented urban Fort Collins providing a moderate rate of growth in human pressure on the stream. While the impact of agriculture on the river was considerable but relatively static, the City of Fort Collins was initiating a phase of very rapid growth in small industrial and commercial developments which accompanied extremely rapid growth as an urban population center. A few miles east, the interstate highway attracted commercial development; Windsor, about 10 miles downstream from Interstate 25 was becoming the center for an extensive industrial complex.

We chose to initiate a data gathering program on several physical, chemical and biological parameters that would serve as base-line data on the quality of the river water that could be useful in determining modifications in the water quality as anticipated changes in population and activities took place. Four primary sample sites were chosen to monitor the stream: one was above Fort Collins to represent the upper Poudre water with minor impact of man's activities; the second was below Fort Collins to sample the water after impact by the urban center, the third was above the town of

Windsor and was representative of several miles of agricultural activity; and the fourth sample point was below Windsor to monitor the developmental activity of the town.

Initially, frequent samplings of the water were undertaken to minimize the effects of a great number of factors that caused fluctuations in many of the test parameters. Among these factors were stream flow, storms with surface runoff and temporary swelling of the stream, irrigation schedules, varying ground water seepage, wildlife and domesticated animals, fluctuating efficiencies of sewage treatment effluents, seasonal variations, etc. Later, sampling frequency was reduced and a few additional monitoring tests were added. As the study progressed changes in analytical methods were incorporated as new procedures became available and as Federal and State regulations required more sensitive tests than we originally used.

The data is being presented as an Information Series report from the Environmental Resources Center of Colorado State University rather than as a research type of report. No interpretations of the data are made nor are conclusions drawn. It is hoped that the data will serve as working information for a wide variety of persons who are interested and concerned with the quality of the Poudre River. It is especially hoped that the data will serve as a working tool for the many people who are charged with the planning and development, the economic viability, the decision making and environmental regulation in this important area of the State, and who must be concerned with maintaining the water quality of the Poudre River. An additional goal of this work was to establish a model of intensive monitoring of a discrete segment of a stream so that accurate data may be obtained for long range projections with a minimal error factor.

To reduce the large volume of observations to a more manageable number, without introducing a large error or bias, we have presented the data so that the year is divided into four 3-calendar month seasons. Multiple observations within each sampling period is presented as a mean, median and geometric mean; also the range of values and standard deviation is given. Each is given for all parameters (except fish) because the distribution pattern of values varied among the several variables under investigation so that no single treatment of values was the best, statistically, for all parameters. The user wishing to compare sites, seasons or years for any single water quality factor may choose the most appropriate values for analysis. As alluded to above, the methods used for fish analyses were handled in a different manner, at slightly different sample sites, than the other parameters.

Although a very brief overview of the segment of the river under study was given earlier, a slightly more detailed description is given as background to the complex life-cycle of this relatively small, multi-use river system.

The Cache La Poudre River, usually known as the Poudre, has its origin in the Poudre Ponds (10,800 ft. elevation) almost at the Continental Divide in the Rocky Mountain National Park. The stream flows northeastward for about 20 miles and then eastward through the Poudre Canyon, most of it in the Roosevelt National Forest. It is joined by several mountain tributaries as well as diversion water from the North Platte River System through the Laramie River Tunnel. Several mountain reservoirs are used to retain water from the spring snow melt and the periodic summer storms for later use and to regulate river flow. Many of the smaller tributaries are dry through

most of the year. There are a few small year-round resident communities in the Canyon but the greatest influx of people is in the May-September period when recreational activities as fishing, summer cabins, camping, hiking and just driving the paved highway is moderately high. Many domesticated animals are grazed during the summer and the wildlife is abundant. Because Cameron Pass over the Continental Divide west of the Canyon has been an unpaved non-winter-maintained road, through traffic has been minimal, but this road is to be paved in the near future. At the lower end of this mountain segment of the Poudre, both the Cities of Greeley and Fort Collins take water for treatment as part of their drinking water supplies. The length of this Canyon section of river is about 65 miles and it leaves the Canyon at an elevation of 6,000 feet.

What has arbitrarily been considered the Plains Segment of the River is about 41 river miles long and extends in a southeastward direction from 6 miles above the small City of LaPorte (elevation 5,300 feet) to its confluence with the South Platte River, east of Greeley, at an elevation of 4,650 feet. This entire area developed historically as a major agricultural center dependent upon the River for its water. The average annual precipitation is about 14.5 inches but subject to wide annual fluctuations from about 8 to 21 inches. Also, the precipitation patterns within each year are quite uneven, with as much as one-half of the moisture occurring in a very few rain or snow storms. In both 1976 and 1977, one-third of the annual moisture fell as single storm systems in July.

The Poudre flow is augmented by a few relatively small tributaries and trans-mountain diverted Colorado River water which is stored in Horsetooth Reservoir and smaller Carter Lake and enters the Poudre system after farm irrigation or domestic use.

The entire segment of the River is part of a very complex, sophisticated water management system. Diversions of large quantities of water at several points along the River are made to supply the needs of rightful users as they call for water or it is stored in a large number of relatively small reservoirs for later use. This system of storing spring "flood" water and heavy storm run-off serves to control flooding in the Valley and helps in the attempts to maintain reasonable levels of low flow in the River during protracted dry periods. This latter goal is not always achieved and at some diversion points there are periods in which the River is dry for all practical purposes. The flow resumes downstream with ground water seepages, overland flow after storms, and, most important, return of water to the main channel after its use for irrigation, domestic or industrial applications. It should also be noted that the extremely large network of water transfer canals and storage reservoirs leads to large losses of water due to evaporation as well as ground seepage in this area of high sunlight, low humidity and normally dry soils. This highly developed technology of water management may lead to reuse of any particular portion of water several times in the 41 mile river reach. Also it is obvious that this intensive withdrawal of water and return downstream after use leads to a situation in which, particularly in the lower portion of the 41 mile segment, the water, including its dissolved and suspended materials, is only remotely related to the water flowing out of the mountain canyon.

TABLE 1. AIR TEMPERATURE °C; CACHE LA POUDDRE RIVER

Sampling Period	1970-71 Sites				1971-72 Sites				1972-73 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	7	7	7	7	7	7	7	7	7	7	7	7
Mean/Median	15.9/15.0	15.8/15.5	14.9/15.0	16.9/16.0	14.9/15.5	16.2/16.5	16.6/13.5	18.4/16.5	16.6/18.5	18.4/21.0	18.9/20.5	18.9/23.0
Geo. Mean	12.1	14.5	13.6	15.4	13.4	15.3	15.4	17.6	13.6	15.1	14.4	15.0
Std. Dev.	6.9	7.0	6.9	6.8	6.9	5.9	7.2	5.9	9.1	9.2	9.7	9.3
Range	5.0-23.0	7.0-24.5	7.0-23.0	8.5-26.5	5.0-24.0	9.0-25.0	10.0-26.0	11.0-27.0	3.0-29.0	3.0-30.0	1.5-30.0	2.0-30.0
Summer												
# Samples	7	7	7	7	6	6	6	6	6	6	6	6
Mean/Median	20.3/20.0	23.0/23.0	24.6/25.0	25.4/26.0	16.7/19.2	19.2/22.2	19.9/21.5	20.4/23.2	17.2/16.8	19.5/19.0	19.3/19.8	21.5/20.2
Geo. Mean	19.7	22.5	24.2	24.9	14.2	17.6	18.2	18.6	16.9	19.2	19.2	21.2
Std. Dev.	5.1	5.0	4.6	5.3	7.4	6.9	7.1	7.6	3.1	4.0	1.0	4.4
Range	11.0-28.0	15.5-32.0	17.5-33.0	18.5-35.0	3.3-23.0	6.6-24.0	6.6-27.5	6.6-27.0	14.0-21.5	15.0-26.0	18.0-20.0	18.0-30.0
Fall												
# Samples	6	6	6	6	7	7	7	7	6	6	6	6
Mean/Median	6.0/5.5	4.3/3.5	4.8/5.0	4.0/4.5	4.0/3.0	5.6/5.0	6.6/4.0	6.8/5.0	1.7/7.5	2.3/5.2	2.3/3.5	1.3/2.5
Geo. Mean	5.8	3.8	4.5	2.9	2.5	3.2	4.1	5.0	4.2	1.6	1.5	1.4
Std. Dev.	1.9	2.0	1.8	2.5	4.8	6.1	7.0	5.7	11.5	12.0	12.3	12.9
Range	4.0-8.5	2.0-7.0	2.0-7.0	0.5-6.5	-2.0-12.7	-2.0-14.5	-0.5-15.0	-1.0-15.5	-14.0-12.0	-13.0-8.5	-13.0-15.0	-15.0-15.0
Winter												
# Samples	6	6	6	6	6	6	6	6	6	6	6	6
Mean/Median	2.5/2.8	3.7/5.0	3.3/3.2	2.0/2.0	3.1/5.2	2.6/5.2	1.2/4.0	2.3/4.8	0.7/3.0	0.2/2.5	0.6/2.5	1.6/3.2
Geo. Mean	2.4	3.1	2.2	1.8	2.8	2.1	1.5	1.8	1.4	1.1	1.3	1.6
Std. Dev.	2.6	3.1	3.2	4.8	6.7	7.4	6.6	8.5	6.3	5.3	5.6	7.3
Range	-2.0-6.0	-2.0-6.0	0.0-7.0	-5.0-7.0	-10.0-8.0	-10.0-10.0	-10.0-8.0	-10.0-12.0	-9.0-8.0	-7.0-5.0	-9.0-6.0	-10.0-9.0
Yearly												
# Samples	26	26	26	26	26	26	26	26	25	25	25	25
Mean/Median	11.2/8.2	12.3/8.2	12.5/7.8	12.8/9.2	9.6/7.5	10.9/10.5	11.1/10.8	12.0/12.0	9.3/12.0	10.4/13.5	10.6/15.0	11.2/15.0
Geo. Mean	8.0	8.4	8.1	7.9	6.0	6.6	6.2	7.5	5.1	5.0	6.2	5.7
Std. Dev.	8.3	9.5	9.8	11.0	8.7	9.3	10.0	10.1	11.1	12.0	11.9	12.8
Range	-2.0-28.0	-2.0-32.0	0.0-33.0	-5.0-35.0	-10.0-24.0	-10.0-25.0	-10.0-27.5	-10.0-27.0	-14.0-29.0	-13.0-30.0	-15.0-30.0	-15.0-30.0

*The year has been divided as follows: Spring = April-June
 Summer = July-September
 Fall = October-December
 Winter = January-March

TABLE 1. (Continued)

Sampling Period	1973-74 Sites				1974-75 Sites				1975-76 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	6	6	6	6	4	4	4	4	2	2	2	2
Mean/Median	16.4/18.0	16.1/16.8	17.9/19.0	18.2/18.2	15.5/14.0	16.1/14.2	16.5/14.5	19.0/20.5	6.5/6.5	7.0/7.0	11.5/11.5	8.5/8.5
Geo. Mean	15.0	14.3	15.7	15.7	13.5	14.6	15.1	17.3	4.7	4.9	8.7	6.5
Std. Dev.	6.5	7.2	9.5	9.6	9.1	8.5	8.2	8.2	6.4	7.1	10.6	7.8
Range	6.0-25.7	5.0-26.5	6.0-34.0	5.0-34.0	6.0-28.0	8.0-28.0	9.0-28.0	8.0-27.0	2.0-11.0	2.0-12.0	4.0-19.0	3.0-14.0
Summer												
# Samples	7	7	7	7	4	4	4	4	1	1	1	1
Mean/Median	17.8/17.9	20.0/21.0	21.0/21.5	22.6/22.5	15.1/15.2	20.4/20.0	19.6/19.2	20.4/21.5	25.0/-	31.0/-	33.0/-	32.0/-
Geo. Mean	17.8	19.6	20.8	22.4	15.1	20.3	19.5	20.2	-	-	-	-
Std. Dev.	1.3	4.3	2.8	5.0	0.9	2.1	2.6	2.6	-	-	-	-
Range	16.0-19.5	14.0-24.9	16.0-24.0	13.5-27.5	14.0-16.0	18.5-23.0	17.0-23.0	16.5-22.0	-	-	-	-
Fall												
# Samples	6	6	6	6	5	5	5	5	1	1	1	1
Mean/Median	4.9/4.2	5.3/5.2	5.5/6.8	5.8/5.0	2.5/2.0	4.2/-1.0	4.2/-1.0	5.4/0.0	6.0/-	10.5/-	10.0/-	9.5/-
Geo. Mean	4.9	4.7	4.6	4.7	1.5	1.7	1.9	4.6	-	-	-	-
Std. Dev.	4.0	2.6	3.2	3.8	8.5	10.2	8.9	9.5	-	-	-	-
Range	0.0-10.0	2.0-8.5	0.0-8.0	0.0-10.0	-7.0-14.0	-5.0-16.5	-3.0-16.0	-2.0-20.0	-	-	-	-
Winter												
# Samples	6	6	6	6	3	3	3	3	1	1	1	1
Mean/Median	0.5/0.8	0.8/0.0	0.4/0.0	0.7/-0.2	1.5/1.0	1.3/2.0	0.7/0.0	1.5/2.0	-2.0/-	3.0/-	4.0/-	12.0/-
Geo. Mean	0.9	1.2	1.1	1.4	1.2	1.4	1.1	1.4	-	-	-	-
Std. Dev.	5.0	4.4	3.8	3.3	5.8	6.0	5.0	6.0	-	-	-	-
Range	-6.0-7.5	-4.5-7.5	-4.0-6.0	-3.0-6.0	-4.0-7.5	-5.0-7.0	-4.0-6.0	-5.0-7.0	-	-	-	-
Yearly												
# Samples	25	25	25	25	16	16	16	16	5	5	5	5
Mean/Median	10.2/10.0	10.9/8.5	11.6/8.0	12.2/10.0	8.7/10.7	10.7/13.5	10.5/12.2	11.8/13.2	8.4/6.0	14.1/10.5	14.0/10.0	14.1/12.0
Geo. Mean	6.2	6.6	6.7	13.6	4.6	5.2	5.2	6.2	4.4	7.5	10.0	10.9
Std. Dev.	8.6	9.2	10.1	10.7	9.3	10.6	10.2	10.6	10.5	11.9	12.3	10.8
Range	-6.0-25.7	-4.5-26.5	-4.0-34.0	-3.0-34.0	-7.0-28.0	-5.0-28.0	-4.0-28.0	-5.0-27.0	-2.0-25.0	2.0-31.0	4.0-33.0	3.0-32.0

TABLE 1. (Continued)

Sampling Period	1976-77 Sites			
	1	2	3	4
Spring*				
# Samples	1	1	1	1
Mean/Median	22.0/-	21.0/-	23.0/-	29.0/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Summer				
# Samples	1	1	1	1
Mean/Median	18.0/-	22.0/-	24.0/-	26.0/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Fall				
# Samples	1	1	1	1
Mean/Median	15.0/-	7.5/-	7.5/-	5.5/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Winter				
# Samples	1	1	1	1
Mean/Median	9.0/-	13.0/-	12.5/-	11.5/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Yearly				
# Samples	4	4	4	4
Mean/Median	16.0/16.5	15.9/17.0	16.3/16.8	18.0/18.8
Geo. Mean	15.2	14.6	14.4	14.8
Std. Dev.	-5.5	6.9	8.5	11.3
Range	9.0-22.0	7.5-22.0	7.5-24.0	5.5-29.0

TABLE 2. WATER TEMPERATURE °C; CACHE LA POUUDRE RIVER

Sampling Period	1970-71 Sites				1971-72 Sites				1972-73 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	7	7	7	7	6	6	6	6	7	7	7	7
Mean/Median	8.1/9.5	10.0/11.0	11.4/13.0	11.9/13.0	8.3/8.5	9.5/9.5	9.8/9.5	10.8/10.8	9.6/9.0	11.9/11.0	13.6/14.5	13.1/15.0
Geo. Mean	7.5	9.4	10.7	11.4	8.2	9.4	9.6	10.6	9.0	11.3	12.8	12.3
Std. Dev.	3.0	3.6	3.9	3.7	1.7	1.7	2.1	2.0	3.7	4.0	5.1	4.9
Range	4.0-12.0	5.0-14.5	6.0-15.5	7.0-15.5	6.0-10.5	7.0-12.0	7.0-13.0	8.0-14.0	5.0-16.0	6.5-18.5	7.0-23.0	6.0-21.0
Summer												
# Samples	7	7	7	7	6	6	6	6	6	6	6	6
Mean/Median	12.5/12.5	16.5/17.5	19.4/20.0	18.5/19.0	10.9/11.8	15.4/16.0	17.5/19.2	16.8/19.0	10.3-10.5	15.8-15.5	17.8-17.2	16.3-16.5
Geo. Mean	12.4	16.4	19.2	18.2	10.6	14.9	16.6	15.7	10.2	15.7	17.3	16.1
Std. Dev.	1.6	1.8	3.2	3.2	2.3	3.7	5.1	5.2	1.4	2.4	4.3	2.6
Range	10.5-15.0	14.0-18.0	15.0-24.0	14.0-23.0	6.6-13.0	8.8-19.0	7.7-21.5	6.6-20.0	8.0-12.0	12.5-19.0	12.0-25.0	12.0-19.0
Fall												
# Samples	6	6	6	6	7	7	7	7	6	6	6	6
Mean/Median	3.0/2.0	3.4/3.2	3.2/4.0	3.0/2.2	3.9/2.0	4.5/3.2	3.9/3.0	4.4/4.0	3.8/2.0	3.4/1.8	2.9/1.5	3.6/2.5
Geo. Mean	2.4	2.8	3.2	2.7	3.0	3.1	2.9	3.4	2.6	2.5	2.5	2.6
Std. Dev.	3.3	3.2	2.8	2.9	3.6	3.6	4.2	3.9	5.4	5.0	4.9	5.0
Range	0.0-7.5	0.0-7.5	-0.5-6.5	-0.5-7.0	0.0-10.1	0.5-10.5	-0.5-11.0	0.0-11.0	-1.5-11.5	-1.0-12.0	-1.0-11.0	-1.0-12.0
Winter												
# Samples	6	6	6	6	6	6	6	6	6	6	6	6
Mean/Median	1.6/1.0	2.8/2.5	2.3/1.8	1.9/0.5	1.9/1.8	2.3/2.0	1.4/1.2	2.0/2.0	1.1/0.8	2.2/1.8	1.5/1.0	2.0/1.2
Geo. Mean	1.7	2.5	2.1	1.7	1.8	2.1	1.7	1.9	1.2	2.2	1.9	2.2
Std. Dev.	2.0	2.2	2.5	2.6	1.4	2.6	3.0	2.5	2.2	2.5	2.0	2.5
Range	-0.5-4.5	0.0-5.5	0.0-5.5	0.0-5.5	0.0-4.0	0.0-7.0	-2.0-6.0	-1.0-6.0	-2.0-4.0	-0.5-6.0	-0.5-4.5	-0.5-5.0
Yearly												
# Samples	26	26	26	26	25	25	25	25	25	25	25	25
Mean/Median	6.6/6.2	8.6/7.0	9.5/6.8	9.3/7.5	6.2/6.6	7.8/8.2	8.0/7.7	8.3/8.0	6.3/8.0	8.5/9.0	9.1/10.0	8.9/9.0
Geo. Mean	4.7	6.8	6.5	6.0	4.6	5.4	5.1	5.6	4.2	5.8	5.9	6.0
Std. Dev.	5.0	6.3	7.7	7.6	4.2	5.8	7.2	6.7	5.1	6.7	8.0	7.2
Range	-0.5-15.0	0.0-18.0	-0.5-24.0	-0.5-23.0	0.0-13.0	0.0-19.0	-2.0-21.5	-1.0-20.0	-2.0-16.0	-1.0-19.0	-1.0-25.0	-1.0-21.0

*The year has been divided as follows: Spring = April-June
 Summer = July-September

Fall = October-December
 Winter = January-March

TABLE 2. (Continued)

Sampling Period	1973-74 Sites				1974-75 Sites				1975-76 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	6	6	6	6	4	4	4	4	2	2	2	2
Mean/Median	7.8/8.9	8.8/9.4	9.7/9.9	9.6/10.1	8.5/8.5	9.4/8.5	11.3/11.0	12.0/10.5	4.0/4.0	3.2/3.2	5.5/5.5	5.8/5.8
Geo. Mean	7.5	8.3	9.1	9.1	8.3	9.1	11.0	11.4	3.1	3.2	4.2	4.7
Std. Dev.	2.0	2.7	3.4	2.9	2.1	2.9	3.0	18.0	3.5	1.1	4.9	4.6
Range	4.0-9.0	4.0-11.5	4.0-14.0	4.0-12.0	6.0-11.0	7.0-13.5	8.0-15.0	8.0-19.0	1.5-6.5	2.5-4.0	2.0-9.0	2.5-9.0
Summer												
# Samples	7	7	7	7	4	4	4	4	1	1	1	1
Mean/Median	12.9/12.6	16.5/17.3	18.3/20.0	17.5/18.0	11.9/11.8	15.3/16.0	16.8/17.0	16.1/16.2	15.0/-	18.0/-	21.0/-	20.0/-
Geo. Mean	12.7	16.4	18.1	17.4	11.8	15.2	16.5	16.1	-	-	-	-
Std. Dev.	2.6	2.1	2.8	2.2	1.8	1.5	3.0	1.8	-	-	-	-
Range	11.0-18.5	13.5-18.5	14.0-21.2	14.0-19.5	10.0-14.0	13.0-16.0	13.0-20.0	14.0-18.0	-	-	-	-
Fall												
# Samples	6	6	6	6	5	5	5	5	1	1	1	1
Mean/Median	4.1/4.2	4.2/3.5	4.0/3.5	3.9/4.5	2.8/2.0	3.2/-1.0	3.3/-1.0	4.2/0.0	6.0/-	7.0/-	7.5/-	6.5/-
Geo. Mean	3.9	3.3	3.2	2.9	1.6	1.6	1.8	2.4	-	-	-	-
Std. Dev.	3.2	3.4	3.2	3.6	8.7	8.9	7.5	7.2	-	-	-	-
Range	-0.5-8.5	0.0-9.0	0.0-8.0	0.0-9.0	-7.0-13.5	-5.0-13.5	-3.0-12.0	-2.0-13.0	-	-	-	-
Winter												
# Samples	6	6	6	6	3	3	3	3	1	1	1	1
Mean/Median	1.4/0.8	1.7/0.8	1.8/1.0	1.6/1.2	1.7/2.0	1.8/1.5	1.2/1.0	1.0/1.0	2.0/-	4.0/-	3.0/-	4.0/-
Geo. Mean	1.6	1.5	1.8	1.9	1.8	2.4	1.5	1.4	-	-	-	-
Std. Dev.	1.7	2.5	2.3	2.3	1.5	2.5	2.3	2.0	-	-	-	-
Range	0.0-3.5	-1.0-5.0	-0.5-5.0	-1.0-4.5	0.0-3.0	-0.5-4.5	-1.0-3.5	-1.0-3.0	-	-	-	-
Yearly												
# Samples	25	25	25	25	16	16	16	16	5	5	5	5
Mean/Median	6.8/7.0	8.1/8.7	8.8/8.0	8.5/9.0	6.3/8.5	7.5/8.5	8.3/10.5	8.5/11.0	6.2/6.0	7.1/4.0	8.5/7.5	8.4/6.5
Geo. Mean	5.1	5.3	6.0	5.7	4.0	4.6	4.7	6.0	4.5	5.5	6.1	6.5
Std. Dev.	5.0	6.4	7.2	6.9	6.3	7.3	7.7	7.5	5.4	6.3	7.6	6.9
Range	-0.5-18.5	-1.0-18.5	-0.5-21.2	-1.0-19.5	-7.0-14.0	-5.0-16.0	-3.0-20.0	-2.0-19.0	1.5-15.0	2.5-18.0	2.0-21.0	2.5-20.0

TABLE 2. (Continued)

Sampling Period	1976-77 Sites			
	1	2	3	4
Spring*				
# Samples	1	1	1	1
Mean/Median	10.0/-	14.0/-	17.0/-	17.0/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Summer				
# Samples	1	1	1	1
Mean/Median	12.0/-	14.0/-	18.0/-	18.0/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Fall				
# Samples	1	1	1	1
Mean/Median	4.0/-	5.0/-	4.5/-	4.0/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Winter				
# Samples	1	1	1	1
Mean/Median	6.0/-	7.0/-	5.0/-	4.0/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Yearly				
# Samples	4	4	4	4
Mean/Median	8.0/8.0	10.0/10.5	11.1/11.0	10.8/10.5
Geo. Mean	7.3	9.1	9.1	8.4
Std. Dev.	3.7	4.7	7.4	7.8
Range	4.0-10.0	5.0-14.0	4.5-18.0	4.0-18.0

TABLE 3. pH READINGS; CACHE LA POUFRE RIVER

Sampling Period	1970-71 Sites				1971-72 Sites				1972-73 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	7	7	7	7	7	7	7	7	7	7	7	7
Mean/Median	7.7/7.4	7.7/7.8	8.1/8.3	8.0/8.0	7.5/7.6	7.7/7.8	8.1/8.0	8.0/7.9	7.5/7.3	7.6/7.9	8.1/8.2	7.9/8.0
Geo. Mean	7.6	7.7	8.1	8.0	7.4	7.8	8.0	7.9	7.5	7.6	8.0	7.9
Std. Dev.	0.9	0.6	0.6	0.6	0.6	0.3	0.5	0.4	0.6	0.6	0.5	0.4
Range	6.2-8.6	6.4-8.1	6.8-8.5	6.8-8.7	6.2-8.2	7.2-8.1	7.4-8.6	7.4-8.5	6.8-8.2	6.8-8.2	7.2-8.7	7.3-8.3
Summer												
# Samples	7	7	7	7	6	6	6	6	6	6	6	6
Mean/Median	7.8/7.7	7.9/7.9	8.4/8.5	8.1/8.1	7.5/7.4	7.8/7.8	8.3/8.4	8.0/8.0	6.5/6.4	7.0/7.0	7.6/7.5	7.5/7.4
Geo. Mean	7.8	7.9	8.4	8.1	7.5	7.8	8.3	8.0	6.4	7.0	7.6	7.4
Std. Dev.	0.3	0.1	0.3	0.2	0.2	0.1	0.3	0.1	0.3	0.2	0.2	0.2
Range	7.6-8.5	7.8-8.0	8.0-8.8	7.7-8.2	7.2-7.8	7.6-7.8	8.0-8.6	7.8-8.0	6.2-6.8	6.8-7.3	7.3-8.0	7.3-7.9
Fall												
# Samples	6	6	6	6	7	7	7	7	6	6	6	6
Mean/Median	8.2/8.2	7.9/8.0	8.1/8.1	8.0/8.0	7.5/7.6	7.9/7.8	8.0/7.9	8.1/8.1	7.0/7.2	6.9/7.1	7.3/7.3	7.4/7.4
Geo. Mean	8.2	7.9	8.1	8.0	7.4	7.9	8.0	8.1	7.0	6.9	7.2	7.3
Std. Dev.	0.3	0.1	0.1	0.1	0.4	0.2	0.2	0.3	0.3	0.5	0.7	0.7
Range	7.9-8.6	7.7-8.0	8.0-8.2	7.9-8.1	6.9-7.9	7.6-8.3	7.7-8.3	7.8-8.6	6.1-7.6	5.9-7.5	6.2-8.1	6.3-8.0
Winter												
# Samples	6	6	6	6	6	6	6	6	6	6	6	6
Mean/Median	8.1/8.0	8.0/8.0	8.2/8.2	8.1/8.1	7.5/7.4	7.6/7.6	7.8/7.8	7.8/7.8	7.1/6.7	7.4/7.4	7.7/7.7	7.8/7.8
Geo. Mean	8.0	8.0	8.2	8.1	7.4	7.6	7.8	7.8	7.0	7.4	7.7	7.8
Std. Dev.	0.6	0.3	0.2	0.2	0.6	0.3	0.2	0.2	0.7	0.4	0.4	0.4
Range	7.4-9.1	7.8-8.5	7.9-8.4	7.9-8.2	6.7-8.1	7.2-8.1	7.6-8.2	7.7-8.2	6.4-8.0	6.8-8.0	7.0-8.1	7.1-8.2
Yearly												
# Samples	26	26	26	26	26	26	26	26	25	25	25	25
Mean/Median	7.9/8.0	7.9/7.9	8.2/8.2	8.0/8.0	7.5/7.5	7.8/7.8	8.0/8.0	8.0/8.0	7.0/6.8	7.3/7.3	7.7/7.6	7.6/7.7
Geo. Mean	7.9	7.9	8.2	8.0	7.4	7.7	8.0	8.0	7.0	7.2	7.6	7.6
Std. Dev.	0.6	0.3	0.4	0.3	0.5	0.3	0.4	0.3	0.7	0.6	0.6	0.5
Range	6.2-9.1	6.4-8.5	6.8-8.8	6.8-8.7	6.2-8.2	7.2-8.3	7.4-8.6	7.4-8.6	6.1-8.2	5.9-8.2	6.2-8.7	6.3-8.3

*The year has been divided as follows: Spring = April-June
Summer = July-September
Fall = October-December
Winter = January-March

TABLE 3. (Continued)

Sampling Period	1973-74 Sites				1974-75 Sites				1975-76 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	6	6	6	6	4	4	4	4	2	2	2	1
Mean/Median	7.6/7.5	7.7/7.8	7.9/7.9	7.9/7.8	7.1/7.0	7.7/7.7	8.2/8.2	8.0/8.0	8.0/8.0	8.1/8.0	8.6/8.6	8.5/-
Geo. Mean	7.6	7.7	7.9	7.9	7.1	7.7	8.2	8.0	8.0	8.0	8.5	-
Std. Dev.	0.4	0.1	0.2	0.3	0.9	0.3	0.5	0.3	0	0.1	0.1	-
Range	7.2-8.2	7.6-7.8	7.7-8.3	7.6-8.2	6.2-8.3	7.3-8.0	7.6-8.9	7.7-8.3	8.0-8.0	8.0-8.1	8.5-8.6	-
Summer												
# Samples	7	7	7	7	4	4	4	4	1	1	1	1
Mean/Median	7.1/7.3	7.7/7.9	8.1/8.2	7.8/8.0	7.2/7.4	7.4/7.6	7.8/7.8	7.5/7.6	6.0/-	8.0/-	8.1/-	7.9/-
Geo. Mean	7.1	7.7	8.1	7.8	7.2	7.4	7.7	7.5	-	-	-	-
Std. Dev.	0.7	0.5	0.4	0.5	0.5	0.7	0.9	0.5	-	-	-	-
Range	5.7-7.8	7.0-8.1	7.5-8.5	6.8-8.4	6.5-7.6	6.4-8.1	6.7-8.6	6.9-8.0	-	-	-	-
Fall												
# Samples	6	6	6	6	5	5	5	5	1	1	1	1
Mean/Median	7.0/7.2	7.2/7.4	7.3/7.5	7.5/7.7	7.9/8.0	7.9/7.9	8.0/8.1	8.0/8.1	7.8/-	7.7/-	8.1/-	8.0/-
Geo. Mean	7.0	7.1	7.2	7.4	7.9	7.9	8.0	8.0	-	-	-	-
Std. Dev.	0.9	0.9	0.9	0.9	0.3	0.2	0.2	0.1	-	-	-	-
Range	5.3-7.6	5.5-7.9	5.6-8.3	5.8-8.4	7.4-8.2	7.6-8.2	7.8-8.2	7.8-8.1	-	-	-	-
Winter												
# Samples	6	6	6	6	3	3	3	3	1	1	1	1
Mean/Median	7.6/7.8	7.7/7.8	7.8/8.0	7.9/8.0	7.6/7.6	7.7/7.7	7.8/7.8	7.8/7.8	6.8/-	7.0/-	6.9/-	7.7/-
Geo. Mean	7.6	7.7	7.8	7.9	7.6	7.7	7.8	7.8	-	-	-	-
Std. Dev.	0.5	0.4	0.4	0.4	0.2	0.1	0	0.1	-	-	-	-
Range	6.8-8.2	7.0-8.1	7.1-8.2	7.1-8.2	7.5-7.8	7.6-7.7	7.8-7.8	7.8-7.9	-	-	-	-
Yearly												
# Samples	25	25	25	25	16	16	16	16	5	5	5	4
Mean/Median	7.3/7.5	7.6/7.8	7.8/7.9	7.8/7.9	7.5/7.6	7.7/7.7	8.0/8.0	7.9/7.9	7.3/7.8	7.8/8.0	8.0/8.1	8.0/8.0
Geo. Mean	7.3	7.6	7.8	7.7	7.4	7.7	7.9	7.8	7.3	7.7	8.0	8.0
Std. Dev.	0.7	0.5	0.6	0.6	0.6	0.4	0.5	0.3	0.9	0.5	0.7	0.3
Range	5.3-8.2	5.5-8.1	5.6-8.5	5.8-8.4	6.2-8.3	6.4-8.2	6.7-8.9	6.9-8.3	6.0-8.0	7.0-8.1	6.9-8.6	7.7-8.5

TABLE 3. (Continued)

Sampling Period	1976-77 Sites			
	1	2	3	4
Spring*				
# Samples	1	1	1	1
Mean/Median	7.7/-	6.6/-	7.5/-	7.7/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Summer				
# Samples	1	1	1	1
Mean/Median	6.7/-	7.7/-	8.1/-	7.9/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Fall				
# Samples	1	1	1	1
Mean/Median	7.7/-	7.2/-	7.2/-	6.5/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Winter				
# Samples	1	1	1	1
Mean/Median	8.3/-	8.0/-	8.4/-	8.1/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Yearly				
# Samples	4	4	4	4
Mean/Median	7.6/7.7	7.4/7.4	7.8/7.8	7.6/7.8
Geo. Mean	-7.6	7.4	7.8	7.5
Std. Dev.	0.7	0.6	0.5	0.7
Range	6.7-8.3	6.6-8.0	7.2-8.4	6.5-8.1

TABLE 4. DISSOLVED SOLIDS, mg/l, BY CONDUCTIVITY; CACHE LA POUDRE RIVER

Sampling Period	1970-71 Sites				1971-72 Sites				1972-73 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	7	7	7	7	7	7	7	7	7	7	7	7
Mean/Median	144/85	859/1000	954/1170	1141/1350	112/104	854/232	739/265	840/330	152/85	711/860	651/573	1012/1040
Geo. Mean	111	558	741	947	90	373	412	506	114	482	523	833
Std. Dev.	103	660	569	543	82	1101	820	891	122	535	454	546
Range	50-260	100-1600	145-1550	185-1625	34-272	97-2790	124-2240	172-2240	50-336	100-1550	168-1530	258-1650
Summer												
# Samples	7	7	7	7	6	6	6	6	6	6	6	6
Mean/Median	90/90	850/920	934/1035	1314/1320	905/144	1070/1212	888/929	1115/1224	113/80	1173/1225	784/765	1119/1120
Geo. Mean	84	779	895	1305	212	950	863	1082	89	1163	740	1044
Std. Dev.	40	368	277	163	1909	404	207	261	93	162	285	442
Range	49-170	388-1460	505-1360	1030-1570	66-4800	262-1350	495-1102	629-1344	35-290	910-1330	485-1100	520-1860
Fall												
# Samples	6	6	6	6	7	7	7	7	6	6	6	6
Mean/Median	250/245	890/842	881/810	1144/1068	182/196	731/626	771/662	883/882	98/108	826/805	753/743	782/790
Geo. Mean	245	851	857	1123	172	660	708	809	93	813	748	780
Std. Dev.	54	303	232	246	62	343	316	883	32	159	95	56
Range	170-310	540-1422	600-1280	850-1300	90-240	270-1326	288-1275	393-1428	52-130	610-1100	640-860	710-845
Winter												
# Samples	6	6	6	6	6	6	6	6	6	6	6	6
Mean/Median	266/265	1107/1108	1266/1190	1299/1270	279/278	947/808	893/832	1079/1055	342/345	1083/988	1199/1112	1469/1385
Geo. Mean	266	1104	1255	1297	277	904	877	1069	341	1052	1175	1450
Std. Dev.	14	89	186	80	35	357	197	172	27	316	289	274
Range	250-290	1020-1259	1055-1520	1225-1450	240-330	730-1660	730-1280	910-1390	300-375	875-1700	975-1770	1225-1995
Yearly												
# Samples	26	26	26	26	26	26	26	26	25	25	25	25
Mean/Median	182/230	921/998	1003/1052	1225/1275	353/193	892/772	818/832	970/1004	175/125	939/900	839/802	1092/1120
Geo. Mean	151	788	911	1155	169	665	673	813	113	814	752	989
Std. Dev.	96	410	369	312	911	627	454	508	124	375	365	440
Range	49-310	100-1600	145-1550	185-1625	34-4800	97-2790	124-2240	172-2240	35-375	100-1700	168-1770	258-1995

*The year has been divided as follows: Spring = April-June
Summer = July-September
Fall = October-December
Winter = January-March

TABLE 4. (Continued)

Sampling Period	1973-74 Sites				1974-75 Sites				1975-76 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	6	6	6	6	4	4	4	4	2	2	2	2
Mean/Median	70/37	437/350	436/340	448/395	33/26	339/272	299/330	448/398	180/180	1100/1100	575/575	620/620
Geo. Mean	48	232	244	284	28	247	267	434	175	1100	573	618
Std. Dev.	66	416	409	376	22	289	134	134	57	0	64	71
Range	19-180	41-950	47-950	56-860	14-64	81-730	110-425	355-640	140-220	1100-1100	530-620	570-670
Summer												
# Samples	7	7	7	7	4	4	4	4	1	1	1	1
Mean/Median	129/90	713/655	707/700	926/910	29/28	588/580	365/370	543/600	16/-	460/-	255/-	425/-
Geo. Mean	100	687	701	909	27	574	358	521	-	-	-	-
Std. Dev.	120	202	103	183	12	147	82	158	-	-	-	-
Range	47-390	400-1000	550-875	627-1125	15-44	440-750	260-460	310-660	-	-	-	-
Fall												
# Samples	6	6	6	6	5	5	5	5	1	1	1	1
Mean/Median	182/182	476/495	583/620	808/800	105/90	441/470	466/460	515/525	140/-	550/-	625/-	575/-
Geo. Mean	181	471	578	806	88	434	462	520	-	-	-	-
Std. Dev.	11	71	72	67	63	85	70	78	-	-	-	-
Range	165-195	390-550	465-640	710-920	32-175	350-525	400-560	430-605	-	-	-	-
Winter												
# Samples	6	6	6	6	3	3	3	3	1	1	1	1
Mean/Median	174/180	748/603	847/675	907/818	188/185	683/500	703/550	743/630	135/-	860/-	850/-	850/-
Geo. Mean	174	671	794	853	188	594	638	702	-	-	-	-
Std. Dev.	14	444	374	376	20	454	393	316	-	-	-	-
Range	150-185	410-1630	590-1570	520-1630	170-210	350-1200	410-1150	500-1100	-	-	-	-
Yearly												
# Samples	25	25	25	25	16	16	16	16	5	5	5	5
Mean/Median	138/165	598/590	646/640	778/800	83/54	498/480	443/405	548/578	130/140	814/860	576/620	618/575
Geo. Mean	111	481	535	658	56	429	401	523	99	766	537	602
Std. Dev.	81	329	301	326	71	259	218	185	73	300	215	156
Range	19-390	41-1630	47-1570	56-1630	14-210	81-1200	110-1150	310-1100	16-220	460-1100	255-850	425-850

TABLE 4. (Continued)

Sampling Period	1976-77 Sites			
	1	2	3	4
Spring*				
# Samples	1	1	1	1
Mean/Median	28/-	800/-	480/-	630/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Summer				
# Samples	1	1	1	1
Mean/Median	33/-	590/-	510/-	470/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Fall				
# Samples	1	1	1	1
Mean/Median	93/-	1100/-	980/-	1200/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Winter				
# Samples	1	1	1	1
Mean/Median	125/-	420/-	425/-	415/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Yearly				
# Samples	4	4	4	4
Mean/Median	70/63	728/695	599/495	679/550
Geo. Mean	57	683	565	620
Std. Dev.	47	293	257	359
Range	28-125	420-1100	425-980	415-1200

TABLE 5. DISSOLVED SOLIDS, mg/l, BY FILTERABLE RESIDUE; CACHE LA POUVRE RIVER

Sampling Period	1974-75 Sites				1975-76 Sites				1976-77 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	3	3	3	3	2	2	2	2	1	1	1	1
Mean/Median	114/110	990/400	1029/714	1555/1740	293/293	2118/2118	1466/1466	1353/1353	59/-	1940/-	700/-	1380/-
Geo. Mean	104	698	887	1440	291	2117	1462	1347	-	-	-	-
Std. Dev.	56	1031	709	668	51	95	161	185	-	-	-	-
Range	60-172	390-2180	532-1840	814-2110	257-329	2051-2186	1352-1580	1222-1484	-	-	-	-
Summer												
# Samples	4	4	4	4	1	1	1	1	1	1	1	1
Mean/Median	135/61	1295/1333	660/648	1257/1286	299/-	914/-	463/-	990/-	13/-	1230/-	955/-	1380/-
Geo. Mean	59	1202	656	1235	-	-	-	-	-	-	-	-
Std. Dev.	185	551	87	266	-	-	-	-	-	-	-	-
Range	8-409	729-1785	567-775	956-1500	-	-	-	-	-	-	-	-
Fall												
# Samples	5	5	5	5	1	1	1	1	1	1	1	1
Mean/Median	180/166	982/1059	1060/959	1196/1289	256/-	1276/-	1328/-	1416/-	65/-	1290/-	1115/-	1481/-
Geo. Mean	166	960	1017	1189	-	-	-	-	-	-	-	-
Std. Dev.	74	230	385	143	-	-	-	-	-	-	-	-
Range	75-258	741-1252	739-1660	1035-1308	-	-	-	-	-	-	-	-
Winter												
# Samples	2	2	2	2	1	1	1	1	1	1	1	1
Mean/Median	310/310	1508/1508	1369/1369	1340/1340	25/-	2138/-	1871/-	1851/-	387/-	1314/-	1396/-	1561/-
Geo. Mean	310	1348	1299	1309	-	-	-	-	-	-	-	-
Std. Dev.	22	956	611	411	-	-	-	-	-	-	-	-
Range	295-326	852-2184	937-1801	1050-1631	-	-	-	-	-	-	-	-
Yearly												
# Samples	14	14	14	14	5	5	5	5	4	4	4	4
Mean/Median	172/163	1148/988	1002/774	1311/1296	233/257	1713/2051	1319/1352	1393/1416	131/62	1444/1302	1042/1035	1450/1430
Geo. Mean	122	1004	902	1270	175	1621	1197	1363	66	1418	1010	1449
Std. Dev.	119	603	473	352	120	581	526	320	172	333	292	88
Range	8-409	390-2184	532-1840	814-2110	25-329	914-2186	465-1871	990-1851	13-387	1230-1940	700-1396	1380-1561

*The year has been divided as follows: Spring = April-June
 Summer - July-September
 Fall = October-December
 Winter = January-March

TABLE 6. TURBIDITY, FTU (FORMAZIN TURBIDITY UNITS); CACHE LA POUDRE RIVER

Sampling Period	1970-71 Sites				1971-72 Sites				1972-73 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	7	7	7	7	7	7	7	7	7	7	7	7
Mean/Median	11.7/13.0	16.4/16.0	17.3/20.0	17.2/20.0	18.4/21.0	20.3/22.0	22.5/24.0	30.4/36.0	11.7/4.2	29.3/7.6	17.2/15.0	14.1/9.3
Geo. Mean	7.6	13.6	14.8	15.1	14.0	17.3	19.2	26.0	6.1	14.6	14.6	11.6
Std. Dev.	9.2	10.1	9.4	7.9	12.5	11.1	12.4	15.8	16.2	44.1	10.7	9.0
Range	0.0-24.0	4.2-34.0	5.1-31.0	5.1-27.0	4.2-36.0	7.6-32.0	7.6-41.0	10.0-52.0	1.7-47.0	5.1-126.0	6.8-35.0	4.2-29.0
Summer												
# Samples	7	7	7	7	6	6	6	6	6	6	6	6
Mean/Median	6.6/6.8	16.5/10.0	20.1/16.0	27.0/25.0	6.5/6.4	10.0/10.2	13.5/14.0	36.7/32.0	4.0/4.0	8.7/8.7	14.1/16.0	35.0/35.0
Geo. Mean	6.4	12.4	17.0	25.2	5.8	9.5	12.5	31.7	3.6	8.1	12.3	29.2
Std. Dev.	1.7	17.2	14.3	10.2	3.0	3.0	4.8	19.2	2.3	3.2	6.2	21.0
Range	4.2-9.3	5.9-55.0	7.6-51.0	12.0-42.0	2.5-10.0	5.1-13.0	5.1-20.0	10.0-67.0	0.0-6.4	3.4-12.0	3.4-20.0	12.0-66.0
Fall												
# Samples	6	6	6	6	7	7	7	7	6	6	6	6
Mean/Median	4.8/3.8	7.6/6.8	8.4/6.4	9.0/8.4	3.5/3.4	8.1/6.8	7.8/6.8	9.6/7.6	4.4/3.8	9.3/4.6	7.1/4.2	9.0/8.9
Geo. Mean	3.9	7.1	7.3	8.6	3.3	7.8	7.3	8.7	4.1	5.4	5.6	8.2
Std. Dev.	3.2	3.2	5.5	3.2	1.3	2.8	3.2	5.6	1.8	12.4	6.5	4.0
Range	1.7-10.0	5.1-14.0	4.2-19.0	5.9-14.0	1.7-5.1	5.9-13.0	5.1-14.0	5.9-22.0	2.5-7.6	0.0-34.0	3.4-20.0	4.2-14.0
Winter												
# Samples	6	6	6	6	5	6	6	6	6	6	6	6
Mean/Median	3.1/3.4	9.6/9.2	8.2/8.4	11.7/9.2	3.7/3.4	10.8/9.3	13.3/11.5	19.4/13.0	4.8/4.6	14.9/10.5	14.0/10.5	18.1/16.5
Geo. Mean	2.7	8.6	8.0	10.4	3.5	8.9	12.6	14.8	4.7	11.7	12.0	16.1
Std. Dev.	1.4	5.0	1.8	6.6	1.4	7.6	4.7	18.4	1.0	13.5	8.9	10.2
Range	0.8-4.2	4.2-18.0	5.1-10.0	5.9-24.0	1.7-5.1	3.4-25.0	9.3-21.0	6.8-56.0	3.4-5.9	5.1-42.0	5.1-30.0	8.5-37.0
Yearly												
# Samples	26	26	26	26	25	26	26	26	25	25	25	25
Mean/Median	6.7/4.6	12.8/9.6	13.9/10.0	16.7/13.5	8.4/5.1	12.5/10.2	14.3/12.5	23.7/16.0	6.4/4.2	16.1/8.5	13.3/11.0	18.8/14.0
Geo. Mean	-4.9	10.3	11.3	14.0	5.7	10.4	12.2	17.8	4.6	9.5	10.6	14.4
Std. Dev.	5.9	10.9	10.3	10.0	9.1	8.3	8.9	17.9	8.9	25.2	8.7	15.3
Range	0.0-24.0	4.2-55.0	4.2-51.0	5.1-42.0	1.7-36.0	3.4-32.0	5.1-41.0	5.9-67.0	0.0-47.0	0.0-126.0	3.4-35.0	4.2-66.0

*The year has been divided as follows: Spring = April-June
 Summer = July-September
 Fall = October-December
 Winter = January-March

TABLE 6. (Continued)

Sampling Period	1973-74 Sites				1974-75 Sites				1975-76 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	6	6	6	6	4	4	4	4	2	2	2	2
Mean/Median	18.0/18.0	20.8/14.0	24.5/16.0	29.8/24.0	6.4/5.9	8.8/8.5	13.0/10.7	20.3/14.2	1.4/1.4	3.6/3.6	11.7/11.7	8.5/8.5
Geo. Mean	8.2	12.9	15.3	18.4	5.2	7.0	8.2	12.6	1.3	3.5	11.5	8.3
Std. Dev.	16.2	22.0	25.2	31.7	4.2	6.1	12.0	20.8	0.2	1.1	3.3	2.2
Range	0.0-41.0	3.4-62.0	2.5-72.0	3.4-91.0	1.8-12.0	3.0-15.0	2.5-27.0	3.6-49.0	1.2-1.5	2.8-4.4	9.4-14.0	6.9-10.0
Summer												
# Samples	7	7	7	7	4	4	4	4	1	1	1	1
Mean/Median	9.4/7.6	10.7/10.0	13.7/13.0	34.4/25.0	5.4/4.9	4.7/4.6	13.0/10.5	27.5/29.5	2.0/-	5.2/-	9.3/-	19.0/-
Geo. Mean	7.8	10.6	13.5	30.5	5.0	4.6	12.3	26.8	-	-	-	-
Std. Dev.	7.2	1.7	2.4	20.5	2.3	0.8	5.4	6.9	-	-	-	-
Range	3.4-25.0	8.5-13.0	11.0-18.0	17.0-76.0	3.0-8.5	3.8-5.7	10.0-21.0	18.0-33.0	-	-	-	-
Fall												
# Samples	6	6	6	6	5	5	5	5	1	1	1	1
Mean/Median	3.7/2.9	12.7/8.5	15.4/8.5	18.6/12.5	2.7/1.5	4.4/4.6	4.6/4.6	7.4/7.2	0.6/-	20.0/-	50.0/-	30.0/-
Geo. Mean	2.9	10.4	10.6	13.2	1.8	4.3	4.3	7.4	-	-	-	-
Std. Dev.	3.4	8.9	17.7	19.3	3.3	0.7	1.6	0.8	-	-	-	-
Range	0.0-9.3	4.2-25.0	4.2-51.0	4.2-57.0	0.9-8.7	3.5-5.3	2.3-6.9	6.6-8.7	-	-	-	-
Winter												
# Samples	6	6	6	6	3	3	3	3	1	1	1	1
Mean/Median	1.8/1.5	11.5/10.0	11.1/9.0	12.2/10.0	1.3/1.2	3.6/3.6	5.3/5.7	6.9/7.7	2.0/-	3.0/-	2.5/-	2.0/-
Geo. Mean	1.9	10.3	9.1	11.6	1.3	3.6	5.0	6.6	-	-	-	-
Std. Dev.	2.1	5.4	7.3	4.4	0.1	0.6	2.3	2.4	-	-	-	-
Range	0.0-5.0	4.0-20.0	3.5-20.0	9.0-20.0	1.2-1.4	3.1-4.2	2.9-7.4	4.2-8.8	-	-	-	-
Yearly												
# Samples	25	25	25	25	16	16	16	16	5	5	5	5
Mean/Median	8.3/5.0	13.8/10.0	16.1/13.0	24.2/17.0	4.0/2.4	5.4/4.2	8.9/6.3	15.6/8.2	1.5/1.5	7.1/4.4	17.0/9.4	13.6/10.0
Geo. Mean	4.4	11.0	12.0	17.6	2.8	4.8	6.8	11.4	1.3	5.2	10.9	9.5
Std. Dev.	10.5	11.9	15.3	21.9	3.4	3.5	7.3	13.3	0.6	7.3	18.9	11.1
Range	0.0-41.0	3.4-62.0	2.5-72.0	3.4-91.0	0.9-12.0	3.0-15.0	2.3-27.0	3.6-49.0	0.6-2.0	2.8-20.0	2.5-50.0	2.0-30.0

TABLE 6. (Continued)

Sampling Periods	1976-77 Sites			
	1	2	3	4
Spring*				
# Samples	1	1	1	1
Mean/Median	2.7/-	2.0/-	3.7/-	6.0/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Summer				
# Samples	1	1	1	1
Mean/Median	2.8/-	4.5/-	6.5/-	12.0/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Fall				
# Samples	1	1	1	1
Mean/Median	5.2/-	2.0/-	1.8/-	3.0/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Winter				
# Samples	1	1	1	1
Mean/Median	1.0/-	2.5/-	1.5/-	2.0/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Yearly				
# Samples	4	4	4	4
Mean/Median	2.9/2.8	2.8/2.2	3.4/2.8	5.8/4.5
Geo. Mean	-2.5	2.6	2.8	4.6
Std. Dev.	1.7	1.2	2.3	4.5
Range	1.0-5.2	2.0-4.5	1.5-6.5	2.0-12.0

TABLE 7. SETTLEABLE RESIDUE, ml/l, CACHE LA POUVRE RIVER

Sampling Periods	1970-71 Sites				1971-72 Sites				1972-73 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	7	7	7	7	7	7	7	7	7	7	7	7
Mean/Median	<0.1/<0.1	<0.2/<0.1	<0.2/<0.1	<0.1/0.1	<0.1/<0.1	<0.1/<0.1	<0.1/0.1	<0.2/0.2	<0.2/<0.1	<0.6/<0.1	<0.2/<0.1	<0.2/<0.1
Geo. Mean	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.5	<0.2	<0.1
Std. Dev.	0	0.3	0.2	0.1	0	0	0	0.1	0.2	0.7	0.1	0.3
Range	<0.1-0.2	<0.1-0.9	<0.1-0.6	<0.1-0.2	<0.1-0.2	<0.1-0.1	<0.1-0.2	<0.1-0.3	<0.1-0.5	<0.1-2.1	<0.1-0.4	<0.1-0.8
Summer												
# Samples	7	7	7	7	6	6	6	6	6	6	6	6
Mean/Median	<0.1/<0.1	<0.2/<0.1	<0.2/<0.1	<0.1/0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.2/0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1
Geo. Mean	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Std. Dev.	0	0.2	0.1	0.1	0	0	0	0.2	0	0	0	0
Range	<0.1	<0.1-0.6	<0.1-0.4	<0.1-0.2	<0.1	<0.1	<0.1	<0.1-0.6	<0.1	<0.1	<0.1	<0.1-0.1
Fall												
# Samples	6	6	6	6	7	7	7	7	6	6	6	6
Mean/Median	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.2/<0.1	<0.1/<0.1	<0.1/<0.1
Geo. Mean	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Std. Dev.	0	0	0	0	0	0	0	0	0	0.2	0	0
Range	<0.1	<0.1-0.2	<0.1-0.1	<0.1-0.1	<0.1	<0.1-0.2	<0.1	<0.1-0.2	<0.1	<0.1-0.5	<0.1	<0.1
Winter												
# Samples	6	6	6	6	6	6	6	6	6	6	6	6
Mean/Median	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.2/0.2
Geo. Mean	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Std. Dev.	0	0	0	0	0	0	0	0	0	0	0	0.1
Range	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1-0.2	<0.1	<0.1-0.1	<0.1-0.1	<0.1-0.1	<0.1-0.2	<0.1-0.2
Yearly												
# Samples	26	26	26	26	26	26	26	26	25	25	25	25
Mean/Median	<0.1/<0.1	<0.2/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.2/<0.1	<0.1/<0.1	<0.1/<0.1
Geo. Mean	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Std. Dev.	0	0.2	0.1	0	0	0	0	0.1	0.1	0.4	0.1	0.1
Range	<0.1-0.2	<0.1-0.9	<0.1-0.6	<0.1-0.2	<0.1-0.2	<0.1-0.2	<0.1-0.2	<0.1-0.6	<0.1-0.5	<0.1-2.1	<0.1-0.4	<0.1-0.8

*The year has been divided as follows: Spring = April-June
 Summer = July-September
 Fall = October-December
 Winter = January-March

TABLE 7. (Continued)

Sampling Periods	1973-74 Sites				1974-75 Sites				1975-76 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	6	6	6	6	4	4	4	4	2	2	2	2
Mean/Median	<0.2/<0.1	<0.2/<0.1	<0.2/<0.1	<0.3/<0.1	<0.1/<0.1	<0.2/<0.1	<0.2/<0.1	<0.3/<0.1	<0.1/<0.1	<0.1/<0.1	<0.2/<0.2	<0.1/<0.1
Geo. Mean	<0.1	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1
Std. Dev.	0.1	0.2	0.3	0.4	0	0.1	0.2	0.4	0	0	0.1	0
Range	<0.1-0.3	<0.1-0.6	<0.1-0.8	<0.1-1.0	<0.1-0.2	<0.1-0.3	<0.1-0.4	<0.1-0.9	<0.1	<0.1	<0.1-0.2	<0.1
Summer												
# Samples	7	7	7	7	4	4	4	4	1	1	1	1
Mean/Median	<0.1/<0.1	<0.1/0.1	<0.1/<0.1	<0.2/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/-	<0.1/-	<0.1/-	<0.1/-
Geo. Mean	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-
Std. Dev.	0	0.1	0	0.1	0	0	0	0	-	-	-	-
Range	<0.1	<0.1-0.4	<0.1-0.1	<0.1-0.5	<0.1	<0.1	<0.1-0.1	<0.1-0.1	-	-	-	-
Fall												
# Samples	6	6	6	6	5	5	5	5	1	1	1	1
Mean/Median	<0.1/<0.1	<0.1/<0.1	<0.2/<0.1	<0.2/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/-	<0.1/-	<0.1/-	<0.1/-
Geo. Mean	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-
Std. Dev.	0	0	0.1	0.2	0	0	0	0	-	-	-	-
Range	<0.1	<0.1-0.2	<0.1-0.4	<0.1-0.6	<0.1	<0.1	<0.1	<0.1-0.1	-	-	-	-
Winter												
# Samples	6	6	6	6	3	3	3	3	1	1	1	1
Mean/Median	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/-	<0.1/-	<0.1/-	<0.1/-
Geo. Mean	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-
Std. Dev.	0	0	0	0	0	0	0	0	-	-	-	-
Range	<0.1	<0.1	<0.1-0.1	<0.1-0.2	<0.1	<0.1	<0.1	<0.1-0.1	-	-	-	-
Yearly												
# Samples	25	25	25	25	16	16	16	16	5	5	5	5
Mean/Median	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.2/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.2/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1
Geo. Mean	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Std. Dev.	0	0.1	0.2	0.2	0	0.1	0.1	0.2	0	0	0	0
Range	<0.1-0.3	<0.1-0.6	<0.1-1.0	<0.1-1.0	<0.1-0.2	<0.1-0.3	<0.1-0.4	<0.1-0.9	<0.1	<0.1	<0.1-0.2	<0.1

TABLE 7. (Continued)

Sampling Periods	1976-77			
	1	2	3	4
Spring*				
# Samples	1	1	1	1
Mean/Median	<0.1/-	<0.1/-	<0.1/-	<0.1/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Summer				
# Samples	1	1	1	1
Mean/Median	<0.1/-	<0.1/-	<0.1/-	<0.1/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Fall				
# Samples	1	1	1	1
Mean/Median	<0.1/-	<0.1/-	<0.1/-	<0.1/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Winter				
# Samples	1	1	1	1
Mean/Median	<0.1/-	<0.1/-	<0.1/-	<0.1/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Yearly				
# Samples	4	4	4	4
Mean/Median	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1	<0.1/<0.1
Geo. Mean	<0.1	<0.1	<0.1	<0.1
Std. Dev.	0	0	0	0
Range	<0.1	<0.1	<0.1	<0.1

TABLE 8. SUSPENDED RESIDUE, mg/l; CACHE LA POUDRE RIVER

Sampling Period	1970-71 Sites				1971-72 Sites				1972-73 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	7	7	7	7	6	7	7	7	7	7	7	7
Mean/Median	7.6/5.0	9.4/7.0	9.9/6.0	10.6/11.0	42.5/10.0	46.1/35.0	71.6/70.0	49.9/22.0	60.0/45.0	89.7/87.0	104.1/97.0	124.1/125.0
Geo. Mean	5.6	7.7	7.9	9.1	11.9	29.3	40.2	25.1	19.6	46.6	54.9	58.7
Std. Dev.	5.3	6.4	6.9	5.7	60.1	45.4	62.6	51.3	62.8	78.5	85.5	99.4
Range	1.0-15.0	3.0-20.0	3.0-20.0	3.0-20.0	1.0-147.0	7.0-128.0	4.0-127.0	3.0-133.0	0.6-178.0	2.6-238.0	2.8-218.0	2.2-294.0
Summer												
# Samples	7	7	7	7	5	5	5	5	5	6	5	6
Mean/Median	4.6/3.0	14.4/3.0	11.9/14.0	20.6/12.0	24.8/20.0	35.0/38.0	46.6/52.0	58.2/45.0	1.0/1.0	17.2/2.8	5.2/3.2	27.7/31.9
Geo. Mean	3.1	5.7	8.9	15.6	14.3	24.9	37.6	53.9	0.8	4.5	4.0	22.9
Std. Dev.	6.0	23.7	7.5	18.0	18.9	19.7	23.7	25.5	0.6	35.5	4.3	15.4
Range	0.0-18.0	1.0-67.0	2.0-19.0	7.0-57.0	1.0-49.0	3.0-56.0	8.0-72.0	34.0-91.0	0.2-1.8	1.2-89.5	1.5-12.2	7.6-45.8
Fall												
# Samples	5	5	5	5	7	7	7	7	6	6	5	6
Mean/Median	3.6/3.0	8.4/9.0	8.2/7.0	8.2/9.0	38.3/18.0	66.1/16.0	59.1/21.0	59.7/17.0	4.1/3.2	5.7/5.4	9.3/8.8	9.2/9.0
Geo. Mean	2.6	7.4	6.9	8.0	15.2	26.1	33.9	30.7	3.0	4.1	9.1	7.0
Std. Dev.	3.3	4.3	5.8	2.0	48.8	76.7	73.1	77.6	3.2	3.8	2.0	5.5
Range	1.0-9.0	4.0-13.0	3.0-18.0	6.0-10.0	0.0-119.0	2.0-203.0	10.0-207.0	7.0-217.0	1.2-8.5	0.5-12.0	7.5-12.2	1.0-17.0
Winter												
# Samples	6	6	6	6	6	6	5	5	6	6	6	6
Mean/Median	2.3/1.0	6.5/4.5	6.3/5.0	5.3/3.0	8.8/6.0	13.5/12.5	17.0/13.0	30.4/23.0	9.9/11.8	16.4/10.8	13.4/12.8	17.7/16.0
Geo. Mean	1.7	4.6	4.4	3.9	6.1	6.4	12.8	29.0	6.9	11.8	12.5	16.4
Std. Dev.	2.7	5.3	5.9	5.1	8.4	13.7	13.5	30.7	6.9	14.7	6.3	7.5
Range	0.0-7.0	1.0-14.0	0.0-16.0	2.0-15.0	0.0-24.0	0.0-29.0	4.0-38.0	1.0-79.0	1.2-16.5	4.0-42.8	5.8-24.5	8.0-29.8
Yearly												
# Samples	25	25	25	25	24	25	24	24	24	25	23	25
Mean/Median	4.7/3.0	9.9/6.0	9.2/7.0	11.6/9.0	29.2/13.5	41.7/24.0	51.4/34.5	50.4/29.5	21.2/3.8	34.5/7.0	39.8/12.2	47.9/16.0
Geo. Mean	3.1	6.2	7.0	8.4	11.2	19.0	29.7	28.0	4.9	10.6	14.5	20.7
Std. Dev.	4.9	13.0	6.6	11.4	40.8	49.8	54.3	51.6	41.2	55.7	64.3	70.2
Range	0.0-18.0	1.0-67.0	0.0-20.0	2.0-57.0	0.0-147.0	0.0-203.0	4.0-207.0	1.0-217.0	0.2-178.0	0.5-238.0	1.5-218.0	1.0-294.0

*The year has been divided as follows: Spring = April-June
Summer = July-September

Fall = October-December
Winter = January-March

TABLE 8. (Continued)

Sampling Period	1973-74 Sites				1974-75 Sites				1975-76 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	6	6	6	6	4	4	4	4	2	2	2	2
Mean/Median	13.8/9.0	16.4/10.6	22.2/22.6	27.6/16.7	6.3/7.0	8.2/8.1	13.0/12.2	18.3/18.4	1.2/1.2	5.7/5.7	16.0/16.0	10.6/10.6
Geo. Mean	6.3	12.7	16.7	21.6	2.7	6.1	6.8	10.4	1.1	5.7	15.9	10.2
Std. Dev.	14.2	12.9	15.4	22.1	4.7	6.3	12.7	17.1	0.5	0.7	2.8	4.0
Range	0.5-31.8	6.5-37.2	5.0-39.8	10.2-63.8	0.1-11.2	1.8-15.0	1.5-25.8	2.2-34.2	0.8-1.5	5.2-6.2	14.0-18.0	7.8-13.4
Summer												
# Samples	7	7	7	7	4	4	4	4	1	1	1	1
Mean/Median	2.9/3.0	5.8/5.5	9.3/8.2	20.8/17.2	0.8/0.9	2.1/1.7	9.3/9.4	23.0/20.0	0.1/-	0.4/-	0.1/-	0.9/-
Geo. Mean	2.5	4.8	8.9	19.3	0.8	1.9	8.5	20.8	-	-	-	-
Std. Dev.	1.8	3.9	3.0	9.0	0.3	1.0	4.3	12.0	-	-	-	-
Range	1.0-6.2	1.8-13.5	5.2-13.8	11.5-38.0	0.5-1.1	1.4-3.5	4.5-13.8	12.8-39.2	-	-	-	-
Fall												
# Samples	6	6	6	6	5	5	5	5	1	1	1	1
Mean/Median	4.2/4.4	7.0/7.6	9.0/11.0	11.1/11.4	3.0/2.2	4.2/4.0	3.9/4.5	8.2/8.8	2.3/-	4.5/-	6.0/-	3.8/-
Geo. Mean	2.4	5.6	6.8	9.4	2.2	3.7	2.8	7.8	-	-	-	-
Std. Dev.	3.5	3.9	4.8	6.2	3.0	2.1	3.5	2.6	-	-	-	-
Range	0.2-10.0	1.1-12.0	0.9-12.8	3.1-19.0	1.0-8.0	1.5-7.0	0.0-8.5	4.5-11.2	-	-	-	-
Winter												
# Samples	6	6	6	6	3	3	3	3	1	1	1	1
Mean/Median	<2.7/2.4	6.6/6.8	8.2/8.0	8.3/9.4	4.6/3.0	5.8/4.7	8.4/8.5	12.0/10.8	4.8/-	4.5/-	3.8/-	4.0/-
Geo. Mean	<1.0	5.5	7.9	7.8	3.8	5.5	8.1	11.8	-	-	-	-
Std. Dev.	2.8	3.8	2.3	2.3	3.4	2.4	2.7	2.6	-	-	-	-
Range	<0.1-7.2	2.2-12.2	5.0-12.0	3.5-10.5	2.2-8.5	4.2-8.5	5.7-11.0	10.2-15.0	-	-	-	-
Yearly												
# Samples	25	25	25	25	16	16	16	16	5	5	5	5
Mean/Median	<5.8/3.8	8.8/6.9	12.0/9.6	17.1/13.8	3.6/2.2	5.0/4.1	8.4/6.4	15.1/11.0	1.9/1.5	4.2/4.5	8.4/6.0	6.0/4.0
Geo. Mean	<2.5	6.5	9.4	13.4	2.0	3.8	5.6	11.6	1.1	3.0	3.6	4.3
Std. Dev.	-8.3	8.0	9.5	13.8	3.5	3.9	7.3	11.3	1.8	2.2	7.4	4.8
Range	<0.1-31.8	1.1-37.2	0.9-39.8	3.1-63.8	0.1-11.2	1.4-15.0	0.0-25.8	2.2-39.2	0.1-4.8	0.4-6.2	0.1-18.0	0.9-13.4

TABLE 8. (Continued)

Sampling Period	1976-77 Sites			
	1	2	3	4
Spring*				
# Samples	1	1	1	1
Mean/Median	4.5/-	3.0/-	6.5/-	11.2/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Summer				
# Samples	1	1	1	1
Mean/Median	8.0/-	2.8/-	7.5/-	5.0/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Fall				
# Samples	1	1	1	1
Mean/Median	23.0/-	15.0/-	12.0/-	20.0/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Winter				
# Samples	1	1	1	1
Mean/Median	10.0/-	16.0/-	13.0/-	10.0/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Yearly				
# Samples	4	4	4	4
Mean/Median	11.4/9.0	9.2/9.0	9.8/9.8	11.6/10.6
Geo. Mean	9.5	6.7	9.3	10.3
Std. Dev.	8.1	7.3	3.2	6.2
Range	4.5-23.0	2.8-16.0	6.5-13.0	5.0-20.0

TABLE 9. DISSOLVED OXYGEN, mg/l; CACHE LA POUDRE RIVER

Sampling Period	1970-71 Sites				1971-72 Sites				1972-73 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	7	7	7	7	7	7	7	7	7	7	7	7
Mean/Median	10.0/8.8	8.8/8.7	10.7/10.7	9.4/10.2	10.3/9.8	9.3/8.8	10.1/9.5	9.4/8.4	10.6/10.7	9.0/8.5	10.1/8.7	8.7/8.3
Geo. Mean	9.9	8.7	10.4	9.2	10.2	9.2	9.8	9.2	10.5	8.6	9.8	8.4
Std. Dev.	1.8	1.1	2.4	2.4	1.4	1.7	2.5	2.5	1.6	2.9	2.7	2.3
Range	8.5-13.0	6.9-10.2	7.5-13.8	6.4-12.4	8.7-12.2	7.0-12.4	7.5-14.8	7.2-14.2	8.6-12.7	5.6-12.9	8.0-15.4	6.1-12.7
Summer												
# Samples	7	7	7	7	6	6	6	6	6	6	6	6
Mean/Median	11.5/8.9	7.2/6.8	9.4/9.4	8.0/7.9	9.2/9.1	6.8/6.6	9.4/9.6	7.6/7.3	8.4/8.6	4.6/4.2	7.6/7.5	5.7/5.8
Geo. Mean	9.2	7.1	9.2	7.9	9.2	6.7	9.3	7.5	8.3	4.0	7.1	5.5
Std. Dev.	1.0	1.7	2.7	1.4	0.3	1.2	1.2	1.4	1.4	2.5	2.6	1.6
Range	8.5-11.5	5.3-10.8	6.2-12.3	6.2-10.6	8.8-9.8	5.6-8.4	7.3-10.6	6.4-10.2	5.9-10.1	1.3-7.1	3.8-10.9	3.6-7.8
Fall												
# Samples	6	6	6	6	7	7	7	7	6	6	6	6
Mean/Median	11.9/11.9	9.5/9.5	11.0/10.8	9.8/9.8	11.5/12.0	8.7/8.9	10.1/9.7	9.2/9.5	14.0/14.4	10.2/10.6	11.9/10.8	12.3/12.8
Geo. Mean	11.8	9.2	10.9	9.8	11.4	8.4	10.1	9.1	13.7	9.6	11.4	11.9
Std. Dev.	1.4	1.4	1.1	0.6	1.7	2.2	1.0	0.9	3.6	3.7	3.7	3.5
Range	9.6-13.4	7.5-10.7	9.6-12.4	9.1-10.6	9.1-14.3	5.8-11.2	9.4-12.2	8.1-10.3	9.3-18.5	4.7-15.5	8.1-17.3	7.8-16.6
Winter												
# Samples	6	6	6	6	5	6	6	6	6	6	6	6
Mean/Median	11.5/11.4	8.5/8.7	9.4/8.5	8.9/8.4	11.4/11.5	8.8/8.8	9.4/9.4	9.1/9.2	17.1/17.2	13.9/14.0	15.0/14.5	14.5/14.6
Geo. Mean	11.4	8.4	9.2	8.8	11.4	8.6	9.3	9.1	17.0	13.8	14.9	14.4
Std. Dev.	0.7	1.5	2.0	1.1	0.3	2.1	1.2	0.8	1.6	2.1	1.8	1.7
Range	10.7-12.5	6.6-10.3	7.6-12.1	8.1-11.0	10.9-11.6	6.1-12.5	7.8-11.4	7.7-9.9	14.3-19.0	11.4-16.1	12.6-17.6	12.1-16.8
Yearly												
# Samples	26	26	26	26	25	26	26	26	25	25	25	25
Mean/Median	10.5/10.8	8.4/8.4	10.1/10.2	9.0/8.8	10.6/9.8	8.5/8.4	9.8/9.6	8.9/8.6	12.5/12.0	9.4/9.5	11.1/10.0	10.3/11.0
Geo. Mean	10.4	8.3	9.9	8.9	10.5	8.2	9.7	8.7	11.9	8.2	10.4	9.4
Std. Dev.	1.6	1.5	2.0	1.6	1.5	2.0	1.6	1.7	3.9	4.0	3.5	4.1
Range	8.5-13.4	5.3-10.8	6.2-13.8	6.2-12.4	8.7-14.3	5.6-12.5	7.3-14.8	6.4-14.2	5.9-19.0	1.3-16.1	3.8-17.6	3.6-16.8

*The year has been divided as follows: Spring = April-June
 Summer = July-September
 Fall = October-December
 Winter = January-March

TABLE 9. (Continued)

Sampling Period	1973-74 Sites				1974-75 Sites				1975-76 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	6	6	6	6	4	4	4	4	2	2	2	2
Mean/Median	9.1/8.2	8.4/7.9	8.0/7.9	8.1/7.6	9.5/9.3	8.9/9.0	9.6/9.1	8.3/8.7	11.8/11.8	11.0/11.0	11.7/11.7	10.9/10.9
Geo. Mean	8.9	8.2	7.9	8.0	9.4	8.9	9.5	8.2	11.8	10.9	11.6	10.8
Std. Dev.	2.2	2.0	1.4	1.4	0.8	0.3	1.2	1.4	0.6	2.5	1.6	1.7
Range	6.5-12.2	6.4-12.0	6.1-10.5	6.3-10.1	8.8-10.4	8.2-9.5	8.8-11.3	6.4-9.4	11.4-12.2	9.2-12.8	10.6-12.8	9.7-12.1
Summer												
# Samples	7	7	7	7	4	4	4	4	1	1	1	1
Mean/Median	9.4/9.4	7.1/7.1	8.8/8.7	7.4/7.5	8.4/8.5	7.4/7.0	9.2/9.2	7.9/8.0	8.6/-	7.9/-	7.7/-	7.8/-
Geo. Mean	9.3	7.1	8.7	7.4	8.4	7.4	9.2	7.8	-	-	-	-
Std. Dev.	1.2	0.7	1.5	0.4	0.5	0.9	0.6	0.9	-	-	-	-
Range	7.9-11.8	6.2-7.8	7.2-12.0	6.6-7.7	7.8-8.9	6.6-8.8	8.6-10.0	6.8-8.7	-	-	-	-
Fall												
# Samples	6	6	6	6	5	5	5	5	1	1	1	1
Mean/Median	11.7/11.3	9.7/9.6	11.1/10.1	10.9/10.0	10.8/11.2	10.0/10.8	11.5/11.6	10.5/11.4	10.1/-	6.6/-	10.4/-	10.4/-
Geo. Mean	11.7	9.6	11.0	10.8	10.8	9.9	11.4	10.4	-	-	-	-
Std. Dev.	2.0	1.3	1.9	1.9	1.4	2.0	0.7	1.8	-	-	-	-
Range	10.2-14.0	8.1-11.7	9.7-13.9	9.6-14.3	8.8-12.4	7.0-12.2	10.4-12.2	8.1-12.4	-	-	-	-
Winter												
# Samples	6	6	6	6	3	3	3	3	1	1	1	1
Mean/Median	11.2/11.0	10.4/10.6	10.6/10.6	10.8/10.9	10.9/10.8	9.7/9.6	11.8/11.4	11.1/11.1	13.5/-	12.2/-	14.4/-	13.0/-
Geo. Mean	11.1	10.3	10.6	10.8	10.9	9.7	11.8	11.1	-	-	-	-
Std. Dev.	1.0	1.3	0.9	0.9	0.3	0.8	0.9	0.1	-	-	-	-
Range	9.7-12.4	8.6-11.7	9.2-11.6	9.4-11.8	10.6-11.2	9.0-10.6	11.2-12.8	11.0-11.2	-	-	-	-
Yearly												
# Samples	25	25	25	25	16	16	16	16	5	5	5	5
Mean/Median	10.3/10.7	8.8/8.6	9.6/9.7	9.2/9.6	9.9/9.9	9.0/9.1	10.5/10.8	9.4/9.2	11.2/11.4	9.7/9.2	11.2/10.6	10.6/10.4
Geo. Mean	10.1	8.6	9.4	9.0	9.8	8.9	10.4	9.2	11.0	9.4	10.9	10.4
Std. Dev.	1.8	1.8	1.9	2.0	1.4	1.6	1.4	1.8	1.9	2.7	2.6	2.0
Range	6.5-14.0	6.2-12.0	6.1-13.9	6.3-14.3	7.8-12.4	6.6-12.2	8.6-12.8	6.4-12.4	8.6-13.5	6.6-12.8	7.7-14.4	7.8-13.0

TABLE 9. (Continued)

Sampling Period	1976-77 Sites			
	1	2	3	4
Spring*				
# Samples	1	1	1	1
Mean/Median	9.8/-	7.4/-	9.0/-	6.3/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Summer				
# Samples	1	1	1	1
Mean/Median	8.6/-	5.8/-	8.2/-	7.8/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Fall				
# Samples	1	1	1	1
Mean/Median	10.6/-	9.8/-	11.2/-	10.6/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Winter				
# Samples	1	1	1	1
Mean/Median	10.1/-	9.8/-	12.8/-	9.9/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Yearly				
# Samples	4	4	4	4
Mean/Median	9.8/10.0	8.2/8.6	10.3/10.1	8.6/8.8
Geo. Mean	9.7	8.0	10.1	8.5
Std. Dev.	0.8	2.0	2.1	2.0
Range	8.6-10.6	5.8-9.8	8.2-12.8	6.3-10.6

TABLE 10. BIOCHEMICAL OXYGEN DEMAND, mg/l; CACHE LA POUDRE RIVER

Sampling Period	1970-71 Sites				1971-72 Sites				1972-73 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	7	7	7	7	6	6	6	6	7	5	6	7
Mean/Median	2.0/1.8	5.7/6.4	6.4/6.6	5.8/5.5	2.0/1.8	2.8/2.6	4.2/3.9	4.1/3.6	5.5/6.6	6.4/6.1	7.8/8.5	5.4/6.0
Geo. Mean	1.8	4.9	5.4	4.9	1.9	2.5	3.8	3.1	4.3	6.3	7.2	4.8
Std. Dev.	0.8	2.7	3.6	3.2	0.8	1.4	2.1	3.2	3.2	1.3	2.6	2.4
Range	1.0-3.2	1.7-8.8	2.1-11.7	2.0-11.0	1.2-3.2	1.0-5.3	2.1-7.8	0.8-9.8	0.8-9.0	5.0-8.2	2.8-10.2	1.4-8.0
Summer												
# Samples	7	7	7	7	6	6	6	6	6	4	6	6
Mean/Median	1.1/1.0	3.7/3.4	4.5/4.0	3.0/2.3	1.4/1.4	4.2/5.0	4.1/3.8	3.5/3.6	1.6/0.8	4.6/4.4	4.8/4.8	3.4/3.0
Geo. Mean	1.0	3.4	4.1	2.7	1.4	3.7	3.4	3.3	0.8	4.4	4.6	3.0
Std. Dev.	0.6	1.8	2.0	1.4	0.3	1.8	2.7	1.0	2.0	1.3	1.3	1.7
Range	0.6-2.4	1.4-6.6	2.0-7.0	1.4-5.6	1.1-1.8	1.8-6.0	1.1-8.4	1.8-4.7	0.2-2.4	3.2-6.3	2.9-6.5	1.3-5.7
Fall												
# Samples	6	6	6	6	6	6	6	6	6	6	6	6
Mean/Median	2.4/2.4	5.6/5.1	5.8/5.4	4.2/4.1	3.8/3.4	5.8/5.3	5.1/5.0	4.2/3.4	3.2/2.8	5.4/5.0	4.3/4.8	3.8/3.2
Geo. Mean	2.3	5.2	5.6	3.8	3.3	5.3	4.9	3.8	2.7	5.2	3.8	3.6
Std. Dev.	0.4	2.2	1.5	1.9	2.1	2.7	1.6	2.2	1.9	1.3	2.0	1.5
Range	1.7-2.8	2.4-8.5	4.3-7.7	1.5-7.4	1.3-6.7	2.8-9.5	3.2-7.0	2.0-8.2	1.0-6.3	3.9-7.6	1.5-6.7	2.7-6.8
Winter												
# Samples	6	6	6	6	5	5	5	5	6	6	6	6
Mean/Median	2.1/2.4	7.6/7.6	6.4/6.8	5.1/4.8	4.2/3.6	>6.8/>6.9	>7.0/7.4	6.5/7.3	4.6/5.0	9.3/8.6	9.8/11.0	8.7/9.3
Geo. Mean	2.0	7.6	6.3	5.0	4.1	>6.7	>6.8	6.3	4.5	9.2	9.3	8.1
Std. Dev.	0.7	1.2	1.0	1.4	1.1	1.5	1.7	1.5	1.1	1.6	3.2	3.2
Range	1.0-2.6	6.1-9.4	5.0-7.3	3.4-7.3	3.1-5.7	5.2->9.0	4.6->8.6	4.6-7.9	3.3-6.1	7.7-11.9	4.9-12.7	4.1-11.5
Yearly												
# Samples	26	26	26	26	23	23	23	23	25	21	24	25
Mean/Median	1.9/1.9	5.6/6.3	5.7/5.6	4.5/4.4	2.8/2.2	>4.8/5.2	>5.0/5.4	4.5/4.2	3.8/3.5	6.6/6.3	6.7/5.0	5.3/5.2
Geo. Mean	1.7	4.9	5.2	3.9	2.4	>4.2	>4.4	3.9	2.6	6.2	5.9	4.5
Std. Dev.	0.8	2.4	2.3	2.3	1.6	2.4	2.2	2.3	2.6	2.3	3.2	3.0
Range	0.6-3.2	1.4-9.4	2.0-11.7	1.4-11.0	1.1-6.7	1.0-9.5	1.1->8.6	0.8-9.8	0.2-9.0	3.2-11.9	1.5-12.7	1.3-11.5

*The year has been divided as follows: Spring = April-June
 Summer = July-September
 Fall = October-December
 Winter = January-March

TABLE 10. (Continued)

Sampling Period	1973-74 Sites				1974-75 Sites				1975-76 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	6	6	6	6	4	4	4	4	2	2	2	2
Mean/Median	3.7/3.1	5.6/6.2	5.1/5.7	4.3/4.4	2.2/2.0	5.2/5.0	6.7/6.6	5.6/5.6	2.8/2.8	3.7/3.7	10.4/10.4	9.6/9.6
Geo. Mean	3.1	5.0	3.8	3.6	2.1	4.7	6.5	5.6	2.7	3.7	10.4	9.5
Std. Dev.	2.5	2.6	3.3	2.4	1.0	2.7	2.1	0.5	1.1	0.4	0.6	1.6
Range	1.7-8.4	2.3-8.2	0.7-8.6	1.3-7.0	1.4-3.6	2.4-8.5	4.8-8.8	5.0-6.3	2.0-3.6	3.4-4.0	10.0-10.8	8.5-10.7
Summer												
# Samples	7	7	7	7	4	4	4	4	1	1	1	1
Mean/Median	1.6/1.8	2.5/2.1	4.0/4.3	2.9/3.2	0.8/0.6	2.7/3.4	4.3/4.3	3.7/3.6	0.6/-	1.0/-	<0.1/-	1.5/-
Geo. Mean	1.1	2.2	4.0	2.7	0.5	2.2	4.2	3.6	-	-	-	-
Std. Dev.	1.2	1.3	0.8	1.1	0.7	1.4	1.1	1.0	-	-	-	-
Range	0.2-3.7	1.0-3.8	2.7-5.0	1.4-4.7	0.1-1.7	0.6-3.6	3.1-5.5	2.4-4.7	-	-	-	-
Fall												
# Samples	6	6	6	6	5	5	5	5	1	1	1	1
Mean/Median	3.4/3.0	3.8/3.8	5.2/4.5	4.3/4.5	4.0/3.4	8.0/7.8	9.5/9.0	7.5/7.1	0.1/-	2.6/-	3.2/-	3.8/-
Geo. Mean	2.9	3.6	4.7	4.0	2.4	7.8	9.2	7.0	-	-	-	-
Std. Dev.	1.9	1.3	2.5	1.7	4.3	2.1	2.3	3.1	-	-	-	-
Range	1.0-6.2	2.0-5.3	2.7-9.3	1.9-6.9	0.5-11.2	5.4-10.8	7.3-12.2	3.8-12.4	-	-	-	-
Winter												
# Samples	6	6	6	6	3	3	3	3	1	1	1	1
Mean/Median	2.7/2.6	8.8/9.0	8.9/9.6	7.4/6.2	7.9/10.8	9.4/9.0	11.2/11.2	9.5/11.1	9.9/-	7.0/-	6.4/-	5.6/-
Geo. Mean	2.4	8.7	8.7	6.9	5.9	9.4	11.2	9.2	-	-	-	-
Std. Dev.	1.2	1.7	2.2	2.9	5.4	1.1	0.2	2.9	-	-	-	-
Range	1.2-4.9	6.3-10.9	6.0-11.1	4.4-11.3	1.7-11.2	8.6-10.6	11.1-11.4	6.2-11.2	-	-	-	-
Yearly												
# Samples	25	25	25	25	16	16	16	16	5	5	5	5
Mean/Median	2.8/2.4	5.1/5.0	5.8/5.0	4.6/4.6	3.5/1.8	6.2/6.5	7.8/7.8	6.5/5.9	3.2/2.0	3.6/3.4	<6.1/<6.4	6.0/5.6
Geo. Mean	-2.2	4.2	4.9	4.0	1.8	5.2	7.3	5.9	1.3	3.0	<2.9	4.9
Std. Dev.	1.9	2.9	2.9	2.6	3.9	3.1	3.1	2.9	4.0	2.2	4.5	3.7
Range	0.2-8.4	1.0-10.9	0.7-11.1	1.3-11.3	0.1-11.2	0.6-10.8	3.1-12.2	2.4-12.4	0.1-9.9	1.0-7.0	<0.1-10.8	1.5-10.7

TABLE 10. (Continued)

Sampling Period	1976-77 Sites			
	1	2	3	4
Spring*				
# Samples	1	1	1	1
Mean/Median	2.2/-	2.8/-	6.6/-	4.8/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Summer				
# Samples	1	1	1	1
Mean/Median	1.0/-	4.2/-	2.2/-	4.2/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Fall				
# Samples	1	1	1	1
Mean/Median	1.2/-	9.2/-	4.1/-	9.1/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Winter				
# Samples	1	1	1	1
Mean/Median	2.3/-	6.2/-	3.0/-	3.7/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Yearly				
# Samples	4	4	4	4
Mean/Median	1.7/1.7	5.6/5.2	4.0/3.6	5.4/4.5
Geo. Mean	1.6	5.1	3.7	5.1
Std. Dev.	0.7	2.8	1.9	2.5
Range	1.0-2.3	2.8-9.2	2.2-6.6	3.7-9.1

TABLE 11. ORTHO-PHOSPHATE, mg/l; CACHE LA POUUDRE RIVER

Sampling Period	1970-71 Sites				1971-72 Sites				1972-73 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	7	7	7	7	6	6	6	6	7	7	7	7
Mean/Median	<0.26/0.30	3.30/5.00	2.31/1.60	1.83/2.20	0.21/0.20	0.61/0.28	0.63/0.56	0.59/0.44	<0.27/0.40	1.14/1.20	0.67/0.90	0.84/0.70
Geo. Mean	<0.14	2.25	1.81	1.60	0.18	0.35	0.41	0.40	<0.18	0.99	0.59	0.80
Std. Dev.	0.18	2.39	1.58	0.88	0.09	0.71	0.53	0.50	0.19	0.60	0.34	0.29
Range	0.01-0.50	0.50-5.70	0.50-4.40	0.54-2.90	0.05-0.34	0.05-0.64	0.05-1.60	0.05-1.50	0.00-0.50	0.40-2.00	0.50-1.10	0.50-1.20
Summer												
# Samples	7	7	7	7	6	6	6	6	6	6	6	6
Mean/Median	0.19/0.20	2.08/1.00	1.57/1.00	0.91/1.00	<0.11/0.08	1.12/1.18	0.64/0.46	0.47/0.50	<0.04/0.00	1.42/1.55	0.98/0.90	1.48/1.25
Geo. Mean	0.16	1.57	1.19	0.86	<0.08	0.99	0.56	0.46	<0.03	1.37	0.73	1.06
Std. Dev.	0.10	1.76	1.66	0.33	0.10	0.54	0.36	0.09	0.03	0.41	0.73	1.23
Range	0.04-0.30	0.60-5.49	0.70-5.30	0.50-1.50	0.00-0.30	0.42-1.70	0.35-1.10	0.30-0.55	0.00-0.10	0.90-1.90	0.20-2.10	0.30-3.60
Fall												
# Samples	6	6	6	6	6	6	6	6	6	6	6	6
Mean/Median	0.11/0.10	2.37/2.66	2.29/2.38	1.16/1.90	<0.05/0.00	1.33/0.76	1.14/1.05	0.89/0.70	<0.16/0.10	0.87/0.45	0.55/0.15	1.27/1.35
Geo. Mean	0.07	1.09	1.07	0.80	<0.03	1.12	1.02	0.77	<0.09	0.49	0.25	1.21
Std. Dev.	0.08	1.26	1.18	0.79	0.04	0.83	0.65	0.61	0.18	1.16	0.83	0.40
Range	0.01-0.26	0.01-3.73	0.01-3.38	0.01-2.08	0.00-0.10	0.50-2.80	0.50-2.40	0.41-2.10	0.00-0.50	0.10-3.20	0.10-2.20	0.70-1.70
Winter												
# Samples	6	6	6	6	5	6	6	6	6	6	6	6
Mean/Median	<0.09/0.02	4.96/5.02	4.22/4.08	2.95/2.89	<0.11/0.00	1.02/1.20	1.10/1.15	0.98/1.00	<0.11/0.01	2.08/1.90	1.55/1.60	1.88/1.90
Geo. Mean	<0.05	4.94	4.18	2.93	<0.05	0.59	1.10	0.98	<0.06	1.99	1.53	1.88
Std. Dev.	0.10	0.47	0.70	0.42	0.16	0.79	0.09	0.13	0.15	0.68	0.25	0.17
Range	0.00-0.25	4.21-5.60	3.60-5.50	2.40-3.60	0.00-0.40	0.10-2.10	1.00-1.20	0.80-1.10	0.00-0.40	1.30-3.00	1.20-1.80	1.70-2.00
Yearly												
# Samples	26	26	26	26	23	24	24	24	25	25	25	25
Mean/Median	<0.17/0.18	3.14/3.05	2.55/2.80	1.79/1.90	<0.12/0.10	1.02/1.03	0.88/1.00	0.74/0.65	<0.15/0.10	1.37/1.30	0.93/0.90	1.35/1.30
Geo. Mean	<0.10	2.07	1.74	1.33	<0.07	0.69	0.71	0.61	<0.08	1.07	0.64	1.16
Std. Dev.	0.13	1.93	1.61	0.96	0.12	0.73	0.50	0.44	0.17	0.83	0.67	0.73
Range	0.00-0.25	0.01-5.70	0.01-5.50	0.01-3.60	0.00-0.40	0.05-2.80	0.05-2.40	0.05-2.10	0.00-0.50	0.10-3.20	0.10-2.20	0.30-3.60

*The year has been divided as follows: Spring = April-June
Summer = July-September

Fall = October-December
Winter = January-March

TABLE 11. (Continued)

Sampling Period	1973-74 Sites				1974-75 Sites				1975-76 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	6	6	6	6	4	4	4	4	2	2	2	2
Mean/Median	<0.28/0.15	<1.47/1.15	<0.87/0.65	1.07/1.10	<0.18/0.15	0.55/0.35	0.43/0.40	1.15/1.50	<0.20/<0.20	<0.20/<0.20	0.35/0.35	<0.50/<0.50
Geo. Mean	<0.10	<0.68	<0.47	0.84	<0.16	0.40	0.36	1.00	<0.20	<0.20	0.35	<0.40
Std. Dev.	0.31	1.33	0.72	0.70	0.10	0.52	0.26	0.73	0	0	0.07	0.42
Range	0.00-0.70	0.00-3.50	0.00-1.80	0.30-2.10	<0.10-0.30	0.20-1.30	0.20-0.70	0.50-2.20	<0.20-<0.20	<0.20-<0.20	0.30-0.40	<0.20-0.80
Summer												
# Samples	7	7	7	7	4	4	4	4	1	1	1	1
Mean/Median	<0.28/0.10	3.10/0.80	0.47/0.50	1.49/1.20	<0.20/<0.20	<0.25/0.20	<0.30/<0.30	0.70/0.65	<0.20/-	<0.20/-	<0.20/-	<0.20/-
Geo. Mean	<0.12	0.93	0.33	1.22	<0.20	<0.24	<0.28	0.69	-	-	-	-
Std. Dev.	0.33	6.36	0.38	0.90	0	0.10	0.12	0.14	-	-	-	-
Range	0.00-0.80	0.10-17.50	0.10-1.10	0.40-2.60	<0.20-<0.20	<0.20-0.40	<0.20-0.40	0.60-0.90	-	-	-	-
Fall												
# Samples	6	6	6	6	5	5	5	5	1	1	1	1
Mean/Median	<0.27/0.25	<1.27/1.15	2.83/1.65	1.12/1.00	<0.20/<0.20	0.98/0.90	0.62/0.60	0.74/0.80	<0.20/-	1.70/-	1.20/-	0.90/-
Geo. Mean	<0.19	<0.67	1.51	0.90	<0.20	0.98	0.62	0.68	-	-	-	-
Std. Dev.	0.17	1.03	3.73	0.69	0	0.11	0.04	0.30	-	-	-	-
Range	0.00-0.50	0.00-3.10	0.20-10.30	0.20-2.30	<0.20-0.20	0.90-1.10	0.60-0.70	0.30-1.10	-	-	-	-
Winter												
# Samples	6	6	6	6	3	3	3	3	1	1	1	1
Mean/Median	<0.36/0.15	1.40/1.25	1.05/1.05	1.17/1.05	<0.20/<0.20	1.19/1.10	0.70/0.60	1.13/1.10	<0.01/-	0.22/-	0.19/-	0.10/-
Geo. Mean	<0.12	1.33	1.03	1.15	<0.20	1.23	0.69	1.04	-	-	-	-
Std. Dev.	0.61	0.50	0.24	0.24	0	0.42	0.17	0.55	-	-	-	-
Range	0.00-1.60	1.00-2.30	0.80-1.50	1.00-1.60	<0.20-<0.20	0.90-1.70	0.60-0.90	0.60-1.70	-	-	-	-
Yearly												
# Samples	25	25	25	25	16	16	16	16	5	5	5	5
Mean/Median	<0.29/0.20	<1.86/1.10	<1.27/1.10	1.22/1.10	<0.19/<0.20	<0.74/0.90	<0.51/0.60	0.91/0.90	<0.16/<0.20	<0.52/0.22	<0.46/0.30	<0.44/<0.20
Geo. Mean	<0.13	<0.87	<0.68	1.02	<0.19	<0.54	<0.45	0.81	<0.11	<0.34	<0.35	<0.31
Std. Dev.	0.36	3.37	1.98	0.67	0.04	0.46	0.21	0.47	0.08	0.66	0.42	0.38
Range	0.00-1.60	0.00-17.50	0.00-10.30	0.20-2.60	0.10-0.30	<0.20-1.70	<0.20-0.90	0.30-2.20	<0.01-<0.20	<0.20-1.70	0.19-1.20	0.10-0.90

TABLE II. (Continued)

Sampling Period	1976-77 Sites			
	1	2	3	4
Spring*				
# Samples	1	1	1	1
Mean/Median	<0.02/-	0.09/-	0.47/-	0.61/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Summer				
# Samples	1	1	1	1
Mean/Median	<0.02/-	0.05/-	0.20/-	0.16/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Fall				
# Samples	1	1	1	1
Mean/Median	0.04/-	1.27/-	1.57/-	1.06/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Winter				
# Samples	1	1	1	1
Mean/Median	<0.02/-	3.89/-	2.53/-	1.65/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Yearly				
# Samples	4	4	4	4
Mean/Median	<0.02/<0.02	1.32/0.68	1.09/0.92	0.87/0.84
Geo. Mean	<0.02	0.39	0.74	0.64
Std. Dev.	0.01	1.80	0.96	0.64
Range	<0.02-0.04	0.05-3.89	0.02-2.53	0.16-1.65

TABLE 12. TOTAL PHOSPHORUS, mg/l; CACHE LA POUDBRE RIVER

Sampling Period	1973-74 Sites				1974-75 Sites				1975-76 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	-	-	-	-	4	4	4	4	2	2	2	2
Mean/Median	-	-	-	-	<0.22/<0.20	1.52/1.15	1.32/1.40	3.08/2.40	<0.20/<0.20	0.55/0.55	1.45/1.45	1.95/1.95
Geo. Mean	-	-	-	-	<0.22	1.30	1.25	2.74	<0.20	0.52	1.24	1.75
Std. Dev.	-	-	-	-	0.05	1.08	0.49	1.84	0	0.21	1.06	1.20
Range	-	-	-	-	<0.20-0.30	0.70-3.10	0.70-1.80	1.70-5.80	<0.20	0.40-0.70	0.70-2.20	1.10-2.80
Summer												
# Samples	-	-	-	-	4	4	4	4	1	1	1	1
Mean/Median	-	-	-	-	<0.25/<0.20	<0.72/<0.70	0.90/0.85	2.52/2.70	<0.20/-	1.40/-	0.70/-	0.70/-
Geo. Mean	-	-	-	-	<0.24	<0.60	0.88	2.41	-	-	-	-
Std. Dev.	-	-	-	-	0.10	0.45	0.24	0.81	-	-	-	-
Range	-	-	-	-	<0.20-0.40	<0.20-1.30	0.70-1.20	1.40-3.30	-	-	-	-
Fall												
# Samples	6	6	6	6	5	5	5	5	1	1	1	1
Mean/Median	<0.57/<0.35	1.62/1.00	<0.93/<1.00	1.05/1.15	<0.20/<0.20	3.10/3.00	1.94/1.90	2.84/2.80	<0.20/-	3.50/-	2.80/-	2.20/-
Geo. Mean	<0.42	0.94	<0.76	0.86	<0.20	3.09	1.92	2.75	-	-	-	-
Std. Dev.	0.48	2.08	0.53	0.59	0	0.33	0.30	0.79	-	-	-	-
Range	<0.20-1.30	0.20-5.80	<0.20-1.60	0.20-2.00	<0.20-0.20	2.80-3.50	1.60-2.40	1.80-4.00	-	-	-	-
Winter												
# Samples	6	6	6	6	3	3	3	3	1	1	1	1
Mean/Median	<0.28/<0.20	2.77/2.50	2.57/2.60	2.67/2.70	<0.20/<0.20	3.73/3.20	2.87/2.90	3.53/3.60	0.17/-	0.25/-	0.23/-	0.13/-
Geo. Mean	<0.26	2.63	2.53	2.59	<0.20	3.63	2.82	3.51	-	-	-	-
Std. Dev.	0.13	1.01	0.48	0.71	0	1.10	0.65	0.50	-	-	-	-
Range	<0.20-0.50	1.60-4.60	1.80-3.20	1.80-3.60	<0.20	3.00-5.00	2.20-3.50	3.00-4.00	-	-	-	-
Yearly												
# Samples	-	-	-	-	16	16	16	16	5	5	5	5
Mean/Median	-	-	-	-	<0.22/<0.20	<2.23/<2.80	1.70/1.70	2.95/2.80	<0.20/<0.20	1.25/0.70	1.33/0.70	1.59/1.10
Geo. Mean	-	-	-	-	<0.21	<1.70	1.52	2.78	<0.19	0.81	0.93	0.91
Std. Dev.	-	-	-	-	0.05	1.38	0.80	1.07	0.01	1.33	1.11	1.09
Range	-	-	-	-	<0.20-0.40	<0.20-5.00	0.70-3.50	1.40-5.80	<0.17-<0.20	0.25-3.50	0.23-2.80	0.13-2.80

*The year has been divided as follows: Spring = April-June
 Summer = July-September
 Fall = October-December
 Winter = January-March

TABLE 12. (Continued)

Sampling Period	1976-77 Sites			
	1	2	3	4
Spring*				
# Samples	1	1	1	1
Mean/Median	0.05/-	0.26/-	1.08/-	1.23/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Summer				
# Samples	1	1	1	1
Mean/Median	0.02/-	0.70/-	0.20/-	0.33/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Fall				
# Samples	1	1	1	1
Mean/Median	1.15/-	3.89/-	2.72/-	2.96/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Winter				
# Samples	1	1	1	1
Mean/Median	0.02/-	4.32/-	2.79/-	2.04/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Yearly				
# Samples	4	4	4	4
Mean/Median	0.31/0.04	2.29/2.30	1.70/1.90	1.64/1.64
Geo. Mean	0.07	1.32	1.13	1.25
Std. Dev.	0.56	2.11	1.27	1.12
Range	0.02-1.15	0.26-4.32	0.20-2.79	0.33-2.96

TABLE 13. TOTAL KJELDAHL NITROGEN, mg/l; CACHE LA POUDDRE RIVER

Sampling Period	1972-73 Sites				1973-74 Sites				1974-75 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	-	-	7	7	-	-	6	6	4	4	4	4
Mean/Median	-	-	6.5/1.8	1.8/1.3	-	-	1.6/1.4	1.4/0.7	<0.2/<0.2	<0.9/0.6	<0.7/0.6	0.5/0.5
Geo. Mean	-	-	2.3	1.5	-	-	1.3	1.0	<0.1	<0.5	<0.5	0.4
Std. Dev.	-	-	13.2	1.4	-	-	1.1	1.4	0.1	1.0	0.6	0.3
Range	-	-	0.8-36.4	0.7-4.6	-	-	0.6-3.3	0.5-4.2	<0.1-0.3	<0.1-2.4	<0.1-1.5	0.2-0.8
Summer												
# Samples	-	-	6	6	-	-	6	7	4	4	4	4
Mean/Median	-	-	4.7/3.9	1.8/2.0	-	-	<0.6/<0.6	1.0/0.8	0.2/0.2	0.9/0.7	0.8/0.9	0.8/0.8
Geo. Mean	-	-	3.9	1.6	-	-	<0.5	0.9	0.1	0.5	0.8	0.7
Std. Dev.	-	-	3.4	0.8	-	-	0.4	0.4	0.1	0.9	0.3	0.3
Range	-	-	1.3-11.2	0.8-2.8	-	-	<0.1-1.2	0.5-1.6	0.1-0.3	0.1-2.0	0.5-1.1	0.4-1.1
Fall												
# Samples	-	-	6	6	-	-	6	6	5	5	5	5
Mean/Median	-	-	1.0/1.0	1.4/1.0	-	-	1.8/1.7	1.9/2.0	<1.0/<1.0	13.8/15.9	12.5/13.3	8.0/8.5
Geo. Mean	-	-	0.9	1.2	-	-	1.6	1.2	<1.0	12.8	12.0	7.9
Std. Dev.	-	-	0.5	1.0	-	-	1.0	1.7	0	4.9	3.8	1.1
Range	-	-	0.5-1.8	0.7-3.5	-	-	0.7-3.5	0.2-4.8	<1.0	5.5-17.8	7.2-16.6	6.2-8.8
Winter												
# Samples	-	-	6	6	6	6	6	6	3	3	2	3
Mean/Median	-	-	3.6/3.4	2.4/2.4	<0.5/<0.4	>4.0/>2.9	>3.0/>3.0	>2.0/>2.0	1.1/1.1	19.8/19.8	13.9/13.9	13.8/13.9
Geo. Mean	-	-	3.5	2.3	<0.3	>3.3	>3.0	>2.0	1.1	18.9	13.9	13.7
Std. Dev.	-	-	0.9	0.7	0.4	3.1	0.7	0.4	0.2	7.5	1.0	1.5
Range	-	-	2.8-4.5	1.3-3.6	<0.1-1.3	>2.1->10.1	>2.0->4.0	>1.5->2.5	1.0-1.3	12.4-27.3	13.2-14.6	12.2-15.2
Yearly												
# Samples	-	-	25	25	-	-	24	25	16	16	15	16
Mean/Median	-	-	4.1/2.0	1.8/1.4	-	-	>1.7/1.8	>1.5/1.5	<0.6/0.6	<8.5/4.0	<6.4/1.9	5.4/3.6
Geo. Mean	-	-	2.3	1.6	-	-	>1.3	>1.2	<0.4	<2.7	<2.5	2.3
Std. Dev.	-	-	7.1	1.0	-	-	1.2	1.1	0.5	8.9	6.6	5.4
Range	-	-	0.5-36.4	0.7-4.6	-	-	<0.1->4.0	0.2-4.8	<0.1-1.3	<0.1-27.3	<0.1-16.6	0.2-15.2

*The year has been divided as follows: Spring = April-June
 Summer = July-September
 Fall = October-December
 Winter = January-March

TABLE 13. (Continued)

Sampling Period	1975-76 Sites				1976-77 Sites			
	1	2	3	4	1	2	3	4
Spring*								
# Samples	2	2	2	2	1	1	1	1
Mean/Median	<1.0/<1.0	6.8/6.8	14.2/14.2	11.0/11.0	0.4/-	0.7/-	3.9/-	3.6/-
Geo. Mean	<1.0	6.8	13.3	9.9	-	-	-	-
Std. Dev.	0	1.0	6.7	6.9	-	-	-	-
Range	<1.0	6.1-7.5	9.4-18.9	6.2-15.9	-	-	-	-
Summer								
# Samples	1	1	1	1	1	1	1	1
Mean/Median	1.1/-	7.1/-	2.8/-	2.5/-	0.1/-	2.9/-	0.8/-	0.8/-
Geo. Mean	-	-	-	-	-	-	-	-
Std. Dev.	-	-	-	-	-	-	-	-
Range	-	-	-	-	-	-	-	-
Fall								
# Samples	1	1	1	1	1	1	1	1
Mean/Median	3.9/-	16.8/-	9.4/-	7.0/-	0.2/-	3.2/-	1.6/-	5.6/-
Geo. Mean	-	-	-	-	-	-	-	-
Std. Dev.	-	-	-	-	-	-	-	-
Range	-	-	-	-	-	-	-	-
Winter								
# Samples	1	1	1	1	1	1	1	1
Mean/Median	2.1/-	5.3/-	4.4/-	3.8/-	0.5/-	2.8/-	2.3/-	3.5/-
Geo. Mean	-	-	-	-	-	-	-	-
Std. Dev.	-	-	-	-	-	-	-	-
Range	-	-	-	-	-	-	-	-
Yearly								
# Samples	5	5	5	5	4	4	4	4
Mean/Median	<1.8/1.1	8.6/7.1	9.0/9.4	7.1/6.2	0.3/0.3	2.4/2.8	2.2/2.0	3.4/3.6
Geo. Mean	<1.6	7.8	7.3	5.8	0.4	2.1	1.8	2.7
Std. Dev.	1.3	4.7	6.3	5.3	0.2	1.1	1.3	2.0
Range	<1.0-3.9	5.3-16.8	2.8-18.9	2.5-15.9	0.1-0.5	0.7-3.2	0.8-3.9	0.8-5.6

TABLE 14. AMMONIA NITROGEN, mg/l; CACHE LA POUVRE RIVER

Sampling Period	1970-71 Sites				1971-72 Sites				1972-73 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	7	7	7	7	6	6	6	6	7	7	7	7
Mean/Median	<0.1/0.0	<1.0/1.4	<0.4/0.3	<0.3/0.1	0.2/0.2	0.4/0.3	0.3/0.3	0.4/0.4	0.1/0.1	1.8/2.1	0.7/0.7	0.5/0.5
Geo. Mean	<0.1	<0.6	<0.3	<0.2	0.2	0.4	0.3	0.3	0.1	1.2	0.6	0.5
Std. Dev.	0	1.0	0.3	0.4	0.1	0.3	0.1	0.1	0	1.5	0.5	0.1
Range	0.0-0.2	0.0-2.2	0.0-0.9	0.0-1.1	0.1-0.4	0.2-0.9	0.2-0.5	0.2-0.5	0.1-0.2	0.2-3.7	0.2-1.5	0.3-0.7
Summer												
# Samples	7	7	7	7	6	6	6	6	6	6	6	6
Mean/Median	<0.1/<0.1	1.4/0.9	0.3/0.3	0.3/0.3	<0.2/0.2	2.4/3.0	0.6/0.5	0.7/0.6	<0.1/<0.1	3.5/2.7	0.8/0.4	0.8/0.7
Geo. Mean	<0.1	1.0	0.3	0.3	<0.2	1.8	0.4	0.6	<0.1	3.2	0.4	0.7
Std. Dev.	0.1	1.0	0.1	0.1	0.1	1.2	0.6	0.4	0	1.5	1.1	0.2
Range	0.0-0.3	0.4-3.2	0.2-0.4	0.2-0.4	0.0-0.4	0.2-3.3	0.1-1.9	0.4-1.5	0.0/<0.1	2.3-5.6	0.1-3.1	0.5-1.2
Fall												
# Samples	6	6	6	6	6	6	6	6	6	6	6	6
Mean/Median	<0.1/0.1	3.6/1.8	1.3/1.2	0.7/0.6	<0.1/0.1	2.6/3.1	1.6/1.4	1.0/0.9	<0.1/0.0	1.6/0.6	1.0/0.4	0.6/0.5
Geo. Mean	<0.1	2.5	1.3	0.6	<0.1	2.0	1.2	0.8	<0.1	1.0	0.6	0.6
Std. Dev.	0	4.0	0.3	0.4	0	1.5	1.1	0.7	0	2.2	1.1	0.2
Range	0.0-0.1	1.2-11.5	0.9-1.9	0.2-1.3	0.0-0.1	0.4-4.0	0.5-3.3	0.2-1.9	0.0-0.2	0.6-6.0	0.3-3.2	0.4-4.9
Winter												
# Samples	6	6	6	6	5	6	6	6	6	6	6	6
Mean/Median	<0.1/0.1	3.4/3.6	2.7/2.6	1.7/1.5	<0.1/0.1	2.8/2.8	2.5/2.7	1.8/1.9	<0.1/0.0	3.5/3.4	2.8/2.9	2.0/2.2
Geo. Mean	<0.1	3.4	2.7	1.7	<0.1	2.8	2.4	1.6	<0.1	3.4	2.8	1.9
Std. Dev.	0	1.0	0.5	0.5	0	0.4	0.8	1.0	0	0.9	0.6	0.7
Range	0.0-0.1	2.4-4.3	2.1-3.5	1.3-2.4	0.0-0.2	2.4-3.3	1.1-3.4	0.6-3.4	0.0-0.1	2.5-4.8	2.1-3.4	1.1-2.8
Yearly												
# Samples	26	26	26	26	23	24	24	24	25	25	25	25
Mean/Median	<0.1/<0.1	<2.3/1.7	<1.1/0.7	<0.7/0.4	<0.2/0.1	2.1/2.6	1.3/0.5	1.0/0.6	<0.1/0.0	2.6/2.7	1.3/0.9	1.0/0.7
Geo. Mean	<0.1	<1.4	<0.7	<0.4	<0.1	1.4	0.8	0.7	<0.1	1.9	0.8	0.8
Std. Dev.	0	2.3	1.0	0.7	0.1	1.3	1.1	0.8	0	1.7	1.2	0.7
Range	0.0-0.3	0.0-11.5	0.0-3.5	0.0-2.4	0.0-0.4	0.2-4.0	0.1-3.4	0.2-3.4	0.0-0.2	0.2-6.0	0.1-3.4	0.3-4.9

*The year has been divided as follows: Spring = April-June
 Summer = July-September
 Fall = October-December
 Winter = January-March

TABLE 14. (Continued)

Sampling Period	1973-74 Sites				1974-75 Sites				1975-76 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	6	6	6	6	4	4	4	4	2	2	2	2
Mean/Median	<0.2/0.1	<3.0/1.4	1.2/0.6	0.6/0.5	0.2/0.2	2.4/1.4	2.6/1.0	1.5/1.4	<0.2/<0.2	5.0/5.0	4.3/4.3	2.7/2.7
Geo. Mean	<0.1	<1.1	0.7	0.5	0.2	0.9	0.9	1.1	<0.2	5.0	4.2	2.6
Std. Dev.	0.1	3.5	1.4	0.4	0.1	3.1	3.7	1.2	0.1	1.0	1.6	0.8
Range	0.0-0.3	0.0-8.3	0.1-3.5	0.2-1.1	0.1-0.4	0.1-6.9	0.1-8.1	0.3-2.8	<0.1-0.3	4.4-5.7	3.2-5.4	2.1-3.3
Summer												
# Samples	7	7	7	7	4	4	4	4	1	1	1	1
Mean/Median	<0.2/0.0	0.7/0.6	0.4/0.4	0.7/0.6	<0.2/<0.1	<0.4/<0.4	<0.2/<0.2	<0.3/<0.3	0.7/-	4.4/-	1.6/-	1.1/-
Geo. Mean	<0.1	0.7	0.3	0.6	<0.1	<0.3	<0.2	<0.2	-	-	-	-
Std. Dev.	0.3	0.4	0.3	0.4	0.1	0.3	0.1	0.3	-	-	-	-
Range	0.0-0.8	0.3-1.3	0.1-1.1	0.3-1.3	<0.1-0.3	<0.1-0.7	<0.1-0.3	<0.1-0.6	-	-	-	-
Fall												
# Samples	6	6	6	6	5	5	5	5	1	1	1	1
Mean/Median	<0.2/<0.2	1.6/1.6	1.5/1.0	1.2/1.4	<0.2/0.1	9.3/10.0	9.8/10.0	5.9/6.0	0.4/-	16.7/-	8.5/-	4.1/-
Geo. Mean	<0.1	0.9	0.7	1.1	<0.2	8.3	9.2	5.8	-	-	-	-
Std. Dev.	0.1	1.4	1.6	0.4	0.2	4.6	3.3	1.4	-	-	-	-
Range	0.0-0.4	0.1-3.0	0.1-3.7	0.6-1.5	<0.1-0.5	4.3-15.0	4.5-13.5	4.5-7.9	-	-	-	-
Winter												
# Samples	6	6	6	6	3	3	3	3	1	1	1	1
Mean/Median	<0.2/0.2	8.8/12.6	9.1/9.2	5.1/6.0	0.4/0.4	13.7/16.5	11.9/10.2	9.7/8.1	<0.1/-	0.2/-	0.1/-	<0.1/-
Geo. Mean	<0.2	7.5	7.9	4.3	0.4	13.0	11.4	9.4	-	-	-	-
Std. Dev.	0.2	4.9	4.8	2.7	0.1	5.1	4.6	3.3	-	-	-	-
Range	0.0-0.7	2.9-14.5	3.7-14.9	1.2-7.9	0.3-0.4	7.8-16.9	8.4-17.1	7.6-13.5	-	-	-	-
Yearly												
# Samples	25	25	25	25	16	16	16	16	5	5	5	5
Mean/Median	<0.2/0.1	<3.4/2.4	3.0/1.1	1.8/1.1	<0.2/<0.2	<6.2/4.7	<6.0/6.3	<4.1/3.6	<0.3/<0.3	6.3/4.4	3.8/3.2	<2.1/2.1
Geo. Mean	<0.1	<1.4	1.0	1.1	<0.2	<2.2	<1.9	<1.9	<0.2	3.3	1.9	<1.3
Std. Dev.	0.2	4.3	4.3	2.3	0.1	6.2	5.7	3.9	0.2	6.2	3.3	1.6
Range	0.0-0.8	0.0-14.5	0.1-14.9	0.2-7.9	<0.1-0.5	<0.1-16.9	<0.1-17.1	<0.1-13.5	<0.1-0.7	0.2-16.7	0.1-8.5	<0.1-4.1

TABLE 14. (Continued)

Sampling Period	1976-77 Sites			
	1	2	3	4
Spring*				
# Samples	1	1	1	1
Mean/Median	<0.1/-	0.1/-	2.3/-	1.6/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Summer				
# Samples	1	1	1	1
Mean/Median	<0.1/-	2.6/-	<0.1/-	<0.1/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Fall				
# Samples	1	1	1	1
Mean/Median	<0.1/-	0.6/-	0.3/-	2.6/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Winter				
# Samples	1	1	1	1
Mean/Median	<0.1/-	1.1/-	0.1/-	2.3/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Yearly				
# Samples	4	4	4	4
Mean/Median	<0.1/<0.1	1.1/0.8	<0.7/0.2	<1.6/2.0
Geo. Mean	≈0.1	0.6	<0.3	<1.0
Std. Dev.	0	1.1	1.1	1.1
Range	<0.1-<0.1	0.1-2.6	<0.1-2.3	<0.1-2.6

TABLE 15. NITRATE NITROGEN, mg/l; CACHE LA POUDDRE RIVER

Sampling Period	1974-75 Sites				1975-76 Sites				1976-77 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	3	3	3	3	2	2	2	2	1	1	1	1
Mean/Median	0.70/0.10	10.43/3.00	2.00/2.00	7.93/7.30	<0.10/<0.10	3.18/3.18	0.65/0.65	1.22/1.22	0.02/-	1.87/-	0.70/-	1.58/-
Geo. Mean	0.26	4.80	1.97	7.40	<0.06	3.16	0.58	1.20	-	-	-	-
Std. Dev.	0.98	14.28	0.40	3.59	0.13	0.51	0.41	0.35	-	-	-	-
Range	0.10-1.80	1.40-26.90	1.60-2.40	4.70-11.80	<0.10-0.20	2.82-3.54	0.36-0.94	0.98-1.47	-	-	-	-
Summer												
# Samples	4	4	4	4	1	1	1	1	1	1	1	1
Mean/Median	0.85/1.00	12.72/15.55	5.30/6.00	16.05/17.15	<0.01/-	1.00/-	0.45/-	1.35/-	0.22/-	5.25/-	1.83/-	2.54/-
Geo. Mean	0.60	8.01	3.67	10.69	-	-	-	-	-	-	-	-
Std. Dev.	0.52	8.04	3.46	11.14	-	-	-	-	-	-	-	-
Range	0.10-1.30	0.90-18.90	0.60-8.60	1.60-28.30	-	-	-	-	-	-	-	-
Fall												
# Samples	5	5	5	5	1	1	1	1	1	1	1	1
Mean/Median	0.23/0.23	1.24/0.86	1.30/1.50	2.32/2.50	0.03/-	0.10/-	0.11/-	0.16/-	0.26/-	7.02/-	5.10/-	4.35/-
Geo. Mean	0.20	1.09	1.07	2.22	-	-	-	-	-	-	-	-
Std. Dev.	0.12	0.73	0.75	0.69	-	-	-	-	-	-	-	-
Range	0.09-0.42	0.57-2.34	0.33-2.15	1.29-3.17	-	-	-	-	-	-	-	-
Winter												
# Samples	3	3	3	3	1	1	1	1	1	1	1	1
Mean/Median	0.28/0.21	0.80/0.84	0.85/0.78	1.51/1.50	0.22/-	0.30/-	0.23/-	0.31/-	0.37/-	8.10/-	5.50/-	5.50/-
Geo. Mean	0.24	0.77	0.84	1.50	-	-	-	-	-	-	-	-
Std. Dev.	0.19	0.27	0.14	0.18	-	-	-	-	-	-	-	-
Range	0.14-0.49	0.51-1.05	0.75-1.01	1.33-1.69	-	-	-	-	-	-	-	-
Yearly												
# Samples	15	15	15	15	5	5	5	5	4	4	4	4
Mean/Median	0.49/0.23	6.05/1.40	2.42/1.60	6.94/2.52	<0.09/0.03	1.55/1.00	0.42/0.36	0.85/0.98	0.22/0.24	5.56/6.14	3.28/3.46	3.49/3.44
Geo. Mean	0.27	2.33	1.60	3.97	<0.04	0.79	0.33	0.63	0.14	4.86	2.45	3.13
Std. Dev.	0.53	8.61	2.48	8.15	0.11	1.54	0.32	0.60	0.15	2.73	2.38	1.76
Range	0.09-1.80	0.51-26.90	0.33-8.60	1.29-28.30	<0.01-0.22	0.10-3.54	0.10-0.94	0.16-1.47	0.02-0.37	1.87-8.10	0.70-5.50	1.58-5.50

*The year has been divided as follows: Spring = April-June
Summer = July-September
Fall = October-December
Winter = January-March

TABLE 16. SULFATES, mg/l; CACHE LA POUDRE RIVER

Sampling Period	1971-72 Sites				1972-73 Sites				1973-74 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	-	-	-	-	2	2	7	7	6	6	6	6
Mean/Median	-	-	-	-	21/21	180/180	152/177	195/213	<14/<10	115/16	146/122	166/151
Geo. Mean	-	-	-	-	19	173	127	172	<11	34	52	96
Std. Dev.	-	-	-	-	8	49	66	71	10	145	134	133
Range	-	-	-	-	13-28	131-229	25-218	42-288	5-36	8-328	3-335	15-328
Summer												
# Samples	-	-	-	-	-	-	6	6	5	5	7	7
Mean/Median	-	-	-	-	-	-	170/157	220/234	<10/<10	163/181	147/143	188/169
Geo. Mean	-	-	-	-	-	-	166	210	<10	150	145	180
Std. Dev.	-	-	-	-	-	-	38	53	1	45	26	48
Range	-	-	-	-	-	-	128-232	111-275	8-11	75-203	115-193	115-275
Fall												
# Samples	-	-	-	-	-	-	6	6	1	1	6	6
Mean/Median	-	-	-	-	-	-	216/208	227/229	33/-	279/-	344/304	588/622
Geo. Mean	-	-	-	-	-	-	211	220	-	-	325	560
Std. Dev.	-	-	-	-	-	-	52	59	-	-	126	162
Range	-	-	-	-	-	-	160-323	136-303	-	-	222-599	376-833
Winter												
# Samples	-	-	2	2	-	-	6	6	5	5	5	5
Mean/Median	-	-	216/216	262/262	-	-	162/164	225/216	<22/24	662/564	794/614	1003/809
Geo. Mean	-	-	208/-	258/-	-	-	152	220	<20	580	660	900
Std. Dev.	-	-	57	44	-	-	51	51	8	364	549	531
Range	-	-	159/273	217/306	-	-	70-232	190-278	<10-34	326-1350	376-1873	598-2053
Yearly												
# Samples	-	-	-	-	-	-	25	25	17	17	24	24
Mean/Median	-	-	-	-	-	-	174/177	216/227	<16/11	300/203	331/234	452/320
Geo. Mean	-	-	-	-	-	-	161	200	<14	140	190	290
Std. Dev.	-	-	-	-	-	-	58	58	10	322	367	423
Range	-	-	-	-	-	-	25-323	42-303	5-36	8-1350	3-1873	15-2053

*The year has been divided as follows: Spring = April-June
 Summer = July-September
 Fall = October-December
 Winter = January-March

TABLE 16. (Continued)

Sampling Period	1974-75 Sites				1975-76 Sites				1976-77 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	4	4	4	4	2	2	2	2	1	1	1	1
Mean/Median	<5/3	469/234	430/318	519/433	120/120	1677/1677	991/991	1152/1152	13/-	717/-	348/-	554/-
Geo. Mean	<3	210	272	481	107	1674	981	1146	-	-	-	-
Std. Dev.	5	442	364	218	52	84	137	118	-	-	-	-
Range	<1-13	38-1370	54-1030	326-884	67-172	1592-1761	854-1128	1034-1270	-	-	-	-
Summer												
# Samples	4	4	4	4	1	1	1	1	1	1	1	1
Mean/Median	<3/3	919/720	379/326	707/629	<10/-	822/-	472/-	706/-	13/-	553/-	456/-	618/-
Geo. Mean	<2	800	366	649	-	-	-	-	-	-	-	-
Std. Dev.	1	519	108	300	-	-	-	-	-	-	-	-
Range	<1-4	442-1796	299-564	376-1195	-	-	-	-	-	-	-	-
Fall												
# Samples	5	5	5	5	1	1	1	1	1	1	1	1
Mean/Median	<40/30	696/850	686/670	740/810	48/-	536/-	494/-	692/-	20/-	65/-	63/-	65/-
Geo. Mean	<31	663	668	654	-	-	-	-	-	-	-	-
Std. Dev.	26	202	157	290	-	-	-	-	-	-	-	-
Range	<10-80	430-880	500-880	220-1100	-	-	-	-	-	-	-	-
Winter												
# Samples	3	3	3	3	1	1	1	1	1	1	1	1
Mean/Median	110/114	898/606	876/532	1061/1066	65/-	385/-	706/-	652/-	76/-	520/-	581/-	685/-
Geo. Mean	110	756	783	1033	-	-	-	-	-	-	-	-
Std. Dev.	25	543	426	238	-	-	-	-	-	-	-	-
Range	77-138	429-1659	532-1491	766-1350	-	-	-	-	-	-	-	-
Yearly												
# Samples	16	16	16	16	5	5	5	5	4	4	4	4
Mean/Median	<35/12	733/654	581/531	737/738	<72/65	1019/822	731/706	871/706	30/16	464/536	362/402	480/586
Geo. Mean	<12	617	473	659	<51	862	692	840	25	340	276	351
Std. Dev.	43	488	339	321	60	623	272	271	31	279	221	282
Range	<1-138	38-1796	54-1491	220-1350	<10-172	385-1761	472-1128	652-1270	13-76	65-717	63-581	65-685

TABLE 17. CHLORIDE, mg/l; CACHE LA POUDDRE RIVER

Sampling Period	1974-75 Sites				1975-76 Sites				1976-77 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	3	3	3	3	2	2	2	2	1	1	1	1
Mean/Median	<1.4/<0.4	8.8/3.5	13.4/10.7	20.9/16.0	2.8/2.8	29.5/29.5	28.2/28.2	34.6/34.6	<0.4/-	23.5/-	24.0/-	26.5/-
Geo. Mean	<0.8	5.3	9.0	19.5	2.8	29.5	28.0	34.6	-	-	-	-
Std. Dev.	1.7	10.6	12.5	10.1	0.9	1.4	4.4	2.0	-	-	-	-
Range	<0.4-3.4	2.0-21.0	2.5-27.0	14.2-32.5	2.2-3.5	28.5-30.5	25.1-31.3	33.2-36.0	-	-	-	-
Summer												
# Samples	4	4	4	4	1	1	1	1	1	1	1	1
Mean/Median	<6.8/<0.4	19.6/20.3	11.4/12.1	19.6/18.6	<0.4/-	12.2/-	6.7/-	13.4/-	<0.4/-	48.0/-	20.0/-	29.0/-
Geo. Mean	<1.1	19.4	6.3	18.9	-	-	-	-	-	-	-	-
Std. Dev.	12.7	3.0	8.3	6.0	-	-	-	-	-	-	-	-
Range	<0.4-25.8	15.4-22.1	0.5-20.8	13.9-27.3	-	-	-	-	-	-	-	-
Fall												
# Samples	5	5	5	5	1	1	1	1	1	1	1	1
Mean/Median	<1.2/<0.4	23.7/23.3	26.3/21.8	27.7/24.3	0.8/-	26.8/-	23.3/-	26.3/-	<0.4/-	24.6/-	26.1/-	31.7/-
Geo. Mean	<0.8	23.2	24.7	27.0	-	-	-	-	-	-	-	-
Std. Dev.	1.2	5.5	11.7	7.2	-	-	-	-	-	-	-	-
Range	<0.4-3.0	17.9-32.8	18.9-47.1	21.8-39.7	-	-	-	-	-	-	-	-
Winter												
# Samples	3	3	3	3	1	1	1	1	1	1	1	1
Mean/Median	1.8/2.0	25.9/22.8	27.8/30.3	27.3/27.8	1.0/-	13.2/-	13.7/-	14.7/-	1.7/-	28.0/-	27.4/-	31.6/-
Geo. Mean	1.3	25.4	27.4	27.1	-	-	-	-	-	-	-	-
Std. Dev.	1.3	6.8	5.7	4.3	-	-	-	-	-	-	-	-
Range	0.4-3.0	21.3-33.7	21.3-31.8	22.8-31.3	-	-	-	-	-	-	-	-
Yearly												
# Samples	15	15	15	15	5	5	5	5	4	4	4	4
Mean/Median	<2.9/<0.4	20.1/21.3	20.0/21.3	24.1/24.3	<1.6/1.0	22.2/26.8	20.0/23.3	24.7/26.3	<0.7/<0.4	31.0/26.3	24.4/25.1	29.7/30.3
Geo. Mean	<1.0	16.8	14.3	20.8	<1.2	20.6	17.6	22.8	<0.6	29.7	24.2	29.6
Std. Dev.	6.5	8.5	11.8	7.4	1.2	8.8	9.8	10.4	0.6	11.5	3.2	2.5
Range	<0.4-25.8	2.0-33.7	0.5-47.1	13.9-39.7	<0.4-3.5	12.2-30.5	6.7-31.3	13.4-36.0	<0.4-1.7	23.5-48.0	20.0-27.4	26.5-31.7

*The year has been divided as follows: Spring = April-June
Summer = July-September
Fall = October-December
Winter = January-March

TABLE 18. ALKALINITY, as mg/l CaCO₃; CACHE LA POUDRE RIVER

Sampling Period	1974-75 Sites				1975-76 Sites				1976-77 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	2	2	2	2	2	2	2	2	2	1	1	1
Mean/Median	0.4/0.4	0.6/0.6	0.6/0.6	1.1/1.1	148/148	293/293	254/254	262/262	27/-	224/-	234/-	250/-
Geo. Mean	0.3	0.5	0.6	1.1	147	293	254	262	-	-	-	-
Std. Dev.	0.1	0.2	0.3	0.1	16	16	9	8	-	-	-	-
Range	0.3-0.4	0.4-0.7	0.4-0.8	1.0-1.2	136/159	282/304	248/261	257/268	-	-	-	-
Summer												
# Samples	4	4	4	4	-	1	1	1	1	1	1	1
Mean/Median	39/25	278/231	231/172	290/234	-	157/-	121/-	167/-	41/-	235/-	215/-	265/-
Geo. Mean	34	258	210	271	-	-	-	-	-	-	-	-
Std. Dev.	24	134	127	137	-	-	-	-	-	-	-	-
Range	29-74	174-475	158-421	200-494	-	-	-	-	-	-	-	-
Fall												
# Samples	5	5	5	5	1	1	1	1	1	1	1	1
Mean/Median	194/164	447/446	461/482	468/446	248/-	234/-	267/-	274/-	5/-	193/-	223/-	262/-
Geo. Mean	170	447	460	467	-	-	-	-	-	-	-	-
Std. Dev.	99	29	38	30	-	-	-	-	-	-	-	-
Range	66-323	401-478	401-492	446-504	-	-	-	-	-	-	-	-
Winter												
# Samples	3	3	3	3	1	1	1	1	1	1	1	1
Mean/Median	162/162	261/259	262/251	279/269	140/-	265/-	256/-	266/-	161/-	185/-	223/-	253/-
Geo. Mean	162	260	261	278	-	-	-	-	-	-	-	-
Std. Dev.	6	32	29	31	-	-	-	-	-	-	-	-
Range	156-167	230-294	241-295	255-314	-	-	-	-	-	-	-	-
Yearly												
# Samples	14	14	14	14	4	5	5	5	4	4	4	4
Mean/Median	115/115	295/276	287/273	310/292	171/150	248/265	231/256	246/266	58/34	209/208	224/223	258/258
Geo. Mean	44	130	117	151	166	242	222	242	31	208	224	257
Std. Dev.	99	165	172	171	52	57	62	45	70	25	8	7
Range	0.3-323	0.4-478	0.4-492	1.0-504	136-248	157-304	121-267	167-274	5-161	183-235	215-234	250-265

*The year has been divided as follows: Spring = April-June
Summer = July-SeptemberFall = October-December
Winter = January-March

TABLE 19. FECAL COLIFORMS/100 ml; CACHE LA POUDRE RIVER

Sampling Period	1973-74 Sites				1974-75 Sites				1975-76 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	-	-	-	-	4	4	4	4	2	2	2	2
Mean/Median	-	-	-	-	36/38	1100/420	760/580	>220/240	38/38	810/810	145/140	270/270
Geo. Mean	-	-	-	-	28	580	390	>150	19	710	145	250
Std. Dev.	-	-	-	-	25	1600	790	140	46	550	7	130
Range	-	-	-	-	9-57	200-3500	60-1800	30-350	5-70	420-1200	140-150	180-360
Summer												
# Samples	1	1	1	1	4	4	4	4	1	1	1	1
Mean/Median	<10/-	1000/-	200/-	<100/-	>420/170	3500/1600	870/880	7200/2700	13/-	840/-	97/-	210/-
Geo. Mean	-	-	-	-	>140	2000	720	3900	-	-	-	-
Std. Dev.	-	-	-	-	600	4400	560	9900	-	-	-	-
Range	-	-	-	-	21-1500	750-10000	330-1400	1400-22000	-	-	-	-
Fall												
# Samples	6	6	6	6	5	5	5	5	1	1	1	1
Mean/Median	<9/<10	<1200/860	770/480	<1200/320	55/19	1700/360	<360/320	1900/1300	87/-	300/-	250/-	290/-
Geo. Mean	<7	<430	380	<340	26	580	<140	1000	-	-	-	-
Std. Dev.	5	1300	720	1600	87	3100	350	2200	-	-	-	-
Range	0-15	<10-3600	50-1900	<10-3500	10-210	130-7200	<10-810	200-5600	-	-	-	-
Winter												
# Samples	6	6	6	6	3	3	3	3	1	1	1	1
Mean/Median	10/4	2600/550	1600/150	940/930	58/13	1300/1400	140/130	160/200	7/-	40/-	10/-	10/-
Geo. Mean	5	940	210	810	29	1300	130	150	-	-	-	-
Std. Dev.	17	3900	3400	510	79	96	41	62	-	-	-	-
Range	2-45	200-9900	40-9200	350-1700	12-150	1200-1400	98-180	93-200	-	-	-	-
Yearly												
# Samples	13	13	13	13	16	16	16	16	5	5	5	5
Mean/Median	<9/7	<1900/800	1100/220	<1000/500	>141/20	1900/860	<540/320	>2500/360	36/13	560/420	130/140	210/210
Geo. Mean	<6	<690	210	<460	>41	1100	<270	>620	19	350	87	130
Std. Dev.	11	2700	2800	1100	320	2800	550	5400	39	460	87	130
Range	0-45	<10-9900	40-9200	<10-3500	9-1300	130-10000	<10-1800	30-22000	5-87	40-1200	10-250	10-360

*The year has been divided as follows: Spring = April-June
 Summer = July-September
 Fall = October-December
 Winter = January-March

TABLE 19. (Continued)

Sampling Period	1976-77 Sites			
	1	2	3	4
Spring*				
# Samples	1	1	1	1
Mean/Median	110/-	330/-	980/-	320/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Summer				
# Samples	1	1	1	1
Mean/Median	790/-	470/-	1400/-	1400/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Fall				
# Samples	1	1	1	1
Mean/Median	29/-	1400/-	60/-	60/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Winter				
# Samples	1	1	1	1
Mean/Median	11/-	48/-	19/-	23/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Yearly				
# Samples	4	4	4	4
Mean/Median	240/70	560/400	610/520	450/190
Geo. Mean	73	320	200	160
Std. Dev.	370	590	690	650
Range	11-790	48-1400	19-1400	23-1400

TABLE 20. TOTAL COLIFORMS (x 10⁻²)/100 ml; CACHE LA POUDRE RIVER

Sampling Period	1970-71 Sites				1971-72 Sites				1972-73 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	7	7	7	7	7	7	7	7	7	7	7	7
Mean/Median	<18/6.0	1200/99	260/62	200/71	77/6.9	240/87	>310/30	480/100	21/3.0	>240/>30	>92/7.5	>59/5.4
Geo. Mean	<5.6	280	50	89	10	93	>75	190	3.2	>23	>6.7	>12
Std. Dev.	32	1900	440	210	170	390	490	640	28	480	180	110
Range	<1.0-16	31-5200	5.0-1200	10-520	1.0-450	13-1100	6.0-1300	38-1400	0.3-73	<0.1-1300	0.2-480	3.0-510
Summer												
# Samples	7	7	7	7	6	6	6	6	6	6	6	6
Mean/Median	5.9/4.0	430/390	120/40	260/310	>95/60	>270/>300	>180/>220	>120/80	440/1.0	340/120	<290/68	280/82
Geo. Mean	4.1	190	44	220	>33	>270	>75	>58	1.6	29	<26	92
Std. Dev.	4.6	560	180	150	110	46	140	110	1100	580	510	420
Range	1.0-11	26-1600	7.0-520	78-510	0.4->500	210->300	1.0->300	2.0->300	0.0-2600	0.0-1500	<0.1-1300	9.4-1100
Fall												
# Samples	6	6	6	6	7	7	7	7	6	6	6	6
Mean/Median	<5.0/<1.0	300/84	<120/22	220/170	<1.6/1.2	60/11	44/9.3	9.6/9.4	2.2/1.9	50/33	17/14	20/15
Geo. Mean	<1.9	120	<25	100	<0.8	20	9.3	6.3	1.1	29	5.2	11
Std. Dev.	9.3	390	170	260	1.5	80	89	5.8	1.6	57	19	19
Range	<1.0-24	18-910	<1.0-350	15-710	<0.1-4.2	1.8-220	1.5-240	0.3-18	0.1-4.9	4.0-160	0.1-53	1.4-51
Winter												
# Samples	6	6	6	6	6	6	6	6	6	6	6	6
Mean/Median	<0.3/<0.2	62/62	11/9.5	<29/24	<1.3/<1.0	57/48	12/4.7	8.6/8.6	0.9/0.9	510/300	190/38	50/48
Geo. Mean	<0.2	43	9.6	<12	<0.8	39	6.5	4.2	0.8	230	72	43
Std. Dev.	0.3	46	7.0	22	1.4	46	15	7.1	0.4	560	350	28
Range	<0.1-0.7	12-120	4.0-24	<0.1-55	0.1-4.0	7.0-130	2.3-41	0.2-17	0.4-1.6	40-1300	29-900	21-100
Yearly												
# Samples	26	26	26	26	26	26	26	26	25	25	25	25
Mean/Median	<7.6/2.5	540/98	<130/14	<180/63	<45/2.5	>160/110	>140/24	>160/36	110/1.1	>280/55	<150/29	>100/24
Geo. Mean	<1.9	130	<28	<74	<3.7	>64	>25	>24	1.7	>41	<15	>26
Std. Dev.	18	1100	260	190	100	220	280	380	520	470	310	220
Range	<0.1-24	12-5200	<1.0-1200	<0.1-710	<0.1-453	1.8-1100	1.0-1300	0.2-1400	0.0-2600	0.0-1500	<0.1-1300	1.4-1100

*The year has been divided as follows: Spring = April-June
Summer = July-September
Fall = October-December
Winter = January-March

TABLE 20. (Continued)

Sampling Period	1973-74 Sites				1974-75 Sites				1975-76 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	6	6	6	6	4	4	4	4	2	2	2	2
Mean/Median	1.7/1.9	<83/62	<20/27	29/26	7.6/1.6	390/500	290/280	>140/120	0.8/0.8	26/26	3.9/3.9	14/14
Geo. Mean	1.6	<55	<13	25	3.1	190	65	>85	0.7	16	3.7	12
Std. Dev.	0.8	72	15	17	12	260	320	130	0.5	29	1.8	9.2
Range	0.8-2.5	<10-190	2.0-43	10-60	1.4-26	10-550	7.0-580	18->300	0.4-1.1	5.6-47	2.6-5.2	7.0-20
Summer												
# Samples	7	7	7	7	4	4	4	4	1	1	1	1
Mean/Median	18/2.7	1100/260	<1700/190	8800/2300	27/13	410/340	210/70	530/440	45/-	600/-	590/-	1500/-
Geo. Mean	2.9	370	<180	820	7.4	180	69	300	-	-	-	-
Std. Dev.	34	1800	2900	16000	37	440	320	500	-	-	-	-
Range	0.3-92	40-5000	<10-8000	30-41000	1.0-80	20-960	10-690	36-1200	-	-	-	-
Fall												
# Samples	6	6	6	6	5	5	5	5	1	1	1	1
Mean/Median	29/1.9	210/200	160/140	190/91	3.7/0.6	250/130	93/92	480/150	2.0/-	15/-	6.0/-	42/-
Geo. Mean	2	140	62	82	1.2	84	44	130	-	-	-	-
Std. Dev.	69	160	160	210	5.1	330	77	710	-	-	-	-
Range	0.1-170	32-400	8.0-340	7.0-460	0.1-12	2.6-820	1.3-210	6.0-1700	-	-	-	-
Winter												
# Samples	6	6	6	6	3	3	3	3	1	1	1	1
Mean/Median	4.2/3.4	380/160	170/100	>1600/910	>12/4.2	>110/27	13/9.9	150/36	3.1/-	4.0/-	30/-	29/-
Geo. Mean	2.9	150	56	>790	>6.7	>50	11	46	-	-	-	-
Std. Dev.	3.5	560	260	1800	15	160	11	230	-	-	-	-
Range	5.4-10	13-1500	9.0-680	70-4700	2.4->30	15->300	4.8-25	6.4-420	-	-	-	-
Yearly												
# Samples	25	25	25	25	16	16	16	16	5	5	5	5
Mean/Median	14/1.9	<480/170	<550/30	>2700/92	>12/2.1	>300/180	160/48	>350/250	10/2.0	130/15	130/6.0	320/29
Geo. Mean	2.3	<150	<48	>190	>3.3	>110	42	>120	2.6	25	17	48
Std. Dev.	38	1100	1600	8400	21	310	230	480	19	260	260	660
Range	0.1-170	<10-5000	2.0-8000	7.0-41000	0.1-80	2.6-960	1.3-690	6.0-1700	0.4-45	4.0-600	2.6-590	7.0-1500

TABLE 20. (Continued)

Sampling Period	1976-77 Sites.			
	1	2	3	4
Spring*				
# Samples	1	1	1	1
Mean/Median	26/-	380/-	480/-	460/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Summer				
# Samples	1	1	1	1
Mean/Median	150/-	150/-	590/-	550/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Fall				
# Samples	1	1	1	1
Mean/Median	1.0/-	30/-	2.0/-	10/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Winter				
# Samples	1	1	1	1
Mean/Median	2.8/-	5.1/-	27/-	32/-
Geo. Mean	-	-	-	-
Std. Dev.	-	-	-	-
Range	-	-	-	-
Yearly				
# Samples	4	4	4	4
Mean/Median	45/14	140/90	270/250	260/250
Geo. Mean	10	54	63	95
Std. Dev.	71	170	300	280
Range	1.0-150	5.1-380	2.0-590	10-550

TABLE 21. STANDARD PLATE COUNT ($\times 10^{-2}$)/ml at 50°C; CACHE LA POUDDRE RIVER

Sampling Period	1970-71 Sites				1971-72 Sites				1972-73 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	7	7	7	7	7	7	7	7	7	7	7	7
Mean/Median	54/42	330/100	120/79	160/77	32/31	95/62	280/40	150/150	29/9.7	>73/96	>43/30	140/72
Geo. Mean	41	130	95	110	34	72	89	120	11	>38	>24	76
Std. Dev.	37	400	92	130	10	75	500	87	53	58	43	170
Range	12-120	20-1200	25-290	35-440	15-43	28-220	13-1400	39-270	1.1-150	1.3-150	1.3-130	20-380
Summer												
# Samples	7	7	7	7	6	6	6	6	6	6	6	6
Mean/Median	26/20	210/67	130/80	130/92	>540/34	>570/91	>640/180	>690/270	41/23	200/220	*930/340	310/240
Geo. Mean	21	110	74	87	>41	>590	>110	>320	29	150	>330	230
Std. Dev.	16	240	140	110	120	1200	1200	1100	40	140	140	260
Range	9.0-49	17-690	12-440	18-360	4.0->3000	30->3000	2.0->3000	95->3000	12-87	33-400	37->3000	69-680
Fall												
# Samples	6	6	6	6	7	7	7	7	6	6	6	6
Mean/Median	25/21	160/90	54/43	190/47	8.0/10	19/9.9	25/24	46/57	10/7.1	32/32	28/11	29/14
Geo. Mean	22	100	38	73	7.0	15	25	36	7.0	28	15	20
Std. Dev.	12	160	45	220	5.0	18	3.0	29	9.0	16	32	26
Range	11-44	32-480	11-140	9.0-640	2.4-13	9.0-50	21-290	10-80	2.3-25	16-51	3.0-84	5.0-52
Winter												
# Samples	6	6	6	6	6	6	6	6	6	6	6	6
Mean/Median	44/9.7	90/50	280/280	50/50	7.0/6.8	38/38	30/40	9.0/10	11/4.7	71/53	100/130	93/100
Geo. Mean	16	53	190	41	6.0	38	22	9.0	7.0	62	82	88
Std. Dev.	68	97	200	25	4.0	1.0	21	3.0	12	43	51	33
Range	4.0-180	10-280	11-540	14-84	3.2-10	37-39	6.2-45	6.5-12	2.3-33	33-150	17-140	49-140
Yearly												
# Samples	26	26	26	26	26	26	26	26	25	25	25	25
Mean/Median	37/21	210/86	140/90	140/88	>150/15	>210/38	>270/40	>260/95	20/9.8	>92/53	>210/43	130/70
Geo. Mean	25	96	70	72	>17	>52	>58	>84	10	>55	>45	66
Std. Dev.	40	280	140	150	620	660	690	640	34	93	630	170
Range	4.0-180	10-1200	11-540	9.0-640	2.4->3000	9.0->3000	2.0->3000	6.5->3000	1.0-150	1.3-400	1.3->3000	5.0-680

*The year has been divided as follows: Spring = April-June
Summer = July-September
Fall = October-December
Winter = January-March

TABLE 21. (Continued)

Sampling Period	1973-74 Sites			
	1	2	3	4
Spring*				
# Samples	6	6	6	6
Mean/Median	86/120	450/190	600/200	690/210
Geo. Mean	38	290	270	240
Std. Dev.	75	450	610	970
Range	4.0-160	72-1200	71-1900	170-2400
Summer				
# Samples	7	7	7	7
Mean/Median	120/270	1600/1600	220/180	640/800
Geo. Mean	39	1100	140	460
Std. Dev.	160	1300	200	450
Range	5.1-350	280->3000	20-550	130-1100
Fall				
# Samples	6	6	6	6
Mean/Median	82/53	460/370	780/250	1000/1300
Geo. Mean	54	320	330	670
Std. Dev.	94	440	950	800
Range	14-270	59-1300	82-2100	150-1900
Winter				
# Samples	6	6	6	6
Mean/Median	>8.0/3.5	250/96	190/42	520/290
Geo. Mean	>5.0	100	83	320
Std. Dev.	11	300	280	500
Range	1.0->30	12-640	10-690	52-1300
Yearly				
# Samples	25	25	25	25
Mean/Median	>74/27	>710/54	430/180	720/650
Geo. Mean	>24	>320	150	390
Std. Dev.	100	890	630	680
Range	1.0-350	12->3000	10-2100	52-2400

TABLE 22. STANDARD PLATE COUNT ($\times 10^{-2}$)/ml at 20°C; CACHE LA POUDRE RIVER

Sampling Period	1970-71 Sites				1971-72 Sites				1972-73 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	7	7	7	7	6	7	7	7	7	7	7	7
Mean/Median	20/13	92/53	50/49	80/90	30/33	110/89	82/39	210/91	41/10	>47/>30	59/31	>75/55
Geo. Mean	18	52	40	66	23	75	57	94	14	>28	21	>38
Std. Dev.	11	130	35	52	19	87	88	320	75	40	98	67
Range	10-33	25-380	16-110	26-180	6.0-51	12-270	24-270	18-950	1.2-34	2.0-100	1.0-280	1.0-200
Summer												
# Samples	7	7	7	7	6	6	6	6	4	4	5	3
Mean/Median	18/9.0	250/110	110/80	100/120	>520/221	>560/52	260/36	>5200/220	100/56	480/290	>680/100	140/89
Geo. Mean	12	120	62	86	>43	>88	55	>380	51	170	>150	120
Std. Dev.	22	320	120	55	1200	1200	380	12000	130	610	1300	88
Range	4.0-66	28-900	9.0-350	22-160	10->3000	19->3000	1.0-950	72->3000	9.0-290	22-1300	27->3000	87-240
Fall												
# Samples	6	6	6	6	7	7	7	7	5	6	5	6
Mean/Median	27/16	84/26	44/31	38/34	9.4/9.0	21/16	38/26	36/42	11/11	53/41	29/27	34/25
Geo. Mean	18	49	32	31	8.6	18	29	28	6.8	44	28	28
Std. Dev.	26	93	38	24	4.6	16	39	23	12	36	5.1	26
Range	5.0-75	12-250	8.0-110	13-76	4.6-19	12-57	12-130	6.7-62	2.0-31	21-110	24-37	15-84
Winter												
# Samples	5	5	5	5	6	6	6	5	6	6	6	5
Mean/Median	12/10	210/110	130/41	49/52	14/6.7	44/43	58/38	31/19	11/6.0	170/94	150/110	130/41
Geo. Mean	8.4	96	64	40	10	43	46	26	6.4	130	110	76
Std. Dev.	10	320	140	29	13	12	43	21	14	170	120	190
Range	2.2-29	21-770	9.0-300	12-83	4.9-33	30-58	21-120	14-65	2.0-38	67-500	27-350	39-470
Yearly												
# Samples	25	25	25	25	25	26	26	25	22	25	23	21
Mean/Median	19/12	160/46	82/45	70/55	>140/14	>170/43	110/37	>1300/160	37/10	>160/64	>210/58	>86/55
Geo. Mean	14	73	47	54	>17	>48	45	>72	12	>64	>53	>49
Std. Dev.	19	230	94	49	600	580	200	6000	72	290	620	110
Range	2.2-75	12-900	8.0-350	12-1800	4.6->3000	12->3000	1.0-950	6.7->3000	1.2-290	2.0-1300	1.0->3000	1.0-470

*The year has been divided as follows: Spring = April-June
 Summer = July-September
 Fall = October-December
 Winter = January-March

TABLE 22. (Continued)

Sampling Period	1973-74 Sites			
	1	2	3	4
Spring*				
# Samples	6	6	6	6
Mean/Median	39/34	430/235	460/180	330/240
Geo. Mean	19	210	170	270
Std. Dev.	52	590	720	220
Range	4.0-140	29-1600	27-1900	140-670
Summer				
# Samples	7	7	6	6
Mean/Median	>190/150	>900/340	470/80	>610/180
Geo. Mean	>67	>260	120	>190
Std. Dev.	290	1200	950	1200
Range	15-800	20->3000	34-2400	32->3000
Fall				
# Samples	6	6	6	6
Mean/Median	76/39	480/470	610/270	610/220
Geo. Mean	45	280	240	260
Std. Dev.	110	410	710	740
Range	16-290	40-1000	19-1600	34-1700
Winter				
# Samples	5	6	6	6
Mean/Median	8.0/3.3	280/110	280/43	480/480
Geo. Mean	4.0	120	62	320
Std. Dev.	11	370	420	360
Range	0.8-27	19-930	2.0-1000	44-1000
Yearly				
# Samples	24	25	25	25
Mean/Median	>85/24	>540/200	460/110	>510/290
Geo. Mean	>22	>210	120	>230
Std. Dev.	170	760	690	690
Range	0.8-800	19->3000	2.0-2400	32->3000

TABLE 23. CALCIUM, mg/l; CACHE LA POUDRE RIVER

Sampling Period	1974-75 Sites				1975-76 Sites				1976-77 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	3	3	3	3	2	2	2	2	1	1	1	1
Mean/Median	8/6	103/40	96/44	111/100	58/58	295/295	104/104	120/120	7/-	240/-	100/-	140/-
Geo. Mean	6	56	62	102	57	295	101	120	-	-	-	-
Std. Dev.	6	128	108	55	11	7	37	14	-	-	-	-
Range	3-14	18-250	25-220	62-170	50-66	290-300	78-130	110-130	-	-	-	-
Summer												
# Samples	4	4	4	4	1	1	1	1	1	1	1	1
Mean/Median	10/10	190/209	50/58	134/137	2/-	107/-	47/-	82/-	13/-	170/-	90/-	130/-
Geo. Mean	9	184	39	132	-	-	-	-	-	-	-	-
Std. Dev.	3	47	29	25	-	-	-	-	-	-	-	-
Range	6-13	120-220	9-76	103-160	-	-	-	-	-	-	-	-
Fall												
# Samples	4	4	4	4	1	1	1	1	1	1	1	1
Mean/Median	47/52	115/110	96/97	132/130	300/-	100/-	99/-	100/-	16/-	160/-	200/-	180/-
Geo. Mean	39	115	96	132	-	-	-	-	-	-	-	-
Std. Dev.	26	10	4	5	-	-	-	-	-	-	-	-
Range	12-73	110-130	92-100	130-140	-	-	-	-	-	-	-	-
Winter												
# Samples	3	3	3	3	1	1	1	1	1	1	1	1
Mean/Median	74/73	173/130	167/120	143/130	60/-	290/-	250/-	230/-	63/-	140/-	110/-	150/-
Geo. Mean	74	159	140	142	-	-	-	-	-	-	-	-
Std. Dev.	4	93	99	23	-	-	-	-	-	-	-	-
Range	70-78	110-280	100-230	130-170	-	-	-	-	-	-	-	-
Yearly												
# Samples	14	14	14	14	5	5	5	5	4	4	4	4
Mean/Median	34/14	146/125	95/93	131/130	96/60	217/290	121/99	130/110	25/14	180/165	125/105	150/145
Geo. Mean	20	121	73	127	41	193	103	122	17	173	119	149
Std. Dev.	30	77	64	29	117	104	78	58	26	43	51	22
Range	3-78	18-280	9-230	62-170	2-300	100-300	47-250	82-230	7-63	140-240	90-200	130-180

*The year has been divided as follows:

Spring = April-June

Summer = July- September

Fall = October-December

Winter = January-March

TABLE 24. MAGNESIUM, mg/l; CACHE LA POUDRE RIVER

Sampling Period	1974-75 Sites				1975-76 Sites				1976-77 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	3	3	3	3	2	2	2	2	1	1	1	1
Mean/Median	<2/1	51/16	53/39	69/53	8/8	70/70	43/43	42/42	3/-	100/-	55/-	78/-
Geo. Mean	<2	23	36	64	8	70	43	39	-	-	-	-
Std. Dev.	2	69	51	36	2	8	1	23	-	-	-	-
Range	<1-4	6-130	11-110	44-110	7-10	65-76	42-44	26-58	-	-	-	-
Summer												
# Samples	4	4	4	4	1	1	1	1	1	1	1	1
Mean/Median	2/2	76/86	32/40	76/76	1/-	45/-	23/-	41/-	12/-	140/-	110/-	120/-
Geo. Mean	2	73	20	75	-	-	-	-	-	-	-	-
Std. Dev.	1	25	20	11	-	-	-	-	-	-	-	-
Range	1-3	40-93	2-47	62-88	-	-	-	-	-	-	-	-
Fall												
# Samples	4	4	4	4	1	1	1	1	1	1	1	1
Mean/Median	10/12	35/38	40/40	60/60	15/-	78/-	88/-	94/-	4/-	63/-	67/-	85/-
Geo. Mean	8	35	40	60	-	-	-	-	-	-	-	-
Std. Dev.	5	7	4	4	-	-	-	-	-	-	-	-
Range	2-14	25-40	36-46	55-65	-	-	-	-	-	-	-	-
Winter												
# Samples	3	3	3	3	1	1	1	1	1	1	1	1
Mean/Median	15/15	69/43	63/45	74/66	13/-	120/-	110/-	120/-	17/-	68/-	81/-	88/-
Geo. Mean	15	58	59	72	-	-	-	-	-	-	-	-
Std. Dev.	0	53	32	22	-	-	-	-	-	-	-	-
Range	15-15	35-130	45-100	57-99	-	-	-	-	-	-	-	-
Yearly												
# Samples	14	14	14	14	5	5	5	5	4	4	4	4
Mean/Median	<7/4	58/40	46/42	69/64	9/10	77/76	61/44	68/58	9/8	93/84	78/74	93/86
Geo. Mean	≤4	44	35	67	7	73	53	59	7	88	76	91
Std. Dev.	6	40	28	19	5	27	36	39	7	36	24	19
Range	<1-15	6-130	2-110	44-110	1-15	45-120	23-110	26-120	3-17	63-140	55-110	78-120

*The year has been divided as follows: Spring = April-June
Summer = July-SeptemberFall = October-December
Winter = January-March

TABLE 25. POTASSIUM, mg/l; CACHE LA POUDDRE RIVER

Sampling Period	1974-75 Sites				1975-76 Sites				1976-77 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	3	3	3	3	2	2	2	2	1	1	1	1
Mean/Median	<1/1	3/2	3/3	7/5	2/2	6/6	5/5	6/6	1/-	5/-	4/-	7/-
Geo. Mean	<1	2	3	6	1	5	5	6	-	-	-	-
Std. Dev.	0	2	2	4	1	1	0	1	-	-	-	-
Range	<1-1	1-5	2-5	4-11	1-2	5-6	5-5	5-7	-	-	-	-
Summer												
# Samples	4	4	4	4	1	1	1	1	1	1	1	1
Mean/Median	<1/<1	4/4	<3/3	6/6	<1/-	5/-	3/-	5/-	1/-	4/-	7/-	9/-
Geo. Mean	<1	4	<2	6	-	-	-	-	-	-	-	-
Std. Dev.	0	1	1	1	-	-	-	-	-	-	-	-
Range	<1-1	3-5	<1-4	5-8	-	-	-	-	-	-	-	-
Fall												
# Samples	4	4	4	4	1	1	1	1	1	1	1	1
Mean/Median	2/2	5/4	4/5	6/6	3/-	11/-	9/-	11/-	1/-	6/-	7/-	9/-
Geo. Mean	2	5	4	6	-	-	-	-	-	-	-	-
Std. Dev.	1	1	1	1	-	-	-	-	-	-	-	-
Range	1-2	4-6	3-5	6-7	-	-	-	-	-	-	-	-
Winter												
# Samples	3	3	3	3	1	1	1	1	1	1	1	1
Mean/Median	2/2	6/6	6/6	7/7	2/-	6/-	6/-	3/-	2/-	7/-	6/-	9/-
Geo. Mean	2	6	6	7	-	-	-	-	-	-	-	-
Std. Dev.	0	1	1	1	-	-	-	-	-	-	-	-
Range	2-2	5-7	5-7	6-8	-	-	-	-	-	-	-	-
Yearly												
# Samples	14	14	14	14	5	5	5	5	4	4	4	4
Mean/Median	<1/1	4/5	<4/4	7/6	<2/2	7/6	6/5	6/5	1/1	6/6	6/6	8/9
Geo. Mean	<1	4	<4	6	<2	6	5	6	1	5	6	8
Std. Dev.	1	2	2	2	1	3	2	3	0.5	1	1	1
Range	1-2	1-7	1-7	4-11	1-3	5-11	3-9	3-11	1-2	4-7	4-7	7-9

*The year has been divided as follows: Spring = April-June
Summer = July-SeptemberFall = October-December
Winter = January-March

TABLE 26. SODIUM, mg/l; CACHE LA POUDDRE RIVER

Sampling Period	1974-75 Sites				1975-76 Sites				1976-77 Sites			
	1	2	3	4	1	2	3	4	1	2	3	4
Spring*												
# Samples	3	3	3	3	2	2	2	2	1	1	1	1
Mean/Median	2/2	42/18	61/69	84/81	4/4	73/73	60/60	66/66	18/-	170/-	120/-	130/-
Geo. Mean	2	23	47	83	4	73	60	66	-	-	-	-
Std. Dev.	1	51	43	15	1	1	8	4	-	-	-	-
Range	2-3	7-100	15-100	70-100	4-5	72-74	54-66	64-69	-	-	-	-
Summer												
# Samples	4	4	4	4	1	1	1	1	1	1	1	1
Mean/Median	3/2	99/106	41/76	123/119	2/-	52/-	33/-	55/-	4/-	90/-	45/-	80/-
Geo. Mean	2	96	32	121	-	-	-	-	-	-	-	-
Std. Dev.	2	25	47	26	-	-	-	-	-	-	-	-
Range	1-6	63-120	2-91	98-156	-	-	-	-	-	-	-	-
Fall												
# Samples	4	4	4	4	1	1	1	1	1	1	1	1
Mean/Median	8/9	58/54	61/50	84/82	12/-	130/-	170/-	160/-	3/-	80/-	77/-	110/-
Geo. Mean	7	57	60	84	-	-	-	-	-	-	-	-
Std. Dev.	3	13	12	10	-	-	-	-	-	-	-	-
Range	3-11	48-79	48-72	76-98	-	-	-	-	-	-	-	-
Winter												
# Samples	3	3	3	3	1	1	1	1	1	1	1	1
Mean/Median	9/10	89/70	97/86	106/100	10/-	170/-	160/-	130/-	10/-	95/-	52/-	110/-
Geo. Mean	9	80	94	105	-	-	-	-	-	-	-	-
Std. Dev.	1	54	29	21	-	-	-	-	-	-	-	-
Range	8-10	48-150	74-130	89-130	-	-	-	-	-	-	-	-
Yearly												
# Samples	14	14	14	14	5	5	5	5	4	4	4	4
Mean/Median	6/4	73/66	69/73	100/99	7/5	100/74	97/66	96/69	9/7	109/92	74/64	108/110
Geo. Mean	4	59	52	97	5	91	80	87	7	104	68	106
Std. Dev.	4	40	32	24	4	49	64	47	7	41	34	21
Range	1-11	7-150	2-130	70-156	2-12	52-170	33-170	55-160	3-18	80-170	45-120	80-130

*The year has been divided as follows: Spring = April-June
Summer = July-September
Fall = October-December
Winter = January-March

Table 27. FISH SURVEYS, 1970-1975, CACHE LA POUUDRE RIVER.

Station Clean Control: Upstream part of Martinez Park on Fort Collins City Property.

Part B. August, 1974 -- November, 1975

Fish Species	Number of Collections	Average Number Per Collection	Average % Biomass per Collection
*Brown trout	5	2	4.7
*Rainbow trout	5	1	3.8
White sucker	5	97	78.7
Longnose sucker	5	406	7.2
*Yellow perch	5	<1	tr.
Johnny darter	5	7	tr.
Longnose dace	5	70	1.7
Creek chub	5	6	0.4
*Pumpkinseed sunfish	5	<1	tr.
*Green sunfish	5	3	tr.
*Largemouth bass	5	<1	tr.
*Black bullhead	5	<1	0.4
Fathead minnow	5	132	0.4
Sand shiner	5	<1	tr.
Common shiner	5	<1	tr.
Plains topminnow	5	15	tr.
*Whitefish	5	<1	2.7

*Denotes game fishes

Table 27. Continued

Station 1: ⁽¹⁾ Above Fort Collins #2 Sewage Disposal Plant
 Part A. April, 1970 -- August, 1972

Fish Species	Number of Collections	Average Number Per Collection	Average Length in Inches
Carp	8	37	15.4
Longnose dace	8	62	2.0
White sucker	8	117	5.6
Fathead minnow	8	303	1.9
Sand shiner	8	165	2.5
Johnny darter	8	2	2.2
Creek chub	8	1	3.9
*Green sunfish	8	25	2.3
Longnose sucker	8	27	4.7
Common shiner	8	7	2.8
*Largemouth bass	8	3	2.6
*Bluegill sunfish	8	<1	2.2
*Mountain whitefish	8	<1	5.6
Plains killifish	8	<1	2.5
*Black bass	8	<1	2.8

Part B. ⁽¹⁾ November, 1972 -- November, 1975

Fish Species	Number of Collections	Average Number Per Collection	Average % Biomass Per Collection
Carp	10	54	64.7
White sucker	10	227	32.3
Longnose sucker	10	16	1.6
Fathead minnow	10	52	0.4
Sand shiner	10	35	0.2
*Green sunfish	10	16	0.3
*Rainbow trout	10	<1	0.1
Longnose dace	10	10	0.3
Creek chub	10	1	tr.
Common shiner	10	<1	tr.
Plains killifish	10	<1	tr.
Johnny darter	10	<1	tr.
*Bluegill sunfish	10	<1	tr.

*Denotes game fishes

⁽¹⁾ Part A data by fish species and size; Part B data by fish species, number and biomass.

Table 27. Continued

Station 1A: Directly west of rest area on west side of I-25.

Part B. November, 1972 -- November, 1975

Fish Species	Number of Collections	Average Number Per Collection	Average % Biomass Per Collection
Carp	10	28	35.8
White sucker	10	387	61.1
Longnose sucker	10	17	1.5
Fathead minnow	10	147	0.3
Sand shiner	10	81	0.2
Longnose dace	10	47	0.5
*Green sunfish	10	4	tr.
*Largemouth bass	10	<1	tr.
Johnny darter	10	<1	tr.
Plains killifish	10	<1	tr.
Common shiner	10	<1	tr.
Creek chub	10	1	tr.
*Black bullhead	10	<1	tr.
*Yellow perch	10	<1	tr.
Brassy minnow	10	<1	tr.
Common shiner	10	<1	tr.

*Denotes game fishes

Table 27. Continued

Station 2: Above, under and below Highway Number 392 bridge.

Part A. April, 1970 -- August, 1972

Fish Species	Number of Collections	Average Number Per Collection	Average Length in Inches
Carp	8	22	11.8
White sucker	8	245	8.3
Fathead minnow	8	57	2.2
Sand shiner	8	183	2.3
Common shiner	8	38	3.4
Creek chub	8	10	4.1
Longnose dace	8	43	2.4
Johnny darter	8	13	2.3
Longnose sucker	8	4	7.7
Brassy minnow	8	16	2.9
*Black bass	8	<1	2.7
*Pumpkinseed sunfish	8	<1	4.0
*Green sunfish	8	14	2.5
Plains killifish	8	5	2.2
*Black bullhead	8	<1	4.5
*Largemouth bass	8	<1	4.3

Part B. November, 1972 -- November, 1975

Fish Species	Number of Collections	Average Number Per Collection	Average % Biomass Per Collection
Carp	10	38	30.2
White sucker	10	364	64.8
Longnose sucker	10	16	2.3
Creek chub	10	5	0.1
Sand shiner	10	163	1.1
*Green sunfish	10	21	0.2
*Black crappie	10	<1	tr.
Longnose dace	10	67	0.5
Fathead minnow	10	88	0.4
Johnny darter	10	12	tr.
Plains killifish	10	1	tr.
Brassy minnow	10	1	tr.
*Largemouth bass	10	<1	tr.
Common shiner	10	8	0.3
*Bluegill sunfish	10	<1	tr.
*Yellow perch	10	<1	tr.
Plains topminnow	10	<1	tr.

*Denotes game fishes

Table 27. Continued

Station 3: Approximately three-fourths mile below Kodak, Windsor plant,
under and below wooden bridge.

Part A. April, 1970 -- August, 1972

Fish Species	Number of Collections	Average Number Per Collection	Average Length in Inches
Carp	8	13	9.6
Longnose dace	8	47	2.6
White sucker	8	146	6.1
Fathead minnow	8	133	2.1
Sand shiner	8	497	2.1
Common shiner	8	197	3.1
Johnny darter	8	8	1.6
*Green sunfish	8	11	3.3
*Pumpkinseed sunfish	8	<1	5.0
Creek chub	8	3	5.6
*Largemouth bass	8	<1	3.4
Plains killifish	8	<1	2.0
Longnose sucker	8	<1	3.2
*Black bass	8	<1	5.2
Brassy minnow	8	<1	2.5
*Bluegill sunfish	8	<1	4.5
*Black bullhead	8	<1	8.8

Part B. November, 1972 -- November, 1975

Fish Species	Number of Collections	Average Number Per Collections	Average % Biomass Per Collection
Carp	10	23	33.5
White sucker	10	386	53.6
Sand shiner	10	964	7.6
Common shiner	10	30	0.8
Fathead minnow	10	89	1.5
Creek chub	10	11	1.0
Longnose dace	10	20	0.4
*Green sunfish	10	8	1.2
Brook stickelback	10	2	tr.
Longnose sucker	10	1	0.1
*Black crappie	10	<1	tr.
Brassy minnow	10	2	tr.
*Bluegill sunfish	10	<1	tr.
Johnny darter	10	<1	tr.
Plains killifish	10	<1	tr.
*Yellow perch	10	<1	tr.
*Black bullhead	10	<1	tr.
Red shiner	10	<1	tr.
*Largemouth bass	10	<1	0.2

*Denotes game fishes

Table 27. Continued

Station 3A: One-fourth mile above bridge on Weld County RD-31, directly west of the Davis Rodeo Arena.

Part B. November, 1972 -- November, 1975

Fish Species	Number of Collections	Average Number Per Collection	Average % Biomass Per Collection
White sucker	10	180	38.8
Carp	10	71	55.5
*Green sunfish	10	11	0.7
Sand shiner	10	373	3.4
Fathead minnow	10	82	0.5
Plains killifish	10	2	tr.
Longnose sucker	10	<1	tr.
*Black bullhead	10	<1	tr.
Longnose dace	10	1	tr.
Johnny darter	10	<1	tr.
Creek chub	10	6	0.4
Common shiner	10	15	0.3
*Rainbow trout	10	<1	0.4
*Yellow perch	10	<1	tr.
*Largemouth bass	10	<1	tr.
Brassy minnow	10	2	tr.
Red shiner	10	<1	tr.

*Denotes game fishes