WATER QUALITY BRANCH

WATER MANAGEMENT DIVISION

MINISTRY OF ENVIRONMENT, LANDS AND PARKS

Water Quality in British Columbia

Objectives Attainment in 1992

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SUMMARY

The task of setting water quality objectives in priority basins in British Columbia began in mid 1982. By the end of 1992, the Ministry had set water quality objectives in 36 bodies of water, including fresh and marine, throughout the Province. Monitoring to check the attainment of objectives started, on an annual basis, in 1987. This report presents the results of monitoring done in 1992 to check the attainment of objectives in 33 basins.

The results are summarized in a series of tables. Overall, the objectives were met about 89 percent of the time, an outcome similar to those of 1988 to 1991. Although this result falls short of an ideal 100 percent compliance, it generally applies only to objectives that were set in problem areas. Thus, while the monitoring results describe indirectly how well problems are being dealt with, they are a rather conservative reflection of the state of water quality in the Province as a whole.

Variables for which objectives were sometimes exceeded in more than one basin in 1992 included the following: fecal coliforms, *E. coli*, enterococci, suspended solids, turbidity, phosphorus, nitrite, chlorophyll-*a*, pH, dissolved oxygen, temperature, copper in water and sediments, iron, lead in sediments, zinc in water and sediments, PCBs in sediments and PAHs in sediments.

Cases of objectives being exceeded need investigation to determine the cause and the possible need for corrective action. Monitoring in future years will indicate whether problems are persisting or being solved. Monitoring also shows how close water quality conditions are to ideal and results are thus one measure of the state of the environment in B.C.

ACKNOWLEDGEMENTS

The regional staff of Environmental Protection carried out most of the monitoring, either directly or by using co-op students and contractors. Zenon Environmental Inc. analyzed the samples except those for mercury which were analyzed by Analytical Service Laboratories Ltd. Information was also obtained from industries, from Environmental Protection, from the Canada-B.C. Water Quality Monitoring Agreement, from regional offices of the Ministry of Health, from the federal departments of Environment and of Fisheries and Oceans, from B.C. Hydro, and from the Greater Vancouver Regional District.

TABLE OF CONTENTS

TABLE OF CONTENTS continued

LIST OF TABLES

LIST OF TABLES continued

Table **Page**

LIST OF FIGURES

LIST OF FIGURES continued

Figure **Page**

INTRODUCTION

In 1981, the Auditor General recommended that the Ministry develop a method of measuring its performance in safeguarding water quality. To fulfill this recommendation, the Ministry undertook to set water quality objectives for fresh and marine surface waters of British Columbia.

Water quality objectives are safe conditions or threshold levels of a substance which will protect the most sensitive water use of a specific body of water. They establish a reference against which the state of water quality at a specific site is checked, as recommended by the Auditor General. They are also used to prepare Waste Management Permits or Plans and to measure their effectiveness. They are thus a basic tool for use in maintaining a healthy aquatic environment.

Work on water quality objectives began in 1982. By the end of 1992, objectives had been set in 36 separate bodies of water and updated in one. In each basin considered, some type of water quality problem was expected due to human activity. Objectives have been set for lakes, rivers, creeks, and marine areas and cover all six Environmental Regions of the Province.

This report for 1992 is the seventh in a series of annual reports which began in 1986. Since 1987, funds have been allocated to allow for limited monitoring of ambient water to check the attainment of the objectives. As a result, a picture of how well objectives are met was obtained from 1987 to 1991 and is again given here for 1992. The report is a condensation of monitoring data for the use of managers of the water resource. It indicates where conditions are acceptable and provides a warning of where further evaluation may be needed to solve water quality problems. It can also be used by anyone interested in the present state of water quality in a given basin although, to keep this report to a reasonable length, familiarity with the detailed background reports on water quality objectives for each basin is assumed. Copies of the background reports on objectives can be obtained from the Water Quality Branch of the Ministry in Victoria.

The water basins in which water quality objectives are set are usually chosen because of perceived water quality problems. Thus, results presented here indicate conditions in likely problem areas,

but do not reflect the state of water quality in the Province as a whole. There are many bodies of water where water quality is relatively unaffected by humans and likely to remain so for the foreseeable future. Nevertheless, reports in this series are an important measure of the state of the environment regarding water quality in British Columbia.

METHODS OF PRESENTING AND INTERPRETING THE DATA

Reports on objectives

By the end of 1992, the Ministry of Environment had completed 34 reports on water quality objectives for 36 specific bodies of water. The complexity and size of the reports varied considerably, depending upon the body of water considered. These waterbodies were distributed among the Environment Regions as follows:

Vancouver Island	4
Skeena	4
Northern Interior	8
Southern Interior	9
Kootenay	4
Lower Mainland	7
Total	36

Work is in progress on another 16 reports for different water basins. These reports are now at various stages of completion.

Tables of Results

Data collected in 1992 to check objectives are summarized in Tables 2 to 34, with a separate table for each of the 33 water basins monitored. Three basins were not monitored in 1992, due either to low priority or late completion of the objectives during 1992. Decisions on which basins to monitor and on the details of monitoring and funding were reached early in the year after close consultation with the Regions. The work to be done was described in monitoring schedules and was generally carried out by contractors or students under regional supervision.

Each table lists all the objectives that have been set, as they appear in the summary table of each report on objectives. A few of the objectives have been updated to reflect new water quality criteria and procedures. For example, we are now using chlorophyll-*a* instead of periphyton biomass and total ammonia-N instead of un-ionized ammonia-N. The 90th percentile of 400 MPN/100 mL for fecal coliform values is used when high fecal coliform values are recorded at bathing beaches.

Five different concluding statements are used: objective met, objective not met, indefinite result, objective not checked, and omitted 1992. The objective is considered met if it was either equalled or not exceeded by the monitoring result. The result is reported as indefinite if there were insufficient data to check the objective, the data were suspect, or the mimimum detectable concentration was too high. The objective is reported as not checked if, for some reason, planned data collection did not take place. The objective is reported as omitted if the plan was to not monitor because of low priority, taking into account past results. We consider these tables to be the most important part of this report since they summarize where, when, and by how much objectives were met in 1992.

Text

The text in this report first gives a provincial overview of the results. The tabulated data for each body of water are then described briefly, by Region, mentioning the highlights and drawing some general conclusions. Qualifying statements such as: "...the objectives were nearly met, slightly exceeded or probably met..." are avoided at this stage. They are considered too speculative without the support of further evidence to explain them. Thus, objectives exceeded by a wide margin are categorized equally with apparent borderline cases. While a more detailed interpretation is desirable, the presentation of data that would be required to document the significance of results in more detail is beyond the scope of this province-wide summary report.

There is also no attempt to explain what may have caused the results or to comment on the effect of objectives not being met. Such assessments would entail consideration of river flows, effluent discharges, whether objectives are long-term or short-term, the degree to which objectives are exceeded, quality assurance, and other factors. In the past, assessments of this type were left to

Regions to carry out on an ongoing basis. In the future, we plan to present information collected over a period of time in some type of short state-of-environment type of reports for specific basins. A quality assurance program to test the accuracy and precision of laboratory data was introduced in 1991 and the results for 1992 are presented in the next chapter.

The report guides those involved in managing water quality by focusing on areas of concern where further assessment or inspection may be needed. Since monitoring to check water quality objectives covers only a short time span, usually at most 30 days, we believe that any instance when objectives were not met could be significant and is worth a more detailed look. Further study could show that certain objectives were exceeded due to natural phenomena. On the other hand, it could reveal the need for corrective action if there were human causes to the problem.

Figures

The 36 basins where objectives have been set are shown on a location map in Figure 1. The 33 water basins monitored in 1992 are detailed in separate maps, Figures 2 to 34, on which sampling sites referred to in the tables are shown. Each figure number corresponds to the table of the same number.

Guide to Ranking Future Monitoring

Due to limited funds, we cannot monitor all basins where objectives have been set each year. Monitoring is therefore ranked as follows:

• **1st priority**: any basin with less than three years of complete monitoring and any basin considered provincially or internationally significant. Examples of significant basins are the Fraser River due to fisheries, the Okanagan Valley lakes due to recreation, the lower Columbia River due to transboundary effects, and Burrard Inlet due to a federal-provincial plan.

• **2nd priority**: any basin in which, after at least three years monitoring, a number of objectives are not regularly attained and there is either a local expression of concern or a plan for short-term action.

• **3rd priority**: any basin as for the 2nd priority above, but where the concern and the plan of action are undefined.

• **4th priority**: any basin in which, after at least three years monitoring, most objectives are either being met or the corrective plan of action is long term.

QUALITY ASSURANCE PROGRAM

Introduction

A quality assurance program, describing the accuracy and precision of test results, was begun in 1991. The program was limited in scope due both to scarce resources and the fact that it was the first of its type to be undertaken. In 1992, the program was repeated and expanded slightly. Details on procedures and results are in a separate Water Quality Branch report issued in April, 1993.

Twelve variables were chosen for testing in the program. These were mercury, aluminum, cadmium, chromium, copper, iron, lead, zinc, cyanide, ammonia nitrogen, nitrite nitrogen and suspended solids. These were chosen on the basis of important objectives most frequently exceeded. Fecal coliforms was not included due to the lack of standard references.

In an ideal situation one would aim to measure the accuracy and precision of the total monitoring process. This would include sample collection, handling in the field, shipping, storage, and laboratory analysis. Only the accuracy and precision of the laboratory analyses were measured in the 1992 program (except for mercury and aluminum) and, strictly speaking, the results apply to just a few months operating period of the laboratory, not year-round operation.

Procedure

Standard reference solutions were prepared by a commercial laboratory using clean-room techniques. The concentrations chosen for these solutions were usually close to the maximum criterion level to protect aquatic life for each substance. Results would thus indicate the confidence one may have in laboratory data at levels where sensitive objectives may be exceeded.

All reference samples were submitted blind to the analyzing laboratory, that is to say the laboratory was not aware that they were reference samples. The actual concentrations of all metal

solutions were certified by the National Research Council of Canada laboratory in Ottawa (NRC). The other variables were certified by Analytical Service Laboratories Ltd. of Vancouver (ASL). All variables were analyzed in their unfiltered or total state.

Mercury

For mercury, a reference solution nominally containing 100 ng/L Hg was prepared by NRC. The procedure used for mercury differed from that used for the other substances because the literature indicates that, due to contamination problems, clean-room techniques for all routine analyses are essential to ensure reliable analytical results. Our experience in 1991 showed that the laboratory with the best results was ASL (Analytical Service Laboratories Ltd.) of Vancouver. It was subsequently chosen to analyze the reference samples and to perform all 1992 routine mercury analyses to check objectives. Reference samples were submitted in batches of six (three times) or five (once) to ASL between July and September for a total of 23 samples. The samples were sent out monthly from NRC.

In measuring mercury, travel blanks were used to monitor the effect that sampling in the field might have on sample contamination. Travel blanks are sample bottles containing pre-acidified, mercury-free distilled water. These are opened in the field, subjected to the same handling as normal sample bottles (except they are not filled with sample or preservative), capped and sent to the laboratory for mercury analysis along with the true samples. Any mercury found in the travel blanks, together with a knowledge of laboratory accuracy, gives a measure of contamination from the field.

Other metals

• Prepared reference solutions

For the other metals, two reference solutions containing copper, iron, lead, and zinc were prepared by ASL at the following nominal concentrations:

solution 1: 5 µg/L Cu, 300 µg/L Fe, 10 µg/L Pb, and 50 µg/L Z

solution 2: 5 µg/L Cu, 300 µg/L Fe, 5 µg/L Pb, and 30 µg/L Zn

Samples of each solution were submitted in batches of five on five separate occasions, between June and September, to Zenon Environmental Inc. of Vancouver which is the laboratory generally used for objectives work. Thus, a total of 25 samples of each solution were submitted.

• St. Lawrence River Seaway Water

Samples of water from the St Lawrence River Seaway were also used as a reference solution for metals. The concentrations of thirteen ions had been certified, but only six that were of interest are reported on here. These are:

Al = 84.4 µg/L, Cd = 0.028 µg/L, Cr = 0.45 µg/L, Cu = 2.8 µg/L, Fe = 129 µg/L, Zn = 3.3µg/L.

Samples of the water were submitted in batches of five to Zenon Environmental on five separate occasions, between June and August, for a total of 25 samples.

• Field replicates

A rough indication of field plus laboratory precision for aluminum was obtained by sampling a lake on southern Vancouver Island. Six grab samples were taken in quick succession on two separate occasions, once in January and once in July. Results showing precision for total aluminum (at a level of 50 µg/L) are presented in the results section.

Cyanide, ammonia, and nitrite

Reference solutions were prepared by ASL for cyanide, ammonia nitrogen, and nitrite nitrogen, at the following nominal concentrations:

200 µg/L CN measured as strong-acid dissociable cyanide (similar to total cyanide), 10 µg/L CN measured as weak-acid dissociable cyanide (similar to free cyanide), 10 mg/L NH3-N, and 0.060 mg/L NO2-N.

Samples of each of these reference solutions were submitted in batches of five to Zenon Environmental on four separate occasions, between June and August, for a total of 20 samples for each variable.

Suspended solids

Two reference solutions were prepared by the Ministry of Environment containing nominally 10 mg/L and 100 mg/L of suspended solids. Samples of each of these reference solutions were submitted in batches of five to Zenon Environmental on four separate occasions, between June and August, for a total of 20 samples for each concentration.

Results

The results are given in terms of the accuracy and the precision of the laboratory measurements. The accuracy is a measure of how the analytical result differs from the true value. It is expressed as a percent by dividing the analytical result by the true concentration of the reference solution. The precision is a measure of the repeatability of the analysis. It is also expressed as a percent by dividing the standard deviation of the analytical results by their mean.

The results are presented as overall average accuracy and precision for all samples submitted with bracketed ranges obtained from the subset batches of five samples.

Mercury

ASL achieved an average accuracy of 97% (63 - 115%) and a precision 6% (1.4 - 11%). This means that, on average, mercury results at the 100 ng/L level are expected to be 3% below the true value and can be replicated within 6% as far as laboratory measurements are concerned. At any

one time, however, the data show that results can range from 37% below to 15% above the true value.

The problem of mercury contamination in the field during sampling was partly addressed by the results from travel blanks. Generally, the results showed no contamination in the field which is an improvement over 1991 results.

Copper

For the prepared reference solutions, Zenon gave an average accuracy of 144% (91 - 363%) and a precision of 22% (0 - 137%) at the 5 µg/L level. Copper results are therefore expected, on average, to be about 44% higher than the true value and can be replicated within 22% by the laboratory. Extreme swings in the accuracy and precision, as indicated by the bracketed ranges, are usually produced by occasional outliers.

Zenon produced similar copper results from the St. Lawrence River samples. Accuracy averaged 150% (101 - 196%) and precision 25% (11 - 38%) at the 2.8 µg/L level. These relatively poor results are consistent with the solution levels being less than ten times the minimum detection limit.

Iron

The Zenon accuracy from reference solutions averaged 96% (82 - 106%) and the precision 8% (0.35 - 55%) at the 300 µg/L level. Iron results are therefore expected to be 4% below the true value, on average, and can be replicated within 8% in the laboratory. However, while the average accuracy was high the wide range indicates the presence of a few outliers.

Similar iron results were obtained from the St Lawrence River samples. Accuracy averaged 107% (101 - 113%) and precision 11% (4.5 - 20%) at the 129 µg/L level.

Lead

The Zenon accuracy for reference solutions averaged 102% and the precision 19% at the 10 µg/L level. At the 5 µg/L level, average results were 109% for accuracy and 17% for precision. These results were fairly close with perhaps slightly more accurate results at the higher level, as might be expected. The overall averages for both levels were 105% (76 - 130%) for accuracy and 18% (0 - 46%) for precision. Lead results are therefore likely to be 5% higher than the true value and can be replicated within 18%.

Zinc

The Zenon accuracy for reference solutions averaged 100% and the precision 13% at the 50 µg/L level. At the 30 µg/L level, average results showed little change at 96% for accuracy and 9% for precision. The overall averages for both levels were 98% (86 - 108%) for accuracy and 11% (1.7 - 22%) for precision. Thus, zinc results are expected to be 2% below the true value and can be replicated within 11% in the laboratory.

The results from the St. Lawrence River samples were not as good at a concentration level of 3.3 µg/L. Accuracy averaged 226% (126 - 270%) and precision 29% (19 - 46%). The poorer results may be due to a problem analyzing at a level that was ten times less than that of the prepared reference solutions. They are also consistent with the solution level being less than ten times the minimum detection limit.

Aluminum

Analysis of the St. Lawrence River samples by Zenon gave an average accuracy of 117% (73 - 140%) and an average precision of 7% (4 - 9%) at an aluminum level of 84.4 µg/L. Thus, on average, total aluminum can be expected to be 17% above the true value and to be replicated within 7%.

The overall field plus laboratory precision from replicate lake water samples was 18% for one set of replicates and 57% for another at the aluminum level of 50 µg/L. These results suggest that

there could be a loss of precision due to sampling in the field which is significantly higher than the precision loss in the laboratory. More field work will be needed to quantify this problem.

Cadmium

All laboratory results were below the detection limit of 2 µg/L provided by Zenon in this instance for St. Lawrence River samples. Since the actual level was 0.028 µg/L, such a result would be expected. It shows, at least, that there were no major cadmium contamination problems at the laboratory.

Chromium

Analysis of the St. Lawrence River samples by Zenon gave an average accuracy of 1024% (756 - 1422%) and an average precision of 27% (16 - 40%) at a chromium level of 0.45 µg/L. These results indicate a major problem with accuracy since reported levels can be expected to be about ten times higher then actual levels.

Cyanide (strong-acid and weak-acid dissociable)

The quality assurance results for these variables could not be used due to problems with the analyses. In all cases the 72-hour time limit for digestion of samples and the 48-hour time limit for analysis after digestion were exceeded, leading to unreliable data.

Ammonia nitrogen

Zenon accuracy averaged 73% (0.1 - 104%) and the precision averaged 13% (1.3 - 27%) at the 10 mg/L level. This rather unexpected result was due to some very low outliers on one batch of

samples. If this unusual occurrence were disregarded, an accuracy closer to 10% would be expected.

Nitrite nitrogen

Zenon accuracy averaged 79% (8 - 103%) and the precision averaged 1% (0 - 2.9%) at the 0.060 mg/L level. As with ammonia nitrogen, this accuracy result came from unusually low outliers on one batch of samples. Disregarding this result would produce an expected accuracy below 4%.

Suspended solids

Zenon accuracy averaged 85% (79 - 95%) at the 100 mg/L level and 109% (70 - 165%) at the 10 mg/L level. The equivalent values for precision were 9% (4 - 15%) and 16% (6 - 24%). As would be expected, results were less variable at the higher concentration.

PROVINCIAL OVERVIEW OF RESULTS

Presentation of Results

In the tables summarizing the monitoring data, there are five kinds of concluding statement. These are: objective met, objective not met, objective not checked, objective omitted, and indefinite result.

To get an overview of performance for the Province, the number of occurrences of each conclusion were totalled for each water basin from the summary tables. In compiling these totals, each instance of a maximum (or minimum) objective being met or not met was counted together with all average and percentile values.

The results of this compilation are shown in Table 1. The sum of occurrences for each kind of conclusion is given by Region and then totalled for the whole Province. The occurrences are also expressed as a percent of the total of all occurrences, both by Region and for the Province as a whole.

Discussion of Results

Although the results apply to specific occurrences, we assume in this analysis that they are representative of the whole year. This simplification is a conservative approach to describing the state of water quality since data were usually collected during worst-case conditions.

Table 1 shows that the objectives were met 81% of the time in the Province as a whole in 1992. This result varied according to Region from 63% to 87%. Objectives were not met from between 4.5% to 21% of the time, with an overall average of 10%.

The occurrence of objectives not checked, objectives omitted, or indefinite results averaged 2%, 4%, and 3%, respectively. If we subtract these relatively minor instances of no result from the

total, then the number of instances (or percent of time) that objectives were met becomes 89% and the number not met 11%.

We can therefore state that, in the Province as a whole, the objectives were met about 89% of the time in 1992. This is an approximate statement since it can be influenced by several monitoring factors. For example, the frequency at which particular objectives in any Region are monitored can change the final result. The inclusion or omission of water basins with either serious or minor water quality problems will obviously also affect the outcome.

The overall result for objectives met in 1992 was slightly lower than results for previous years. The objectives were met 94% of the time in 1987, 93% in 1988, 92% in 1989, 93% in 1990, and 90% in 1991. The data suggest a minor downward trend. As the monitoring program is repeated in future years the general picture could change even further. New basins will be added and, with a shrinking monitoring budget, there will be a tendency to cease monitoring in areas where objectives are being met consistently by a wide margin, as described in the Methods section (Guide to ranking future monitoring).

As a first priority, we will probably concentrate on areas where the worst human-made water quality problems occur. This strategy could, at first, produce a more negative general result. We would expect the situation to improve in subsequent years as corrective action is taken. The goal, of course, is for water quality objectives to be met 100% of the time in all such areas. Monitoring in future years, followed by corrective action where required, will show how close we can get to this ideal situation.

VANCOUVER ISLAND REGION

Cowichan-Koksilah Rivers

Results are presented in Table 2 and site locations in Figure 2.

The Cowichan River is the most important river on Vancouver Island for recreational and commercial fisheries. The Koksilah River is a major tributary of the Cowichan River near its mouth. Possible sources of contamination include treated municipal sewage and effluents from a fish hatchery, a sawmill, and abandoned metal mines.

The objectives for fecal coliforms, *E. coli* , and enterococci were generally not met in the Cowichan and Koksilah rivers, as has been the case since monitoring started in 1988. These objectives are fairly restrictive upstream from Duncan since they were set to protect drinking-water use after disinfection only. As recommended in the 1989 report, the sources of possible bacteriological contamination need to be established before the situation can be corrected.

Dissolved oxygen levels, measured during the summer, at times exceeded the objective in both rivers, especially in the lower reaches. Similar results have been reported since 1988.

The objectives for turbidity, suspended solids, and ammonia were generally met throughout the Cowichan River as has usually been the case in the past. No data were collected on chlorophyll-a copper, lead, zinc, and copper-8 quinolinolate. While the objectives for heavy metals have been met in the past, those for chlorophyll-a and copper-8 have never been checked.

Middle Quinsam Lake

Results are presented in Table 3 and site locations in Figure 3.

Middle Quinsam Lake drains via the Quinsam River into the Campbell River near its estuary. The Middle Quinsam Lake sub-basin is a valuable habitat for trout and salmon and could be impacted by an open-pit coal mine now being developed in the area.

Not all the objectives needed to be checked in 1992 because the mine was operating at about 50 percent of full-scale capacity and there was no mining in the Long Lake area. Thus some measurements were deliberately omitted, as shown in Table 3.

Most of the objectives tested were met. The only exception was the objective for zinc which was exceeded once in the Quinsam River where it enters Middle Qinsam Lake (the objective was met on nine other occasions).

Objectives met included those for phosphorus in Middle Quinsam lake, suspended solids, ammonia, nitrate, nitrite, dissolved oxygen, aluminum, cadmium, cobalt, copper, lead, manganese, mercury, nickel, and silver. All these results were similar to those obtained from 1989 to 1991 (in 1990, the zinc objective was exceeded in two instances).

The results for pH were indefinite because insufficient samples were collected in 30 days to calculate medians and 90th percentiles. The results for arsenic and iron were indefinite because too few samples were collected to calculate monthly averages. The objective for mercury in water was not checked, although it has been met in the past. The objective for mercury in fish has yet to be checked.

Oyster River

Results are presented in Table 4 and site locations in Figure 4.

The Oyster River flows from the Forbidden Plateau area into the Strait of Georgia, south of Campbell River. The river and its tributaries are important habitat for several species of trout and salmon. The main threats to water quality are logging and mine exploration. The latter is expected to lead to active mining in the future, especially for coal.

Most of the objectives were checked in 1992 as they had been in 1991 and similar results were obtained (in 1990, the first year of monitoring, many measurements were omitted). The only objective exceeded was for chromium in the Oyster River, Woodhus Creek, and the Little Oyster River. In 1991, the chromium objectives was exceeded once in the Oyster River and further testing was recommended. In 1992, the objective was exceeded in about half of the samples collected, but our quality assurance results suggest that the laboratory tends to report higher than actual levels.

Objectives met included those for turbidity, suspended solids, ammonia, nitrate, pH, aluminum, arsenic, cobalt, copper, lead, manganese, nickel, and zinc. Testing for fecal coliforms, nitrite, cadmium, iron, and mercury was not carried out in 1992. The objective for lead in fish has yet to be tested.

Elk and Beaver Lakes

Located near Victoria, these are the most important recreational fisheries lakes on southern Vancouver Island. Water-contact recreation is also very important in the lakes. Residential and agricultural development and the release of phosphorus from lake sediments are responsible for the present eutrophic state of the lakes.

Since the objectives for Elk and Beaver lakes were completed during 1992, monitoring to check their attainment will start in 1993.

SKEENA REGION

Bulkley River

Results are presented in Table 5 and site locations in Figure 5.

The Bulkley River is a major tributary to the Skeena River. It is an important river for fisheries and has some drinking water use. The main influences on water quality are treated municipal effluent from Houston and Smithers and possible contamination in the headwaters from mining.

The objective for fecal coliforms was not met upstream from Houston although it was met upstream from Smithers. The objective is fairly restrictive in these locations since it was set to protect drinking water use. The same result was obtained in 1991. Elsewhere, the objective was met as were all other objectives checked. These included objectives for turbidity, suspended solids, chlorophyll-*a*, ammonia, nitrite, and dissolved oxygen. Similar results have been obtained from 1987 to 1990. The source of the relatively higher fecal coliform counts upstream from Houston needs to be established before the problem can be corrected.

Kathlyn Seymour, Round, and Tyhee Lakes

Results are presented in Table 6 and site locations in Figure 6.

These four small lakes, in the Smithers area, are used for recreation, domestic water supply, and irrigation. The main influence on water quality is residential development around the lakes and, in addition for Kathlyn Lake, the proximity of the airport.

The fecal coliform objectives were met at all domestic water intakes and beaches where measured in all four lakes, except at a water intake in Kathlyn Lake. Water near intakes in Kathlyn, Seymour, and Tyhee lakes has occasionally exceeded the objective in the past (1988-1990) although all the coliform objectives were met in 1991. The objective for turbidity was exceeded at

times in Seymour and Round lakes and the colour objective was exceeded at times in all the lakes except Tyhee Lake. Similar results have been obtained in the past.

The total phosphorus objective was exceeded in Kathlyn Lake but could not be checked in Tyhee Lake because stratification had occurred at sampling time. The objective was not checked in Round Lake. All the objective results reflect the tendency for the lakes to be eutrophic. Long-term measures outlined in the assessment report setting the objectives need to be implemented to reverse this trend.

Lower Kitimat River and Arm

Results are presented in Table 7 and site locations in Figure 7.

The river and arm are an important migration route for salmonids, and the water is also used for recreation and for industrial and municipal supplies. A kraft pulp mill and a municipal treatment plant discharge to the river and an aluminum smelter discharges at the head of the arm.

The objectives were monitored for three years from 1988 to 1990. The data obtained were fairly consistent and most objectives were met, except at times those for cyanide, fluoride, suspended solids, nitrite, and certain metals. No monitoring was carried out in 1991 and an assessment to update the existing objectives was started in 1992. Partial monitoring was also resumed in 1992.

Among the objectives checked in 1992, only those for suspended solids and turbidity were exceeded a few times in the river downstream from the pulp mill. Other objectives that were met included those for ammonia, nitrite, dissolved oxygen, pH, and the objective for pulp mill toxicity. The toxicity results, reported for the first time in 1992, covered the whole year and show that the mill effluent posed no threat to aquatic life in the Kitimat River.

Lakelse Lake

Results are presented in Table 8 and site locations in Figure 8.

Lakelse Lake drains into the Skeena River and is important for salmon spawning and rearing and for recreation. It is also used as a domestic water supply. The only threats to water quality are septic tanks around the shoreline and possibly logging in watersheds that drain into the lake.

All the objectives were checked and were met in 1992. These included objectives for fecal coliforms, turbidity, phosphorus, chlorophyll-*a* , and dissolved oxygen. Similar results were obtained from 1987 to 1990, when all objectives were met (except chlorophyll-*a* in 1990 and 1991), and indicate that the lake is in good condition.

NORTHERN INTERIOR REGION

Charlie Lake

Results are presented in Table 9 and site locations in Figure 9.

Charlie Lake is used as a drinking water supply and for recreation. Agriculture and residential development around the lake are factors affecting water quality.

Results from bathing beaches were indefinite due to insufficient sampling. Since 1989 the bacteriological quality of the water at beaches has improved and there have been no beach closures. At the Fort St. John intake, the more stringent fecal coliform objective to protect drinking water was met year-round in 1992. In the past, this objective has sometimes been met (1987,1988, 1990) and sometimes been exceeded (1989, 1991).

The phosphorus objective at spring overturn was met for the second year in a row since 1987. The phosphorus objective for other times of the year was usually met until July after which time it was exceeded. These results are similar to those of 1991 and show that the lake is not as eutrophic as it has been in the past.

Bullmoose Creek

Results are presented in Table 10 and site locations in Figure 10.

Bullmoose Creek and its tributaries (West and South Bullmoose creeks) are important recreational fish habitat. The creeks are adjacent to an open pit coal mine.

The objective for turbidity was met in West and South Bullmoose creeks but exceeded at times in Bullmoose Creek during freshet. In the past, the objectives for turbidity and suspended solids have sometimes been exceeded during the freshet period. The objective for nitrate was also

exceeded in Bullmoose Creek as well as in West Bullmoose Creek, a result similar to those obtained in 1989 and 1990.

Other objectives checked were met and included those for nitrite, and pH. No other objectives were checked in 1992. In the past, the objective for dissolved oxygen has been met while those for fecal coliforms and chlorophyll-*a*, have been exceeded.

Nechako River

Results are presented in Table 11 and site locations in Figure 11.

The Nechako River, a major tributary to the Fraser River at Prince George, has its flow controlled for power generation. The river is an important route for migrating salmon. Water quality can be affected by treated municipal sewage and diffuse sources sush as forestry and agriculture. Water temperature can be influenced by the flow of water released frm the dams and by the manner in which it is released.

The fecal coliform objective was met in the Nechako River except immediately downstream from Vanderhoof. This objective has usually been exceeded at some time since 1987, except in 1991 when it was met at all sites. In major tributaries (Stuart River, Necoslie River, and Chilako River), the objective was met as it has been in the past.

Other objectives which were met in the Nechako, the Stuart, and the Chilako rivers (with exceptions as noted) were those for ammonia, nitrite, dissolved oxygen (not checked in Stuart), and pH (not checked in Chilako). Total gas pressure was not measured although the objective was met in 1989 and 1990. Chlorophyll-*a* was also omitted although in 1988, the only year it was checked, the objective was met in the Nechako River but exceeded in the Stuart River. No measurements were made in the Chilako River in 1991.

The temperature objective immediately downstream from Cheslatta Falls was met during the winter months, from January to June and after October. However, during the summer months

(June to September) the objective was frequently exceeded. Similar results have been obtained since 1987. Further downstream, just below Vanderhoof, a less stringent temperature objective was met most of the year except for certain weeks in June and August. Temperature objectives will presumably be met when a coldwater release structure, planned for the Kenney Dam upstream from Cheslatta Falls, is installed.

Pine River

Results are presented in Table 12 and site locations in Figure 12.

The Pine River, a tributary to the Peace River, supplies water to Chetwynd and supports significant sportfish populations. The water quality is considered to be mostly in a natural state with the major influence coming from treated sewage from the Village of Chetwynd.

Although monitoring is a low priority for this basin, some data were collected in 1992. They showed objectives being met for chlorophyll-*a*, ammonia, nitrite, and dissolved oxygen. Past results show all objectives being met fairly consistently from 1987 to 1990. There was no monitoring in 1991.

Pouce Coupe River and Dawson Creek

Results are presented in Table 13 and site locations in Figure 13.

The Pouce Coupe River runs into the Peace River inside the Alberta Border. Dawson Creek is its major tributary. The waters are affected mainly by municipal discharges.

In the Pouce Coupe River, the objectives for fecal coliform, chlorophyll-*a*, nitrite, and dissolved oxygen were met as they have been in the past. The ammonia objective was also met as it has been for most years except in 1989. The turbidity and suspended solids objectives were exceeded at times as they have been in most years. In Dawson Creek, fecal coliform objectives do not apply but most of the other objectives checked (turbidity, suspended solids, nitrite, dissolved oxygen)

were exceeded on several occasions as they were in previous years. The ammonia objective was met in 1992.

The municipal treatment plants need to be upgraded if all objectives are to be met. Monitoring was interrupted in 1991 and future monitoring is a low priority.

Peace River

Results are presented in Table 14 and site locations in Figure 14.

Objectives have been set for the Peace River between the Bennett Dam and the B.C.-Alberta Border. The water is important for aquatic life and irrigation and can be affected by municipal discharges, an oil and gas refinery, and a pulp mill built in 1988 after the objectives were set. The objectives were first checked in 1988.

Objectives in the Peace River were checked for three years from 1988 to 1990 and thus only partial testing has been carried out since. Objectives not checked in 1992 but exceeded at times in the past were suspended solids and chlorophyll-*a*. Other objectives which have been met in the past but were also not checked in 1992 included fluoride, cyanide, ammonia, nitrite, total dissolved gases, and chlorophenols.

Those objectives measured in 1992 were all met. They included objectives for fecal coliforms, turbidity, dissolved oxygen, pH, temperature, copper, chromium, lead, nickel, and zinc. The copper, chromium, and lead objectives have at times been exceeded in the past. The objective for phenol, which was exceeded in 1989, was indefinite in 1992 due to lack of a control site measurement. Considering the importance of the Peace River, both in B.C. and in Alberta, we recommend that all objectives that may be at risk due to human influence be checked regularly in the future, as monitoring funds permit.

Williams Lake

Results are presented in Table 15 and site locations in Figure 15.

Williams Lake drains to the Fraser River and is important for drinking water, recreation, and aquatic life. The water quality is affected by phosphorus which comes from lake sediments and from traditional farming practices in the San Jose River drainage, the main inlet to the lake.

Monitoring to check objectives has been carried since 1987. The objective for fecal coliforms to protect bathing beaches was indefinite in 1992 due to insufficient sampling. It has been met in the past. The objective to protect drinking water was not checked. It was met in 1989, the only year it was measured.

The objective for turbidity, which has not always been met in the past, was not checked. The objectives for phosphorus, chlorophyll-*a*, and dissolved oxygen were all exceeded, as they have been fairly consistently in the past. The objective for clarity was met in 1992 as it was once before in 1989. These results reflect the current eutrophic state of the lake.

Upper Finlay River

The Finlay River, located in the north east part of the Province, drains into the north end of Williston Lake. The area of the upper Finlay was the site of a gold and silver mine and mill, now closed. Objectives apply to Jock and Galen creeks which eventually flow into the upper Finlay River.

The objectives were checked in 1987. Since the area is remote and the operation is closed, no further monitoring has been carried out. Future monitoring may be needed if the mill is reactivated on a full-time basis

SOUTHERN INTERIOR REGION

Bonaparte River

Results are presented in Table 16 and site locations in Figure 16.

The Bonaparte River is a tributary to the Thompson River. It is an important trout habitat and is affected by cattle farming and municipal discharges. Its main tributaries are Clinton Creek and Loon Creek.

The objectives have been monitored since 1987 with varying degrees of completion. As a result, limited monitoring has been carried out starting in 1991. Objectives which have been exceeded consistently at times include those for fecal coliforms, suspended solids, turbidity, and chlorophyll-*a*. A similar result was obtained in 1992 for the Bonaparte River and its main tributaries as a whole. Objectives which were met, and have been met usually in the past, included those for ammonia, nitrite, and pH. Dissolved oxygen was not measured in the river or creeks although it has been met there in the past. In Loon Lake, the dissolved oxygen objective was not met in 1992, duplicating past results.

The water quality situation in the Bonaparte River basin seems to be fairly stable and well defined. However, there is a renewed regional interest in protecting water uses in this basin and correcting water quality problems. Routine monitoring to check attainment of objectives will therefore be continued.

Okanagan Valley Lakes

Results are presented in Table 17 and site locations in Figure 17.

To date, objectives have only been set in the five main lakes for phosphorus, which is the main factor controlling the trophic state of the lakes. The lakes are highly valued for recreation,

fisheries, and as a source of drinking and irrigation water. The major inputs of phosphorus are from treated municipal sewage and from diffuse sources that include septic tanks, agriculture, and forestry.

The short-term phosphorus objective was met in Wood Lake, as it has been since 1990. This is a definite trend away from previous results obtained in 1987, 1988, and 1989 when the objective was not met. The phosphorus objectives for Kalamalka and Okanagan lakes were met as usual, including in the Vernon Arm of Okanagan Lake. However, the objective was exceeded in the Armstrong Arm of Okanagan Lake as has been the case in the past. The objective was met in Skaha Lake, as it was for the first time in 1991. It was still exceeded in Osoyoos Lake as it has been in the past.

Similkameen River

Results are presented in Table 18 and site locations in Figure 18.

The Similkameen River flows from Manning Park, through the south Okanagan, then south across the U.S. border. It is important for fisheries, drinking water, and irrigation. Water quality can be affected by mining and municipal discharges. The water quality objectives were updated in 1990 because of an increase in mining activity in the Hedley Creek area.

Objectives have not been checked in the Similkameen River from Manning Park to Princeton, in Allison Creek, and in Wolfe Creek since 1990. In 1991 and 1992, Hedley Creek was added to this list. Taking into account past results, these areas were considered a low priority for monitoring.

All objectives checked in the Similkameen River were met in 1992. These included those for fecal coliforms, suspended solids, cyanide, arsenic, ammonia, pH, chromium, copper, iron, lead, manganese, molybdenum, nickel, and zinc. The objective for iron had been exceeded in 1990 and

the fecal coliform objective, set to protect water for drinking after disinfection only, had been exceeded at times each year since 1987.

Since 1992 is only the second year of monitoring to check the updated objectives, future monitoring of these objectives should be a priority.

Cahill Creek

Results are presented in Table 19 and site locations in Figure 19.

Cahill Creek, its tributaries (Nickel Plate Mine Creek and Sunset Creek), and a parallel stream (Red Top Gulch Creek) enter the Similkameen River near Hedley. Fish from the Similkameen River use the creek near its mouth and the water is also used for irrigation. This watershed is the site of a gold mine and mill which began operating in 1987. Monitoring to check objectives began the same year.

The objectives-checking program was scaled down starting in 1990 since most objectives were either being met or there was a good record of the water quality. While a larger number of objectives than usual were exceeded in 1991, the results improved again in 1992. Objectives exceeded included those for suspended solids, sulphate, cyanide, and pH. The objectives that were met in 1992 included those for turbidity, arsenic, nitrite, nitrate, aluminum, cadmium, copper, iron, lead, mercury, molybdenum, selenium, silver, and zinc.

Bessette Creek

Results are presented in Table 20 and site locations in Figure 20.

Bessette Creek, which flows into the Shuswap River, is formed by the joining of Harris and Duteau creeks near the town of Lumby. Lawson Creek, and its tributary Spider Creek, flow into Duteau Creek. These creeks provide spawning habitat for trout and four species of salmon.

Activities that can affect water quality include a telephone pole treatment plant near Harris Creek, a woodwaste landfill along Duteau Creek, and agricultural operations generally.

This was the second year that most of the objectives were checked. Results were similar to those of 1991 with a number of objectives being exceeded at times. These included objectives for fecal coliforms, *E. coli*, enterococci, suspended solids, turbidity, pH, and dissolved oxygen.

Objectives for tri- and tetra-chlorophenols in water were also exceeded. However, objectives for chlorophenols in sediments and fish were met in 1992. The objectives for chlorophenols in water and in sediments were met in 1991 and exceeded in 1990. Thus, the 1990-1992 results as a whole indicate that the chlorophenol problem is still not under control.

Among other objectives met in 1992 were those for dissolved solids, substrate sedimentation, ammonia, nitrite, nitrate, chlorophyll-*a*, colour, temperature, and resin acids.

Continued monitoring to check objectives will likely be a priority in this basin for the next few years.

Tributaries to Okanagan Lake near Westbank

Results are presented in Table 21 and site locations in Figure 21.

Objectives were set for Peachland, Trepanier, and Westbank creeks which flow into Okanagan Lake in the Peachland-Westbank area. Peachland and Trepanier creeks support spawning populations of kokanee or trout, and all three creeks are used for irrigation and domestic water supplies. Peachland and Trepanier creeks can be affected by seepage from a molybdenum mine which closed recently. Treated sewage effluent is discharged to Westbank Creek.

This was the second year that most of the objectives were checked and only the objective for iron was exceeded in 1992. Bacteriological objectives, set to protect bathing beaches, were not checked in 1992 because of incomplete sampling. These objectives were exceeded in 1991.

Among objectives met were those for suspended solids, dissolved solids, sodium, ammonia, nitrate, nitrite, dissolved oxygen, pH, aluminum, copper, molybdenum, and zinc..

Continued monitoring to check objectives will likely be a priority in this basin for the next few years.

Tributaries to Okanagan Lake near Kelowna

Results are presented in Table 22 and site locations in Figure 22.

Mission, Kelowna, and Brandt's creeks are tributaries to Okanagan Lake on its east shore near Kelowna. Mission and Kelowna creeks support salmonids and the water is also used for irrigation and domestic supply. Brandt's Creek is used mainly for just irrigation. The creeks can be affected by urban stormwater runoff in their lower reaches and by logging or agriculture further upstream. Treated wastewater is discharged to Brandt's Creek.

This was the second year of relatively complete monitoring to check objectives. The objectives for bacteriological contaminants were generally not met as was the case in the past. Other objectives exceeded included those for specific conductivity and dissolved oxygen.

All other objectives checked were met. These included those for ammonia, nitrite, chlorophyll-*a*, pH, aluminum, copper, lead, and zinc. Continued monitoring is recommended.

Hydraulic Creek

Results are presented in Table 23 and site locations in Figure 23.

Hydraulic Creek flows into Okanagan Lake via Mission Creek about 10 km upstream from the lake. Hydraulic Creek is an important source of drinking water relying on disinfection only. The

creek also supports recreational fish and is used for irrigation. Commercial logging in the watershed can affect these water uses.

The summer of 1992 represents the second year of relatively complete monitoring. In 1992, objectives for temperature, suspended solids, and fecal coliforms were exceeded on occasion. In 1991, only the objective for temperature was exceeded. The objective for turbidity was met in both years and the objectives for *E. coli* and enterococci have not yet been checked.

Monitoring to check objectives in Hydraulic Creek will remain a priority for the next few years to establish a reasonable data base.

Thompson River

Results are presented in Table 24 and site locations in Figure 24.

Objectives were set in 1992 for the South Thompson which drains Little Shuswap Lake, the North Thompson which joins the South Thompson at Kamloops, Kamloops Lake, and the lower Thompson which is a major tributary to the Fraser River. This river system is very important for fish, especially salmon and trout. It is used extensively for recreation and is also a source of water for drinking, irrigation, and industrial use.

Between the North Thompson River and Kamloops Lake, the river receives treated effluents from a bleached kraft pulp mill and the from the City of Kamloops. There are also diffuse discharges from agriculture. These discharges can affect Kamloops Lake and the Thompson River downstream.

Objectives were checked for the first time in 1992 but, since the report was finalized late in the year, the monitoring was incomplete. The objective for fecal coliforms, set to protect the water for drinking, was met where applicable in the South Thompson and the lower Thompson but was exceeded in the North Thompson. The objective for chlorophyll-*a*, set in the lower Thompson to

protect against nutrient enrichment, was not met. The only other objectives checked, also in the lower Thompson, were those for resin acids which were met.

Objectives which have yet to be checked include those for *E. coli*, colour, and dioxins and furans in water, sediments, and fish.

KOOTENAY REGION

Columbia and Windermere Lakes

Results are presented in Table 25 and site locations in Figure 25.

The two lakes are important for fisheries, recreation, and as a source of drinking water. Residential development around the lakes is the main potential influence on water quality.

The pattern in the past has been for all objectives set in the lakes to be met, the only exception being the objectives for phosphorus which were exceeded in the lakes in 1987. In 1992, the objective for fecal coliforms at Windermere Lake beaches was met and the objectives for phosphorus in the lakes at spring overturn were also met.

Monitoring to check objectives has been carried out since 1987, although not all objectives were checked each year. Since the objectives have been met fairly consistently, future monitoring is a low priority at this time.

Toby Creek and Upper Columbia River

Results are presented in Table 26 and site locations in Figure 26.

Toby Creek enters the Upper Columbia River just downstream from Windermere Lake. Both streams are important for aquatic life and recreation. Toby Creek can be affected by indirect discharges of domestic sewage and by drainage from an abandoned mine. The Upper Columbia River receives a discharge of treated sewage from Radium Hot Springs.

In the Upper Columbia River, the fecal coliform objectives to protect drinking water upstream from Radium and recreation downstream from Radium were met. Results obtained intermittently in the past since 1987 have shown both these objectives being exceeded. In Toby Creek, the

objectives were last checked in 1988 and 1989. All objectives were met except, on one occasion, those for fecal coliforms. Objectives met included those for suspended solids, nutrients, and certain metals.

Although objectives have not been strictly checked completely over three years, future monitoring is considered a fairly low priority considering results obtained so far.

Columbia River from Keenleyside to Birchbank

Results are presented in Table 27 and site locations in Figure 27.

The Columbia River is one of the major rivers in British Columbia and further downstream in the United States. In B.C., the lower section of the river is important for aquatic life, sport fishing, recreation and, to a lesser extent, as a drinking water supply. In the U.S., it supports a food fishery, major salmon runs, and irrigation and drinking water supplies. In the section of river from the Hugh Keenleyside Dam to Birchbank, the main influence is a kraft pulp mill discharging effluent about 3 km downstream from the dam. The mill is being expanded and modernized and the effluent treatment upgraded to secondary. There are also small discharges of secondary-treated municipal effluent.

This is the second year of monitoring to check the attainment of objectives. Objectives met in 1992 included those for colour, suspended solids, turbidity, pulp mill toxicity in the river, chlorophenols, resin acids, and chlorinated resin acids. Among those exceeded were objectives for dissolved oxygen, pH, dissolved gases, and dioxins and furans in sediments. Similar results were obtained in 1991 except for pH. The pH objective was not always met in 1992 due to some low values both upstream and downstream from the pulp mill.

The objective for dioxins and furans in the muscle of mountain whitefish was exceeded in 1992 as it was in 1991. A public notice advising against consumption of mountain whitefish from the river was issued in 1990. This situation is expected to improve sometime after modernization of the pulp mill. The objective for total dissolved gases was frequently exceeded, both in 1991 and

1992. Changes in the way the Hugh Keenleyside dam is operated will be required in order to meet the objective at all times. The objective for dissolved oxygen was not met on a few occasions although, as in 1991, no recorded values were below 9.4 mg/L.

As in 1991, there were insufficient data to check fecal coliform and *E. coli* objectives and the results for dioxins and furans in water were again indefinite due to high detection limits. Objectives for total organic carbon in sediment and for chlorophyll-*a* have yet to be checked.

Considering the international significance of the river and its importance to aquatic life, continued monitoring remains a priority.

LOWER MAINLAND REGION

Fraser River from Hope to Kanaka Creek

Results are presented in Table 28 and site locations in Figure 28.

Objectives have been set for the Fraser River, for tributaries entering from the south, and for all major water courses between the Fraser River and the International Border. The Fraser River is a major salmon migration route and the tributaries are important spawning areas. The major discharges to the Fraser River in this section are of treated municipal sewage.

Monitoring to check objectives was carried out in 1987,1988, and 1990 and 1992. The results for 1992 showed that the fecal coliform objective was met in the Fraser River and in some tributaries, but exceeded in certain other tributaries. The objective for dissolved oxygen was met in the river, but was not met in several of the tributaries. The ammonia objective was generally met in the river and tributaries except in Elk Creek. The results for 1992, although incomplete, were similar to past results.

Considering the importance of the Fraser River, past results, and the intermittent nature of the monitoring, at least one more year of complete monitoring should be carried out.

Fraser River from Kanaka Creek to the Mouth

Results are presented in Table 29 and site locations in Figure 29.

The river and outer estuary are very important for salmon migration and rearing. The water is used for irrigation and certain beaches are heavily used for recreation. Water quality can be affected by major discharges of municipal and industrial effluents.

Monitoring to check objectives has been carried out annually since 1987. Due to the provincial importance of this river and the threats to water quality that exist in this section, such monitoring will be continued.

In 1992, the fecal coliform objective set to protect irrigation was met in the Main Stem, the North Arm, and the Middle Arm. In the Main Arm, it was not met at times downstream from Annacis. The objective to protect swimming was met at all points along Iona beach. Results for Tsawwassen beach were indefinite due to insufficient sampling. These coliform results were similar to those obtained in the past.

The dissolved oxygen objective was met in the Main Stem and in all the river arms. However, it was not met in the Main Arm sloughs (Gunderson, Deas, and Ladner sloughs) and the North Arm sloughs (Tree Island, Eburne, and MacDonald sloughs). Similar results have been obtained in the past. No data were collected on Sturgeon Bank and Roberts Bank. The only other objectives exceeded were those for copper and for PCBs in sediment. Copper was exceeded in the Middle Arm and PCBs were exceeded in the sediments of the Main Arm in Ladner Harbour and close to a naval dock.

Other objectives checked in 1992 were met. These included those for suspended solids, ammonia, pH, lead, zinc, and chlorophenols in sediments. The results for chlorophenols confirm those of 1990 and 1991 which showed a definite improvement over 1989 when the objective was exceeded in the Main and North arms.

Boundary Bay

Results are presented in Table 30 and site locations in Figure 30, respectively.

Boundary Bay sustains a crab and herring fishery and is important for recreation. The little Campbell River, the Serpentine River, and the Nicomekl River are tributaries to Boundary Bay on the east side. They provide important habitat for trout and salmon and are used for irrigation. The

main influences on water quality are from sewage pumping stations, stormwater, and septic tanks in Boundary Bay and from agriculture in the tributaries.

The fecal coliform objectives to protect bathing beaches were exceeded at times in parts of Boundary Bay in 1992, including at sites in White Rock and Centennial Beach. The objective to protect irrigation use was met in the rivers except in Latimer Creek, a tributary to the Serpentine River near the headwaters.

The objectives for suspended solids and turbidity were met in all areas except in Hyland Creek, a tributary to the Serpentine River near the mouth. The dissolved oxygen objective was not met in the bottom water of Boundary Bay (below 9 m) and at a site near a pump station. It was also frequently not met in the tributary rivers. Low dissolved oxygen has been a chronic problem in this waterbody.

The substrate sedimentation objective was not checked in1992, although it had been in 1990 and 1989. At that time the objective was met in some streams and exceeded in others, usually near the mouths.

The maximum objective for ammonia was met in the tributary streams. On the other hand, the nitrite objectives were frequently exceeded in theses streams. These results are similar to those obtained in the past. The objectives for toxic substances such as those for lead in the Nicomekl River and PCBs in the sediments of Boundary Bay and the tributaries were not checked in 1992 but have been met in the past.

Monitoring to check objectives has been carried out since 1988, although not completely every year. Considering the length of record and the consistency of results, further monitoring is a low priority at this time.

Burrard Inlet

Results are presented in Table 31 and site locations in Figure 31.

Burrard Inlet includes Port Moody Arm, Indian Arm, Vancouver Harbour, False Creek, and English Bay. The water is designated for aquatic life and wildlife in all areas and for primary-contact recreation in most areas, except in False Creek. There are several municipal and industrial discharges to Burrard Inlet which can affect water quality. These include primary-treated sewage, combined sewer overflows, stormwater, bulk-loading terminals, a sugar refinery, a sodium chlorate plant, a chlor-alkali plant, and oil refineries.

This is the third year that objectives for Burrard Inlet have been checked but only the second year that monitoring was fairly complete in comparison to the first year of monitoring in 1990.

Extensive data were collected for fecal coliforms at bathing beaches. Samples of the data are summarized in Table 31. The objective was met in all areas except at Deep Cove in Indian Arm. The enterococci objective was met in all areas tested. These results represent an improvement over 1991 and show that beaches in the area remain fit for swimming during the recreational season.

The objective for suspended solids was tested using Indian Arm as a control site. The objective was generally met except occasionally in outer Burrard near Locarno and in False Creek.

The ammonia objectives were met throughout Burrard Inlet. The objective for dissolved oxygen was frequently not met at all sites tested, although the minimum value always occurred in the bottom waters and was usually above 5 mg/L. These measurements were made in the summer thereby presenting a worst case for dissolved oxygen values. The pH objective, applicable between 2nd. Narrows and Roche Point, was met.

The objective for arsenic in water was met at all sites tested. Values for arsenic in the sediments were indefinite due to a high detection limit (the objective was met in 1991). Objectives for a number of heavy metals in water and sediments were set for various locations. There was more of a tendency for objectives to be exceeded in the sediments than in the water. Results can be summarized as follows:

- in water, objectives for cadmium, iron, lead, mercury, and nickel were met. Objectives for zinc were exceeded except in outer Burrard and False Creek while those for copper were exceeded at most sites.
- in sediments, objectives for chromium, and nickel were met while those for cadmium, copper, lead, mercury, and zinc were often not met. High values occurred near oil refineries and combined sewer overflows. The mercury objective for fish was not met in the muscle of some of the English sole from False Creek and off Locarno Park.

The above results for metals were fairly similar to those obtained in previous years. The major difference was the mercury objective for fish which was met in 1991 but exceeded in some samples in 1992.

Objectives have been set for a number of organic compounds, many of which were checked for the first time in 1991. Similar results were obtained again in 1992. The objective for PCBs was exceeded in sediments from Vancouver Harbour and False Creek. The objective for phenols was not met on several occasions in the Harbour and in Port Moody Arm. For PAHs, objectives for individual PAHs in sediments have been grouped as either low molecular weight (L-PAH) or high molecular weight (H-PAH) compounds. The L-PAH objectives were met in outer Burrard sediments but were generally exceeded elsewhere. The H-PAH objectives were generally exceeded in all areas. Results for tributyl tin were indefinite due to high detection limits and objectives for chlorophenols, ethylene dichloride, and styrene were not checked.

Burrard Inlet Tributaries

Results are presented in Table 32 and site locations in Figure 32.

Objectives were set for three tributaries to Burrard Inlet. School House Brook discharges to Port Moody Arm and could be influenced by a chemical polymer plant. Lynn Creek discharges to Vancouver Harbour and could be affected by a municipal landfill. The Capilano River discharges to outer Burrard Inlet and may also be affected by a municipal landfill. The main uses of these tributaries are recreation, aquatic life, and wildlife.

The results for1991, the first year of testing, were very incomplete. The record for 1992 improved but was still not complete. All objectives tested were met. These included objectives for fecal coliforms, ammonia, nitrite, chlorophyll-*a* (measured in the Capilano River only), dissolved oxygen, copper (measured in the Capilano River and Lynn Creek), and mercury. The copper objective was exceeded in School House Brook in 1991 but was not checked in 1992.

Other objectives not checked included those for *E. coli*, enterococci, phenols, temperature, pH, cadmium, chromium, cobalt, iron, lead, zinc, mercury in fish, chlorophenols in water and sediments, and PCBs in water, sediments, and fish.

North Shore Lower Fraser Tributaries

Results are presented in Table 33 and site locations in Figure 33.

Objectives have been set for the following four tributaries to the north shore of the lower Fraser River in the Lower Mainland: Kanaka Creek, the Pitt River, the Coquitlam River, and the Brunette River. All these streams, and their tributary streams and lakes, support salmon and trout fisheries to varying degrees. Most are important for recreation and some are sources of drinking water requiring treatment. Discharges which can affect water quality include stormwater, agricultural runoff, treated sewage, landfill leachates, wastewaters from gravel operations, and a wood preservation plant.

Fecal coliform, *E. coli*, and enterococci objectives were exceeded in many of the streams. These included Kanaka Creek, the Alouette River, the North Alouette River, Or Creek and Scott Creek (tributaries to the Coquitlam River), and Deer Lake. In the Pitt and Coquitlam rivers, the fecal coliform objective was met but those for *E. coli* and enterococci were exceeded. Only in Pitt Lake were the objectives for all three microbiological indicators met. The objectives for *Pseudomonas aeruginosa* were checked for the first time in 1992 and were met in Deer Lake but exceeded in Scott Creek, Hoy Creek (a tributary to Scott Creek), and Burnaby Lake. These results are similar to

those of 1991 but in contrast to those of 1990 when the objectives were generally met in the Pitt River, the Alouette River, the North Alouette River, the Coquitlam River, and Or Creek.

The objectives for suspended solids and turbidity were frequently indefinite due to a lack of control sites. Both objectives were met in the Coquitlam River while in Kanaka Creek the objective for suspended solids was met and that for turbidity was not. The substrate sedimentation objective was met in the Coquitlam River but exceeded in Kanaka Creek in 1992, the first year it was checked in either stream.

The objectives for ammonia and nitrite were met in all streams and lakes. The objective for chlorophyll-*a* was met in all areas checked in 1992 as had been the case in 1990. The dissolved oxygen objective was generally met, except at times in the Alouette and North Alouette rivers. The pH objective was met in all areas tested. It was not checked in the Coquitlam and Brunette river drainages or in Kanaka Creek where slightly lower pH values have been recorded in the past.

Some heavy metal objectives were exceeded at times in the Brunette River drainage. Among objectives not met were those for copper, lead and zinc in both water and sediments The objectives for chromium and mercury were met throughout the system. Data on lead in fish from Burnaby Lake were indefinite due to a high detection limit.

The objectives for chlorophenols in water, sediments, and fish were met in the Pitt River, a similar result to 1991 and an improvement over 1990 when the objective for chlorophenols in sediments was exceeded. This was the first time that the objective for chlorophenols in fish had been checked in the Pitt River.

Pender Harbour

Results are presented in Table 34 and site locations in Figure 34.

Pender Harbour, a small coastal inlet on the Sechelt Peninsula, is important for recreational boating and fishing. It also supports commercial fishing and some commercial shellfish

harvesting. The main influences on water quality are from diffuse sources such as septic tanks, some agriculture, and from sewage discharges from boats.

Water quality objectives were established in early 1992 and monitoring to check their attainment also started then. The enterococci objective to protect primary contact recreation was met although there were many indefinite results due to insufficient sampling. The fecal coliform objective to protect shellfish harvesting could not be checked due also to insufficient sampling.

The objectives for metals in the water column were generally met. These included objectives for copper, zinc, lead, and iron (the iron objective was exceeded once in Bargain Bay). In the sediments, the copper objective was met. The zinc and lead sediment objectives were met in Bargain Bay but exceeded in Pender Harbour. The objective for lead in tissue was met in oysters from Pender Harbour and Bargain Bay.

The objective for dissolved oxygen was met except in deeper waters where it was exceeded about 10% of the time. The ammonia objective was met in Pender Harbour but objectives for PAHs in sediments were frequently exceeded near docks.

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TABLE 1

PROVINCIAL OVERVIEW OF WATER QUALITY OBJECTIVES - 1992

REGION	NUMBER OF OCCURRENCES					
	OBJECTIVES MET	OBJECTIVES NOT MET	OBJECTIVES NOT CHECKED	OBJECTIVES OMITTED	INDEFINITE RESULT	TOTALS
Vancouver Island	337	32	37	57	68	531
	63%	6%	7%	11%	13%	100%
Skeena	241	14	1	35	4	295
	82%	4.50%	0.50%	12%	1%	100%
Northern Interior	1944	225	17	24	21	2231
	87%	10%	1%	1%	1%	100%
Southern Interior	1567	97	48	123	30	1865
	84%	5%	3%	6%	2%	100%
Kootenay	546	183	0	2	12	743
	73%	25%	0%	0%	2%	100%
Lower Mainland	3249	450	117	98	126	4040
	80%	11%	3%	3%	3%	100%
All Regions	7884	1001	220	339	261	9705
	81%	10%	2%	4%	3%	100%
All Regions less occurrences with no result	7884	1001				8885
	89%	11%				100%

TABLE 2

COWICHAN - KOKSILAH RIVERS WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc. (np)	Cowichan River: E206108 d/s Cowichan Lake	Jul. 27 - Sep. 2	5	<2 - 54/100 mL np = 29/100 mL	Objective not met
	0120802 u/s Highway 1	Jul. 27 - Sep. 2	5	9 - 14/100 mL np = 14/100 mL	Objective not met
	E206106 1 km d/s Duncan STP	Jul. 27 - Sep. 2	5	5 - 57/100 mL np = 40/100 mL	Objective not met
	Koksilah River: E207425 Pt. Renfrew Rd.	Jul. 27 - Sep. 2	5	4 - 33/100 mL np = 30/100 mL	Objective not met
	E206976 Koksilah Rd.	Jul. 27 - Sep. 2	5	9 - 34/100 mL np = 30/100 mL	Objective not met
	0123981 at Highway 1	Jul. 27 - Sep. 2	5	<2 - 289/100 mL np = 179/100 mL	Objective not met
E. Coli <10/100 mL 90th perc. (np)	Cowichan River 0120802 u/s Highway 1	Jul. 27 - Sep. 2	5	8 - 15/100 mL np = 14/100 mL	Objective not met
	Koksilah River : E207425 Pt. Renfrew Rd.	Jul. 27 - Sep. 2	5	4 - 28/100 mL np = 22/100 mL	Objective not met
	E206976 Koksilah Rd.	Jul. 27 - Sep. 2	5	7 - 37/100 mL np = 29/100 mL	Objective not met
	0123981 at Highway 1	Jul. 27 - Sep. 2	5	<2 - 208/100 mL np = 130/100 mL	Objective not met
E. Coli <385/100 mL geometric mean (gm)	Cowichan River E206106 1 km d/s Duncan STP	Jul. 27 - Sep. 2	5	7 - 54/100 mL gm = 13/100 mL	Objective met

TABLE 2 continued

COWICHAN - KOKSILAH RIVERS WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Enterococci <3/100 mL. 90th perc. (np)	Cowichan River E206108 d/s Cowichan Lake	Jul. 27 - Sep. 2	5	1 - 52/100 mL np = 27/100 mL	Objective not met
	Koksilah River: E207425 Pt. Renfrew Rd.	Jul. 27 - Sep. 2	5	5 - 16/100 mL np = 16/100 mL	Objective not met
	E206976 Koksilah Rd.	Jul. 27 - Sep. 2	5	4 - 17/100 mL np = 13/100 mL	Objective not met
	0123981 at Highway 1	Jul. 27 - Sep. 2	5	9 -70/100 mL np = 66/100 mL	Objective not met
Enterococci <100/100 mL geometric mean (gm)	Cowichan River E206106 1 km d/s Duncan STP	Jul. 27 - Sep. 2	5	1 - 9/100 mL gm = 3/100 mL	Objective met
Turbidity max increase 5 NTU or 10%	Cowichan River: 0120802 u/s Highway 1	Jul. 27 - Sep. 2	5	0.3 - 2.7 NTU	Control site
	E206106 1 km d/s Duncan STP	Jul. 27 - Sep. 2	5	0.5 - 1.1 NTU	Objective met
	Koksilah River	1992	0	no data collected	Omitted 1992
Suspended Solids max increase 10 mg/L or 10%	Cowichan River: 0120802 u/s Highway 1	Jul. 27 - Sep. 2	5	1 - 6 mg/L	Control site
	E206106 1 km d/s Duncan STP	Jul. 27 - Sep. 2	5	1 - 11 mg/L	Objective met
	Koksilah River	1992	0	no data collected	Omitted 1992
Ammonia-N <1.30 mg/L av 6.75 mg/L max at pH = 7.9 temp = 15 C	Cowichan River: 0120802 u/s Highway 1	Jul. 27 - Sep. 2	5	<0.005 - 0.046 mg/L av = 0.019 mg/L	Objectives met
	E206106 1 km d/s Duncan STP	Jul. 27 - Sep. 2	5	0.091 - 0.181 mg/L av = 0.126 mg/L	Objectives met

TABLE 2 continued

COWICHAN - KOKSILAH RIVERS WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Chlorophyll-a 50 mg/m2 max	Cowichan River	1992	0	no data collected	Objective not checked
Tot Cl2 Res. 0.002 mg/L max	Cowichan River	1992	0	no data collected	Omitted 1992
Dissolved Oxygen 8.0 mg/L min Jun - Sep 11.2 mg/L min Oct - May	Cowichan River: E206108 d/s Cowichan Lake	Jul. 27 - Aug. 18	4	8.2 - 8.4 mg/L	Objective met
	0120802 u/s Highway 1	Jul. 27 - Aug. 18	4	8.0 - 9.0 mg/L	Objective met
	E206106 1 km d/s Duncan STP	Jul. 27, Aug. 11 Aug. 4, Aug. 18	2 2	7.6 - 7.8 mg/L 8.0 - 8.2 mg/L	Obj. not met Obj. met
	Koksilah River: E207425 Pt. Renfrew Rd.	Aug. 18 Jul. 27 - Aug. 11	1 3	7.6 mg/L 8.8 - 9.6 mg/L	Obj. not met Obj. met
	E206976 Koksilah Rd.	Aug. 4, 18 Jul. 27, Aug. 11	2 2	7.2 - 7.3 mg/L 8.0 - 8.6 mg/L	Obj. not met Obj. met
	0123981 at Highway 1	Jul. 27 - Aug. 18	4	6.2 - 7.8 mg/L	Objective not met
Dissolved Cu <0.002 mg/L av 0.004 mg/L max or 20% increase	Cowichan River Koksilah River	1992	0	no data collected	Omitted 1992
Dissolved Pb <0.003 mg/L av 0.008 mg/L max or 20% increase	Cowichan River Koksilah River	1992	0	no data collected	Omitted 1992
Dissolved Zn <0.030 mg/L av 0.180 mg/L max	Cowichan River Koksilah River	1992	0	no data collected	Omitted 1992
Copper-8 Quinolinolate 0.0005mg/L max	Cowichan River	1992	0	no data collected	Omitted 1992

TABLE 3

MIDDLE QUINSAM LAKE WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total-P <0.007 mg/L av (May - Sep)	Long Lake: E206619 over deepest point	1992	0	no data collected	Objective not checked
Total-P <0.006 mg/L av (May - Sep)	Middle Quinsam Lake: E206618 over deepest point	May 28 - Sep. 22	16	<0.003 - 0.005 mg/L (1 - 9 m) av = 0.003 mg/L	Objective met
Chlorophyll-a <50 mg/m2 av	Quinsam River d/s Flume L & Long L	1992	0	no data collected	Omitted 1992
Turbidity <1.0 NTU av 5.0 NTU max	Quinsam River: 0900504 d/s Middle Quinsam L.	Jul. 30, Aug 6,12	3	all = 0.2 NTU	Max obj. met Av. not chked.
		Nov 24, Dec 1, 7	3	0.3 - 2.0 NTU	Max obj. met
Suspended Solids <5 mg/L av 25 mg/L max or max increase 10 mg/L	Quinsam River: 0126402 u/s Middle Quinsam L.	Jul. 30, Aug 6,12	3	<1.0 - 10 mg/L	Control site
		Nov 10, Dec 1, 7	3	<4 - 2 mg/L	
	E206901 into Mid. Quinsam Lk.	Jul. 30, Aug 6,12	3	<1 - 1 mg/L	Max obj. met Av. not chked.
		Nov 10, Dec 1, 7	3	<4 - 2 mg/L	Max obj. met
	0900504 d/s Middle Quinsam L.	Jul 30, Aug 6, 12	3	<1 - 1 mg/L	Max obj. met
		Nov. 10 - Dec. 7	4	<4 - 1 mg/L	Max obj. met
	Middle Quinsam Lake: E206618 over deepest point	1992	0	no data collected	Objective not checked
	d/s Flume L & Long L Long Lake	1992	0	no data collected	Omitted 1992
Ammonia-N <1.85 mg/L av 12.7 mg/L max at pH = 7.5 temp = 10 C	Long Lake: E206619 over deepest point	1992	0	no data collected	Omitted 1992
	Middle Quinsam Lake: E206618 over deepest point	1992	0	no data collected	Objectives not checked
	Quinsam River 0900504 d/s Middle Quinsam L.	Jul 30, Aug 6, 12	3	0.007 - 0.008 mg/L	Max obj. met Av. not chked.
		Nov. 10 - Dec. 7	4	<0.005 - 0.013 mg/L	Max obj. met

TABLE 3 continued

MIDDLE QUINSAM LAKE WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Nitrate-N <40 mg/L av 200 mg/L max	Quinsam River: E206901 into Mid. Quinsam Lk.	Jul. 30 - Dec. 7	6	<0.02 - 0.04 mg/L	Max obj. met Av not chked.
	Long lake: E206619 over deepest point	1992	0	no data collected	Omitted 1992
	Middle Quinsam Lake: E206618 over deepest point	1992	0	no data collected	Objectives not checked
	d/s Flume L & Long L	1992	0	no data collected	Omitted 1992
Nitrate-N 10 mg/L max	Quinsam River: 0900504 d/s Middle Quinsam L.	1992	0	no data collected	Objective not checked
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Quinsam River: 0126402 u/s Middle Quinsam L.	Jul 30 , Aug 6, 12	3	<0.005 - 0.006 mg/L	Max obj. met Av. not chked.
		Nov 10, Dec 1, 7	3	all <0.005 mg/L	Max obj. met
	E206901 into Mid. Quinsam Lk.	Jul 30, Aug 6, 12	3	<0.005 - 0.006 mg/L	Max obj. met
		Nov 10, Dec 1, 7	3	all <0.005 mg/L	Max obj. met
	Middle Quinsam Lake E206618	1992	0	no data collected	Obj. not chked.
	Long Lake d/s Flume L & Long L	1992	0	no data collected	Omitted 1992
Diss. Oxygen 3 mg/L min 1m above seds. May - Sep	Middle Quinsam Lake E206618 over deepest point	May 28 - Sep 22	6	5.4 - 10.6 mg/L (10 - 13 m)	Objective met
	Long Lake	1992	0	no data collected	Obj. not chked.
pH >6.5 90th perc (np) >6.9 median (med)	Middle Quinsam Lake: E206618 over deepest point	May 28 Jun 15 Jul 14 Aug 12 Sep 22	16 10 11 15 14	0-10 m: 7.3 - 7.6 0-9 m: 7.4 - 7.7 0-10 m: 7.5 - 7.9 0-10 m: 7.0 - 8.0 0-13 m: 6.9 - 7.4	Indefinite result
	Quinsam River d/s Flume L & Long L	1992	0	no data collected	Omitted 1992
	Long Lake	1992	0	no data collected	Objective not checked

TABLE 3 continued

MIDDLE QUINSAM LAKE WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Al <0.05 mg/L av 0.1 mg/L max	Quinsam River: 0126402 u/s Middle Quinsam L.	Jul 30, Aug 6, 12	3	<0.02 - 0.04 mg/L	Max obj. met Av not chked
		Nov 10, Dec 1, 7	3	<0.02 - 0.05 mg/L	Max obj. met
	E206901 into Mid. Quinsam Lk.	Jul 30, Aug 6, 12	3	all < 0.02 mg/L	Max obj. met
		Nov 10, Dec 1, 7	3	all < 0.02 mg/L	Max obj. met
	0900504 d/s Middle Quinsam L.	Jul 30, Aug 6, 12	3	<0.02 - 0.02 mg/L	Max obj. met
		Nov. 10 - Dec. 7	4	<0.02 - 0.02 mg/L	Max obj. met
	Middle Quinsam Lake: E206618 over deepest point	1992	0	no data collected	Objectives not checked
	Long Lake d/s Flume L & Long L	1992	0	no data collected	Omitted 1992
Total As <0.05 mg/L av	Quinsam River: 0126402 u/s Middle Quinsam L.	Jul 30, Aug 6, 12	3	all < 0.001 mg/L	Indefinite result
		Nov 10, Dec 1, 7	3	all < 0.001 mg/L	Indefinite result
	E206901 into Mid. Quinsam Lk.	Jul 30, Aug 6, 12	3	all < 0.001 mg/L	Indefinite result
		Nov 10, Dec 1, 7	3	all < 0.001 mg/L	Indefinite result
	0900504 d/s Middle Quinsam L.	Jul 30, Aug 6, 12	3	all < 0.001 mg/L	Indefinite result
		Nov 10 - Dec 7	4	all < 0.001 mg/L	Indefinite result
	Middle Quinsam Lake: E206618 over deepest point	1992	0	no data collected	Objective not checked
	Long Lake d/s Flume L & Long L	1992	0	no data collected	Omitted 1992

TABLE 3 continued

MIDDLE QUINSAM LAKE WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cd <0.0002mg/L av 0.0003mg/L max	Quinsam River: 0126402 u/s Middle Quinsam L.	Dec. 1, 7	2	0.0001 - 0.0003 mg/L	Max obj. met Av. not chked.
	E206901 into Mid. Quinsam Lk.	Dec. 1, 7	2	0.0001 - 0.0002 mg/L	Max obj. met
	0900504 d/s Middle Quinsam L.	Nov. 24 Dec. 1, 7	3	0.0001 - 0.0002 mg/L	Max obj. met
	Middle Quinsam Lake: E206618 over deepest point	1992	0	no data collected	Objectives not checked
	Long Lake d/s Flume L & Long L	1992	0	no data collected	Omitted 1992
Total Co 0.05 mg/L max	Quinsam River: 0900504 d/s Middle Quinsam L.	Jul 14 - Dec 7	10	<0.003 - 0.003 mg/L	Objective met
Total Cu <0.002 mg/L av	Quinsam River: 0126402 u/s Middle Quinsam L.	Jul 14 - Aug 12	5	0.002 - 0.003 mg/L av = 0.002 mg/L	Objective met
		Nov 10 - Dec 7	5	<0.001 - 0.003 mg/L av = 0.001 mg/L	Objective met
	E206901 into Mid. Quinsam Lk. d/s Middle Quinsam L.	Jul 14 - Aug 12	5	0.001 - 0.003 mg/L av = 0.002 mg/L	Objective met
		Nov 10 - Dec 7	5	<0.001 - 0.004 mg/L av = 0.002 mg/L	Objective met
	0900504 d/s Middle Quinsam L.	Jul 14 - Aug 12	5	0.001 - 0.003 mg/L av = 0.002 mg/L	Objective met
		Nov 10 - Dec 7	5	<0.001 - 0.003 mg/L av = 0.002 mg/L	Objective met
	Middle Quinsam Lake: E206618 over deepest point	1992	0	no data collected	Objective not checked
	Long Lake d/s Flume L & Long L	1992	0	no data collected	Omitted 1992
Total Fe <0.3 mg/L av	Quinsam River: 0126402 u/s Middle Quinsam L.	Jul. 30 - Dec. 7	6	<0.003 - 0.03 mg/L	Indefinite result
	E206901 into Mid. Quinsam Lk.	Jul. 30 - Dec. 7	6	0.04 - 0.14 mg/L	Indefinite result
	0900504 d/s Middle Quinsam L.	Jul. 30 - Dec. 7	7	0.06 - 0.09 mg/L	Indefinite result
	Middle Quinsam Lake	1992	0	no data collected	Objective not checked
	Long Lake d/s Flume L & Long L	1992	0	no data collected	Omitted 1992

TABLE 3 continued

MIDDLE QUINSAM LAKE WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Pb <0.003 mg/L av 0.005 mg/L max	Quinsam River: 0126402 u/s Middle Quinsam L.	Jul. 30 - Dec. 7	6	all < 0.1 mg/L	Max indef. Av not chked.
	E206901 into Mid. Quinsam Lk.	Jul. 30 - Dec. 7	6	all < 0.1 mg/L	Max indef.
	0900504 d/s Middle Quinsam L.	Jul. 30-Dec. 7	7	all < 0.1 mg/L	Max indef.
	Middle Quinsam Lake: E206618 over deepest point	1992	0	no data collected	Objectives not checked
	Long Lake d/s Flume L & Long L	1992	0	no data collected	Omitted 1992
Total Mn 0.05 mg/L max	Quinsam River: 0900504 d/s Middle Quinsam L.	Jul. 30 - Dec. 7	7	max = 0.01 mg/L	Objective met
Total Hg 0.1 ug/L max	Quinsam River Middle Quinsam Lake	1992	0	no data collected	Objective not checked
	Long Lake d/s Flume L & Long L	1992	0	no data collected	Omitted 1992
Total Hg 0.5 mg/kg max in fish, wet wt.	Long & Middle Q. Lks. d/s Flume L & Long L	1992	0	no data collected	Omitted 1992
Total Ni 0.025 mg/L max	Quinsam River: 0126402 u/s Middle Quinsam L.	Jul. 30 - Dec. 7	6	all = 0.002 mg/L	Objective met
	E206901 into Mid. Quinsam Lk.	Jul. 30 - Dec. 7	5	all = 0.002 mg/L	Objective met
	0900504 d/s Middle Quinsam L.	Jul. 30 - Dec. 7	7	all = 0.002 mg/L	Objective met
	Middle Quinsam Lake	1992	0	no data collected	Objective not checked
	Long Lake d/s Flume L & Long L	1992	0	no data collected	Omitted 1992
Total Ag 0.0001mg/L max	Quinsam River: 0126402 u/s Middle Quinsam L.	Jul 14 - Dec 12	5	all < 0.0005 mg/L	Objective met (assumed)
	E206901 into Mid. Quinsam Lk.	Jul 14 - Dec 12	5	all < 0.0005 mg/L	Objective met (assumed)
	0900504 d/s Middle Quinsam L.	Jul 14 - Dec 12	5	all < 0.0005 mg/L	Objective met (assumed)

TABLE 3 continued

MIDDLE QUINSAM LAKE WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Ag 0.0001mg/L max	Middle Quinsam Lake	1992	0	no data collected	Objective not checked
	Long Lake d/s Flume L & Long L	1992	0	no data collected	Omitted 1992
Total Zn 0.03 mg/L max	Quinsam River: 0126402 u/s Middle Quinsam L.	Jul 14 - Dec 12	9	<0.002 - 0.007 mg/L	Objective met
		Nov. 17	1	0.045 mg/L	Objective not met
	E206901 into Mid. Quinsam Lk.	Jul 14 - Dec 12	10	0.002 - 0.029 mg/L	Objective met
	0900504 d/s Middle Quinsam L.	Jul 14 - Dec 12	10	<0.002 - 0.005 mg/L	Objective met
	Middle Quinsam Lake	1992	0	no data collected	Objective not checked
	Long Lake d/s Flume L & Long L	1992	0	no data collected	Omitted 1992

TABLE 4

OYSTER RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <100/100 mL 90th perc. (np)	Oyster River	1992	0	no data collected	Omitted 1992
Turbidity 5 NTU max	Oyster River	1992	0	no data collected	Objective not checked
Turbidity <7 NTU 90th perc.	Oyster River: 0125580 near the mouth	May 12 - Jun. 8	5	0.1 - 0.3 NTU np = 0.3 NTU	Objective met
Susp. Solids 12 mg/L max	Oyster River	1992	0	no data collected	Objective not checked
Susp. Solids <15 mg/L 90th perc.	Oyster River: 0125580 near the mouth	May 12 - Jun. 8	5	<1 - 1 mg/L np = 1 mg/L	Objective met
Ammonia-N <1.85 mg/L av 12.7 mg/L max at pH = 7.5 temp = 10 C	Oyster River: 0125580 near the mouth	Feb. 17, Jul. 7	2	<0.005 - 0.012 mg/L	Max obj. met Av not chkd.
	Woodhus Creek Little Oyster River	1992	0	no data collected	Omitted 1992
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Oyster River Woodhus Creek Little Oyster River	1992	0	no data collected	Omitted 1992
Nitrate-N 10 mg/L max	Oyster River: 0125580 near the mouth	Jan. 16 - Mar. 23	12	<0 02 - 0.23 mg/L	Objective met
	Woodhus Creek Little Oyster River	1992	0	no data collected	Omitted 1992
pH 6.5 - 8.5	Oyster River: E208377 u/s Adrian Creek	1992	0	no data collected	Objective not checked
	Woodhus Creek: E207431 ~ 5 km from mouth	May 12 - Jun. 8	5	7.2 - 7.6	Objective met

TABLE 4 continued

OYSTER RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 - 8.5	Little Oyster River: E207430 near the mouth	May 12 - Jun. 8	5	7.3 - 7.6	Objective met
pH >6.5 90th perc 8.5 max	Oyster River: 0125580 near the mouth	May 12 - Jun. 8	5	7.4 - 8.0 np = 7.9	Objectives met
Dissolved Al <0.05 mg/L av 0.1 mg/L max	Oyster River: 0125580 near the mouth	May 12 - Jun. 8	5	0.02 - 0.04 mg/L av = 0.034 mg/L	Objectives met
	Woodhus Creek: E207431 ~ 5 km from mouth	May 12 - Jun. 8	5	0.02 - 0.04 mg/L av = 0.028 mg/L	Objectives met
	Little Oyster River: E207430 near the mouth	May 12 - Jun. 8	5	0.04 - 0.10 mg/L av = 0.052 mg/L	Max obj. met Av not met
Total As 0.05 mg/L max	Oyster River: 0125580 near the mouth	May 12 - Jun. 1	4	all < 0.001 mg/L	Objective met
	Woodhus Creek: E207431 ~ 5 km from mouth	May 12 - Jun. 1	4	all < 0.001 mg/L	Objective met
	Little Oyster River: E207430 near the mouth	May 12 - Jun. 1	4	all < 0.001 mg/L	Objective met
Total Cd 0.2 ug/L max	Oyster River Woodhus Creek Little Oyster River	1992	0	no data collected	Objective not checked
Total Cr 0.002 mg/L max	Oyster River : 0125580 near the mouth	May 26, Jun. 1	2	0.004 - 0.008 mg/L	Objective not met
		May 12,21, Jun 8	3	all < 0.005 mg/L	Indefinite result
	Woodhus Creek: E207431 ~ 5 km from mouth	May 26, Jun 1	2	0.004 - 0.008 mg/L	Objective not met
		May 12,21, Jun 8	3	all < 0.005 mg/L	Indefinite result
	Little Oyster River: E207430 near the mouth	May 26, Jun. 1,8	3	0.003 - 0.008 mg/L	Objective not met
		May 12 & 21	2	all < 0.005 mg/L	Indefinite result

TABLE 4 continued

OYSTER RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Co 0.002 mg/L max	Oyster River: 0125580 near the mouth	May 12 - Jun. 8	5	all < 0.001 mg/L	Objective met
	Woodhus Creek: E207431 ~ 5 km from mouth	May 12 - Jun. 8	5	<0.001 - 0.001 mg/L	Objective met
	Little Oyster River: E207430 near the mouth	May 12 - Jun. 8	5	<0.001 - 0.001 mg/L	Objective met
Total Cu <0.003 mg/L av <0.005 mg/L 90th perc. (np)	Oyster River: 0125580 near the mouth	May 12 - Jun. 8	5	av = 0.002 mg/L np = 0.003 mg/L	Objectives met
Total Cu <0.010 mg/L 90th perc.	Woodhus Creek: E207431 ~ 5 km from mouth	May 12 - Jun. 8	5	0.001 - 0.004 mg/L np = 0.003 mg/L	Objective met
	Little Oyster River: E207430 near the mouth	May 12 - Jun. 8	5	0.002 - 0.005 mg/L np = 0.004 mg/L	Objective met
Dissolved Fe <0.3 mg/L 90th perc. (np)	Oyster River	1992	0	no data collected	Omitted 1992
Total Pb <3.5 ug/L av 5.9 ug/L max at hardness 12.7 mg/L	Oyster River: 0125580 near the mouth	May 12 - Jun. 8	5	<1 - 1 ug/L av < 1 ug/L	Objectives met
Total Pb <3.9 ug/L av 14.9 ug/L max at hardness 26.2 mg/L	Woodhus Creek: E207431 ~ 5 km from mouth	May 12 - Jun. 8	5	<1 - 1 ug/L av < 1 ug/L	Objectives met
	Little Oyster River: E207430 near the mouth	May 12 - Jun. 8	5	<1 - 1 ug/L av < 1 ug/L	Objectives met

TABLE 4 continued

OYSTER RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Pb 0.8 ug/g max in fish muscle	Oyster River Woodhus Creek Little Oyster River	1992	0	no data collected	Omitted 1992
Total Mn 0.05 mg/L max	Oyster River: 0125580 near the mouth	May 12 - Jun. 8	5	<0.001 - 0.010 mg/L	Objective met
	Woodhus Creek: E207431 ~ 5 km from mouth	May 12 - Jun. 8	5	<0.001 - 0.004 mg/L	Objective met
	Little Oyster River: E207430 near the mouth	May 12 - Jun. 8	5	0.020 - 0.030 mg/L	Objective met
Total Hg <0.02 ug/L av 0.1 ug/L max	Oyster River Woodhus Creek Little Oyster River	1992	0	no data collected	Objectives not checked
Total Hg 0.5 ug/g max in fish muscle	Oyster River Woodhus Creek Little Oyster River	1992	0	no data collected	Omitted 1992
Total Ni 0.025 mg/L max	Oyster River: 0125580 near the mouth	May 12 - Jun. 8	5	all = 0.002 mg/L	Objective met
	Woodhus Creek: E207431 ~ 5 km from mouth	May 12 - Jun. 8	5	all = 0.002 mg/L	Objective met
	Little Oyster River: E207430 near the mouth	May 12 - Jun. 8	5	all = 0.002 mg/L	Objective met
Total Zn <0.01 mg/L av 0.03 mg/L max	Oyster River: 0125580 near the mouth	May 12 - Jun. 8	5	av = 0.005 mg/L max = 0.007 mg/L	Objectives met
	Woodhus Creek: E207431 ~ 5 km from mouth	May 12 - Jun. 8	5	av = 0.006 mg/L max = 0.010 mg/L	Objectives met
	Little Oyster River: E207430 near the mouth	May 12 - Jun. 8	5	av = 0.007 mg/L max = 0.010 mg/L	Objectives met

TABLE 5

BULKLEY RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc. (np)	0400297 u/s Houston	Jul. 13 - Aug. 10	5	4 - 12/100 mL np = 11/100 mL	Objective not met
	0400434 u/s Smithers	Jul. 20 - Aug. 10	4	1 - 5/100 mL	Indefinite result
Fecal Coliforms <200/100 mL geometric mean (gm)	0400295 100m d/s Houston	Jul. 13 - Aug. 10	5	5 - 15/100 mL gm = 9/100 mL	Objective met
	0400435 d/s Smithers in initial dilution zone	Jul. 20 - Aug. 10	4	1 - 2/100 mL	Indefinite result
Turbidity max increase: 5 NTU or 10%	0400297 u/s Houston	Jul. 13 - Aug. 10	5	0.3 - 0.6 NTU	Control site
	0400295 100m d/s Houston	Jul. 13 - Aug. 10	5	0.3 - 0.7 NTU max inc. = 0.3 NTU	Objective met
	0400434 u/s Smithers	Jul. 20 - Aug. 10	4	0.9 - 2.1 NTU	Control site
	0400435 d/s Smithers in initial dilution zone	Jul. 20 - Aug. 10	4	0.9 - 2.7 NTU max inc. = 0.9 NTU	Objective met
Susp. Solids max increase: 10 mg/L or 10%	0400297 u/s Houston	Jul. 13 - Aug. 10	5	1 - 2 mg/L	Control site
	0400295 100m d/s Houston	Jul. 13 - Aug. 10	5	1 - 2 mg/L max inc. = 1 mg/L	Objective met
	0400434 u/s Smithers	Jul. 20 - Aug. 10	5	3 - 12 mg/L	Control site
	0400435 d/s Smithers in initial dilution zone	Jul. 20 - Aug. 10	5	5 - 11 mg/L max inc. = 2 mg/L	Objective met
Tot. Cl2 Res. 0.002 mg/L max	d/s Houston d/s Smithers	1992	0	chlorination not occurring	no need to check obj.
Chlorophyll-a <50 mg/m2 av	d/s Houston 0400295	Aug. 10	2	24 - 32 mg/m2	Objective met
	d/s Smithers 0400035	Aug. 10	2	12 - 21 mg/m2	Objective met

TABLE 5 continued

BULKLEY RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <1.86 mg/L av 9.65 mg/L max at pH = 7.98 temp = 10 C	Bulkley River 0400297 u/s Houston	Jul. 13 - Aug. 10	5	av = 0.009 mg/L max = 0.016 mg/L	Objectives met
	0400295 100m d/s Houston	Jul. 13 - Aug. 10	5	av = 0.075 mg/L max = 0.107 mg/L	Objectives met
	0400434 u/s Smithers	Jul. 20 - Aug. 10	4	<0.005 - 0.021 mg/L	Max obj. met
	0400435 d/s Smithers in initial dilution zone	Jul. 20 - Aug. 10	4	<0.005 - 0.007 mg/L	Max obj. met
Nitrite-N <0.02 mg/L av 0.06 mg/L max	0400297 u/s Houston	Jul. 13 - Aug. 10	5	all < 0.005 mg/L	Objectives met
	0400295 100m d/s Houston	Jul. 13 - Aug. 10	5	all < 0.005 mg/L	Objectives met
	0400434 u/s Smithers	Jul. 20 - Aug. 10	4	all < 0.005 mg/L	Max obj. met
	0400435 d/s Smithers in initial dilution zone	Jul. 20 - Aug. 10	4	all < 0.005 mg/L	Max obj. met
Dissolved Oxygen 7.8 mg/L min	0400297 u/s Houston	Jul 27, Aug 4,10	3	10.4 - 11.8 mg/L	Objective met
	0400295 100m d/s Houston	Jul 27, Aug 4,10	3	10.2 - 11.8 mg/L	Objective met
	0400434 u/s Smithers	Jul 27, Aug 4,10	3	10.2 - 11.2 mg/L	Objective met
	0400435 d/s Smithers in initial dilution zone	Jul 27, Aug 4,10	3	10.3 - 11.2 mg/L	Objective met

TABLE 6

KATHLYN, SEYMOUR, ROUND & TYHEE LAKES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms: <10/100 mL 90th perc. (np) at water intakes <200/100 mL geometric mean (gm) <400/100 mL 90th perc. (np) at beaches	Kathlyn Lake: E207548 beach	Jul. 15 - Aug. 10	5	gm = 4/100 mL np = 5/100 mL	Objectives met
	E207549 intake #2	Jul. 20 - Aug. 10	4	all <2/100 mL	Indefinite result
	E207550 intake #3	Jul. 15 - Aug. 10	5	np = 15/100 mL	Objective not met
	Seymour Lake: E207552 intake #1	Jul. 15 - Aug. 10	5	np = 6/100 mL	Objective met
	E207553 intake #2	Jul. 15 - Aug. 10	5	np = 2/100 mL	Objective met
	Round Lake: E207555 beach	Jul. 15 - Aug. 10	5	gm = 2/100 mL np = 11/100 mL	Objectives met
	E207556 intake #2	Jul. 15 - Aug. 10	5	np < 2/100 mL	Objective met
	E207557 intake #3	Jul. 15 - Aug. 10	5	np < 2/100 mL	Objective met
	Tyhee Lake: E207559 beach	Jul. 15 - Aug. 10	5	gm = 3/100 mL np = 11/100 mL	Objectives met
	E207560 intake #2	Jul. 15 - Aug. 10	5	np < 2/100 mL	Objective met
	E207561 intake #3	Jul. 15 - Aug. 10	5	np < 2/100 mL	Objective met
Turbidity <1 NTU av 5 NTU max	Kathlyn Lake: E207549 intake #2	Jul. 20 - Aug. 10	4	max = 1.2 NTU	Max obj. met
	E207550 intake #3	Jul. 15 - Aug. 10	5	av = 0.62 NTU max = 0.9 NTU	Objectives met
	Seymour Lake: E207552 intake #1	Jul. 15 - Aug. 10 Aug. 10 Jul. 15 - Aug. 4	5 1 4	av = 2.7 NTU max = 6.0 NTU max = 2.6 NTU	Av. not met Max not met Max obj met

TABLE 6 continued

KATHLYN, SEYMOUR, ROUND & TYHEE LAKES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Turbidity <1 NTU av 5 NTU max	Seymour Lake: E207553 intake #2	Jul. 15 - Aug. 10	5	av = 0.42 NTU max = 0.6 NTU	Objectives met
	Round Lake: E207556 intake #2	Jul. 15 - Aug. 10	5	av = 0.54 NTU max = 0.7 NTU	Objectives met
	E207557 intake #3	Jul. 15 - Aug. 10	5	av = 1.54 NTU max = 4.1 NTU	Av not met Max obj. met
	Tyhee Lake: E207560 intake #2	Jul. 15 - Aug. 10	4	max = 0.9 NTU	Max obj. met
	E207561 intake #3	Jul. 15 - Aug. 10	5	av = 0.66 NTU max = 1.5 NTU	Objectives met
Total P <0.015 mg/L av at spring overturn	Kathlyn Lake 1131007 North Basin	April 21	5	0.5 m: 0.022 mg/L 2.0 m: 0.029 mg/L 4.0 m: 0.025 mg/L 6.0 m: 0.026 mg/L 8.0 m: 0.024 mg/L av = 0.025 mg/L	Objective not met
	Round Lake 1131008 mid-lake	1992	0	no data collected	Objective not checked
	Tyhee Lake 1131009 North Basin	Mar. 4	3	0.5 m: 0.022 mg/L 8.0 m: 0.031 mg/L 16 m: 0.072 mg/L	Indefinite result
Colour 15 TCU max near water intakes	Kathlyn Lake: E207549 intake #2	Jul. 20 - Aug. 10	4	all = 10 TCU	Objective met
	E207550 intake #3	Jul. 20 - Aug. 10 Jul. 15	4 1	5 - 10 TCU 20 TCU	Obj. met Obj. not met
	Seymour Lake intake #2	Jul. 20	1	50 TCU	Objective not met
	Round Lake: E207556 intake #2	Jul. 15 - Aug. 10	5	10 - 15 TCU	Objective met

TABLE 6 continued

KATHLYN, SEYMOUR, ROUND & TYHEE LAKES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Colour 15 TCU max near water intakes	Round Lake: E207557 intake #3	Jul. 27 - Aug. 10 Jul. 15, 20	3 2	all 10 TCU 20 - 50 TCU	Obj. met Obj. not met
	Tyhee Lake: E207560 intake #2	Jul. 15 - Aug. 10	4	5 - 10 TCU	Objective met
	E207561 intake #3	Jul. 15 - Aug. 10	5	5 - 10 TCU	Objective met

TABLE 7

LOWER KITIMAT RIVER AND ARM WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliform shellfish: <14/100 mL median (med) <43/100 mL 90th perc. (np) recreation: <200/100 mL geometric mean (gm) <400/100 mL 90th perc. (np)	Kitimat Harbour and Arm	1992	0	no data collected	Omitted 1992
Suspended Solids max increase: 10 mg/L or 10%	Kitimat River: 0430025 at Highway Bridge	Sep. 9 - Oct. 28	5	16 - 212 mg/L	Control site
	E207569 u/s STP & Eurocan	Oct. 14, 21, 28	3	18 - 73 mg/L max inc. = 3 mg/L	Objective met
	E207570 100m d/s Eurocan	Oct.7,14,28	3	21 - 26 mg/L max inc. = 8 mg/L	Obj. met
		Oct. 19	1	479 mg/L increase = 267 mg/L	Obj. not met
	Kitimat Harbour & Arm	1992	0	no data collected	Omitted 1992
Turbidity max increase: 5 NTU or 10%	Kitimat River: 0430025 at Highway Bridge	Sep. 9 - Oct.28	6	3.7 - 220 NTU	Control site
	E207569 u/s STP & Eurocan	Oct. 14, 21, 28	3	9.0 - 29.0 NTU max inc. = 2.0 NTU	Objective met
	E207570 100m d/s Eurocan	Oct. 7, 19, 28	3	3.9 - 14.0 NTU max inc. = 0.2 NTU	Obj. met
		Oct 14 & Sep 30	2	14.0 & 320.0 NTU inc. = 7 - 100 NTU	Obj. not met
	Kitimat Harbour & Arm	1992	0	no data collected	Omitted 1992

TABLE 7 continued

LOWER KITIMAT RIVER AND ARM WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
WAD Cyanide 0.001 mg/L max or min detection level of 0.005 mg/L	Kitimat Harbour & Arm	1992	0	no data collected	Omitted 1992
Fluoride 1.5 mg/L max	Kitimat Harbour & Arm	1992	0	no data collected	Omitted 1992
H2S 0.002 mg/L max	Kitimat River	1992	0	no data collected	Omitted 1992
Chlorophyll-a <50 mg/m2 av	Kitimat River	1992	0	no data collected	Omitted 1992
Ammonia-N <1.8 mg/L av 14.0 mg/L max at pH = 7.4 temp = 13 C	Kitimat River: 0430025 at Highway Bridge	Sep. 30 - Oct. 28	5	<0.005 - 0.017 mg/L av = 0.01 mg/L	Objectives met
	E207569 d/s STP & u/s Eurocan	Oct. 14, 21, 28	3	0.012 - 0.016 mg/L	Max obj. met
	E207570 100m d/s Eurocan	Sep. 30 - Oct. 28	5	<0.005 - 0.015 mg/L av = 0.009 mg/L	Objectives met
Ammonia-N <2.4 mg/L av 11.0 mg/L max at pH = 7.8 temp = 15 C sal. = 30g/Kg	Kitimat Harbour & Arm	1992	0	no data collected	Omitted 1992
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Kitimat River: 0430025 at Highway Bridge	Sep. 30 - Oct. 28	5	all <0.005 mg/L	Objectives met
	E207569 d/s STP & u/s Eurocan	Oct. 14, 21, 28	3	all <0.005 mg/L	Max obj. met
	E207570 100m d/s Eurocan	Sep. 30 - Oct. 28	5	all <0.005 mg/L	Objectives met
Diss. Oxygen 7.8 mg/L min	Kitimat River: 0430025 at Highway Bridge	Sep 30, Oct 7,14, 19,28	5	8.9 - 12.1 mg/L	Objective met

TABLE 7 continued

LOWER KITIMAT RIVER AND ARM WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Diss. Oxygen 7.8 mg/L min	Kitimat River: E207569 d/s STP & u/s Eurocan	Oct 14,19,21,28	4	10.6 - 12.2 mg/L	Objective met
	E207570 100m d/s Eurocan	Sep 1, Oct 7,14, 19,28	5	10.4 - 12.2 mg/L	Objective met
pH 6.5 - 9.0	Kitimat River: 0430025 at Highway Bridge	Sep. 9	1	7.2	Objective met
Total Al 20% increase	Kitimat Harbour & Arm	1992	0	no data collected	Omitted 1992
Total Cd <0.012 mg/L av 0.038 mg/L max	Kitimat Harbour & Arm	1992	0	no data collected	Omitted 1992
Total Cu <0.002 mg/L av 0.003 mg/L max or 20% increase	Kitimat Harbour & Arm	1992	0	no data collected	Omitted 1992
Total Fe 0.3 mg/L max	Kitimat Harbour & Arm	1992	0	no data collected	Omitted 1992
Total Pb <0.009 mg/L av 0.22 mg/L max or 20% increase	Kitimat Harbour & Arm	1992	0	no data collected	Omitted 1992
Toxicity % mill effluent in river: < 0.05 of the 96-h LC50	Kitimat River at Eurocan	Jan 29 - Dec 7	12	% effluent = 0.10 - 2.04 % 0.05(96-h LC50) = 4 - 5 %	Objective met

TABLE 8

LAKELSE LAKE WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc (np) at water intakes	E207582 intake, lake NE	Aug. 11 - Sep. 7	5	<2 - 2/100 mL np = 2/100 mL	Objective met
	E207581 intake, Gainey Point	Aug. 11 - Sep. 7	5	1 - 2/100 mL np = 2/100 mL	Objective met
Fecal Coliforms <200/100 mL geometric mean (gm) at beaches	E207583 Furlong Beach	Aug. 11 - Sep. 7	5	< 2 - 270/100 mL gm = 8/100 mL	Objective met
Turbidity <1 NTU av 5 NTU max	E207582 intake, lake NE	Aug. 11 - Sep. 7	5	0.4 - 1.1 NTU av = 0.56 NTU	Objectives met
	E207581 intake, Gainey Point	Aug. 11 - Sep. 7	5	0.3 - 0.8 NTU av = 0.48 NTU	Objectives met
Total-P <0.010 mg/L av May - August (0 - 30 m)	E206616 N end, deepest point	Jun. 15 - Aug. 11	9	0.003 - 0.087 mg/L (0.0 - 30 m) av = 0.016 mg/L	Objective not met
Chlorophyll-a <3 ug/L av May - August (0 - 6 m)	E206616 N end, deepest point	May 12 - Aug. 11	6	1.4 - 3.2 ug/g (0 - 6 m) av = 2.52 ug/L	Objective met
Dissolved Oxygen 6 mg/L min 5m above sed.	E206616 N end, deepest point (sediments at 28 m)	May. 12	1	10.4 mg/L (at 23 m)	Objective met
		Jun. 15	1	9.9 mg/L (at 23 m)	Objective met
		Jul. 14	1	8.3 mg/L (at 23 m)	Objective met
		Aug. 11	1	7.8 mg/L (at 23m)	Objective met

TABLE 9

CHARLIE LAKE WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc. (np) near water intakes	Fort St. John intake	Jan 8,15,22,29, Feb. 5	5	all < 2/100 mL	Objective met
		Feb 12,19,26, Mar 4,11	5	all < 2/100 mL	Objective met
		Mar 18,25, Apr 1,8,15	5	all < 2/100 mL	Objective met
		Apr 22,29 May 6,13,20	5	all < 2/100 mL	Objective met
		May 27, Jun 3,10, 17,24	5	all < 2/100 mL	Objective met
		Jul 8,15,22,29, Aug. 5	5	0 - 2/100 mL np < 2/100 mL	Objective met
		Aug 12,19,26, Sep 2,9	5	<2 - 4/100 mL np = 3/100 mL	Objective met
		Sep 16,23,30, Oct 7,14	5	all < 2/100 mL	Objective met
		Oct 21,28, Nov 4,18,25	5	all < 2/100 mL	Objective met
		Nov 25, Dec 3,9, 16,30	5	all < 2/100 mL	Objective met
Fecal Coliforms <200/100 mL geometric mean (gm) <400/100 mL 90th perc. (np) at beaches	Beatton Park Beach south	Jun 22, Jul 20,28	3	9 - 185/100 mL	Indefinite results
	Charlie Lake Park boat launch	Jun 22,29	2	9 - 15/100 mL	Indefinite results
Total-P <0.050 mg/L av at spring overturn <0.075 mg/L av at all other times	0400390 Charlie Lake deep station	Mar. 12	1 1 1	1 m : 0.044 mg/L 6 m : 0.046 mg/L 12 m : 0.900 mg/L	Indefinite result
		May 6 (spring overturn)	1 1 1	1 m : 0.043 mg/L 6 m : 0.055 mg/L 13 m : 0.053 mg/L av = 0.050 mg/L	Objective met

TABLE 9 continued

CHARLIE LAKE WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total-P <0.050 mg/L av at spring overturn <0.075 mg/L av at all other times	0400390 Charlie Lake deep station	Jun. 8	1 1 1	1 m : 0.039 mg/L 6.5 m : 0.037 mg/L 13 m : 0.102 mg/L av = 0.059 mg/L	Objective met
		Jul. 2	1 1 1	1 m : 0.044 mg/L 6 m : 0.039 mg/L 12 m : 0.159 mg/L av = 0.08 mg/L	Objective not met
		Jul. 14	1 1 1	1 m : 0.065 mg/L 6 m : 0.045 mg/L 13 m : 0.165 mg/L av = 0.092 mg/L	Objective not met
		Aug. 20	1 1 1	1 m : 0.258 mg/L 6 m : 0.165 mg/L 12 m : 0..178 mg/L av = 0.200 mg/L	Objective not met
		Sept. 15	1 1 1	1 m : 0.127 mg/L 6 m : 0..192 mg/L 12.5 m : 0.133 mg/L av = 0.151 mg/L	Objective not met
	E207459 Charlie Lake north arm	March 12	1 1 1	1 m : 0.069 mg/L 3 m : 0.039 mg/L 6.5 m : 0.086 mg/L av = 0.065 mg/L	Objective met
		May 6 (spring overturn)	1 1 1	1 m : 0.042 mg/L 4.0m : 0.049 mg/L 7.5m : 0.050 mg/L av = 0.047 mg/L	Objective met
		Jun. 8	1 1 1	1 m : 0.030 mg/L 4.0 m : 0.052 mg/L 7.5m : 0.102 mg/L av = 0.061 mg/L	Objective met
		Jul. 2	1 1 1	1 m : 0.039 mg/L 4 m : 0.088 mg/L 7 m : 0.274 mg/L av = 0.134 mg/L	Objective not met

TABLE 9 continued

CHARLIE LAKE WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total-P <0.050 mg/L av at spring overturn	E207459 Charlie Lake north arm	Jul. 14	1 1 1	1 m : 0.146 mg/L 5 m : 0.059 mg/L 7.5m : 0.136 mg/L av = 0.114 mg/L	Objective not met
<0.075 mg/L av at all other times		Aug. 20	1 1 1	1 m : 0.239 mg/L 3 m : 0.232 mg/L 7 m : 0.198 mg/L av = 0.223 mg/L	Objective not met

TABLE 10

BULLMOOSE CREEK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc. (np)	West Bullmoose Creek South Bullmoose Creek Bullmoose Creek	1992	0	no data collected	Omitted 1992
Turbidity max increase: 5 NTU or 10%	West Bullmoose Creek: E206225 u/s sediment ponds	Apr 1 - Nov 4	10	0.64 - 54.2 NTU	Control site
	E206226 d/s sediment pond 3	Jan 15 - Dec 8	14	0.26 - 7.1 NTU max inc. < 5 NTU	Objective met
	E206227 d/s sediment ponds 1 & 2	Jan 15 - Dec 8	15	0.3 - 7.2 NTU max inc. < 5 NTU	Objective met
	South Bullmoose Creek: E206228 u/s plant	Jan 14 - Nov 5	14	0.21 - 5.8 NTU	Control site
	E206229 d/s plant	Jan 14 - Dec 10	14	0.36 - 6.8 NTU max inc. < 5 NTU	Objective met
	Bullmoose Creek: 0410094 d/s tailing pond	Jan 15 - Dec 8	15	0.22 - 6.0 NTU max inc. < 5 NTU	Objective met
	E206232 20 km d/s tailing pond	Jan 15 - Dec 8	13	0.46 - 6.8 NTU max inc. < 5 NTU	Objective met
		Apr 22,29	2	12.0 - 13.5 NTU max inc. = 5.7 - 7.4 NTU	Objective not met
Susp. Solids max increase: 10 mg/L or 10%	West Bullmoose Creek South Bullmoose Creek Bullmoose Creek	1992	0	no data collected	Objective not checked
Substrate Sedimentation: no increase in particulate < 3 mm diameter	West Bullmoose Creek South Bullmoose Creek Bullmoose Creek	1992	0	no data collected	Objective not checked
Chlorophyll-a <50 mg/m2 av	West Bullmoose Creek South Bullmoose Creek Bullmoose Creek	1992	0	no data collected	Objective not checked
Ammonia-N <0.467 mg/L av 2.43 mg/L max at pH = 8.4 temp = 8 C	West Bullmoose Creek South Bullmoose Creek Bullmoose Creek	1992	0	no data collected	Omitted 1992

TABLE 10 continued

BULLMOOSE CREEK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Nitrite - N <0.02 mg/L av 0.06 mg/L max	West Bullmoose Creek: E206225 u/s sediment ponds	Jan 10 - Nov 4	12	<0.001 - 0.015 mg/L	Max obj. met
	E206226 d/s sediment pond 3	Jan 10 - Dec 8 Mar 5 - Apr 14	22 5	<0.001 - 0.017 mg/L av < 0.001 mg/L	Objectives met
	E206227 d/s sediment ponds 1 & 2	Jan 15 - Dec 8	15	0.3 - 7.2 NTU max inc. < 5 NTU	Objective met
	South Bullmoose Creek: E206228 u/s plant	Jan 14 - Dec 9	14	<0.001 - 0.003 mg/L	Max obj. met Av not checked
	E206229 d/s plant	Jan 14 - Dec 10	13	<0.001 - 0.006 mg/L	Max obj. met
	Bullmoose Creek: 0410094 d/s tailing pond	Jan 10 - Dec 8 Mar 5 - Apr 14	25 5	<0.001 - 0.010 mg/L av = 0.003 mg/L	Objectives met
	E206232 20 km d/s tailing pond	Jan 10 - Dec 8 Mar 5 - Apr 14	25 5	<0.001 - 0.017 mg/L av = 0.002 mg/L	Objectives met
Nitrate+Nitrite - N 10 mg/L max	West Bullmoose Creek: E206225 u/s sediment ponds	Jan 10 - Nov 4	12	<0.005 - 3.58 mg/L	Objective met
	E206226 d/s sediment pond 3	Mar 5 - Jul 7 Sep 16 - Dec 8	13	0.93 - 7.2 mg/L	Objective met
		Jan 10 - Feb 26 Aug 4, Sep 10	9	10.1 - 26.2 mg/L	Objective not met
	E206227 d/s sediment ponds 1 & 2	Mar 5 - Jun 9 Sep 22 - Nov 4	10	2.25 - 9.67 mg/L	Objective met
		Jan 10 - Feb 26 Mar 5 - Jun 9, Dec 8	15	10.2 - 18.1 mg/L	Objective not met
	South Bullmoose Creek: E206228 u/s plant	Jan 14 - Dec 9	14	<0.005 - 0.013 mg/L	Objective met
	E206229 d/s plant	Jan 14 - Dec 10	13	0.053 - 0.663 mg/L	Objective met
	Bullmoose Creek: 0410094 d/s tailing pond	Jan 10 - Nov 4	24	0.03 - 7.72 mg/L	Objective met
		Dec. 8	1	10.3 mg/L	Objective not met
	E206232 20 km d/s tailing pond	Jan 10 - Dec 8	25	1.04 - 2.81 mg/L	Objective met
Dissolved Oxygen	West Bullmoose Creek South Bullmoose Creek Bullmoose Creek	1992	0	no data collected	Omitted 1992

TABLE 10 continued

BULLMOOSE CREEK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 min	West Bullmoose Creek: E206225 u/s sediment ponds	Apr 1 - Nov 4	9	8.0 - 8.5	Objective met
	E206226 d/s sediment pond 3	Jan 15 - Dec 8	13	7.5 - 8.1	Objective met
	E206227 d/s sediment ponds 1 & 2	Jan 15 - Nov 4	13	7.8 - 8.1	Objective met
	South Bullmoose Creek: E206228 u/s plant	Jan 14 - Dec 9	15	7.9 - 8.3	Objective met
	E206229 d/s plant	Jan 14 - Dec 10	14	8.0 - 8.3	Objective met
	Bullmoose Creek: 0410094 d/s tailing pond	Jan 15 - Nov 4	13	7.9 - 8.3	Objective met
	E206232 20 km d/s tailing pond	Jan 15 - Nov 4	13	8.0 - 8.2	Objective met

TABLE 11

NECHAKO RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <100/100 mL 90th perc. (np)	Nechako River: 0400629 200 m u/s Fort Fraser	Sept. 22, 29 Oct. 6, 13, 21	5	<2 - 9/100 mL np = 9/100 mL	Objective met
	0400631 200 m d/s Fort Fraser	Sept. 22, 29 Oct. 6, 13, 21	5	1 - 24/100 mL np = 19/100 mL	Objective met
	0400449 u/s Vanderhoof	Sept. 24 Oct. 1, 8, 15, 21	5	1 - 12/100 mL np = 9/100 mL	Objective met
		Jan. 15, 21, 28 Feb. 6, 13	5	2 - 5/100 mL np = 5/100mL	Objective met
	0400450 100 m d/s Vanderhoof	Sept. 24 Oct. 1, 9, 15, 21	5	240 - 1090/100 mL np = 872/100 mL	Objective not met
		Jan. 28 Feb. 6	1 1	4700/100 mL 4950/100 mL	Indefinite result
	E207450 0.5 km d/s Vanderhoof	Sept. 24 Oct. 1, 8, 15, 21	15	3 - 44/100 mL np = 38/100 mL	Objective met
	Stuart River: 0400488 E bank at Highway 27	Sept. 22, 29 Oct. 6, 13, 21	5	<2 - 15/100 mL np = 9/100 mL	Objective met
	Chilako River 0400039 ~ 30 km from mouth	Sept. 24 Oct. 1, 9, 15, 21	5	<2 - 26/100 mL np = 21/100 mL	Objective met
Fecal Coliforms <10/100 mL 90th perc. (np)	Stuart River: 0920101 W bank at Highway 27	Sept. 22, 29 Oct. 6, 13, 21	5	1 - 2/100 mL np = 2/100 mL	Objective met
Fecal Coliforms <200/100 mL geom. mean (gm)	Necoslie River: 0400801 d/s Fort St. James 20 m u/s Highway 27	Sept. 22, 29 Oct. 6, 13, 21	5	1 - 17/100 mL gm = 3	Objective met
Total Cl2 Res. 0.002 mg/L max	Nechako & Stuart rivers	1992	0	no data collected	Omitted 1992
Ammonia-N <1.83 mg/L av 9.50 mg/L max at pH = 7.7 temp = 12 C	Nechako River: 0400629 200 m u/s Fort Fraser	Sept. 22, 29 Oct. 6, 13, 21	5	av = 0.006 mg/L max = 0.008 mg/L	Objectives met
	0400631 200 m d/s Fort Fraser	Sept. 22, 29 Oct. 6, 13, 21	5	av = 0.007 mg/L max = 0.009 mg/L	Objectives met

TABLE 11 continued

NECHAKO RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <1.83 mg/L av 9.50 mg/L max at pH = 7.7 temp = 12 C	Nechako River: 0400449 u/s Vanderhoof	Jan. 15, 21, 28 Feb. 6, 13	5	av = 0.006 mg/L max = 0.009 mg/L	Objectives met
		Sept. 24 Oct. 1, 8, 15, 21	5	av = 0.006 mg/L max = 0.009 mg/L	Objectives met
	0400450 100 m d/s Vanderhoof	Sept. 24 Oct. 1, 9, 15, 21	5	av = 0.369 mg/L max = 0.464 mg/L	Objectives met
		Jan 28 Feb. 6	1 1	0.329 mg/L 0.228 mg/L	Max obj. met Max obj. met
	E207450 0.5 km d/s Vanderhoof	Sept. 24 Oct. 1, 8, 15, 21	5	av = 0.005 mg/L max = 0.008 mg/L	Objectives met
Ammonia-N <0.887 mg/L av 4.61 mg/L max at pH = 8.1 temp = 12 C	Stuart River: 0400488 E bank at Highway 27	Sept. 22, 29 Oct. 6, 13, 21	5	av = 0.036 mg/L max = 0.137 mg/L	Objectives met
	0920101 W bank at Highway 27	Sept. 22, 29 Oct. 6, 13, 21	5	av = 0.009 mg/L max = 0.019 mg/L	Objectives met
	Chilako River 0400039 ~ 30 km from mouth	Sept. 24 Oct. 1, 9, 15, 21	5	av = 0.008 mg/L max = 0.017 mg/L	Objectives met
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Nechako River: 0400629 200 m u/s Fort Fraser	Sept. 22, 29 Oct. 6, 13, 21	5	av = 0.003 mg/L max = 0.004 mg/L	Objectives met
	0400631 200 m d/s Fort Fraser	Sept. 22, 29 Oct. 6, 13, 21	5	av = 0.003 mg/L max = 0.005 mg/L	Objectives met
	0400449 u/s Vanderhoof	Jan. 15 , 21, 28 Feb. 6, 13	5	av = 0.004 mg/L max = 0.005 mg/L	Objectives met
		Sept. 24 Oct. 1, 8, 15, 21	5	av = 0.004 mg/L max = 0.006 mg/L	Objectives met
	0400450 100 m d/s Vanderhoof	Sept. 24 Oct. 1, 9, 15, 21	5	av = 0.014 mg/L max = 0.029 mg/L	Objectives met
	E207450 0.5 km d/s Vanderhoof	Sept. 24 Oct. 1, 8, 15, 21	15	av = 0.004 mg/L max = 0.005 mg/L	Objectives met
	Stuart River: 0400488 E bank at Highway 27	Sept. 22, 29 Oct. 6, 13, 21	5	all < 0.005 mg/L	Objectives met
	0920101 W bank at Highway 27	Sept. 22, 29 Oct. 6, 13, 21	5	av = 0.004 mg/L max = 0.006 mg/L	Objectives met

TABLE 11 continued

NECHAKO RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Chilako River 0400039 ~ 30 km from mouth	Sept. 24 Oct. 1, 9, 15, 21	5	all < 0.005 mg/L	Objectives met
Chlorophyll-a <50 mg/m2 av	Nechako River Stuart River	1992	0	no data collected	Objective not checked
Chlorophyll-a <100 mg/m2 av	Chilako River	1992	0	no data collected	Objective not checked
Dissolved Oxygen 7.75-11.2 mg/L min, depending on fish egg stage	Nechako River: 0400629 200 m u/s Fort Fraser	 Jan 15 - Feb 13 Sep 29 - Oct 21	 5 4	 12.2 - 13.2 mg/L 9.2 - 10.8 mg/L	 Obj. met Obj. met
	0400631 200 m d/s Fort Fraser	Jan 15 - Feb 13 Sep 29 - Oct 21	5 3	12.0 - 12.9 mg/L 8.2 - 10.5 mg/L	Obj. met Obj. met
	0400449 u/s Vanderhoof	Jan 15 - Feb 13 Sep 24 - Oct 21	5 5	12.0 - 12.8 mg/L 9.9 - 11.9 mg/L	Obj. met Obj. met
	0400450 100 m d/s Vanderhoof	Jan 15 - Feb 13 Sep 24 - Oct 21	5 5	10.6 - 12.7 mg/L 10.6 - 13.2 mg/L	Obj. met Obj. met
	E207450 0.5 km d/s Vanderhoof	Jan 15 - Feb 13 Sep 24 - Oct 21	5 5	12 - 13.1 mg/L 9.8 - 12.0 mg/L	Obj. met Obj. met
	E207451 2 km d/s Vanderhoof	Jan 15 - Feb 13 Sep 24 - Oct 21	5 5	12.0 - 12.9 mg/L 9.0 - 11.9 mg/L	Obj. met Obj. met
	Chilako River 0400039 ~ 30 km from mouth	Sep 22, Oct 1,9,15,21	5	9.8 - 11.2 mg/L	Objective met
	Stuart River:	1992	0	no data collected	Objective not checked
pH 6.5 - 8.5	Nechako River: 0400629 200 m u/s Fort Fraser	 Jan 27 - Oct 21	 7	 7.4 - 7.9	 Objective met
	0400631 200 m d/s Fort Fraser	Jan 27 - Oct 21	7	7.5 - 7.8	Objective met
	0400449 u/s Vanderhoof	Jan 15 - Oct 21	10	7.5 - 7.7	Objective met
	0400450 100 m d/s Vanderhoof	Jan 28 - Oct 21	7	7.4 - 7.8	Objective met
	E207450 0.5 km d/s Vanderhoof	Jan 28 - Oct 21	17	7.0 - 7.6	Objective met

TABLE 11 continued

NECHAKO RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 - 8.5	Stuart River: 0400488 E bank at Highway 27	Sept. 22 - Oct. 21	5	7.8 - 8.0	Objective met
	0920101 W bank at Highway 27	Sept. 22 - Oct. 21	5	7.3 - 8.0	Objective met
	Chilako River	1992	0	no data collected	Omitted 1992
Temperature <15 C av ~ 100m d/s Cheslatta Falls	Nechako River: immediately d/s Cheslatta Falls	Jan 1-Jun 16 & Jun18 Jun 17 & Jun 19-Sep 1 Oct 7 - Dec 31	169 76 86	2.0 - 14.9 C 15.1 - 18.4 C 0 - 10.9 C	Obj. met Obj. not met Obj. met
	10 km d/s Cheslatta Falls* (DFO's B. Irvine site)	Jan 1 - Jun 16 Jun 17 - Sep 4 Sep 5 - Dec 15	168 80 102	0.1 - 15 C 15.1 - 19.4 C 0.8 - 14.7 C	Obj. met Obj. not met Obj. met
Temperature <20 C Jul-Aug <18 C Sep-Jun ~ 100m u/s Stuart River	Nechako River: at Vanderhoof* ~ 40 km u/s Stuart R confl.	Jan 1 - Jun 19 Jun 20 - Jun 30 Jul 1 - Aug 1 Aug 2 - Aug 5 Aug 6 - Aug 31 Sep 1 - Dec 31	136 11 32 4 17 101	0.2 - 18 C 18.2 - 22.5 C 14.6 - 19.6 C 20.1 C 6.0 - 19.6 C 0.2 - 16.0 C	Obj. met Obj. not met Obj. met Obj. not met Obj. met Obj. met
	at Finmore 7.5 km u/s Stuart R confl.	Sep 10 - Aug 20 Aug 2 & Aug 12 - 14	38 4	17.3 - 20.0 C 20.1 - 20.6 C	Obj. met Obj. not met
Total Gas Pressure 109 % max	Nechako River	1992	0	no data collected	Objective not checked

* These sites, although not at the ideal location, are assumed to be representative

TABLE 12

PINE RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc. (np)	E206235 u/s Chetwynd	Sept. 1 - Oct. 12	4	2 - 28/100 mL	Indefinite result
Fecal Coliforms <200/100 mL geometric mean (gm)	0400561 d/s Chetwynd (Twidwell Bend)	Sept. 1 - Oct. 12	3	1 - 7/100 mL	Indefinite result
Turbidity max increase: 5 NTU or 10%	Pine River	1992	0	no data collected	Omitted 1992
Susp. Solids max increase: 10 mg/L or 10%	Pine River	1992	0	no data collected	Omitted 1992
Total CL2 res. 0.002 mg/L max	Pine River d/s Chetwynd	1992	0	chlorination not occurring	no need to check obj.
Chlorophyll-a <50 mg/m2 av	E206235 u/s Chetwynd	Sept. 1	6	5.3 - 15 mg/m2 av = 8.5 mg/m2	Objective met
	0400561 d/s Chetwynd (Twidwell Bend)	Sept. 1	6	9.8 - 13.2 mg/m2 av = 11.5 mg/m2	Objective met
Ammonia-N <0.467 mg/L av 2.43 mg/L max at pH = 8.4 temp = 8 C	E206235 u/s Chetwynd	Sept. 1- Oct. 12	4	all <0.005 mg/L	Max obj. met Av not chkd.
	0400561 d/s Chetwynd (Twidwell Bend)	Sept. 1 - Oct.12	3	<0.005 - 0.022 mg/L	Max obj. met
Nitrite - N <0.02 mg/L av 0.06 mg/L max	E206235 u/s Chetwynd	Sept. 1 - Oct. 12	4	all <0.005 mg/L	Max obj. met Av not chkd.
	0400561 d/s Chetwynd (Twidwell Bend)	Sept. 1 - Oct. 12	3	all <0.005 mg/L	Max obj. met
Dissolved Oxygen 7.75 mg/L min	E206235 u/s Chetwynd	Sep. 1	1	9.3 mg/L	Objective met
	0410028 100 m d/s Chetwynd STP	Sep. 1	1	9.3 mg/L	Objective met

TABLE 12 continued

PINE RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen	0410029 800 m d/s Chetwynd STP	Sep. 1	1	9.3 mg/L	Objective met
7.75 mg/L min	0400561 d/s Chetwynd (Twidwell Bend)	Sep. 1	1	9.3 mg/L	Objective met

TABLE 13

POUCE COUP RIVER AND DAWSON CREEK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <200/100 mL geometric mean (gm)	Pouce Coupe River: E206705 u/s mun. discharge	Jul. 15, 20, 27 Aug. 6, 12	5	9 - 94/100 mL gm = 31.6/100 mL	Objective met
	E206706 600 m d/s mun. dis.	Jul. 15, 20, 27 Aug. 6, 12	5	2 - 130/100mL gm = 19.1/100mL	Objective met
Turbidity max increase: 5 NTU or 10%	Pouce Coupe River: E206705 u/s mun. discharge	Jul. 15, 20, 27 Aug. 6, 12	5	5.5 - 8.4 NTU	Control site
	E206706 600 m d/s mun. dis.	Jul. 20 - Aug. 12	4	4.9 - 7.3 NTU max inc. = 1.3 NTU	Obj. met
		Jul. 15	1	16 NTU inc. = 7.6 NTU	Objective not met
	Dawson Creek: 0410034 u/s mun. discharge	Jul. 15, 20, 27 Aug. 6, 12	5	3.6 - 8.2 NTU	Control site
	0410039 2.5 km d/s mun. dis.	Jul. 15, 20, 27 Aug. 6, 12	5	24 - 34 NTU inc. = 17 - 28 NTU	Objective not met
Susp. Solids max increase: 10 mg/L or 10%	Pouce Coupe River: E206705 u/s mun. discharge	Jul. 15, 20, 27 Aug. 6, 12	5	13 - 20 mg/L	Control site
	E206706 600 m d/s mun. dis.	Jul. 20 - Aug. 12	4	16 - 22 mg/L max inc. = 6 mg/L	Obj. met
		Jul. 15	1	46 mg/L inc. = 28 mg/L	Objective not met
	Dawson Creek: 0410034 u/s mun. discharge	Jul. 15, 20, 27 Aug. 6, 12	5	7 - 13 mg/L	Control site
	0410039 2.5 km d/s mun. dis.	Jul. 15, 20, 27 Aug. 6, 12	5	40 - 63 mg/L inc. = 32 - 53 mg/L	Objective not met
Tot. Cl2 Res. <0.01 mg/L max	Pouce Coupe River & Dawson Creek	1992	0	no chlorination occurring	no need to check obj.
Chlorophyll-a <50 mg/m2 av	Pouce Coupe River: E206705 u/s mun. discharge	Jul. 15	6	16.3 - 30.0 mg/m2 av = 22.6 mg/m2	Objective met
	Dawson Creek	1992	0	no data collected	Obj not chkd

TABLE 13 continued

POUCE COUP RIVER AND DAWSON CREEK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <0.89 mg/L av 4.61 mg/L max at pH = 8.1 temp = 12 C	Pouce Coupe River: E206705 u/s mun. discharge	Jul. 15, 20, 27 Aug. 6, 12	5	<0.005 - 0.035 mg/L av = 0.016 mg/L	Objectives met
	E206706 600 m d/s mun. dis.	Jul. 15, 20, 27 Aug. 6, 12	5	<0.005 - 0.01 mg/L av = 0.007 mg/L	Objectives met
	Dawson Creek: 0410034 u/s mun. discharge	Jul. 15, 20, 27 Aug. 6, 12	5	0.01 - 0.321 mg/L av = 0.135 mg/L	Objectives met
	0410039 2.5 km d/s mun. dis.	Jul. 15, 20, 27 Aug. 6, 12	5	0.021 - 0.1 mg/L av = 0.063 mg/L	Objectives met
Nitrite-N 0.06 mg/L max	Pouce Coupe River: E206705 u/s mun. discharge	Jul. 15, 20, 27 Aug. 6, 12	5	all <0.005 mg/L	Objective met
	E206706 600 m d/s mun. dis.	Jul. 15, 20, 27 Aug. 6, 12	5	all <0.005 mg/L	Objective met
	Dawson Creek: 0410034 u/s mun. discharge	Jul. 15 Jul. 20 - Aug. 12	1 4	0.126 mg/L <0.005 - 0.011 mg/L	Obj. not met Obj. met
	0410039 2.5 km d/s mun. dis.	Jul. 15, 20, 27 Aug 6,12	5	<0.005 - 0.026 mg/L	Objective met
Dissolved Oxygen 5.5 mg/L min	Pouce Coupe River: E206705 u/s mun. discharge	Jul 15,27, Aug 6,12	4	8.2 - 11.0 mg/L	Objective met
	E206959 1.7 km d/s Daws. Cr confl.	Jul 15,27, Aug 6,12	4	7.8 - 11.8 mg/L	Objective met
	Dawson Creek: 0410034 u/s mun. discharge	Jul 15, Aug 6,12	3	6.3 - 8.0 mg/L	Objective met
		Jul. 27	1	4.0 mg/L	Objective not met
	0410039 2.5 km d/s mun. dis.	Jul 15,27, Aug 6,12	4	7.3 - 9.0 mg/L	Objective met

TABLE 14

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <100/100 mL 90th perc. (np)	Peace River 0400134 3.2 km u/s Ft. St. John (N. Side)	Jul. 28, 30 Aug. 4, 11, 13	5	1 - 6/100 mL np = 5/100 mL	Objective met
	0400492 100 m d/s Ft. St. John	Jul. 28, 30 Aug. 4, 11, 13	5	2 - 18/100 mL np = 13/100 mL	Objective met
	0400138 u/s Petro-Canada (N. Side)	Jul. 28, 30 Aug. 4, 11, 13	5	2 - 15/100 mL np = 13	Objective met
Fecal Coliforms <200/100 mL geometric mean	Beatton River	1992	0	no data collected	Omitted 1992
Turbidity max increase: 5 NTU or 10%	Peace River 0400134 3.2 km u/s Ft. St. John (N. Side)	Jul. 28, 30 Aug. 4, 11, 13	5	0.8 - 1.5 NTU	Control site
	0400492 100 m d/s Ft. St. John	Jul. 28, 30 Aug. 4, 11, 13	5	0.8 - 1.7 NTU	Objective met
	0400138 u/s Petro-Canada (N. Side)	Jul. 28, 30 Aug. 4, 11, 13	5	0.8 - 2.5 NTU	Objective met
	0410054 100 m d/s Petro-Canada	Jul. 28, 30 Aug. 4, 11, 13	5	0.8 - 2.5 NTU	Objective met
	E207631 200 m d/s Fibreco	Jul. 28, 30 Aug. 4, 11, 13	15	0.6 - 5.0 NTU	Objective met
	E207965 1 km d/s Fibreco	Jul. 28, 30 Aug. 4, 11, 13	5	1.4 - 3.0 NTU	Objective met
	0400142 5 km d/s Petro-Canada (N. Side)	Jul. 28, 30 Aug. 4, 11, 13	5	1.4 - 3.0 NTU	Objective met
	0400143 5 km d/s Petro-Canada (midstream)	Jul. 28, 30 Aug. 4, 11, 13	5	0.9 - 2.5 NTU	Objective met
	Beatton River	1992	0	no data collected	Omitted 1992

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Suspended Solids max increase: 10 mg/L or 10%	Peace River	1992	0	no data collected	Objective not checked
	Beatton River	1992	0	no data collected	Omitted 1992
Tot Cl2 Res. 0.002 mg/L max	Peace River	1992	0	no data collected	Omitted 1992
Dissolved Fluoride 1.0 mg/L max	Peace River	1992	0	no data collected	Omitted 1992
WAD - CN <0.005 mg/L av 0.01 mg/L max	Peace River	1992	0	no data collected	Omitted 1992
Chlorophyll-a < 50 mg/m2 av	Peace River Beatton River	1992	0	no data collected	Omitted 1992
Ammonia-N <0.709 mg/L av at pH = 8.2 temp = 12 C	Peace River Beatton River	1992	0	no data collected	Omitted 1992
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Peace River Beatton River	1992	0	no data collected	Omitted 1992
Dissolved Oxygen 7.25 mg/L min	Peace River: 0400134 3.2km u/s Ft. St John (N side)	Jul 28, 30, Aug 5,11 13	5	8.2 - 10.8 mg/L	Objective met
	0400492 100 m d/s Ft. St John	Jul 28, 30, Aug 5,11,13	5	8.5 - 11.0 mg/L	Objective met
	0400138 u/s Petro-Canada (N side)	Jul 28, 30, Aug 5,11,13	5	8.5 - 11.1 mg/L	Objective met
	0410054 100m d/s Petro-Canada	Jul 28, 30, Aug 5,11,13	5	8.3 - 11.1 mg/L	Objective met

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 7.25 mg/L min	Peace River: E207631 200 m d/s Fibreco	Jul 28,30, Aug 5,11,13	5	8.6 - 10.9 mg/L	Objective met
	E207965 1 km d/s Fibreco	Jul 28, 30, Aug 5,11,13	5	8.6 - 11.0 mg/L	Objective met
	0400142 5 km d/s Petro-Canada (N side)	Jul 28, 30, Aug 5,11,13	5	8.5 - 10.6 mg/L	Objective met
	0400143 5 km d/s Petro-Canada (midstream)	Jul 28, 30, Aug 5,11,13	5	8.5 - 10.6 mg/L	Objective met
	Beatton River	1992	0	no data collected	Omitted 1992
Total Dissolved Gas 110% max	Peace River	1992	0	no data collected	Omitted 1992
pH 6.5 - 9.0	Peace River: 0400134 3.2km u/s Ft. St John (N side)	Jul. 28, 30 Aug. 4, 11, 13	5	8.0 - 8.2	Objective met
	0400492 100 m d/s Ft. St John	Jul. 28, 30 Aug. 4, 11, 13	5	8.1 - 8.3	Objective met
	0400138 u/s Petro-Canada (N side)	Jul. 28, 30 Aug. 4, 11, 13	5	8.1 - 8.3	Objective met
	0410054 100m d/s Petro-Canada	Jul. 28, 30 Aug. 4, 11, 13	5	8.2 - 8.3	Objective met
	E207631 200 m d/s Fibreco	Jul. 28, 30 Aug. 4, 11, 13	15	8.1 - 8.3	Objective met
	E207965 1 km d/s Fibreco	Jul. 28, 30 Aug. 4, 11, 13	5	8.2 - 8.3	Objective met
	0400142 5 km d/s Petro-Canada (N side)	Jul. 28, 30 Aug. 4, 11, 13	5	8.1 - 8.3	Objective met
	0400143 5 km d/s Petro-Canada (midstream)	Jul. 28, 30 Aug. 4, 11, 13	5	8.2 - 8.3	Objective met

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 - 9.0	Beatton River	1992	0	no data collected	Omitted 1992
Temperature max increase: 1 C	Peace River: 0400134 3.2km u/s Ft. St John (N side)	Jul 28,30, Aug 5,11,13	5	10.1 - 11.8 C	Control site
	0400492 100 m d/s Ft. St John	Jul 28,30, Aug 5,11,13,	5	10.5 - 12.2 C max increase = 0.5 C	Objective met
	0400138 u/s Petro-Canada (N side)	Jul 28,30, Aug 5,11,13,	5	10.3 - 12.2 C	Control site
	0410054 100m d/s Petro-Canada	Jul 28,30, Aug 5,11,13,	5	10.0 - 12.2 C max increase = 0.5 C	Objective met
	E207631 200 m d/s Fibreco	Jul 28,30, Aug 5,11,13,	5	10.0 - 12.7 C max increase = 1.0 C	Objective met
	E207965 1 km d/s Fibreco	Jul 28,30, Aug 5,11,13,	5	10.9 - 12.9 C max increase = 0.7 C	Objective met
	0400142 5 km d/s Petro-Canada (N. side)	Jul 28,30, Aug 5,11,13,	5	10.0 - 12.0 C max increase = 1.0 C	Objective met
	0400143 5 km d/s Petro-Canada (midstream)	Jul 28,30, Aug 5,11,13,	5	10.1 - 12.5 C max increase = 0.9 C	Objective met
Total Cu <0.004 mg/L av 0.011 mg/L max at hardness 100 mg/L or 20% increase	Peace River: 0400138 u/s Petro-Canada (N. Side)	Jul. 28, 30	2	<0.001 - 0.002 mg/L	Control site
	0410054 100 m d/s Petro-Canada	Jul. 28, 30 Aug. 4, 11, 13	5	<0.001 - 0.003 mg/L	Max obj. met Av indefinite
	E207631 200 m d/s Fibreco	Jul 28,30, Aug 4,11,13,	5	<0.001 - 0.009 mg/L	Max obj. met Av indefinite
	E207965 1 km d/s Fibreco	Jul 28,30, Aug 4,11,13,	5	<0.001 - 0.002 mg/L	Max obj. met Av indefinite
	0400142 5 km d/s Petro-Canada (N. side)	Jul 28,30, Aug 4,11,13,	5	0.001 - 0.003 mg/L	Max obj. met Av indefinite
	0400143 5 km d/s Petro-Canada (midstream)	Jul 28,30, Aug 4,11,13,	5	<0.001 - 0.004 mg/L	Max obj. met Av indefinite

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Chlorophenols (tri + tetra + penta) 0.0002 mg/L max	Peace River	1992	0	no data collected	Omitted 1992
Total Chromium 0.002 mg/L max or 20% increase	Peace River: 0400138 u/s Petro-Canada (N. Side)	Jul 28,30	2	0.002 - 0.014 mg/L	Control site
	0410054 100 m d/s Petro-Canada	Jul. 28, 30 Aug. 4, 11, 13	5	<0.002 - 0.003 mg/L max inc. = 0 mg/L	Objective met
	E207631 200 m d/s Fibreco	Jul. 28, 30 Aug. 4, 11, 13	5	0.002 - 0.003 mg/L max inc. = 0.002 mg/L	Objective met
	E207965 1 km d/s Fibreco	Jul 28,30, Aug 4,11,13,	5	<0.002 - 0.004 mg/L max inc. = 0.002 mg/L	Objective met
	0400142 5 km d/s Petro-Canada (N. side)	Jul 28,30, Aug 11,13,	4	<0.002 - 0.003 mg/L max inc. = 0.001 mg/L	Objective met
		Aug. 4	1	0.003 mg/L	Indef. result (no control)
	0400143 5 km d/s Petro-Canada (midstream)	Jul 28,30, Aug 4,11,13,	5	<0.002 - 0.014 mg/L max inc. = 0.001 mg/L	Objective met
Total Lead <0.006 mg/L av 0.082 mg/L max at hardness 100 mg/L or 20% increase	Peace River: 0400138 u/s Petro-Canada (N. Side)	Jul 28,30	2	<0.001 - 0.001 mg/L	Control site
	0410054 100 m d/s Petro-Canada	Jul. 28, 30 Aug. 4, 11, 13	5	<0.001 - 0.002 mg/L	Max obj. met Av indefinite
	E207631 200 m d/s Fibreco	Jul. 28, 30 Aug. 4, 11, 13	5	<0.001 - 0.002	Max obj. met Av indefinite
	E207965 1 km d/s Fibreco	Jul 28,30, Aug 4,11,13,	5	<0.001 - 0.003 mg/L	Max obj. met Av indefinite
	0400142 5 km d/s Petro-Canada (N. side)	Jul 28,30, Aug 4,11,13,	5	<0.001 - 0.02 mg/L	Max obj. met Av indefinite
	0400143 5 km d/s Petro-Canada (midstream)	Jul 28,30, Aug 4,11,13,	5	<0.001 - 0.001 mg/L	Max obj. met Av indefinite
Total Nickel 0.065 mg/L max at hardness 100 mg/L	Peace River: 0400138 u/s Petro-Canada (N. Side)	Jul 28,30	2	<0.008 - 0.009 mg/L	Objective met
	0410054 100 m d/s Petro-Canada	Jul. 28, 30 Aug. 4, 11, 13	5	all < 0.008 mg/L	Objective met
	E207631 200 m d/s Fibreco	Jul. 28, 30 Aug. 4, 11, 13	5	<0.008 - 0.017 mg/L	Objective met

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Nickel 0.065 mg/L max at hardness 100 mg/L	Peace River: E207965 1 km d/s Fibreco	Jul 28,30, Aug 4,11,13,	5	all < 0.008 mg/L	Objective met
	0400142 5 km d/s Petro-Canada (N. side)	Jul 28,30, Aug 4,11,13,	5	all < 0.008 mg/L	Objective met
	0400143 5 km d/s Petro-Canada (midstream)	Jul 28,30, Aug 4,11,13,	5	<0.008 - 0.009 mg/L	Objective met
Total Zinc 0.03 mg/L max or 20% increase	Peace River: 0400138 u/s Petro-Canada (N. Side)	Jul 28,30	2	<0.002 - 0.003 MG/L	Control site
	0410054 100 m d/s Petro-Canada	Jul. 28, 30 Aug. 4, 11, 13	5	<0.002 - 0.014 mg/L	Objective met
	E207631 200 m d/s Fibreco	Jul. 28, 30 Aug. 4, 11, 13	5	0.004 - 0.010 mg/L	Objective met
	E207965 1 km d/s Fibreco	Jul 28,30, Aug 4,11,13,	5	<0.002 - 0.005 mg/L	Objective met
	0400142 5 km d/s Petro-Canada (N. side)	Jul 28,30, Aug 4,11,13,	5	0.002 - 0.005 mg/L	Objective met
	0400143 5 km d/s Petro-Canada (midstream)	Jul 28,30, Aug 4,11,13,	5	<0.002 - 0.009 mg/L	Objective met
Phenol <0.002 mg/L av or 20% increase	Peace River: 0400142 5 Km d/s Petro-Canada (N. Side)	Jul. 28, 30 Aug. 4, 11, 13	5	<0.002 - 0.004 mg/L av = 0.0026 mg/L	Indefinite result (no control)
	0400143 5 Km d/s Petro-Canada (midstream)	Jul. 28, 30 Aug. 4, 11, 13	5	<0.002 - 0.004 mg/L av = 0.0026 mg/L	Indef. result (no control)
Sulfide 0.002 mg/L max or 20% increase	Peace River	1992	0	no data collected	Objective not checked
2,4-D (ester) 0.004 mg/L max	Peace River	1992	0	no data collected	Omitted 1992

TABLE 15

WILLIAMS LAKE WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliform <10/100 mL 90th perc. at water intakes	Williams Lake water intake sites	1992	0	no data collected	Omitted 1992
Fecal Coliform <200/100 mL geometric mean (gm) <400/100 mL 90th perc. (np) at beaches	Scout Island Beach	Jun 22 - Sep 8	4	5 - 15/100 mL	Indefinite result
	Russett Bluff Beach	Jun 22 - Sep 8	4	5 - 190/100 mL	Indefinite result
Turbidity <1 NTU av 5 NTU max	0603019 at lake centre	1992	0	no data collected	Objective not checked
Total P <0.020 mg/L av at spring overturn	0603019 at lake centre	Apr. 1	1 1 1 1	0.5m : 0.048 mg/L 5 m : 0.051 mg/L 10 m : 0.052 mg/L 19 m : 0.054 mg/L av = 0.051 mg/L	Objective not met
Chlorophyll-a <5 ug/L av May - August	0603019 at lake centre	May 14 - Aug 12	4	5.4 - 10.9 ug/L av = 8.37 ug/L	Objective not met
Diss. Oxygen 4 mg/L min 5m above sed.	0603019 at lake centre (sediments at 20 m)	Apr 1, May 14, Nov. 5	3	4.4 - 8.5 mg/L (at 15 m)	Objective met
		Jun 16, Jul 14, Aug 12, Sep 22	4	0.1 - 3.3 mg/L (at 15 m)	Objective not met
Water Clarity 1.2m min Secchi reading	0603019 at lake centre	Apr 12 - Nov 8	30	1.5 - 5.2 m	Objective met

TABLE 16

BONAPARTE RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <100/100 mL 90th perc. (np)	Bonaparte River: 0600508 d/s Cache Creek STP	Mar. 10 - Apr. 7	5	19 - 70/100 mL np = 55/100 mL	Objective met
		Apr. 28 - May 26	5	60 - 183/100 mL np = 150/100 mL	Objective not met
	E207297 d/s Loon Creek	Mar. 10 - Apr. 7	5	3 - 29/100 mL np = 19/100 mL	Objective met
		Apr. 28 - May 26	5	8 - 84/100 mL np = 53/100 mL	Objective met
	Clinton Creek: 0600503 u/s Clinton STP	Mar. 10 - Apr. 7	5	5 - 42/100 mL np = 29/100 mL	Objective met
		Apr. 28 - May 26	5	11 - 98/100 mL np = 79/100 mL	Objective met
	0600505 3 km d/s Clinton STP	Mar. 10 - Apr. 7	5	3 - 204/100 mL np = 135/100 mL	Objective not met
		Apr. 28 - May 26	5	27 - 184/100 mL np = 138/100 mL	Objective not met
	Loon Creek: 0600297 u/s fish hatchery	Mar. 10 - Apr. 7	5	6 - 169/100 mL np = 166/100 mL	Objective not met
		Apr. 28 - May 26	5	22 - 278/100 mL np = 158/100 mL	Objective not met
	E206110 d/s fish hatchery	Mar. 10 - Apr. 7	5	1 - 225/100 mL np = 208/100 mL	Objective not met
		Apr. 28 - May 26	5	12 - 261/100 mL np = 144/100 mL	Objective not met
Fecal Coliforms <10/100 mL 90th perc. at water intakes	Loon Lake	1992	0	no data collected	Omitted 1992
Fecal Coliform <200/100 mL gm at beaches	Loon Lake	1992	0	no data collected	Omitted 1992
Suspended Solids max increase: 10 mg/L or 10%	Bonaparte River: 0600017 u/s Clinton Creek	Mar. 10 - May 26	10	4 - 22 mg/L	Control site
	E207297 d/s Loon Creek	May 5 Mar. 10 - May 26	1 9	max inc. = 18 mg/L max inc. = 8 mg/L	Obj. not met Obj. met

TABLE 16 continued

BONAPARTE RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Suspended Solids max increase: 10 mg/L or 10%	Bonaparte River: 0600508 d/s Cache Creek STP	Mar. 10 - May 19 May-26	9 1	max inc. = 77 mg/L max inc. = 7 mg/L	Obj. not met Obj. met
	Clinton Creek 0600503 u/s Clinton STP	Mar. 10 - May 26	10	4 - 19 mg/L	Control site
	0600505 3 km d/s Clinton STP	Mar. 10 - May 26 Mar. 17, Apr. 7	8 2	max inc. = 26 mg/L max inc. = 7 mg/L	Obj. not met Obj. met
	Loon Creek: 0600297 u/s hatchery	Mar. 10 - May 26	10	9 - 49 mg/L	Control site
	E206110 d/s hatchery	Mar. 10 - May 26	10	max inc. = 2 mg/L	Objective met
Turbidity max increase: 5 NTU or 10%	Bonaparte River: 0600017 u/s Clinton Creek	Mar. 10 - May 26	10	0.2 - 2.9 NTU	Control site
	E207297 d/s Loon Creek	Mar. 10 - May 26	10	max inc. = 4.1 NTU	Objective met
	0600508 d/s Cache Creek STP	Mar. 23 - May 26 Mar. 10, 17, 31	7 3	max inc. = 22.1 NTU max inc. = 3.4 NTU	Obj. not met Obj. met
	Clinton Creek: 0600503 u/s Clinton STP	Mar. 10 - May 26	10	0.9 - 3.9 NTU	Control site
	0600505 3 km d/s Clinton STP	Mar. 10 - May 26	10	max inc. = 4.4 NTU	Objective met
	Loon Creek: 0600297 u/s hatchery	Mar. 10 - May 26	10	1.4 - 13 NTU	Control site
	E206110 d/s hatchery	Mar. 10 - May 26	10	max inc. = 1 NTU	Objective met
Diss. Solids 500 mg/L max	Clinton Creek	1992	0	no data collected	Omitted 1992
Tot Cl2 Res. 0.002 mg/L max	Bonaparte River Clinton Creek	1992	0	no data collected	Omitted 1992

TABLE 16 continued

BONAPARTE RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <0.365 mg/L av 1.90 mg/L max at pH = 8.5 temp = 15 C	Bonaparte River: 0600017 u/s Clinton	Mar. 10 - Apr. 7	5	<0.005 - 0.008 mg/L av = 0.006 mg/L	Objectives met
		Apr. 28 - May 26	5	<0.005 - 0.010 mg/L av = 0.007 mg/L	Objectives met
	E207297 d/s Loon Creek	Mar. 10 - Apr. 7	5	<0.005 - 0.015 mg/L av = 0.008 mg/L	Objectives met
		Apr. 28 - May 26	5	<0.005 - 0.015 mg/L av = 0.008 mg/L	Objectives met
	0600508 d/s Cache Creek STP	Mar. 10 - Apr. 7	5	<0.005 - 0.027 mg/L av = 0.019 mg/L	Objectives met
		Apr. 28 - May 26	5	<0.005 - 0.033 mg/L av = 0.015 mg/L	Objectives met
	0600329 near mouth	Jan 22 - Dec 14	14	<0.005 - 0.022 mg/L	Max obj. met
	Clinton Creek: 0600503 u/s Clinton STP	Mar. 10 - Apr. 7	5	<0.005 - 0.008 mg/L av = 0.006 mg/L	Objectives met
		Apr. 28 - May 26	5	<0.005 - 0.007 mg/L av = 0.005 mg/L	Objectives met
	0600505 3 km d/s Clinton STP	Mar. 10 - Apr. 7	5	0.01 - 0.037 mg/L av = 0.023 mg/L	Objectives met
		Apr. 28 - May 26	5	0.009 - 0.021 mg/L av = 0.013 mg/L	Objectives met
	Loon Creek: 0600297 u/s hatchery	Mar. 10 - Apr. 7	5	<0.005 - 0.011 mg/L av = 0.007 mg/L	Objectives met
		Apr. 28 - May 26	5	<0.005 - 0.010 mg/L av = 0.008 mg/L	Objectives met
	E206110 d/s hatchery	Mar. 10 - Apr. 7	5	0.013 - 0.023 mg/L av = 0.019 mg/L	Objectives met
		Apr. 28 - May 26	5	0.009 - 0.029 mg/L av = 0.016 mg/L	Objectives met

TABLE 16 continued

BONAPARTE RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Bonaparte River: 0600017 u/s Clinton Creek	Mar. 10 - Apr. 7	5	<0.005 - 0.007 mg/L av = 0.005 mg/L	Objectives met
		Apr. 28 - May 26	5	all <0.005 mg/L	Objectives met
	E207297 d/s Loon Creek	Mar. 10 - Apr. 7	5	<0.005 - 0.007 mg/L av = 0.005 mg/L	Objectives met
		Apr. 28 - May 26	5	all <0.005 mg/L	Objectives met
	0600508 d/s Cache STP	Mar. 10 - Apr. 7	5	<0.005 - 0.008 mg/L av = 0.006 mg/L	Objectives met
		Apr. 28 - May 26	5	<0.005 - 0.006 mg/L av = 0.005 mg/L	Objectives met
	Clinton Creek: 0600503 u/s Clinton STP	Mar. 10 - Apr. 7	5	<0.005 - 0.007 mg/L av = 0.005 mg/L	Objectives met
		Apr. 28 - May 26	5	<0.005 - 0.012 mg/L av = 0.006 mg/L	Objectives met
	0600505 3 km d/s Clinton STP	Mar. 10 - Apr. 7	5	<0.005 - 0.011 mg/L av = 0.008 mg/L	Objectives met
		Apr. 28 - May 26	5	<0.005 - 0.005 mg/L av = <0.005 mg/L	Objectives met
Chlorophyll-a <50 mg/m2 av	Bonaparte River 0600329 near mouth	Aug. 17	6	116 - 199 mg/m2 av = 167 mg/m2	Objective not met
Chlorophyll-a <100 mg/m2 av or 20% increase	Clinton Creek	1992	0	no data collected	Omitted 1992
Diss. Oxygen 7.75-11.2 mg/L min depending on fish egg stage	Bonaparte River Clinton Creek Loon Creek	1992	0	no data collected	Objective not checked
Diss. Oxygen 5 mg/L min, 5m above bottom	Loon Lake 0603050 above deepest point (30 m)	Apr. 27	1	2.6 mg/L at 25 m	Objective not met
		Jun. 16	1	1.3 mg/L at 25 m	Objective not met

TABLE 16 continued

BONAPARTE RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 - 8.5	Bonaparte River: 0600017 u/s Clinton Creek	Mar. 10 - Apr. 7	5	8.1 - 8.3	Objective met
		Apr. 28 - May 26	5	8.2 - 8.3	Objective met
	E207297 d/s Loon Creek	Mar. 10 - Apr. 7	5	8.2 - 8.4	Objective met
		Apr. 28 - May 26	5	8.3 - 8.4	Objective met
	Clinton Creek: 0600503 u/s Clinton STP	Mar. 10 - Apr. 7	5	8.3 - 8.5	Objective met
		Apr. 28 - May 26	5	all 8.4	Objective met
	0600505 3 km d/s Clinton STP	Mar. 10 - Apr. 7	5	8.4 - 8.5	Objective met
		Apr. 28 - May 26	5	8.4 - 8.5	Objective met
pH 6.5 - 9.0 (d/s Cache Creek)	Bonaparte River: 0600508 d/s Cache Creek STP	Mar. 10 - Apr. 7	5	8.2 - 8.4	Objective met
		Apr. 28 - May 26	5	8.1 - 8.3	Objective met
	0600329 near mouth	Jan 22 - Dec 14	14	8.3 - 8.8	Objective met
	Loon Creek: 0600297 u/s hatchery	Mar. 10 - Apr. 7	5	8.4 - 8.5	Objective met
		Apr. 28 - May 26	5	8.3 - 8.5	Objective met
	E206110 d/s hatchery	Mar. 10 - Apr. 7	5	8.3 - 8.5	Objective met
		Apr. 28 - May 26	5	8.3 - 8.5	Objective met

TABLE 17

OKANAGAN VALLEY LAKES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total-P <0.040 mg/L av at spring overturn (short-term)	Wood Lake 0500848 lake centre	Mar. 3	1 1	1 - 10 m: 0.035 mg/L 20-30 m: 0.040 mg/L av = 0.037 mg/L	Objective met
Total-P <0.008 mg/L av at spring overturn	Kalamalka Lake: 0500246 south end	Mar. 3	1 1	1-10m: 0.006 mg/L 20-45m: 0.010 mg/L av = 0.008 mg/L	Objective met
	0500461 north end	Mar. 3	1 1	0 m: 0.006 mg/L 20 - 28 m: 0.006 mg/L av = 0.006 mg/L	Objective met
Total-P <0.010 mg/L av at spring overturn	Okanagan Lake: 0500239 Armstrong Arm	Mar. 4	1 1	1-10m: 0.017 mg/L 20-45m: 0.017 mg/L av = 0.017 mg/L	Objective not met
	0500238 Vernon Arm	Mar. 4	1 1	1-10m: 0.006 mg/L 20-45m: 0.006 mg/L av = 0.006 mg/L	Objective met
	0500730 north basin	Mar. 4	1 1	1-10m: 0.006 mg/L 20-45m: 0.005 mg/L av = 0.006 mg/L	Objective met
	0500236 central basin	Mar. 4	1 1	1-10m: 0.005 mg/L 20-45m: 0.006 mg/L av = 0.006 mg/L	Objective met
	0500729 south basin	Feb. 26	1 1	1-10m: 0.008 mg/L 20-45m: 0.010 mg/L av = 0.009 mg/L	Objective met
Total-P <0.015 mg/L av at spring overturn	Skaha Lake 0500615 lake centre	Feb. 17	1 1	1-10m: 0.012 mg/L 20-45m: 0.011 mg/L av = 0.012 mg/L	Objective met
	Osoyoos Lake 0500249 north end	Feb. 19	1 1	1-10m: 0.024 mg/L 20-32m: 0.024 mg/L av = 0.024 mg/L	Objective not met

TABLE 18

SIMILKAMEEN RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10 /100 mL 90th perc. (np)	Similkameen River: E207461 u/s Hedley	Aug. 13 - Sep. 10	5	1 - 6/100 mL np = 5/100 mL	Objective met
	E207463 d/s Candorado	Aug. 13 - Sep. 10	5	1 - 3/100 mL np = 2/100 mL	Objective met
	0500073 near U.S. border	Jan 14 - Mar 24	6	<2 - 8/100 mL	Indefinite result
	Allison, Missezula & Osprey lakes	1992	0	no data collected	Omitted 1992
E. Coli <10/100 mL 90th perc.	Similkameen River: Princeton to border	1992	0	no data collected	Omitted 1992
Enterococci <3/100 mL 90th perc.	Similkameen River: Princeton to border	1992	0	no data collected	Omitted 1992
Suspended Solids max increase: 10 mg/L or 10%	Similkameen River: 0500073 near U.S. border	Jan 14 - Mar 24	6	1 - 7 mg/L	Objective met
	Hedley Creek	1992	0	no data collected	Omitted 1992
Substrate Sedimentation: no increase in weight of particles <3 mm dia	Similkameen River: Princeton to border & Hedley Creek	1992	0	no data collected	Omitted 1992
Turbidity max increase: 1-5 NTU or 10%	Similkameen River: Princeton to border & Hedley Creek	1992	0	no data collected	Omitted 1992
Tot. Cl2 Res. 0.002 mg/L max	Similkameen River : Princeton to border	1992	0	no data collected	Omitted 1992
WAD-CN <0.005 mg/L av 0.010 mg/L max	Similkameen River: E207461 u/s Hedley	Aug. 13 - Sep. 10	5	all < 0.005 mg/L	Objectives met
	E207463 d/s Candorado	Aug. 13 - Sep. 10	5	all < 0.005 mg/L	Objectives met
	0500073 near U.S. border	Jan 14 - Mar 24	6	all < 0.005 mg/L	Max obj. met

TABLE 18 continued

SIMILKAMEEN RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
WAD-CN <0.005 mg/L av 0.010 mg/L max or 20% increase	Hedley Creek	1992	0	no data collected	Omitted 1992
SAD-CN + Thiocyanate as CN 0.20 mg/L max	Similkameen River: E207461 u/s Hedley	Aug. 13 - Sep. 10	5	all < 0.005 mg/L	Objective met
	E207463 d/s Candorado	Aug. 13 - Sep. 10	5	all < 0.005 mg/L	Objective met
SAD-CN + Thiocyanate as CN 0.20 mg/L max or 20% inc.	Hedley Creek	1992	0	no data collected	Omitted 1992
Cyanate as CN 0.45 mg/L max	Similkameen River: E207461 u/s Hedley	Aug. 13 - Sep. 10	5	all < 0.05 mg/L	Objective met
	E207463 d/s Candorado	Aug. 13 - Sep. 10	5	all < 0.05 mg/L	Objective met
Cyanate as CN 0.45 mg/L max or 20% inc.	Hedley Creek	1992	0	no data collected	Omitted 1992
Total Arsenic 0.05 mg/L max or 20% increase	Similkameen River: E207461 u/s Hedley	Aug. 13 - Sep. 10	5	all < 0.001 mg/L	Control site
	E207463 d/s Candorado	Aug. 13 - Sep. 10	5	< 0.001 - 0.001 mg/L	Objective met
Total Arsenic 0.05 mg/L max	Hedley Creek	1992	0	no data collected	Omitted 1992
Ammonia-N <1.09 mg/L av 5.68 mg/L max at pH = 8.0 temp = 15 C	Similkameen River: 0500073 near U.S. border	Jan 14 - Mar 24	6	<0.005 - 0.009 mg/L	Max obj. met Av not chekd
	Hedley Creek	1992	0	no data collected	Omitted 1992

TABLE 18 continued

SIMILKAMEEN RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total-P <0.020 mg/L av at spring overturn	Missezula Lake Allison Lake Osprey Lake	1992	0	no data collected	Omitted 1992
Chlorophyll-a <50 mg/m2 av	Similkameen River: Princeton to border	1992	0	no data collected	Omitted 1992
Chlorophyll-a <100 mg/m2 av	Hedley Creek	1992	0	no data collected	Omitted 1992
Diss. Oxygen 8-11 mg/L min	Similkameen River: Princeton to border	1992	0	no data collected	Omitted 1992
pH 6.5 - 8.5	Similkameen River: 0500073 near U.S. border	Jan 14 - Mar 24	6	7.8 - 8.1	Objective met
	Hedley Creek	1992	0	no data collected	Omitted 1992
Dissolved Al <0.05 mg/L av 0.10 mg/L max or 20% inc.	Similkameen River: Princeton to border & Hedley Creek	1992	0	no data collected	Omitted 1992
Total Cr <0.002 mg/L av 0.02 mg/L max or 20% increase	Similkameen River: E207461 u/s Hedley	Aug 20,26, Sep 3,10	4	<0.002 - 0.003 mg/L	Max obj. met Av not chekd.
	E207463 d/s Candorado	Aug 20,26, Sep 3,10	4	all < 0.002 mg/L	Max obj. met
	Hedley Creek	1992	0	no data collected	Omitted 1992
Total Cu <0.002 mg/L av 0.005 mg/L max or 20% increase hardness = 36	Similkameen River: E207461 u/s Hedley	Aug 13,20,26, Sep 3,10	5	<0.001 - 0.008 mg/L av = 0.003 mg/L	Control site
	E207463 d/s Candorado	Aug 13,20,26, Sep 3,10	5	<0.001 - 0.002 mg/L	Objectives met
Total Cu <0.002 mg/L av 0.003 mg/L max or 20% inc. hardness = 15	Hedley Creek	1992	0	no data collected	Omitted 1992

TABLE 18 continued

SIMILKAMEEN RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Fe 0.3 mg/L max or 20% increase	Similkameen River: E207461 u/s Hedley	Aug. 13 - Sep. 10	5	<0.003 - 0.04 mg/L	Control site
	E207463 d/s Candorado	Aug. 13 - Sep. 10	5	0.01 - 0.03 mg/L	Objective met
	Hedley Creek	1992	0	no data collected	Omitted 1992
Total Pb <0.004 mg/L av 0.022 mg/L max or 20% increase hardness = 36	Similkameen River: E207461 u/s Hedley	Aug. 20 - Sep. 10	4	all <0.001 mg/L	Control site
	E207463 d/s Candorado	Aug. 20 - Sep. 10	4	all <0.001 mg/L	Max obj. met Av not chekd
Total Pb <0.004 mg/L av 0.007 mg/L max or 20% increase hardness = 15	Hedley Creek	1992	0	no data collected	Omitted 1992
Total Pb 0.8ug/g wet wt max in fish muscle	Similkameen River: Princeton to border & Hedley Creek	1992	0	no data collected	Omitted 1992
Total Mn 0.05 mg/L max or 20% increase	Similkameen River: E207461 u/s Hedley	Aug 20,26, Sep 3,10	4	0.002 - 0.003 mg/L	Objective met
	E207463 d/s Candorado	Aug 20,26, Sep 3,10	4	<0.002 - 0.015 mg/L	Objective met
	Hedley Creek	1992	0	no data collected	Omitted 1992
Total Hg <0.02 ug/L av 0.1 ug/L max	Similkameen River: Princeton to border & Hedley Creek	1992	0	no data collected	Omitted 1992
Total Hg 0.5ug/g wet wt max in fish muscle	Similkameen River: Princeton to border & Hedley Creek	1992	0	no data collected	Omitted 1992

TABLE 18 continued

SIMILKAMEEN RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Mo <0.01 mg/L av 0.05 mg/L max May - Sep	Similkameen River: E207461 u/s Hedley	Aug. 20 - Sep. 10	4	all <0.004 mg/L	Max obj. met Av not chekd
	E207463 d/s Candorado	Aug. 20 - Sep. 10	4	all <0.004 mg/L	Max obj. met
	Hedley Creek:	1992	0	no data collected	Omitted 1992
Total Ni 0.025 mg/L max or 20% increase hardness <65	Similkameen River: E207461 u/s Hedley	Aug. 20 - Sep. 10	4	all < 0.01 mg/L	Control site
	E207463 d/s Candorado	Aug. 20 - Sep. 10	4	all < 0.01 mg/L	Objective met
	Hedley Creek	1992	0	no data collected	Omitted 1992
Total U <0.01 mg/L av 0.10 mg/L max or 20% inc.	Similkameen River: Princeton to border & Hedley Creek	1992	0	no data collected	Omitted 1992
Total Zn <0.01 mg/L av 0.03 mg/L max or 20% increase	Similkameen River: E207461 u/s Hedley	Aug 13,20,26, Sep 3,10	5	<0.002 - 0.004 mg/L	Control site
	E207463 d/s Candorado	Aug 13,20,26, Sep 3,10	5	<0.002 - 0.006 mg/L av = 0.003 mg/L	Objectives met
	Hedley Creek	1992	0	no data collected	Omitted 1992

TABLE 19

CAHILL CREEK AND TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Susp. Solids max increase: 10 mg/L or 10%	Red Top Gulch at Hwy. Cahill Cr. at Highway	1992	0	no data collected	Omitted 1992
Susp. solids max increase: 20 mg/L or 10%	Sunset Creek: E215954 u/s Canty Pit	Apr. 27 - Jul. 9	4	1 - 51 mg/L	Control site
	E215955 d/s Canty Pit	Apr.27 Jun. 25 - Jul. 9	1 3	max inc. = 36 mg/L max inc. = 2 mg/L	Obj. not met Obj. met
	Cahill Cr d/s tailing Nickel Plate Mine Cr.	1992	0	no data collected	Omitted 1992
Turbidity max increase: 5 NTU or 10%	Red Top Gulch at Hwy. Cahill Cr. at Highway	1992	0	no data collected	Omitted 1992
Turbidity max increase: 10 NTU or 20%	Sunset Creek: E215954 u/s Canty Pit	Apr. 27 - Jul. 9	4	1 - 16 NTU	Control site
	E215955 d/s Canty Pit	Apr. 27 - Jul. 9	4	max inc. = 6 mg/L	Objective met
	Cahill Cr d/s tailing Nickel Plate Mine Cr.	1992	0	no data collected	Omitted 1992
Diss. Solids 500 mg/L max	Red Top Gulch at Hwy. Cahill Creek Nickel Plate Mine Cr.	1992	0	no data collected	Omitted 1992
Sulphate < 50 mg/L av 150 mg/L max	Red Top Gulch at Hwy. E206638	Jun 25, Jul 2,9,16,23 Jun 25, Jul 2,9,16 Jul. 23	5 4 1	av = 156 mg/L 158 - 160 mg/L 139 mg/L	av not met max not met max obj. met
	Cahill Cr. at Highway E206637	Jun 25, Jul 2,9,16,23	5	av = 59.6 mg/L max = 74.3 mg/L	av not met max obj. met
	Cahill Cr d/s tailing Nickel Plate Mine Cr.	1992	0	no data collected	Omitted 1992
WAD-CN <0.005 mg/L av 0.010 mg/L max	Red Top Gulch at Hwy. E206638	Jun 25, Jul 2,9,16,23	5	av = 0.006 mg/L max = 0.008 mg/L	av not met max obj. met
	Cahill Cr. at Highway E206637	Jun 25, Jul 2,9,16,23	5	av = 0.005 mg/L max = 0.010 mg/L	Objectives met
SAD-CN + Thiocyanate as CN 0.20 mg/L max	Red Top Gulch at Hwy. E206638	Jun 25, Jul 2,9,16,23	5	0.035 - 0.052 mg/L	Objective met
	Cahill Cr. at Highway E206637	Jun 25, Jul 2,9,16,23	5	0.033 - <0.075 mg/L	Objective met

TABLE 19 continued

CAHILL CREEK AND TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Cyanate as CN 0.45 mg/L max	Red Top Gulch at Hwy. E206638	Jun 25, Jul 2,9,16,23	5	all < 0.050 mg/L	Objective met
	Cahill Cr. at Highway E206637	Jun 25, Jul 2,9,16,23	5	<0.050 - 0.170 mg/L	Objective met
Total As 0.05 mg/L max	Red Top Gulch Creek E206638	Jun 25, Jul 2,9,16,23	5	all < 0.04 mg/L	Objective met
	Cahill Cr. at Highway E206637	Jun 25, Jul 2,9,16,23	5	all < 0.04 mg/L	Objective met
Total As 0.5 mg/L max	Nickel Plate Mine Cr.	1992	0	no data collected	Omitted 1992
Ammonia-N (dependent on pH & temp.)	Red Top Gulch at Hwy. Cahill Cr. at Highway	1992	0	no data collected	Omitted 1992
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Red Top Gulch at Hwy. E206638	Jun 25, Jul 2,9,16,23	5	<0.005 - 0.005 mg/L	Objectives met
	Cahill Cr. at Highway E206637	Jun 25, Jul 2,9,16,23	5	all < 0.005 mg/L	Objectives met
Nitrite-N 1 mg/L max	Cahill Cr d/s tailing	1992	0	no data collected	Omitted 1992
Nitrite-N 10 mg/L max	Nickel Plate Mine Cr.	1992	0	no data collected	Omitted 1992
Nitrate-N 10 mg/L max	Red Top Gulch at Hwy. E206638	Jun 25, Jul 2,9,16,23	5	5.62 - 6.04 mg/L	Objective met
	Cahill Cr. at Highway E206637	Jun 25, Jul 2,9,16,23	5	3.36 - 5.18 mg/L	Objective met
Nitrate-N 100 mg/L max	Nickel Plate Mine Cr.	1992	0	no data collected	Omitted 1992
pH 6.5 - 8.5	Red Top Gulch Creek E206638	Jun. 25 - Jul. 23	5	7.4 - 8.43	Objective met
	Cahill Cr. at Highway E206637	Jun. 25 Jul. 23 Jul. 2, 9, 16	1 1 3	8.7 5.71 7.75 - 8.48	Obj. not met Obj. not met Obj. met
	Nickel Plate Mine Cr.	1992	0	no data collected	Omitted 1992
Total Al 0.3 mg/L max or 20% increase at pH > 7	Red Top Gulch at Hwy. E206638	Jun 25, Jul 2,9,16,23	5	0.02 - 0.04 mg/L	Objective met
	Cahill Cr. at Highway E206637	Jun 25, Jul 2,9,16 Jul. 23	4 1	0.03 - 0.16 mg/L 0.88 mg/L	Obj. met Indef result (no control)

TABLE 19 continued

CAHILL CREEK AND TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cd 0.0002 mg/L max	Red Top Gulch at Hwy. E206638	Jun 25, Jul 2,9,16,23	5	all < 0.0005 mg/L	Objective met
	Cahill Cr. at Highway E206637	Jun 25, Jul 2,9,16,23	5	all < 0.0005 mg/L	Objective met
Total Cd 0.005 mg/L max	Cahill Cr d/s tailing	1992	0	no data collected	Omitted 1992
Total Cd 0.02 mg/L max	Nickel Plate Mine Cr.	1992	0	no data collected	Omitted 1992
Total Cu <0.005 mg/L av 0.007 mg/L max or 20% increase	Red Top Gulch at Hwy. E206638	Jun 25, Jul 2,9,16,23	5	av = 0.003 mg/L max = 0.007 mg/L	Objectives met
	Cahill Cr. at Highway E206637	Jun 25, Jul 2,9,16,23	5	av = 0.003 mg/L max = 0.004 mg/L	Objectives met
Total Cu 0.2 mg/L max	Cahill Cr d/s tailing	1992	0	no data collected	Omitted 1992
Total Cu 0.3 mg/L max	Nickel Plate Mine Cr.	1992	0	no data collected	Omitted 1992
Dissolved Fe 0.3 mg/L max	Red Top Gulch at Hwy. E206638	Jun 25, Jul 2,9,16,23	5	0.027 - 0.048 mg/L (Total Fe)	Objective met
	Cahill Cr. at Highway E206637	Jun 25, Jul 2,9,16 Jul. 23	4 1	0.034 - 0.135 mg/L 0.788 mg/L (Total Fe)	Obj. met Indef. result
	Nickel Plate Mine Cr.	1992	0	no data collected	Omitted 1992
Total Pb <0.005 mg/L av 0.007 mg/L max or 20% increase	Red Top Gulch at Hwy. E206638	Jun 25, Jul 2,9,16,23	5	av = 0.001 mg/L max = 0.003 mg/L	Objectives met
	Cahill Cr. at Highway E206637	Jun 25, Jul 2,9,16,23	5	av = 0.001 mg/L max = 0.002 mg/L	Objectives met
Total Pb 0.05 mg/L max	Cahill Cr d/s tailing	1992	0	no data collected	Omitted 1992
Total Pb 0.3 mg/L max	Nickel Plate Mine Cr.	1992	0	no data collected	Omitted 1992
Total Hg 0.10 ug/L max	Red Top Gulch at Hwy. E206638	Jul. 2 - Jul. 23	6	<0.005 - 0.006 ug/L	Objective met
	Cahill Cr. at Highway E206637	Jun. 25 - Jul. 23	7	<0.005 - 0.010 ug/L	Objective met
Total Hg 0.001 mg/L max	Cahill Cr d/s tailing	1992	0	no data collected	Omitted 1992

TABLE 19 continued

CAHILL CREEK AND TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Hg 0.003 mg/L max	Nickel Plate Mine Cr.	1992	0	no data collected	Omitted 1992
Total Hg in fish 0.5 ug/g wet wt. (muscle) max	Red Top Gulch at Hwy. and Cahill Cr. at Highway	1992	0	no data collected	Omitted 1992
Total Mo <0.01 mg/L av 0.05 mg/L max or 20% increase (May-Sep)	Red Top Gulch at Hwy. E206638	Jun 25, Jul 2,9,16,23	5	av = 0.005 mg/L max = 0.007 mg/L	Objectives met
	Cahill Cr. at Highway E206637	Jun 25, Jul 2,9,16,23	5	all < 0.004 mg/L	Objectives met
Total Mo 0.05 mg/L max	Nickel Plate Mine Cr.	1992	0	no data collected	Omitted 1992
Total Se 0.001 mg/L max or 20% increase	Red Top Gulch at Hwy. E206638	Jun 25, Jul 2,9,16,23	5	<0.005 - 0.008 mg/L	Indefinite result (no control)
	Cahill Cr. at Highway E206637	Jun 25, Jul 2,9,16,23	5	all < 0.005 mg/L	Objective met (assumed)
Total Se 0.05 mg/L max	Nickel Plate Mine Cr.	1992	0	no data collected	Omitted 1992
Total Ag 0.0001mg/L max or 20% inc.	Red Top Gulch at Hwy. E206638	Jun 25, Jul 2,9,16,23	5	all < 0.0005 mg/L	Objective met (assumed)
Total Ag 0.0001mg/L max or 20% inc.	Cahill Cr. at Highway E206637	Jun 25, Jul 2,9,16,23	5	all < 0.0005 mg/L	Objective met (assumed)
Total Ag 0.05 mg/L max or 20% inc.	Cahill Cr d/s tailing and Nickel Plate Mine Cr.	1992	0	no data collected	Omitted 1992
Total Zn 0.05 mg/L max	Red Top Gulch at Hwy. E206638	Jun 25, Jul 2,9,16,23	5	<0.002 - 0.007 mg/L	Objective met
	Cahill Cr. at Highway E206637	Jun 25, Jul 2,9,16,23	5	0.002 - 0.008 mg/L	Objective met
	Nickel Plate Mine Cr.	1992	0	no data collected	Omitted 1992

TABLE 20

BESSETTE CREEK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <100/100 mL 90th perc. (np) 200/100 mL max	Bessette Creek: 0500293 u/s Lumby	Aug. 4 Jul. 14, Aug. 11	1 2	205/100 mL 148 - 178/100 mL	Max not met Max obj. met np not chked.
	0500697 d/s Lumby	Jul. 14 Aug. 4, 11	3	59 - 123/100 mL	Max obj. met
	Lawson Creek: 0500645 u/s Riverside mill	Jul. 14, Aug. 4 Jul. 29, Aug. 11	2 2	440 - 875/100 mL 83 - 162/100 mL	Max not met Max obj. met np not chked.
	0500646 d/s Riverside mill	Aug. 4 Jul 14,29, Aug 11	1 3	580/100 mL 20 - 92/100 mL	Max not met Max obj. met
	Spider Creek 0500644 near mouth	1992	0	creek too low and not flowing	Objectives not checked
E. Coli <100/100 mL 90th perc. 200/100 mL max	Bessette Creek: 0500293 u/s Lumby	Jul. 14 Aug. 4, 11	3	146 - 179/100 mL	Max obj. met np not chked.
	0500697 d/s Lumby	Jul. 14 Aug. 4, 11	3	64 - 92/100 mL	Max obj. met
	Lawson Creek: 0500645 u/s Riverside mill	Jul. 14, Aug. 4 Jul. 29, Aug. 11	2 2	340 - 695/100 mL 86 - 138/100 mL	Max not met Max obj. met np not chked.
	0500646 d/s Riverside mill	Aug. 4 Jul 14,29, Aug 11	1 3	505/100 mL 19 - 83/100 mL	Max not met Max obj. met
	Spider Creek 0500644 near mouth	1992	0	creek too low and not flowing	Objectives not checked
Enterococci <25/100 mL 90th perc. 50/100 mL max	Bessette Creek: 0500293 u/s Lumby	Jul. 14 Aug. 4, 11	3	90 - 170/100 mL	Max not met np not chked.
	0500697 d/s Lumby	Jul. 14 Aug. 4, 11	3	78 - 113/100 mL	Max not met
	Lawson Creek: 0500645 u/s Riverside mill	Jul.14 - Aug. 11	4	109 - 755/100 mL	Max not met np not chked.

TABLE 20 continued

BESSETTE CREEK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Enterococci <25/100 mL 90th perc. 50/100 mL max	Lawson Creek: 0500646 d/s Riverside mill	Jul.14 - Aug. 11	4	64 - 830/100 mL	Max not met
	Spider Creek 0500644 near mouth	1992	0	creek too low and not flowing	Objectives not checked
Diss. Solids 500 mg/L max or 20% increase	Lawson Creek: 0500645 u/s Riverside mill	1992	0	no data collected	Omitted 1992
	0500646 d/s Riverside mill	Jul. 14 - Aug. 11	4	422 - 438 mg/L	Objective met
	Spider Creek: 0500644 near mouth	1992	0	creek too low and not flowing	Objective not checked
Susp. Solids 10 mg/L or 10% max increase	Bessette Creek: 0500293 u/s Lumby	Jul. 14 Aug. 4, 11	3	1 - 2 mg/L	Control site
	0500697 d/s Lumby	Aug.4 Jul. 14, Aug. 11	1 2	increase = 14 mg/L max inc. = 2 mg/L	Obj. not met Obj. met
	Lawson Creek: 0500645 u/s Riverside mill	Jul. 14 - Aug. 11	4	2 - 10 mg/L	Control site
	0500646 d/s Riverside mill	Aug. 4 Jul 14, 29, Aug 11	1 3	increase= 40 mg/L max inc. = 5 mg/L	Obj. not met Obj. met
	Spider Creek: 0500644 near mouth	1992	0	creek too low and not flowing	Objective not checked
	Harris Creek: E209072 u/s Bell Pole	Aug. 4, 11	2	1 mg/L	Control site
	E210219 at Bell Pole	Aug. 4, 11	2	1 mg/L	Objective met
Substrate Sedimentation: no increase in weight of particles <3 mm diameter	Bessette Creek Lawson Creek Spider Creek	1992	0	no data collected	Objective not checked
	Harris Creek: E209072 u/s Bell Pole	Jul. 14	1	38.5 g < 3 mm diameter	Control site

TABLE 20 continued

BESSETTE CREEK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Substrate Sedimentation: no increase in weight of particles <3 mm diameter	Harris Creek: E210219 at Bell Pole	Jul. 14	1	37.4 g < 3 mm diameter	Objective met
Turbidity 5 NTU or 10% max increase	Bessette Creek: 0500293 u/s Lumby	Jul. 14, Aug. 4, 11	3	0.6 - 0.9 NTU	Control site
	0500697 d/s Lumby	Jul. 14, Aug. 4	2	0.7 - 1.5 NTU	Objective met
	Lawson Creek 0500645 u/s Riverside mill	Jul. 14 - Aug. 11	4	0.4 - 1.5 NTU	Control site
	0500646 d/s Riverside mill	Aug. 4 Jul. 14, 29, Aug. 11	1 3	increase = 5.1 NTU 0.8 - 1.7 NTU	Obj. not met Obj. met
	Spider Creek: 0500644 near mouth	1992	0	creek too low and not flowing	Objective not checked
	Harris Creek: E209072 u/s Bell Pole	Aug. 4, 11	2	0.2 - 0.5 NTU	Control site
	E210219 at Bell Pole	Aug. 4, 11	2	0.5 NTU	Objective met
Ammonia-N <1.09 mg/L av 5.68 mg/L max at pH = 8.0 temp = 15 C	Bessette Creek: 0500293 u/s Lumby	Jul. 14, Aug. 4, 11	3	0.007 - 0.018 mg/L (diss)	Max obj. met Av. not chked.
	0500697 d/s Lumby	Jul. 14, Aug. 4, 11	3	0.007 - 0.015 mg/L (diss)	Max obj. met
	Lawson Creek: 0500645 u/s Riverside mill	Jul. 14 - Aug. 11	4	<0.005 - 0.032 mg/L (diss)	Max obj. met Av. not chked.
	Lawson Creek: 0500646 d/s Riverside mill	Jul. 14 - Aug. 11	4	<0.005 - 0.027 mg/L (diss)	Max obj. met
	Spider Creek: 0500644 near mouth	1992	0	creek too low and not flowing	Objectives not checked
	Harris Creek: E209072 u/s Bell Pole	Aug. 4, 11	2	0.009 - 0.014 mg/L (diss)	Max obj. met Av. not chked.

TABLE 20 continued

BESSETTE CREEK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <1.09 mg/L av 5.68 mg/L max at pH = 8.0 & temp = 15 C	Harris Creek E210219 at Bell Pole	Aug. 4, 11	2	0.008 - 0.010 mg/L (diss)	Max obj. met
Nitrite-N <0.04 mg/L av 0.12 mg/L max Cl = 2-4 mg/L	Bessette Creek: 0500293 u/s Lumby	Jul. 14, Aug. 4, 11	3	all < 0.005 mg/L	Max obj. met Av not chked.
	0500697 d/s Lumby	Jul. 14, Aug. 4, 11	3	all < 0.005 mg/L	Max obj. met
	Lawson Creek: 0500645 u/s Riverside mill	Jul. 14 - Aug. 11	4	0.006 - 0.01 mg/L	Max obj. met Av not chked.
	0500646 d/s Riverside mill	Jul. 14 - Aug. 11	4	<0.005 - 0.007 mg/L	Max obj. met
	Spider Creek: 0500644 near mouth	1992	0	creek too low and not flowing	Objectives not checked
Nitrite-N <0.02 mg/L av 0.06 mg/L max Cl < 2 mg/L	Harris Creek: E209072 u/s Bell Pole	Aug. 4, 11	2	all < 0.005 mg/L	Max obj. met Av not chked.
	E210219 at Bell Pole	Aug. 4, 11	2	all < 0.005 mg/L	Max obj. met
Nitrate-N 10 mg/L max	Bessette Creek: 0500293 u/s Lumby	Jul. 14, Aug. 4, 11	3	<0.02 - 0.05 mg/L	Objective met
	0500697 d/s Lumby	Jul. 14, Aug. 4, 11	3	<0.02 - 0.02 mg/L	Objective met
	Lawson Creek: 0500645 u/s Riverside mill	Jul.14 - Aug. 11	4	0.24 - 0.63 mg/L	Objective met
	0500646 d/s Riverside mill	Jul.14 - Aug. 11	4	<0.02 - 0.13 mg/L	Objective met
	Spider Creek: 0500644 near mouth	1992	0	creek too low and not flowing	Objective not checked
	Harris Creek: E209072 u/s Bell Pole	Aug. 4 , 11	2	<0.02	Objective met

TABLE 20 continued

BESSETTE CREEK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Nitrate-N 10 mg/L max	Harris Creek: E210219 at Bell Pole	Aug. 4 , 11	2	<0.02	Objective met
Chlorophyll-a 100 mg/m2 max	Bessette Creek 0500697 d/s Lumby	Aug. 11	4	16.7 - 43.6 mg/m2	Objective met
	Harris Creek E209072 u/s Bell Pole	Aug. 6	6	14.9 - 42.8 mg/m2	Objective met
	Spider Creek Lawson Creek	1992	0	no data collected	Objective not checked
Colour 15 TCU max or 20% increase	Lawson Creek: 0500645 u/s Riverside mill	1992	0	no data collected	Omitted 1992
	0500646 d/s Riverside mill	Jul. 14 - Aug. 11	4	10 - 15 TCU	Objective met
	Spider Creek: 0500644 near mouth	1992	0	creek too low and not flowing	Objective not checked
Temperature 1 C max increase	Duteau Creek E216026 u/s Bell Pole	Apr. 30, Jul. 14	2	13 - 16.5 C	Control site
	E208041 d/s Bell Pole	Jul. 14	1	16.5 C max increase = 0 C	Objective met
pH 6.5 - 8.5 or 0.2 max increase at pH >8.5	Bessette Creek: 0500293 u/s Lumby	Jul. 14 - Aug. 11	7	7.4 - 8.1	Objective met
	0500697 d/s Lumby	Jul. 14 Jul. 14 - Aug. 11	1 6	8.9 7.6 - 8.5	Obj. not met Obj. met
pH 6.5 - 8.5	Lawson Creek: 0500645 u/s Riverside mill	Jul. 14 - Aug. 11	7	6.73 - 8.2	Objective met
	Spider Creek 0500644 near mouth	1992	0	creek too low and not flowing	Objective not checked
	Harris Creek E209072 u/s Bell Pole	Jul. 14 - Aug. 11	6	7.7 - 8.07	Objective met

TABLE 20 continued

BESSETTE CREEK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Diss. Oxygen 8-11 mg/L min	Bessette Creek: 0500293 u/s Lumby	Jul. 14 - Aug. 11	5	10.1 - 11.5 mg/L	Objective met
	0500697 d/s Lumby	Jul. 14 - Aug. 11	5	10.2 - 12.9 mg/L	Objective met
	Lawson Creek: 0500645 u/s Riverside mill	Jul. 21, 29, Aug. 4 Jul. 14 , Aug. 11	3 2	7 - 7.5 mg/L 8.5 mg/L	Obj. not met Obj. met
	0500646 d/s Riverside mill	Jul. 14, 21, Aug. 4,11 Jul. 29	4 1	6 - 7.5 mg/L 8.4 mg/L	Obj. not met Obj. met
	Spider Creek: 0500644 near mouth	1992	0	creek too low and not flowing	Objective not checked
	Harris Creek: E209072 u/s Bell Pole	Jul. 14 - Aug. 11	5	9.2 - 10.4 mg/L	Objective met
	E210219 at Bell Pole	Jul. 14 - Aug. 11	5	9 - 11.8 mg/L	Objective met
Resin Acids DHA: 0.013 mg/L max Total: 0.052 mg/L max at pH = 8.0	Lawson Creek: 0500645 u/s Riverside mill	Jul. 14	1	<0.001 mg/L DHA <0.007mg/L Total	Objectives met
	0500646 d/s Riverside mill	Jul.14	1	<0.001mg/L DHA 0.008 mg/L Total	Objectives met
		Jul. 29	1	<0.001mg/L DHA <0.007 mg/L Total	Objectives met
	Spider Creek: 0500644 near mouth	1992	0	creek too low and not flowing	Objectives not checked
	Harris Creek	1992	0	no data collected	Objective not checked
Total Chlorophenols in sediments: 0.005 ug/g max dry weight	Harris Creek: E209072 u/s Bell Pole	Jul. 14	1	< 0.005 ug/g each homologue	Objective met
	E210219 at Bell Pole	Jul. 14	1	< 0.005 ug/g each homologue	Objective met

TABLE 20 continued

BESSETTE CREEK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Chlorophenols in fish: 0.1 ug/g max wet weight	Harris Creek: E209072 u/s Bell Pole	Jul. 14, 21, 28	3	< 0.01 ug/g each homologue	Objective met
	E210219 at Bell Pole	Jul. 14, 21	2	< 0.01 ug/g each homologue	Objective met
		Jul. 28	1	PCP = 0.03 ug/g TCP = 0.02 ug/g TTCP < 0.01 ug/g	Objective met
Mono-CP 0.5 ug/L max Di-CP 0.1 ug/L max	Harris Creek:	1992	0	no data collected	Omitted 1992
Tri-CP 0.05 ug/L max	Harris Creek: E209072 u/s Bell Pole	Jul. 27 Aug. 4	1 1	1 ug/L 1 ug/L	Objective not met
	E210219 at Bell Pole	Jul. 27 Aug. 4	1 1	< 0.1 ug/L < 0.1 ug/L	Indefinite result
Tetra-CP 0.1 ug/L max	Harris Creek: E209072 u/s Bell Pole	Jul. 27 Aug. 4	1 1	0.6 ug/L 0.9 ug/L	Objective not met
	E210219 at Bell Pole	Jul. 27 Aug. 4	1 1	< 0.1 ug/L < 0.1 ug/L	Objective met
Penta-CP 0.05 ug/L max	Harris Creek: E209072 u/s Bell Pole	Jul. 27 Aug. 4	1 1	< 0.1 ug/L < 0.1 ug/L	Indefinite result
	E210219 at Bell Pole	Jul. 27 Aug. 4	1 1	< 0.1 ug/L < 0.1 ug/L	Indefinite result

TABLE 21

TRIBUTARIES TO OKANAGAN LAKE NEAR WESTBANK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <200/100 mL geometric mean (gm)	Westbank Creek 0500096 at the mouth	Jul. 29 - Aug. 12	3	380 - 1070/100 mL	Indefinite result
E. Coli <77/100 mL geometric mean (gm)	Westbank Creek 0500096 at the mouth	Jul. 29 - Aug. 12	3	176 - 1030/100 mL	Indefinite result
Enterococci <20/100 mL geometric mean (gm)	Westbank Creek 0500096 at the mouth	Jul. 29 - Aug. 12	3	370 - 975/100 mL	Indefinite result
Pseudomonas aeruginosa <2/100mL 75th perc (sp)	Westbank Creek 0500096 at the mouth	Jul. 29 - Aug. 12	3	3 - 6/100 mL	Indefinite result
Residual Chlorine 0.002mg/L max	Westbank Creek	1992	0	no data collected	Objective not checked
Suspended Solids 10 mg/L or 10% max increase	Westbank Creek 0500096 at the mouth	Aug. 6 Jul 29, Aug 12	1 2	8 mg/L 13 & 12 mg/L	Obj. met Indef. result (no control)
Substrate Sedimentation no increase in weight of particles <3 mm dia	Westbank Creek	1992	0	no data collected	Omitted 1992
Turbidity 1-5 NTU or 10% max increase	Westbank Creek 0500096 at the mouth	Jul. 29 - Aug. 12	3	1.6 - 3.2 NTU	Indefinite results (no control)
Diss. Solids 500 mg/L max	Peachland Creek: 0500355 d/s Brenda Mine	Feb. 13 - Aug. 12	7	82 - 156 mg/L	Objective met
	0500056 at the mouth	Feb. 13 - Aug. 12	6	114 - 158 mg/L	Objective met
	Trepanier Creek: 0500362 near source	Aug. 6, 12	2	102 - 104 mg/L	Objective met

TABLE 21 continued

TRIBUTARIES TO OKANAGAN LAKE NEAR WESTBANK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Diss. Solids 500 mg/L max	Trepanier Creek: 0500078 at the mouth	Feb. 13 - Aug. 12	7	98 - 164 mg/L	Objective met
Sodium 39 mg/L max at creek mouths May - Sep hard. = 72mg/L 270 mg/L max at other times at creek mouths and elsewhere at all times	Peachland Creek: 0500355 d/s Brenda Mine	Feb. 13 - Aug. 12	9	0.05 - 7.89 mg/L	Objective met
	0500056 at the mouth	Feb. 13 - Aug. 12	7	4.19 - 5.68 mg/L	Objective met
	Trepanier Creek: 0500362 near source	Aug. 6, 12	2	all = 2.9 mg/L	Objective met
	0500078 at the mouth	Feb. 13 - Aug. 12	9	0.05 - 8.11 mg/L	Objective met
Ammonia-N <0.700 mg/L av 3.64 mg/L max at pH = 7.8 temp = 2 C	Peachland Creek: 0500355 d/s Brenda Mine	Feb. 13 - Mar. 11	5	<0.005 - 0.010 mg/L av = 0.006 mg/L	Objectives met
	0500056 at the mouth	Feb. 13 - Mar. 11	5	<0.005 - 0.011 mg/L av = 0.007 mg/L	Objectives met
	Westbank Creek 0500096 at the mouth	Jul. 29 - Aug. 12	3	<0.005 - 0.011 mg/L	Max obj. met Av not checked
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Peachland Creek: 0500355 d/s Brenda Mine	Feb. 13 - Mar. 11	5	<0.005 - 0.006 mg/L av = 0.005 mg/L	Objectives met
	0500056 at the mouth	Feb. 13 - Mar. 11	5	<0.005 - 0.009 mg/L av = 0.006 mg/L	Objectives met
	Westbank Creek 0500096 at the mouth	Jul. 29 - Aug. 12	3	all <0.005 mg/L	Max obj. met
Nitrate-N 10 mg/L max	Peachland Creek: 0500355 d/s Brenda Mine	Feb. 13 - Mar. 11	5	<0.02 - 0.03 mg/L	Objective met
	0500056 at the mouth	Feb. 13 - Mar. 11	5	0.17 - 0.38 mg/L	Objective met
	Westbank Creek 0500096 at the mouth	Feb. 13 - Mar. 11	5	0.81 - 1.16 mg/L	Objective met

TABLE 21 continued

TRIBUTARIES TO OKANAGAN LAKE NEAR WESTBANK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Chlorophyll-a <100 mg/m2 av	Peachland Creek & Westbank Creek	1992	0	no data collected	Objective not checked
Diss. Oxygen 8-11 mg/L min	Westbank Creek 0500096 at the mouth	Jul. 15 - Aug. 12	5	10.2 - 11.2 mg/L	Objective met
pH 6.5 - 9.0	Peachland Creek: 0500355 d/s Brenda Mine	Jul. 15 - Aug. 12	5	7.45 - 8.37	Objective met
	0500056 at the mouth	Jul. 15 - Aug. 12	5	7.5 - 8.47	Objective met
pH 6.5 - 8.5	Trepanier Creek: 0500362 near source	Aug. 6, 12	2	all = 8.2	Objective met
	0500078 at the mouth	Feb. 13 - Aug. 12	7	8.0 - 8.4	Objective met
Diss. Al <0.05 mg/L av 0.1 mg/L max or 20% increase	Peachland Creek: 0500355 d/s Brenda Mine	Feb. 13 - Mar. 11	7	all < 0.02 mg/L	Objectives met
	0500056 at the mouth	Feb. 13 - Mar. 11	5	all <0. 02 mg/L	Objectives met
Diss. Al <0.05 mg/L av 0.1 mg/L max	Trepanier Creek: 0500362 near source	Aug. 6, 12	2	all <0. 02 mg/L	Max obj. met
	0500078 at the mouth	Feb. 13 - Mar.11	5	all <0. 02 mg/L	Objectives met
	Westbank Creek 0500096 at the mouth	Jul. 29 - Aug. 12	3	all <0. 02 mg/L	Max obj. met Av not checked
Total Cu <0.003 mg/L av 0.010 mg/L max hard. = 81mg/L or 20% increase	Peachland Creek: 0500355 d/s Brenda Mine	Feb. 13 - Mar.11	7	<0.001 - 0.001 mg/L	Objectives met
	0500056 at the mouth	Feb. 13 - Mar.11	5	<0.001 - 0.002mg/L av = 0.001 mg/L	Objectives met

TABLE 21 continued

TRIBUTARIES TO OKANAGAN LAKE NEAR WESTBANK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cu <0.016 mg/L av 0.040 mg/L max hard.=408 mg/L	Westbank Creek 0500096 at the mouth	Jul 15,22,29 Aug 6,12	5	0.001 - 0.002 mg/L av = 0.001 mg/L	Objectives met
Total Mo 0.05 mg/L max u/s Peachland L.	Peachland Creek: 0500355 d/s Brenda Mine u/s Peachland L.	Feb. 13 - Mar.11	7	<0.004 - 0.03 mg/L max = 0.03 mg/L	Objective met (Control for d/s site)
Total Mo 0.05 mg/L max or 20% increase < 0.01 mg/L av long - term May - Sep	Peachland Creek: 0500056 at the mouth	Feb. 13 - Mar.11	5	0.01 - 0.02 mg/L max = 0.02 mg/L	Objective met
Total Mo 0.25 mg/L max	Trepanier Creek: 0500362 near source	Aug. 6, 12	2	<0.004 - 0.01 mg/L	Objective met
Total Mo <0.01 mg/L av 0.05 mg/L max (May - Sep)	Trepanier Creek: 0500078 at the mouth	Feb. 13 - Mar.11	7	all <0.01 mg/L	Objectives met
Total Fe 0.3 mg/L max	Westbank Creek 0500096 at the mouth	Jul. 29 - Aug. 12	3	0.32 - 0.4 mg/L	Objective not met
Total Zn 0.03 mg/L max	Westbank Creek 0500096 at the mouth	Jul 15,22,29 Aug 6,12	5	<0.002 - 0.004 mg/L	Objective met

TABLE 22

TRIBUTARIES TO OKANAGAN LAKE NEAR KELOWNA WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <100/100 mL 90th perc. (np)	Mission Creek: E209637 at E Kelowna Bridge	Jun. 4 - Jul. 2	5	6 - 69/100 mL np = 58/100 mL	Objective met
	0500046 at the mouth	Jun. 4 - Jul. 2	5	10 - 54/100 mL np = 52/100 mL	Objective met
	Kelowna Creek: E209638 at Hereron Road	Jun. 4 - Jul. 2	5	84 - 455/100 mL np = 415/100 mL	Objective not met
	E215986 d/s feedlot	Jun. 4 - Jul. 2	5	1850 - 4600/100 mL np = 3425/100 mL	Objective not met
	0500039 at the mouth	Jun. 4 - Jul. 2	5	320 - 630/100 mL np = 537/100 mL	Objective not met
E. Coli <100/100 mL 90th perc. (np)	Mission Creek: E209637 at E Kelowna Bridge	Jun. 11 - Jul. 2	4	11 - 65/100 mL	Indefinite result
	0500046 at the mouth	Jun. 11 - Jul. 2	4	14 - 65/100 mL	Indefinite result
	Kelowna Creek: E209638 at Hereron Road	Jun. 11 - Jul. 2	4	78 - 425/100 mL	Indefinite result
	E215986 d/s feedlot	Jun. 11 - Jul. 2	4	1810 - 4750/100 mL	Indefinite result
	0500039 at the mouth	Jun. 11 - Jul. 2	4	155 - 375/100 mL	Indefinite result
Enterococci <25/100 mL 90th perc. (np)	Mission Creek E209637 at E Kelowna Bridge	Jun. 11 - Jul. 2	5	14 - 255/100 mL np = 250/100 mL	Objective not met
	0500046 at the mouth	Jun. 11 - Jul. 2	5	26 - 305/100 mL np = 253/100 mL	Objective not met
	Kelowna Creek: E209638 at Hereron Road	Jun. 11 - Jul. 2	5	215 - 1420/100 mL np = 1110/100 mL	Objective not met
	E215986 d/s feedlot	Jun. 11 - Jul. 2	5	865 - 3800/100 mL np = 3175/100 mL	Objective not met
	0500039 at the mouth	Jun. 11 - Jul. 2	5	235 - 570/100 mL np = 500/100 mL	Objective not met

TABLE 22 continued

TRIBUTARIES TO OKANAGAN LAKE NEAR KELOWNA WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Specific Conductivity 1200 uS/cm max (May - Sep)	Brandt's Creek: E208958	Jun. 4 - Jul. 2	5	3070 - 3700 uS/cm	Objective not met
	0500009 at the mouth	Jul. 2 Jun. 4 - Jun. 24	1 4	1630 uS/cm 739 - 1100 uS/cm	Obj. not met Obj. met
Ammonia-N <0.700 mg/L av 3.64 mg/L max at pH = 8.2 temp = 15 C	Mission Creek: E209637 at E Kelowna Bridge	Jun. 4 - Jul. 2	5	<0.005 - 0.023 mg/L av = 0.010 mg/L	Objectives met
	0500046 at the mouth	Jun. 4 - Jul. 2	5	<0.005 - 0.029 mg/L av = 0.012 mg/L	Objectives met
	Kelowna Creek: E209638 at Hereron Road	Jun. 4 - Jul. 2	5	0.013 - 0.046 mg/L av = 0.033 mg/L	Objectives met
	E215986 d/s feedlot	Jun. 4 - Jul. 2	5	0.027 - 0.064 mg/L av = 0.040 mg/L	Objectives met
	0500039 at the mouth	Jun. 4 - Jul. 2	5	0.029 - 0.047 mg/L av = 0.039 mg/L	Objectives met
Nitrite-N <0.02 mg/L av 0.06 mg/L max Cl < 2 mg/L	Mission Creek: E209637 at E Kelowna Bridge	Jun. 4 - Jul. 2	5	<0.005 - 0.006 mg/L	Objectives met
	0500046 at the mouth	Jun. 4 - Jul. 2	5	<0.005 - 0.007 mg/L	Objectives met
Nitrite-N <0.20 mg/L av 0.60 mg/L max Cl > 10 mg/L	Kelowna Creek: E209638 at Hereron Road	Jun. 4 - Jul. 2	5	<0.005 - 0.012 mg/L av = 0.007 mg/L	Objectives met
	E215986 d/s feedlot	Jun. 4 - Jul. 2	5	0.011 - 0.047 mg/L av = 0.032 mg/L	Objectives met
	0500039 at the mouth	Jun. 4 - Jul. 2	5	0.006 - 0.019 mg/L av = 0.014 mg/L	Objectives met
Chlorophyll-a <100 mg/m2 av	Mission Creek: E209637 at E Kelowna Bridge	Aug. 19	4	20.9 - 41.7 mg/m2 av = 30 mg/m2	Objective met

TABLE 22 continued

TRIBUTARIES TO OKANAGAN LAKE NEAR KELOWNA WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Chlorophyll-a <100 mg/m2 av	Mission Creek 0500046 at the mouth	Aug. 19	5	9.1 - 28.7 mg/m2 av = 16 mg/m2	Objective met
	Kelowna Creek 0500039 at the mouth	Aug. 19	3	25.9 - 84.2 mg/m2 av = 49 mg/m2	Objective met
Diss. Oxygen 8-11 mg/L min	Mission Creek: E209637 at E Kelowna Bridge	Jun. 4 - Jul. 2	5	8.6 - 11.6 mg/L	Objective met
	0500046 at the mouth	Jun. 4 - Jul. 2	5	9.3 - 12.2 mg/L	Objective met
	Kelowna Creek: E209638 at Hereron Road	Jun. 18 Jun. 4 - Jul. 2	1 4	7.9 mg/L 8.9 - 11 mg/L	Obj. not met Obj. met
	E215986 d/s feedlot	Jun. 4 - Jul. 2	5	9.1 - 11.9 mg/L	Objective met
	0500039 at the mouth	Jun. 11 Jun. 4 - Jul. 2	1 4	7.4 mg/L 8.8 - 10.2 mg/L	Obj. not met Obj. met
pH 6.5 - 9.0	Mission Creek: E209637 at E Kelowna Bridge	Jun. 4 - Jul. 2	5	7.8 - 8.6	Objective met
	0500046 at the mouth	Jun. 4 - Jul. 2	5	7.4 - 8.4	Objective met
pH 6.5 - 8.5	Kelowna Creek: E209638 at Hereron Road	Jun. 4 - Jul. 2	5	7.9 - 8.2	Objective met
	0500039 at the mouth	Jun. 4 - Jul. 2	4	8.1 - 8.2	Objective met
Diss. Al 0.1 mg/L max or 20% increase	Kelowna Creek: E209638 at Hereron Road	Jun. 4 - Jul. 2	5	all <0.02 mg/L	Objective met
	0500039 at the mouth	Jun. 4 - Jul. 2	5	all <0.02 mg/L	Objective met

TABLE 22 continued

TRIBUTARIES TO OKANAGAN LAKE NEAR KELOWNA WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cu <0.009 mg/L av 0.024 mg/L max or 20% increase hard.= 234mg/L	Kelowna Creek: E209638 at Hereron Road	Jun 4,11,18, 24, Jul 2	5	<0.001 - 0.003 mg/L av = 0.002 mg/L	Objectives met
	0500039 at the mouth	Jun 4,11,18, 24, Jul 2	5	0.003 - 0.006 mg/L av = 0.004 mg/L	Objectives met
Total Pb <0.013 mg/L av 0.241 mg/L max or 20% increase hard = 216 mg/L	Kelowna Creek: E209638 at Hereron Road	Jun. 4 - Jul. 2	5	av = 0.002 mg/L max = 0.003 mg/L	Objectives met
	0500039 at the mouth	Jun. 4 - Jul. 2	5	av = 0.002 mg/L max = 0.005 mg/L	Objectives met
Total Pb 0.8ug/g wet wt max in fish muscle	Kelowna Creek	1992	0	no data collected	Omitted 1992
Total Zn 0.1 mg/L max or 20% increase	Kelowna Creek: E209638 at Hereron Road	Jun. 4 - Jul. 2	5	<0.01 - 0.01 mg/L	Objective met
	0500039 at the mouth	Jun. 4 - Jul. 2	5	<0.01 - 0.01 mg/L	Objective met

TABLE 23

HYDRAULIC CREEK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Turbidity 5 NTU max	0500658 Hydraulic Lake outlet	Jun. 2 - Oct. 13	19	0.9 - 3.1 NTU	Objective met
	E215840 at SEKID intake	Jun. 2 - Oct. 13	20	0.1 - 3.5 NTU	Objective met
Turbidity 10 NTU max	E215842 near headwaters	Jun. 2 - Oct. 13	20	0.3 - 1.3 NTU	Objective met
	E215841 u/s Hydraulic Lake	Jun. 2 - Oct. 13	20	1.8- 6.1 NTU	Objective met
Suspended Solids 20 mg/L max	E215841 u/s Hydraulic Lake	Jun. 2 - Oct. 13	20	3 - 20 mg/L	Objective met
	E215840 at SEKID intake	Jun. 23 Jun. 2 - Oct. 13	1 19	23 mg/L 2 - 15 mg/L	Obj. not met Obj. met
Temperature 18 C max	E215842 near headwaters	Jul 21,28, Aug 4,11, 25, Sep 1	6	8.8 - 16.6	Objective met
	E215841 u/s Hydraulic Lake	Jul 21,28, Aug 11,25, Sep. 1	5	8.8 - 15.5 C	Objective met
		Aug. 4	1	19.0 C	Objective not met
	0500658 Hydraulic Lake outlet	Jul 21,28, Aug 25, Sep. 1	4	15.5 - 17.7 C	Objective met
		Aug 4,18	2	19.0 - 19.4 C	Objective not met
	E215840 at SEKID intake	Jul 21,28, Aug 4,11, 25, Sep 1	6	14.0 - 18.0 C	Objective met
		Aug. 18	1	19.0 C	Objective not met
Fecal Coliforms 10/100 mL 90th perc. (np)	E215840 at SEKID intake	Jul. 7 - Aug. 4	5	8 - 30/100 mL np = 29/100 mL	Objective not met
		Aug. 11 - Sep. 8	5	1 - 15/100 mL np = 10/100 mL	Objective met
E. Coli 10/100 mL 90th perc.	Hydraulic Creek	1992	0	no data collected	Omitted 1992
Enterococci 3/100 mL 90th perc.	Hydraulic Creek	1992	0	no data collected	Omitted 1992

TABLE 24

THOMPSON RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms < 10/100 mL 90th perc. (np)	South Thompson 0600135 Kamloops d/s Peterson C.	Jul 28,Aug 4,10, 18,24	5	1 - 18/100 mL np = 9/100 mL	Objective met
	North Thompson 0600164 Kamloops u/s Paul Creek	May 6,13,21,27, Jul 3,8	6	<2 - 6/100 mL np = 25/100 mL	Objective not met
		Jul 7,8,28, Aug 4,10	5	7 - 19/100 mL np = 16/100 mL	Objective not met
	Lower Thompson: 0600004 at Savona	Jul 28,Aug 4,10, 18,24	5	all < 2/100 mL	Objective met
	0600163 d/s Walhachin	Jul 28,Aug 4,10, 18,24	5	all < 2/100 mL	Objective met
	E206586 Spences Br. d/s Nicola R.	Aug 4,10,18, 24,31	5	<2 - 5/100 mL np = 2/100 mL	Objective met
	Confluence to Kamloops L. Kamloops Lake	1992	0	no data collected	Omitted 1992
E. coli < 200/100 mL geometric mean (gm)	South Thompson North Thompson Confluence to Kamloops L. Kamloops Lake Lower Thompson	1992	0	no data collected	Omitted 1992
Colour 15 TCU max or 5 TCU increase over average of N + S Thompson rivers	Lower Thompson: 0600004 at Savona	Dec. 15	1	9 SWU	Indefinite result
	0600163 d/s Walhachin	Dec. 15	1	8 SWU	Indefinite result
	E206586 Spences Br. d/s Nicola R.	Dec. 15	1	9 SWU	Indefinite result
	Confluence to Kamloops L. Kamloops Lake	1992	0	no data collected	Omitted 1992
Chlorophyll-a < 50 mg/m2	Lower Thompson: 0600004 at Savona	Dec. 15	5	93.8 - 362 mg/m2 av = 223 mg/m2	Objective not met
	0600163 d/s Walhachin	Dec. 15	6	303 - 416 mg/m2 av = 367 mg/m2	Objective not met
	E206586 Spences Br. d/s Nicola R.	Dec. 15	6	126 - 219 mg/m2 av = 148 mg/m2	Objective not met

TABLE 24 continued

THOMPSON RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dioxins & Furans 0.2 pg/L max TEQ - TCDD	Confluence to Kamloops L. Kamloops Lake Lower Thompson	1992	0	no data collected	Omitted 1992
Dioxins & Furans 1.0 pg/g max wet wt. in fish TEQ - TCDD	Confluence to Kamloops L. Kamloops Lake Lower Thompson	1992	0	no data collected	Omitted 1992
Dioxins & Furans 0.7 pg/g max dry wt. in sediments TEQ - TCDD	Confluence to Kamloops L. Kamloops Lake Lower Thompson	1992	0	no data collected	Omitted 1992
Resin Acids 12 ug/L DHA max 45ug/L total max at pH = 7.5	Lower Thompson: 0600004 at Savona	Jul 28, Dec 15	2	all < 1 ug/L DHA all < 7 ug/L total	Objectives met
	0600163 d/s Walhachin	Jul 28, Dec 15	2	all < 1 ug/L DHA all < 7 ug/L total	Objectives met
	E206586 Spences Br. d/s Nicola R.	Jul 28, Dec 15	2	all < 1 ug/L DHA all < 7 ug/L total	Objectives met
	Confluence to Kamloops L. Kamloops Lake	1992	0	no data collected	Omitted 1992

TABLE 25

COLUMBIA AND WINDERMERE LAKES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc (np) near water intakes	Windermere Lake water intake sites	1992	0	no data collected	Omitted 1992
	Columbia Lake water intake sites	1992	0	no data collected	Omitted 1992
Fecal Coliforms <200/100 mL geometric mean (gm) at beaches	Windermere Lake: E216064 Timber Ridge	Jul. 14 - Aug. 5	5	1 - 3/100 mL gm = 2/100 mL	Objective met
	Columbia Lake beaches	1992	0	no data collected	Omitted 1992
Turbidity <1 NTU av 5 NTU max during non-freshet	Windermere Lake Columbia Lake water intake sites	1992	0	no data collected	Omitted 1992
Total-P <0.010 mg/L av at spring overturn	Windermere Lake 0200052 off Timber Ridge	Mar. 31	3	1.0 m: 0.004 mg/L 2.5 m: 0.006 mg/L 5.0 m: 0.011 mg/L av = 0.007 mg/L	Objective met
Total-P <0.008 mg/L av at spring overturn	Columbia Lake 0200434 midlake north	Mar. 31	2	1.0 m: 0.004 mg/L 3.7 m: 0.005 mg/L av = 0.0045 mg/L	Objective met

TABLE 26

UPPER COLUMBIA RIVER WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc. (np)	Columbia River: 0200232 u/s Radium	Jul. 14 - Aug. 5	5	2 - 9/100 mL np = 6/100 mL	Objective met
Fecal Coliforms <200/100 mL geometric mean (gm) <400/100 mL 90th perc. (np)	Columbia River: 0200233 d/s Radium	Jul. 14 - Aug. 5	5	12 - 133/100 mL gm = 33/100 mL np = 94/100 mL	Objectives met

TABLE 27

COLUMBIA RIVER FROM KEENLEYSIDE TO BIRCHBANK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 10 mg/L min	Columbia River: 0200183 3 km u/s Celgar	Jan 21 - Oct 27	12	10.0 - 12.8 mg/L	Objective met
		Aug 31, Sep 9	2	9.5 - 9.7 mg/L	Objective not met
	E216155 400 m d/s Celgar	Jan 21 - Oct 27	11	10.3 - 12.6 mg/L	Objective met
		Aug 4 - Sep 29	3	9.4 - 9.8 mg/L	Objective not met
	0200200 400 m u/s Kootenay	Jan 21 - Oct 27	12	10.0 - 13.0 mg/L	Objective met
		Aug 4,31	2	9.4 - 9.6 mg/L	Objective not met
	0200003 at Birchbank	Jan 21 - Oct 27	19	10.1 - 13.0 mg/L	Objective met
		Aug 4 - 31	3	9.3 - 9.8 mg/L	Objective not met
pH 6.5 - 8.5	Columbia River: 0200183 3 km u/s Celgar	Feb 18,May 12,Aug 4	3	5.6 - 5.8	Objective not met
		Jan. 21 - Oct. 27	11	7.3 - 8.0	Objective met
	E216155 400 m d/s Celgar	Nov. 2	1	6.41	Objective not met
		Jan. 21 - Oct. 27	12	7.3 - 8.0	Objective met
	0200200 400 m u/s Kootenay	Jan. 21 - Oct. 27	13	7.4 - 8.0	Objective met
	0200003 at Birchbank	Jan. 7 - Dec. 7	12	7.3 - 8.0	Objective met
Colour 15 TCU max	Columbia River: 0200183 3 km u/s Celgar	Jan 21 - Oct 27	14	all < 5 TCU	Objective met
	E216155 400 m d/s Celgar	Jan. 21 - Nov. 2	13	<5 - 5 TCU	Objective met
	0200200 400 m u/s Kootenay	Jan. 21 - Oct. 27	13	<5 - 5 TCU	Objective met
	0200003 at Birchbank	Mar 24 , Jun 9, Jul 7	3	all < 5 TCU	Objective met
Suspended Solids 10 mg/L max increase	Columbia River: 0200183 3 km u/s Celgar	Jan. 21 - Oct. 27	14	<1 - 1 mg/L	Control site
	E216155 400 m d/s Celgar	Jan. 21 - Oct. 27	13	<1 - 4 mg/L	Objective met
	0200200 400 m u/s Kootenay	Jan. 21 - Oct. 27	13	<1 - 3 mg/L	Objective met

TABLE 27 continued

COLUMBIA RIVER FROM KEENLEYSIDE TO BIRCHBANK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Suspended Solids 10 mg/L max increase	Columbia River: 0200003 at Birchbank	Jan 7 - Dec 7	30	<1 - 4 mg/L	Objective met
Turbidity 5 NTU max increase	Columbia River: 0200183 3 km u/s Celgar	Jan. 21 - Oct. 27	14	0.1 - 0.6 NTU	Control site
	E216155 400 m d/s Celgar	Jan. 21 - Nov. 2	13	0.2 - 1.6 NTU	Objective met
	0200200 400 m u/s Kootenay	Jan. 21 - Oct. 27	13	0.2 - 1.2 NTU	Objective met
	0200003 at Birchbank	Mar 24, Jun 9, Jul 7	3	0.2 - 0.3 NTU	Objective met
Sediment TOC no increase u/s to d/s at 95% confidence	Columbia River	1992	0	no data collected	Omitted 1992
Dissolved Gas < 110% max	Columbia River at Hugh Keenleyside u/s dam	Jun 4 - Oct 10	126	97.0 - 110.0 %	Control site
		Jun 24,25, Aug 3,4	2	110.1 - 110.9 % (n = No of 24-hr periods)	
	at Robson ~ 3.5 km d/s Celgar	Mar 17 - Nov 9	150	110.1 - 135.0 %	Obj. not met
		Mar 21,25 Jul 6,7,20 Aug 1- 18, 23 - 31 Sep 2 - 11, 16 - 20 Oct 11 - 24	56	100.7 - 110.0 % (n = No of 24-hr periods)	Obj. met
Fecal Coliforms <100/100 mL 90th perc. (np)	Columbia River: 0200183 3 km u/s Celgar	Jan. 21 - Oct. 27	11	all < 2/100 mL	Indefinite result
	E216155 400 m d/s Celgar	Jan. 21 - Oct. 27	13	1 - 5/100 mL	Indefinite result
	0200200 400 m u/s Kootenay	Jan. 21 - Oct. 27	13	1 - 3/100 mL	Indefinite result
	0200003 at Birchbank	Jan. 7 - Dec. 7	29	1 -7/100 mL	Indefinite result
E. Coli <100/100 mL 90th perc. (np)	Columbia River: 0200183 3 km u/s Celgar	Jan. 21 - Oct. 27	11	all < 2/100 mL	Indefinite result

TABLE 27 continued

COLUMBIA RIVER FROM KEENLEYSIDE TO BIRCHBANK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
E. Coli <100/100 mL 90th perc. (np)	Columbia River: E216155 400 m d/s Celgar	Jan. 21 - Oct. 27	13	1 - 10/100 mL	Indefinite result
	0200200 400 m u/s Kootenay	Jan. 21 - Oct. 27	13	1 - 2/100 mL	Indefinite result
	0200003 at Birchbank	Jan. 21 - Oct. 27	13	1 - 8/100 mL	Indefinite result
Toxicity % mill effluent in river: < 0.05 of the 96-h LC50	Columbia River d/s Celgar			% effl. 0.05(96-hLC50)	
		Jan 20 - 21	1	0.057 1.70	Obj. met
		Feb 20 - 21	1	0.108 1.45	Obj. met
		Mar 17 - 18	1	0.253 1.50	Obj. met
		Apr 9 - 10	1	0.239 1.70	Obj. met
		May 12 - 13	1	0.129 1.80	Obj. met
		Aug 19 - 20	1	0.075 1.20	Obj. met
		Sep 22 - 23	1	0.180 2.45	Obj. met
		Sep 29 - 30	1	0.104 1.15	Obj. met
		Oct 27 - 28	1	0.221 0.95	Obj. met
		Nov 9 - 10	1	0.226 0.75	Obj. met
		Dec 30 - 31	1	0.071 0.35	Obj. met
Chlorophenols <50 ng/L tri <100ng/L tetra <50 ng/L penta	Columbia River: 0200183 3 km u/s Celgar	Jan 21 - Sep 29	10	tri: <0.1 - <2.0 ng/L (for any of 6 isomers)	Obj. met
				tetra: <0.1 - <1.6 ng/L (for any of 3 isomers)	Obj. met
				penta: <0.2 - <1.5 ng/L	Obj. met
	E216155 400 m d/s Celgar	Jan 21 - Sep 29	11	tri: <0.1 - 25 ng/L (for any of 6 isomers)	Obj. met
				tetra: 0.1 - 3.4 ng/L (for any of 3 isomers)	Obj. met
				penta: <0.2 - 4.8 ng/L	Obj. met
	0200200 400 m u/s Kootenay	Jan 21 - Sep 29	10	tri: <0.2 - 38 ng/L (for any of 6 isomers)	Obj. met
				tetra: <0.2 - 7.0 ng/L (for any of 3 isomers)	Obj. met
				penta: <0.2 - 1.3 ng/L	Obj. met
	0200003 at Birchbank	Jan 21 - Sep 29	10	tri: <0.1 - 18 ng/L (for any of 6 isomers)	Obj. met
				tetra: <0.1 - 3.0 ng/L (for any of 3 isomers)	Obj. met
				penta: <0.2 - 1.5 ng/L	Obj. met
Dioxins/Furans 1pg/g TCDD TEQ max in fish (wet weight)	Columbia River Genelle 2 km u/s Birchbank 0200003	July	15	1.8 - 45.1 pg/g (mountain whitefish)	Objective not met
Dioxins/Furans 0.2 pg/L TCDD TEQ max in water	Columbia River: 0200183 3 km u/s Celgar	Feb. 18	1	<1.5 pg/L TCDD TEQ (for any one homologue)	Indefinite result

TABLE 27 continued

COLUMBIA RIVER FROM KEENLEYSIDE TO BIRCHBANK WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dioxins/Furans 0.2 pg/L TCDD TEQ max in water	E216155 400 m d/s Celgar	Mar. 17	1	<3.6 pg/L TCDD TEQ (for any one homologue)	Indefinite result
	0200200 400 m u/s Kootenay	Feb. 18	1	<1.8 pg/L TCDD TEQ (for any one homologue)	Indefinite result
	0200003 at Birchbank	Mar. 17	1	<1.5 pg/L TCDD TEQ (for any one homologue)	Indefinite result
Dioxins/Furans 0.7 pg/g TCDD TEQ max in seds	Columbia River: E216155 400 m d/s Celgar	September	1	27.41 pg/g TCDD TEQ	Objective not met
	0200003 at Birchbank	September	1	1.72 pg/g TCDD TEQ	Objective not met
Resin Acids 12 ug/L max DHA 45 ug/L max total at pH = 7.5	Columbia River: 0200183 3 km u/s Celgar	Jan. 21 - Oct. 27 Jan. 21 - Oct. 27 Jun. 9	7 6 1	DHA all < 1 ug/L DHA total all < 7 ug/L DHA total = 19 ug/L	Objectives met
	E216155 400 m d/s Celgar	Jan. 21 - Oct. 27 Sep. 29 Jan. 21- Oct. 27 Jun. 9	7 1 7 1	DHA all < 1 ug/L DHA = 2.2 ug/L DHA total = < 7 - 7 ug/L DHA total = 14 ug/L	Objectives met
	0200200 400 m u/s Kootenay	Jan. 21 - Oct. 27 Feb. 18, Mar. 17 Jan. 21 - Oct. 27 Feb. 18, Mar. 17 Jun.9, Jul. 7	6 2 4 2 2	DHA all < 1 ug/L DHA = 6 & 3 ug/L DHA total all < 7 ug/L DHA total = 13-15 ug/L DHA total = 8-12 ug/L	Objectives met
	0200003 at Birchbank	Jan. 21 - Oct. 27 Mar. 17 Jan. 21 - Oct .27 Mar. 17	8 1 8 1	DHA all < 1 ug/L DHA = 4 ug/L DHA total all < 7 ug/L DHA total = 12 ug/L	Objectives met
Chlorinated Resin Acids 6 ug/L max of mono Cl-DHA & di CL-DHA	Columbia River: 0200183 3 km u/s Celgar	Jan. 21 - Oct. 27 Jan. 21 - Oct. 27	7 7	Cl-DHA all < 1 ug/L Cl2-DHA all < 1 ug/L	Objectives met
	E216155 400 m d/s Celgar	Sep. 29 Jan. 21 - Oct. 27 Jan. 21 - Oct. 27	1 7 8	Cl-DHA = 1200 ug/L Cl-DHA all < 1 ug/L Cl2-DHA <0.5 - 1.4 ug/L	Max not met Max obj met Max obj met
	0200200 400 m u/s Kootenay	Sep. 29 Jan. 21 - Oct. 27 Jan. 21 - Oct. 27	1 7 8	Cl-DHA = 330 ug/L Cl-DHA all < 1 ug/L Cl2-DHA all < 1 ug/L	Max not met Max obj met Max obj met
	0200003 at Birchbank	Jan. 21 - Oct. 27 Jan. 21 - Oct. 27	9 9	Cl-DHA all < 1 ug/L Cl2-DHA all < 1 ug/L	Objectives met
Chlorophyll-a <50 mg/m2 av	Columbia River	1992	0	no data collected	Omitted 1992

TABLE 28

FRASER RIVER (HOPE TO KANAKA CREEK) WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <1000/100 mL geometric mean (gm) April-October	Fraser River: E207602 100 m d/s MSA STP	Jul. 7 - Aug. 4	5	15 - 168/100 mL gm = 52/100 mL	Objective met
	Elk Creek 0300046 at Yale Road	Jul. 7 - Aug. 4	5	660-67000/100 mL gm = 10698/100 mL	Objective not met
	Chilliwack Creek 0300040 at Wolfe Road	Jul. 7 - Aug. 4	4	21 - 495/100 mL gm = 96/100 mL	Indefinite result
	Luckakuck Creek 0300036 at Yale Road	Jul. 7 - Aug. 4	5	235 - 630/100 mL gm = 336/100 mL	Objective met
	Atchelitz Creek E207623 near mouth	Jul. 7 - Aug. 4	5	208 - 820/100 mL gm = 338/100 mL	Objective met
	Hope Slough 0300141 at Young Road	Jul. 7 - Aug. 4	4	37 - 890/100 mL gm = 130/100 mL	Indefinite result
	Salmon River E207612 d/s Trinity	Jul. 7 - Aug. 4	5	30 - 575/100 mL gm = 121/100 mL	Objective met
	Bertrand Creek E207092 d/s Aldergrove	Jul. 7 - Aug. 4	5	93 - 375/100 mL gm = 166/100 mL	Objective met
	Sumas River 0300030 d/s Saar Cr. confluence	Jul. 7 - Aug. 4	4	49 - 1070/100 mL gm = 193/100 mL	Indefinite result
	Saar Creek 0300032 ~ 5 km from border	Jul. 7 - Aug. 4	5	127 - 2950/100 mL gm = 1004/100 mL	Objective not met
Fecal Coliforms <100/100 mL 90th perc.	Chilliwack River 0300033 at Vedder Canal	Jul. 7 - Aug. 4	5	8 - 28/100 mL np = 23/100mL	Objective met
Fecal Coliforms <200/100 mL geometric mean (gm) at beaches	Cultus Lake:	1992	0	no data collected	Omitted 1992

TABLE 28 continued

FRASER RIVER (HOPE TO KANAKA CREEK) WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc. at water intakes	Cultus Lake	1992	0	no data collected	Omitted 1992
Tot. Cl2 Res. 0.002 mg/L max	Fraser River	1992	0	no data collected	Omitted 1992
Ammonia-N <1.04 mg/L av 6.67 mg/L max at pH = 7.9 temp = 18 C	Fraser River: E207602 100 m d/s MSA STP	Jul 7 - Aug 4	5	av = 0.018 mg/L max = 0.029 mg/L	Objectives met
Ammonia-N <1.23 mg/L av 13.5 mg/L max at pH = 7.4 temp = 20 C	Elk Creek 0300046 at Yale Road	Jul. 7 - Aug. 4 Jul 14,27 Jul 17,23, Aug 4	5 2 3	av = 8.98 mg/L 13.5 - 25.7 mg/L 0.958 - 2.50 mg/L	Av not met Max not met Max obj. met
	Chilliwack Creek 0300040 at Wolfe Road	Jul. 7 - Aug. 4	5	av = 0.092 mg/L max = 0.166 mg/L	Objectives met
	Luckakuck Creek 0300036 at Yale Road	Jul. 7 - Aug. 4	5	av = 0.022 mg/L max = 0.03 mg/L	Objectives met
	Atchelitz Creek E207623 near mouth	Jul. 7 - Aug. 4	5	av = 0.116 mg/L max = 0.429 mg/L	Objectives met
	Hope Slough 0300141 at Young Road	Jul. 7 - Aug. 4	5	av = 0.073 mg/L max = 0.177 mg/L	Objectives met
	Salmon River E207612 d/s Trinity	Jul. 7 - Aug. 4	5	av = 0.027 mg/L max = 0.038 mg/L	Objectives met
	Bertrand Creek E207092 d/s Aldergrove	Jul. 7 - Aug. 4	5	av = 0.059 mg/L max = 0.085 mg/L	Objectives met
Total-P <0.01 mg/L av at spring overturn	Cultus Lake: 0300037 at lake centre	1992	0	no data collected	Omitted 1992
Dissolved Oxygen 7.75 mg/L min	Fraser River: E207393 u/s Kent STP	1992	0	no data collected	Omitted 1992

TABLE 28 continued

FRASER RIVER (HOPE TO KANAKA CREEK) WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 7.75 mg/L	Fraser River: E207602 100 m d/s MSA STP	Jul 7,14,23,27, Aug. 4	5	8.8 - 9.8 mg/L	Objective met
Dissolved Oxygen 8.0-11.2 mg/L min depending on fish egg stage 6.0 mg/L min at other times (7.75 mg/L min in Chillwk. R)	Elk Creek 0300046 at Yale Road	Jul 7,14,23,27, Aug. 4	5	1.0 - 4.0 mg/L	Objective not met
	Chilliwack Creek 0300040 at Wolfe Road	Jul 14,27, Aug 4	3	6.6 - 8.3 mg/L	Objective met
		Jul 7,23	2	3.7 - 4.6 mg/L	Objective not met
	Luckakuck Creek 0300036 at Yale Road	Jul 14,23,27 Aug 4	4	8.2 - 10.1 mg/L	Objective met
		7-Jul	1	1.5 mg/L	Objective not met
	Atchelitz Creek E207623 near mouth	Jul 27, Aug 4	2	6.7 - 10.5 mg/L	Objective met
		Jul 7,14,23	3	1.5 - 5.2 mg/L	Objective not met
	Hope Slough 0300141 at Young Road	Jul 14,27, Aug 4	3	7.2 - 8.2 mg/L	Objective met
		Jul 7,23	2	5.5 - 5.6 mg/L	Objective not met
	Salmon River E207612 d/s Trinity	Jul 7,14,23,27, Aug. 4	5	7.4 - 10.4 mg/L	Objective met
	Bertrand Creek E207092 d/s Aldergrove	Jul 7,27	2	6.2 - 6.6 mg/L	Objective met
		Jul 14,23, Aug 4	3	4.0 - 5.8 mg/L	Objective not met
	Sumas River 0300030 d/s Saar Cr. confluence	Jul 14,23,27, Aug 4	4	6.4 - 12.3 mg/L	Objective met
		Jul. 7	1	5.8 mg/L	Objective not met
	Saar Creek 0300032 ~ 5 km from border	Jul. 7	1	6.6 mg/L	Objective met
		Jul 14,23,27, Aug 4	4	2.6 - 4.3 mg/L	Objective not met
	Chilliwack River 0300033 at Vedder Canal	Jul 7, Aug 4	2	9.8 - 10.4 mg/L	Objective met
Dissolved Oxygen 5.0 mg/L min in hypolimnion	Cultus Lake	1992	0	no data collected	Omitted 1992
pH 6.5 - 8.5	Fraser River E207602 100 m d/s MSA STP	Jul. 7 - Aug. 4	5	7.7 - 8.0	Objective met

TABLE 28 continued

FRASER RIVER (HOPE TO KANAKA CREEK) WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 - 8.5	Elk Creek 0300046 at Yale Road	Jul. 7 - Aug. 4	5	7.1 - 7.5	Objective met
	Chilliwack Creek 0300040 at Wolfe Road	Jul. 7 - Aug. 4	5	7.3 - 7.7	Objective met
	Luckakuck Creek 0300036 at Yale Road	Jul. 7 - Aug. 4	5	7.2 - 7.7	Objective met
	Atchelitz Creek E207623 near mouth	Jul. 7 - Aug. 4	5	7.3 - 7.7	Objective met
	Hope Slough 0300141 at Young Road	Jul. 7 - Aug. 4	5	7.5 - 7.9	Objective met
	Salmon River E207612 d/s Trinity	Jul. 7 - Aug. 4	5	7.4 - 7.8	Objective met
	Bertrand Creek E207092 d/s Aldergrove	Jul. 7 - Aug. 4	5	7.5 - 8.0	Objective met

TABLE 29

FRASER RIVER (KANAKA CREEK TO THE MOUTH) WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <1000/100 mL geometric mean (gm) 4000/100 mL max Apr - Oct	Main Stem: 0300005 at Pattullo Bridge	Sep 14,22,29 Oct. 13	4	20 - 295/100 mL	Max obj. met gm not chekd.
	Main Arm: GVRD 1 u/s Annacis	Feb 14,Apr 14 Jun. 9, Dec. 1	2 4	5000 - 9000/100 mL 40 - 2800/100 mL	Max not met Max obj. met
	0301308 u/s Annacis	Sep. 14 - Oct. 13 Sep. 29 Sep. 14 - Oct. 13	5 1 4	gm = 549/100 mL 40600/100 mL 31 - 935/100 mL	gm obj. met Max not met Max obj. met
	GVRD 2 d/s Annacis	Dec. 1 Feb. 14 - Oct. 6	1 5	5000/100 mL 70 - 2400/100 mL	Max not met Max obj. met
	0301311 d/s Annacis	Sep. 14 - Oct. 13 Oct. 6 Sep. 14 - Oct. 13	5 1 4	gm = 965/100 mL 19700/100mL 44 - 2950/100 mL	gm obj. met Max not met Max obj. met
	GVRD 3 12 km d/s Annacis	Apr. 14 Feb. 14 - Dec. 1	1 5	6000/100 mL 20 - 1700/100 mL	Max not met Max obj. met
	GVRD 4 d/s Lulu	Feb. 14, Oct. 6, Dec. 1 Apr. 14 - Aug. 11	3 3	7000 - 80000/100 mL 20 - 2800/100 mL	Max not met Max obj. met
	GVRD 5 d/s Steveston	Feb. 14 - Dec. 1 Jun. 9, Aug. 11	4 2	5000 - 30000/100 mL 130 & 80/100 mL	Max not met Max obj. met
	North Arm: E207398 u/s Scott Paper	Sep. 14 - Oct.13	7	79 - 1920/100 mL gm = 235/100 mL	Objectives met
	GVRD 7 Oak Street Bridge		8	20 - 220/100 mL	Max obj. met
	Middle Arm: E207601 100 m d/s North Arm	Sep. 14 - Oct. 13	5	74 - 950/100 mL gm = 254/100 mL	Objectives met
	E207600 at Dinsmore Bridge	Sep. 14 - Oct. 13	4	34 - 300/100 mL	Max obj. met
Fecal Coliforms <200/100 mL geometric mean (gm) Jun - Aug at beaches	Iona Beach: every 1.5 km along jetty, east to west GVRD 4	Jun 17 - Jul 21 Jul 29 - Aug 27	6 6	gm = 28/100 mL gm = 22/100 mL	Obj. met Obj. met
	GVRD 6	Jun. 2 - Jul 3 Jul 15 - Aug 12	6 6	gm = 20/100 mL gm = 28/100 mL	Obj. met Obj. met
	GVRD 8	Jun 3 - Jul 3 Jul 29 - Aug 27	6 6	gm = 20/100 mL gm - 22/100 mL	Obj. met Obj. met

TABLE 29 continued

FRASER RIVER (KANAKA CREEK TO THE MOUTH) WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <200/100 mL geometric mean (gm) Jun - Aug at beaches	Iona Beach: GVRD 10	Jun 3 - Jul 3 Jul 29 - Aug 27	6 6	gm = 28/100 mL gm = 25/100 mL	Obj. met Obj. met
	GVRD 12	Jun 3 - Jul 3 Jul 29 - Aug 27	6 6	gm = 22/100 mL gm = 25/100 mL	Obj. met Obj. met
	GVRD 14	Jun 3 - Jul 3 Jul 15 - Aug 12	6 6	gm = 20/100 mL gm = 22/100 mL	Obj. met Obj. met
	Tsawwassen Beach: GVRD 1 Causeway-north, 0 km	Jun 5 - Jul 31	5	<20 - 110/100 mL	Indefinite result
	GVRD 2 Causeway-north, 2 km	June 5 - Jul 31	5	<20 - 40/100 mL	Indefinite result
	GVRD 3 Causeway-north, 3 km	Jun 5 - Jul 31	5	<20 - 40/100 mL	Indefinite result
Susp. Solids max increase: 10 mg/L or 10%	North Arm E207398 u/s Scott Paper	Mar 11,19,26, Apr.1	4	30 - 45 mg/L	Control site
	0300002 Oak Street Bridge	Mar 4,11,19,26, Apr. 1	5	10 - 47 mg/L Max inc. = 2 mg/L	Objective met
	Middle Arm E207601 100 m d/s North Arm	Mar 4,11,26, Apr. 1	4	9 - 31 mg/L	Control site
	E207600 at Dinsmore Bridge	Mar 4,11,26, Apr. 1	4	5 - 29 mg/L max inc. - 0 mg/L	Objective met
Total Cl2 Res. 0.002 mg/L max	Main Arm	1992	0	no data collected	Omitted 1992
Ammonia-N <1.09 mg/L av 5.7 mg/L max at pH = 8.0 temp = 15 C	Main Arm: GVRD 1 u/s Annacis	Feb. 14 - Dec. 1	6	0.01 - 0.09 mg/L	Max obj. met Av not chkd.
	0301308 u/s Annacis	Mar. 4 - Apr. 1	3	0.008 - 0.039 mg/L	Max obj. met
	0301311 d/s Annacis	Mar. 19 - Apr. 1	3	0.01 - 0.025 mg/L	Max obj. met
	GVRD 2 d/s Annacis	Feb. 14 - Dec. 1	6	0.01 - 0.07 mg/L	Max obj. met
	GVRD 3 12 km d/s Annacis	Feb. 14 - Dec. 1	6	0.02 - 0.07 mg/L	Max obj. met

TABLE 29 continued

FRASER RIVER (KANAKA CREEK TO THE MOUTH) WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <1.09 mg/L av 5.7 mg/L max at pH = 8.0 temp = 15 C	Main Arm: GVRD 4 d/s Lulu	Feb. 14 - Dec. 1	6	0.05 - 0.08 mg/L	Max obj. met
	GVRD 5 d/s Steveston	Feb. 14 - Dec. 1	6	0.06 - 0.15 mg/L	Max obj. met
	North Arm: E207398 u/s Scott Paper	Mar 11 - Apr 1	4	0.006 - 0.016 mg/L	Max obj. met
	0300002 Oak Street Bridge	Mar. 4 - Apr. 1	5	0.009 - 0.018 mg/L av = 0.013 mg/L	Objectives met
	Middle Arm E207601 100 m d/s North Arm	Mar. 4 - Apr. 1	4	0.008 - 0.02 mg/L	Max obj. met
	E207600 at Dinsmore Bridge	Mar 4 - Apr 1	5	0.012 - 0.020 mg/L av = 0.016 mg/L	Objectives met
	Sturgeon Bank Roberts Bank	1992	0	no data collected	Omitted 1992
Dissolved Oxygen 7.75 mg/L min	Main Stem: 0300005 d/s Pattullo Bridge	Sep 14 - Oct 13	5	8.8 - 10.4 mg/L	Objective met
	Main Arm: Gunderson Slough E216045	Jul. 3	11 4	0-4 m: 8.4 - 9.0 mg/L 4-5 m: 3.0 - 6.0 mg/L	Obj. met Obj. not met
		Oct. 13	12 1	0-4 m: 9.2 - 9.7 mg/L 4.5 m:6.4 mg/L	Obj. met Obj. not met
	GVRD 1 u/s Annacis	Feb. 14 - Dec.1	6	9.2 - 12.4 mg/L	Objective met
	0301308 u/s Annacis	Sep 14 - Oct 13	5	8.6 - 10.2 mg/L	Objective met
	0301311 d/s Annacis	Sep 14 - Oct 13	5	8.6 - 10.2 mg/L	Objective met
	GVRD 2 d/s Annacis	Feb. 14 - Dec.1	6	9.2 - 12.4 mg/L	Objective met
	Deas Slough E216044	Jul. 3	15 1	0-5 m: 8.8 - 9.2 mg/L 5.5 m: 3.0 mg/L	Obj. met Obj. not met
		Oct. 13	19 1	0-6.5 m: 8.7 - 9.8 mg/L 7 m: 4.0 mg/L	Obj. met Obj. not met
	GVRD 3 12 km d/s Annacis	Oct. 6 Feb. 14 - Dec.1	1 5	7.2 mg/L 9.4 - 12.2 mg/L	Obj. not met Obj. met

TABLE 29 continued

FRASER RIVER (KANAKA CREEK TO THE MOUTH) WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 7.75 mg/L min	Main Arm: Ladner Slough E216043	Jul. 3	12 2	0-4 m: 7.8 - 8.4 mg/L 4.5-5 m: 4.0 - 5.0 mg/L	Obj. met Obj. not met
		Oct. 13	15	0-5 m: 9.0 - 9.4 mg/L	Obj. met
	GVRD 4 d/s Lulu	Feb. 14 - Dec.1	6	9.4 - 12.1 mg/L	Objective met
	GVRD 5 d/s Steveston	Feb. 14 - Dec.1	6	9.3 - 12.1 mg/L	Objective met
	North Arm: E207398 u/s Scott Paper	Sep 14 - Oct 13	5	8.7 - 10.0 mg/L	Objective met
	Tree Island Slough E216048	Jul. 3	12 2	0-4 m: 8.4 - 9.0 mg/L 4.5-5 m: 5.0 - 7.0 mg/L	Obj. met Obj. not met
		Oct. 13	11	0-4 m: 9.0 - 9.5 mg/L	Obj. met
	Eburne Slough E216049	Jul. 3	11 1	0-3.5 m: 8.0 - 9.0 mg/L 4 m: 2.0 mg/L	Obj. met Obj. not met
		Oct. 13	11	0-3.5 m: 8.6 - 9.4 mg/L	Obj. met
	0300002 Oak Street Bridge	Sep 14 - Oct 13	5	8.4 - 9.4 mg/L	Objective met
	MacDonald Slough E216047	Jul. 3	14 3	0-5 m: 7.8 - 8.4 mg/L 5-6 m: 3.0 - 7.4 mg/L	Obj. met Obj. not met
		Oct. 13	21	0-7 m: 7.6 - 9.1 mg/L	Obj. met
	Middle Arm: E207601 100 m d/s North Arm	Sep 14 - Oct 13	5	8.0 - 9.4 mg/L	Objective met
	E207600 at Dinsmore Bridge	Sep 14 - Oct 13	5	8.2 - 9.8 mg/L	Objective met
Diss. Oxygen 9.0 mg/L min	Sturgeon Bank Roberts Bank	1992	0	no data collected	Omitted 1992
pH 6.5 - 8.5	Main Stem: 0300005 d/s Pattullo Bridge	Sep 14 - Oct 13	5	6.9 - 7.9	Objective met
	Main Arm: GVRD 1 u/s Annacis	Feb. 14 - Dec.1	6	6.8 - 8.0	Objective met
	0301308 u/s Annacis	Sep 14 - Oct 13	5	7.3 - 8.3	Objective met
	0301311 d/s Annacis	Sep 14 - Oct 13	5	7.1 - 8.3	Objective met

TABLE 29 continued

FRASER RIVER (KANAKA CREEK TO THE MOUTH) WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 - 8.5	Main Arm GVRD 2 d/s Annacis	Feb. 14 - Dec.1	6	6.9 - 7.9	Objective met
	GVRD 3 12 km d/s Annacis	Feb. 14 - Dec.1	6	6.9 - 7.7	Objective met
	GVRD 4 d/s Lulu	Feb. 14 - Dec.1	6	6.9 - 7.6	Objective met
	GVRD 5 d/s Steveston	Feb. 14 - Dec.1	6	6.9 - 7.8	Objective met
	North Arm: E207398 u/s Scott Paper	Sep 14 - Oct 13	5	7.0 - 8.3	Objective met
	0300002 Oak Street Bridge	Sep 14 - Oct 13	5	7.1 - 7.9	Objective met
	Middle Arm: E207601 100 m d/s North Arm	Sep 14 - Oct 13	5	7.3 - 7.9	Objective met
	E207600 at Dinsmore Bridge	Sep 14 - Oct 13	5	7.3 - 7.7	Objective met
Total Cu <0.004 mg/L av 0.006 mg/L max at hardness > 35 or 20% increase	Main Arm: GVRD 1 u/s Annacis	Feb. 14 - Dec. 1	6	<0.001 - 0.001 mg/L (Dissolved Cu)	Control site
	0301308 u/s Annacis	Mar 4 - Apr. 1	5	0.003 - 0.005 mg/L av = 0.004 mg/L (Total Cu)	Control site
	0301311 d/s Annacis	Mar 4 - Apr. 1	5	0.003 - 0.004 mg/L av = 0.004 mg/L (Total Cu)	Objectives met
	GVRD 2 d/s Annacis	Feb. 14 - Dec. 1	6	<0.001 - 0.001 mg/L (Dissolved Cu)	Indefinite results
	GVRD 3 12 km d/s Annacis	Feb. 14 - Dec. 1	6	<0.001 - 0.003 mg/L (Dissolved Cu)	Indefinite results
	GVRD 4 d/s Lulu	Feb. 14 - Dec. 1	6	<0.001 - 0.002mg/L (Dissolved Cu)	Indefinite results
	GVRD 5 d/s Steveston	Feb. 14 - Dec. 1	6	<0.001 - 0.001 mg/L (Dissolved Cu)	Indefinite results
	North Arm: E207398 u/s Scott Paper	Mar 3 - Apr 17	5	0.001 - 0.005 mg/L (Total Cu)	Max obj. met Av not chked.

TABLE 29 continued

FRASER RIVER (KANAKA CREEK TO THE MOUTH) WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cu <0.004 mg/L av 0.006 mg/L max at hardness > 35 or 20% increase	North Arm: 0300002 Oak Street Bridge	Apr 3 - Mar 17	5	0.001 - 0.005 mg/L (Total Cu)	Max obj. met
	Middle Arm: E207601 100 m d/s North Arm	Mar 4 - Apr 1	5	0.001 - 0.004 mg/L (Total Cu)	Control site
	E207600 at Dinsmore Bridge	Mar 4 - 26 Apr. 1	3 1	0.002 - 0.005 mg/L 0.008 mg/L (inc=0.007) (Total Cu)	Max obj. met Max not met Av not chekd.
Total Pb <0.003 mg/L av 0.010 mg/L max	Main Arm: GVRD 1 u/s Annacis	Feb. 14 - Dec. 1	6	all <0.001 mg/L (Dissolved Pb)	Indefinite result
	0301308 u/s Annacis	Mar. 4 - Apr. 1	3	<0.001 - 0.001 mg/L (Total Pb)	Max obj. met Av not chkd.
	0301311 d/s Annacis	Mar. 19 - Apr. 1	3	<0.001 - 0.001 mg/L (Total Pb)	Max obj. met
	GVRD 2 d/s Annacis	Feb. 14 - Dec. 1	6	all < 0.001 mg/L (Dissolved Pb)	Indefinite result
	GVRD 3 12 km d/s Annacis	Feb. 14 - Dec. 1	6	<0.001 - 0.004 mg/L (Dissolved Pb)	Indefinite result
	GVRD 4 d/s Lulu	Feb. 14 - Dec. 1	6	all < 0.001 mg/L (Dissolved Pb)	Indefinite result
	GVRD 5 d/s Steveston	Feb. 14 - Dec. 1	6	all < 0.001 mg/L (Dissolved Pb)	Indefinite result
	North Arm: E207398 u/s Scott Paper	Mar 11 - Apr 1	4	<0.001 - 0.002 mg/L (Total Pb)	Max obj. met
	0300002 Oak Street Bridge	Mar. 4 - Apr. 1	5	<0.001 - 0.005 mg/L av = 0.002 mg/L (Total Pb)	Objectives met
	Middle Arm: E207601 100 m d/s North Arm	Mar. 4 - Apr. 1	4	<0.001 - 0.001 mg/L (Total Pb)	Max obj. met Av not chkd.
	E207600 at Dinsmore Bridge	Mar 4 - Apr 1	5	0.001 - 0.005 mg/L av = 0.002 mg/L (Total Pb)	Objectives met
Total-Zn <0.050 mg/L av 0.100 mg/L max	Main Arm: GVRD 1 u/s Annacis	Feb. 14 - Dec. 1	6	<0.001 - 0.002mg/L (Dissolved Zn)	Indefinite results
	0301308 u/s Annacis	Mar. 4 - Apr. 1	3	all 0.01 mg/L (Total Zn)	Max obj. met Av not chkd.

TABLE 29 continued

FRASER RIVER (KANAKA CREEK TO THE MOUTH) WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total-Zn <0.050 mg/L av 0.100 mg/L max	Main Arm: 0301311 d/s Annacis	Mar. 19 - Apr. 1	3	all 0.01 mg/L (Total Zn)	Max obj. met
	GVRD 2 d/s Annacis	Feb. 14 - Dec. 1	6	<0.001 - 0.001 mg/L (Dissolved Zn)	Indefinite results
	GVRD 3 12 km d/s Annacis	Feb. 14 - Dec. 1	6	<0.001 - 0.001 mg/L (Dissolved Zn)	Indefinite results
	GVRD 4 d/s Lulu	Feb. 14 - Dec. 1	6	all < 0.001 mg/L (Dissolved Zn)	Indefinite result
	GVRD 5 d/s Steveston	Feb. 14 - Dec. 1	6	all <0.001 mg/L (Dissolved Zn)	Indefinite result
	North Arm: E207398 u/s Scott Paper	Mar 11 - Apr 1	4	all < 0.01 (Total Zn)	Max obj. met av not chekd.
	0300002 Oak Street Bridge	Mar 3 - Apr 17	5	<0.005 - 0.010 (Total Zn)	Max obj. met
	Middle Arm: E207601 100 m d/s North Arm	Mar. 4 - Apr. 1	5	0.003 - 0.013 mg/L av = 0.007 mg/L	Objectives met
	E207600 at Dinsmore Bridge	Mar 4 - Apr 1	4	<0.002 - 0.021 mg/L (Total Zn)	Max obj. met
Chlorophenols (tri + tetra + penta) in water 0.0002mg/L max	Main Stem Main Arm North Arm Middle Arm	1992	0	no data collected	Objective not checked
Chlorophenols (tri + tetra +penta) in sediments 0.01 ug/g max av of replicates (dry weight)	Main Stem: E206965 Barnston Island	Feb. 13	5	all < 0.005 ug/g for each homologue	Objective met
	E206966 Sapperton Channel	Feb. 13	5	all < 0.005 ug/g for each homologue	Objective met
	Main Arm: E206969 u/s Annacis STP	Feb. 13	5	all < 0.005 ug/g for each homologue	Objective met
		May. 13	1	< 0.005 ug/g for each homologue	Objective met
	E217291-5 Deas Slough	May-13	5	all < 0.005 ug/g for each homologue	Objective met

TABLE 29 continued

FRASER RIVER (KANAKA CREEK TO THE MOUTH) WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Chlorophenols (tri + tetra +penta) in sediments 0.01 ug/g max av of replicates (dry weight)	Main Arm: E217288-90 B.C. Ferries	May-13	4	all < 0.005 ug/g for each homologue	Objective met
	E217284-7 Ladner Harbour	May. 13	4	all < 0.005 for each homologue	Objective met
	E217300 Airport	May-14	2	all < 0.005 ug/g for each homologue	Objective met
	North Arm: E217296-7 u/s & d/s Scott Paper	May-13	2	all < 0.005 ug/g for each homologue	Objective met
	E217298-9 u/s & d/s Belkin	May. 13	3	all < 0.005 ug/g for each homologue	Objective met
	E206968 MacDonald Slough	Feb. 13	5	all < 0.005 ug/g for each homologue	Objective met
Chlorophenols (Tri + tetra + penta) in fish 0.10 ug/g max (wet weight)	Main Stem Main Arm North Arm	1992	0	no data collected	Omitted 1992
PCBs in sediments 0.03 ug/g max av of replicates (dry weight)	Main Stem: E206965 Barnston Island	Feb. 13	5	all < 0.01 ug/g	Objective met
	E206966 Sapperton Channel	Feb. 13	5	all < 0.01 ug/g	Objective met
	Main Arm: E206969 u/s Annacis STP	Feb. 13	5	all < 0.01 ug/g	Objective met
		May. 13	1	< 0.01 ug/g	Objective met
	E217291-5 Deas Slough	May-13	5	all < 0.01 ug/g	Objective met
	E217288-90 B.C. Ferries (FHC sites 1,2,3)	May-13	1 1 1 1	site 1 = <0.01 ug/g site 2 = <0.01 ug/g site 3 = 0.05 ug/g site 3 = 0.033 ug/g	Obj. met Obj. met Obj. not met Obj. not met
	E217284-7 Ladner Harbour (FHC sites 1 2 3 4)	May. 13	1 1 1 1	site 1 = 0.017 ug/g site 2 = 0.046 ug/g site 3 = 0.013 ug/g site 4 < 0.01 ug/g	Obj. met Obj. not met Obj. met Obj. met
	E217300 Airport	May-14	1	< 0.01 ug/g	Objective met

TABLE 29 continued

FRASER RIVER (KANAKA CREEK TO THE MOUTH) WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PCBs in sediments 0.03 ug/g max av of replicates (dry weight)	North Arm: E217296-7 u/s & d/s Scott Paper	May. 13	2	all < 0.01 ug/g	Objective met
	E217298-9 u/s & d/s Belkin	May-13	3	all < 0.01 ug/g	Objective met
	E206968 MacDonald Slough	Feb. 13	5	all < 0.01 ug/g	Objective met
	Middle Arm	1992	0	no data collected	Objective not checked
PCBs in fish 0.50 ug/g max (wet weight)	Main Stem Main Arm North Arm Middle Arm	1992	0	no data collected	Omitted 1992

TABLE 30

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <200/100 mL geometric mean (gm) <400/100 mL 90th perc. (np) April-October	Boundary Bay: GVRD 27 Balsam Street White Rock	May 29, Jun 5,12, 17,19,26	6	20 - 170/100 mL gm = 44/100 mL np = 100/100 mL	Objectives met
	MOH 4 Vidal Street White Rock	Jun 2,8,15,22,29	5	15 - 310/100 mL gm = 73/100 mL np = 80/100 mL	Objectives met
		Aug 4,11,17,25 Sep. 1	5	<5 - 145/100 mL gm = 25/100 mL np = 80/100 mL	Objectives met
	GVRD 29 Oxford Street White Rock	May 29, Jun 5, 12, 17,19,26	6	<20 - 1700/100 mL gm = 42/100 mL np = 800/100 mL	gm obj. met np not met
	MOH 5 High Street White Rock	Jun 2,8,15 22,29	5	<5 - 2000/100 mL gm = 149/100 mL np = 1900/100 mL	gm obj. met np not met
		Aug 4,11,17,25 Sep. 1	5	<5 - 650/100 mL gm = 20/100 mL np = 200/100 mL	Objectives met
	GVRD 30 High Street White Rock	May 29, Jun 5, 12,17,19,26	6	<20 - 1700/100 mL gm = 63/100 mL np = 700/100 mL	gm obj. met np not met
	MOH 8 Centennial Beach concession	Jun 2,8,15,22,29	5	<5 - 235/100 mL gm = 18/100 mL np = 100/100 mL	Objectives met
		Jul 6.13.21.27. Aug. 4	5	5 - 460/100 mL gm = 24/100 mL np = 125/100 mL	Objectives met
	MOH 9 Centennial Beach 3rd Avenue	Jun 2,8,15,22,29	5	<5 - 35/100 mL gm = 10/100 mL np = 26/100 mL	Objectives met
		Jul 6,13,20,27 Aug. 4	5	5 - 1950/100 mL gm = 40/100 mL np = 1010/100 mL	gm obj. met np not met
	MOH 10 Centennial Beach 1st Avenue	Jun 2,8,15,22,29	5	<5 - 45/100 mL gm = 10/100 mL np = 35/100 mL	Objectives met
		Jul 6,13,21,27, Aug. 4	5	30 - 1950/100 mL gm = 185/100 mL np = 1500/100 mL	gm obj. met np not met

TABLE 30 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <200/100 mL geometric mean (gm) <400/100 mL 90th perc (np) April-October	Little Campbell River: 0300066 near source	Oct 6,15,21,27 Nov. 3	5	30 - 48/100 mL gm = 40/100 mL np = 46/100 mL	Objectives met
	0300065 near mouth	Oct 6,15,21,27 Nov. 3	5	12 - 95/100 mL gm = 38/100 mL np = 72/100 mL	Objectives met
Fecal Coliforms <1000/100 mL geometric mean (gm) <4000/100 mL max April-October	Nicomekl River: 0300062 near source	Oct. 6,15,21,27 Nov. 3	5	83 - 133/100 mL gm = 108/100 mL	Objectives met
	0300060 near mouth	Oct. 5,15,21,27 Nov. 3	5	14 - 240/100 mL gm = 53/100 mL	Objectives met
	Murray Creek: E207031 near source	Oct. 15,21,27 Nov. 3	4	14 - 1600/100mL	Max obj. met
	0300064 near mouth	Oct. 6,15,21,27 Nov. 3	5	14 - 163/100 mL gm = 34/100mL	Objectives met
	Anderson Creek: E207028 near source	Nov. 3	1	220/100 mL	Max obj. met
	0300063 near mouth	Oct. 6,15,21,27 Nov. 3	5	15 - 31/100mL gm = 22/100 mL	Objectives met
	Serpentine River: 300059 near source	Oct. 6,15,21,27 Nov. 3	5	43 - 1210/100 mL gm = 229/100 mL	Objectives met
	0300057 near mouth	Oct. 5,15,21,27 Nov. 3	5	15 - 220/100 mL gm = 67/100 mL	Objectives met
	Latimer Creek: E207720 near source	Oct. 6,15,21,27 Nov. 3	5	35 - 116/100 mL gm = 73/100 mL	Objectives met
	E207716 near mouth	Nov. 3 Oct. 6,15,21,27	1 4	6500/100mL 72 - 2500/100 mL gm = 563/100 mL	Max not met Max obj met gm obj met
	Mahood Creek: E207717 near source	Oct. 5,15,21,27 Nov. 3	5	34 -165/100 mL gm = 66/100 mL	Objectives met
	0300056 near mouth	Oct. 5,15,21,27 Nov. 3	5	64 - 350/100 mL gm = 155/100 mL	Objectives met

TABLE 30 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <1000/100 mL geometric mean (gm) <4000/100 mL max April-October	Hyland Creek: E207718 near source	Oct. 5,15,21,27 Nov. 3	5	114 - 175/100 mL gm = 136/100 mL	Objectives met
	E207719 near mouth	Oct. 5,15,21,27 Nov. 3	5	23 - 124/100 mL gm = 50/100 mL	Objectives met
Suspended Solids max increase: 10 mg/L or 10%	Boundary Bay: 0300070 East	Jul. 16	1	10 mg/L	Control site
	E207867 East Delta Airfield (Oliver St pump stn.)	Jul. 16	1	9 mg/L inc. = 0 mg/L	Objective met
	Little Campbell River: 0300066 near source	Oct. 21	1	5 mg/L	Control site
	0300065 near mouth	Oct. 21	1	2 mg/L inc. = 0 mg/L	Objective met
	Nicomekl River: 0300062 near source	Oct. 21	1	9 mg/L	Control site
	0300060 near mouth	Oct. 21	1	9 mg/L inc. = 0 mg/L	Objective met
	Murray Creek: E207031 near source	Oct. 21	1	3 mg/L	Control site
	0300064 near mouth	Oct. 21	1	5 mg/L inc. = 2 mg/L	Objective met
	Anderson Creek: E207028 near source	Nov. 3	1	1 mg/L	Control site
	0300063 near mouth	Oct. 21	1	1 mg/L	Objective met
	Serpentine River: 0300059 near source	Oct. 21	1	25 mg/L	Control site
	0300057 near mouth	Oct. 21	1	13 mg/L inc. = 0 mg/L	Objective met

TABLE 30 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Suspended Solids max increase: 10 mg/L or 10%	Latimer Creek: E207720 near source	Oct. 21	1	2 mg/L	Control site
	E207716 near mouth	Oct. 21	1	6 mg/L inc. = 4 mg/L	Objective met
	Mahood Creek: E207717 near source	Oct. 21	1	2 mg/L	Control site
	0300056 near mouth	Oct. 21	1	4 mg/L inc. = 2 mg/L	Objective met
	Hyland Creek: E207718 near source	Oct. 21	1	2 mg/L	Control site
	E207719 near mouth	Oct. 21	1	14 mg/L inc. = 12 mg/L	Objective not met
Turbidity max increase: 5 NTU or 10%	Boundary Bay: 0300070 East	Jul. 16	1	0.3 NTU	Control site
	E207867 East Delta Airfield (Oliver St pump stn.)	Jul. 16	1	2.5 NTU inc. = 2.2 NTU	Objective met
	Little Campbell River: 0300066 near source	Oct. 21	1	2.9 NTU	Control site
	0300065 near mouth	Oct. 21	1	1.5 NTU inc. = 0 NTU	Objective met
	Nicomekl River: 0300062 near source	Oct. 21	1	4.3 NTU	Control site
	0300060 near mouth	Oct. 21	1	4.6 NTU inc. = 0.3 NTU	Objective met
	Murray Creek: E207031 near source	Oct. 21	1	3.1 NTU	Control site
	0300064 near mouth	Oct. 21	1	4.0 NTU inc. = 0.9 NTU	Objective met
	Anderson Creek: E207028 near source	Nov. 3	1	2.5 NTU	Control site
	0300063 near mouth	Oct. 21	1	0.4 NTU	Objective met

TABLE 30 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Turbidity max increase: 5 NTU or 10%	Serpentine River: 0300059 near source	Oct. 21	1	16 NTU	Control site
	0300057 near mouth	Oct. 21	1	6.5 NTU inc. = 0 NTU	Objective met
	Latimer Creek: E207720 near source	Oct. 21	1	1.6 NTU	Control site
	E207716 near mouth	Oct. 21	1	4.5 NTU inc. = 2.9 NTU	Objective met
	Mahood Creek: E207717 near source	Oct. 21	1	1.9 NTU	Control site
	0300056 near mouth	Oct. 21	1	4.0 NTU inc. = 2.1 NTU	Objective met
	Hyland Creek: E207718 near source	Oct. 21	1	2.1 NTU	Control site
	E207719 near mouth	Oct. 21	1	14 NTU inc. = 11.9 NTU	Objective not met
Substrate Sedimentation no increase in weight of particles <3 mm dia	Little Campbell River Nicomekl River Murray Creek Anderson Creek Serpentine River Latimer Creek Mahood Creek Hyland Creek	1992	0	no data collected	Objective not checked
Ammonia-N <1.23 mg/L av 13.5 mg/L max at pH = 7.4 temp = 20 C	Little Campbell River: 0300066 near source	Oct. 6,15,21,27 Nov. 3	5	0.059 - 0.164 mg/L av = 0.113 mg/L	Objectives met
	0300065 near mouth	Oct. 6,15,21,27 Nov. 3	5	<0.005 - 0.058 mg/L av = 0.027 mg/L	Objectives met
	Nicomekl River: 0300060 near mouth	Oct. 5,15,21,27 Nov. 3	5	0.012 - 0.172 mg /L av = 0.093 mg/L	Objectives met
	Serpentine River: 0300059 near source	Oct. 6,15,21,27 Nov. 3	5	0.083 - 0.323 mg/L av = 0.174 mg/L	Objectives met

TABLE 30 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <1.23 mg/L av 13.5 mg/L max at pH = 7.4 temp = 20 C	Serpentine River 0300057 near mouth	Oct. 5,15,21,27 Nov. 3	5	0.01 - 0.195 mg/L av = 0.095 mg/L	Objectives met
	Latimer Creek: E207716 near mouth	Oct. 6,15,21,27 Nov. 3	5	0.017 - 0.336 mg/L 0.135 mg/L	Objectives met
	Mahood Creek: 0300056 near mouth	Oct. 5,15,21,27 Nov. 3	5	<0.005 - 0.075 mg/L av = 0.024 mg/L	Objectives met
	Hyland Creek: E207718 near source	Oct. 5,15,21,27 Nov. 3	5	0.005 - 0.040mg/L av = 0.022 mg/L	Objectives met
	Murray Creek E207031 near source	Oct. 6,15,21,27 Nov. 3	5	0.020 - 0.062 mg/L av = 0.037 mg/L	Objectives met
	0300064 near mouth	Oct. 6,15,21,27 Nov. 3	5	0.005 - 0.018 mg/L av = 0.011 mg/L	Objectives met
	Anderson Creek 0300063 near mouth	Oct. 6,15,21,27 Nov. 3	5	0.005 -0.024 mg/L av = 0.011 mg/L	Objectives met
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Little Campbell River: 0300066 near source	Oct. 6,15,21,27 Nov. 3	5	<0.005 - 0.009 mg/L av = 0.006 mg/L	Objectives met
	0300065 near mouth	Oct. 6,15,21,27 Nov. 3	5	0.005 - 0.015 mg/L av = 0.012 mg/L	Objectives met
	Nicomekl River: 0300060 near mouth	Oct. 5,15,21,27 Nov. 3	5	0.014 - 0.051 mg/L av = 0.027 mg/L	Max obj. met Av. not met
	Serpentine River: 0300059 near source	Oct. 6,15,21, Nov. 3 Oct. 27 Oct 6 - Nov 3	4 1 5	0.021 - 0.052 mg/L 0.062 mg/L av = 0.037 mg/L	Max obj. met Max not met Av. not met
	0300057 near mouth	Oct. 5,15,21,27 Nov. 3	5	0.013 - 0.035 mg/L av = 0.023 mg/L	Max obj. met Av. not met
	Latimer Creek: E207716 near mouth	Oct. 6,15,21,27 Nov. 3	5	0.009 - 0.043 mg/L av = 0.019 mg/L	Objectives met

TABLE 30 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Mahood Creek: 0300056 near mouth	Oct. 5,15,21,27 Nov. 3	5	<0.005 - 0.009 mg/L av = 0.007 mg/L	Objectives met
	Hyland Creek: E207718 near source	Oct. 5,15,21,27 Nov. 3	5	<0.005 - 0.010 mg/L av = 0.007 mg/L	Objectives met
	Murray Creek E207031 near source	Oct. 6,15,27, Nov. 3 Oct. 21 Oct 6 - Nov 3	4 1 5	0.011 - 0.031 mg/L 0.064 mg/L av = 0.030 mg/L	Max obj. met Max not met Av. not met
	0300064 near mouth	Oct. 6,15,21,27 Nov. 3	5	0.007 - 0.015 mg/L av = 0.010 mg/L	Objectives met
	Anderson Creek 0300063 near mouth	Oct. 6,15,21,27 Nov. 3	5	<0.005 - 0.010 mg/L av = 0.007 mg/L	Objectives met
Chlorophyll-a 50 mg/m2 av	Little Campbell River	1992	0	no data collected	Objective not checked
Chlorophyll-a 100 mg/m2 av	Nicomekl River Murray Creek Anderson Creek	1992	0	no data collected	Objective not checked
Chlorophyll-a 100 mg/m2 av (long term)	Serpentine River Latimer Creek Mahood Creek Hyland Creek	1992	0	no data collected	Objective not checked
Dissolved Oxygen 6.5 mg/L min 9.0 mg/L min (long-term)	Boundary Bay: 0300070 East	Jul. 16	9	0 m: 12.6 mg/L 1 m: 12.8 mg/L 2 m: 12.6 mg/L 3 m: 12.4 mg/L 4 m: 12.0 mg/L 5 m: 11.1 mg/L 6 m: 10.9 mg/L 7 m: 10.7 mg/L 8 m: 7.1 mg/L	Objective met
			1	9 m: 5.8 mg/L 9.5 m: bottom	Objective not met
	E207867 East Delta Airfield (Oliver St pump stn.)	Jul. 16	1	5.5 mg/L	Objective not met

TABLE 30 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 6.0 mg/L min Jun - Oct 11.0 mg/L min Nov - May	Little Campbell River: 0300066 near source	Oct. 6 - Nov. 3	5	1.2 - 4.0 mg/L	Objective not met
	0300065 near mouth	Oct. 6 - Oct. 27 Nov.3	4 1	6.4 - 8.2 mg/L 8.4 mg/L	Obj. met Obj. not met
	Nicomekl River: 0300062 near source	Oct. 6 - Nov. 3	5	8.6 - 11.0 mg/L	Objective met
	0300060 near mouth	Oct. 27 Nov. 3 Oct. 5, 15, 21	1 1 3	5.5 mg/L 8.3 mg/L 6.5 - 8.6 mg/L	Obj. not met Obj. not met Obj. met
	Serpentine River: 0300059 near source	Oct. 6 Nov.3 Oct. 15, 21, 27	1 1 3	5.1 mg/L 7.5 mg/L 6.5 - 8.2	Obj. not met Obj. not met Obj. met
	0300057 near mouth	Oct. 27 Nov.3 Oct. 5, 15, 21	1 1 3	5.3 mg/L 6.7 mg/L 8 - 11 mg/L	Obj. not met Obj. not met Obj. met
Dissolved Oxygen 8.0 mg/L min Jun - Oct 11.0 mg/L min Nov - May	Murray Creek : E207031 near source	Oct. 6 Oct. 15 - Nov. 3	1 4	7.6 mg/L 9.0 - 11.7 mg/L	Obj. not met Obj. met
	0300064 near mouth	Oct. 6 - Oct. 27 Nov.3	4 1	9.1 - 10.9 mg/L 10.6 mg/L	Obj. met Obj. not met
	Anderson Creek: E207028 near source	Nov. 3	1	10.5 mg/L	Objective not met
	0300063 near mouth	Oct. 6 - Nov. 3	5	10 - 11.7 mg/L	Objective met
	Latimer Creek: E207720 near source	Oct. 6 - Nov. 3	5	9 - 11.8 mg/L	Objective met
	E207716 near mouth	Oct. 6 - Oct. 27 Nov. 3	4 1	8.5 - 10 mg/L 10.1 mg/L	Obj. met Obj. not met

TABLE 30 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 8.0 mg/L min Jun - Oct 11.0 mg/L min Nov - May	Mahood Creek: E207717 near source	Oct. 5 - Oct. 27 Nov. 3	4 1	9 - 10.3 mg/L 10.5 mg/L	Obj. met Obj. not met
	0300056 near mouth	Oct. 5 - Oct. 27 Nov. 3	4 1	8.9 - 10.5 mg/L 10.9 mg/L	Obj. met Obj. not met
	Hyland Creek: E207719 near source	Oct. 5 - Oct. 27 Nov. 3	4 1	8.5 - 10.1 mg/L 10.6 mg/L	Obj. met Obj. not met
	E207718 near mouth	Oct. 5 - Oct. 27 Nov. 3	4 1	8.6 - 10.2 mg/L 10.6 mg/L	Obj. met Obj. not met
pH	Little Campbell River Nicomekl River Murray Creek Anderson Creek Serpentine River Latimer Creek Mahood Creek Hyland Creek	1992	0	no data collected	Omitted 1992
Total Lead <0.005 mg/L av 0.010 mg/L max	Nicomekl River	1992	0	no data collected	Objective not checked
PCBs in water 0.001 ug/L max	Serpentine River Latimer Creek Mahood Creek Hyland Creek	1992	0	no data collected	Omitted 1992
PCBs in sediments <0.03 ug/g av	Boundary Bay Serpentine River Latimer Creek Mahood Creek Hyland Creek	1992	0	no data collected	Omitted 1992
PCBs in fish <0.1 - 0.5ug/g wet weight	Serpentine River Latimer Creek Mahood Creek Hyland Creek	1992	0	no data collected	Omitted 1992

TABLE 31

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <200/100 mL geometric mean (gm) May - Oct	Port Moody Arm: GVRD 1 Barnett Pk. E of pier	May 29 - Jun. 24	5	<20 - 3000/100 mL gm = 123/100 mL	Objective met
		Jun. 26 - Jul. 31	5	<20 - 1100/100 mL gm = 83/100 mL	Objective met
	GVRD 2 Barnett Pk. Sandy Bch	May 29 - Jun. 24	5	<20 - 340/100 mL gm = 151/100 mL	Objective met
		Jun. 26 - Jul. 31	5	<20 - 1400/100 mL gm = 89/100 mL	Objective met
	Indian Arm: GVRD 35 Deep Cove Beach N	Jun. 17 - Jul. 17	9	20 - 500/100 mL gm = 107/100 mL	Objective met
		Jul. 22 - Aug. 21	10	<20 - 170/100 mL gm = 46/100 mL	Objective met
	GVRD 39 Deep Cove Beach S	Jun. 17 - Jul. 17	9	<20 - 500/100 mL gm = 143/100 mL	Objective met
		Jul. 22 - Aug. 21	10	20 - 80/100 mL gm = 32/100 mL	Objective met
	2nd Narrows-Roche Pt. GVRD 36 Cates Park Beach	Jun. 17 - Jul. 17	7	<20 - 130/100 mL gm = 38/100 mL	Objective met
		Jul. 22 - Aug. 21	8	<20 - 80/100 mL gm < 20/100 mL	Objective met
	GVRD 29 Cates Park boat ramp	Jun. 17 - Jul. 17	7	<20 - 1100/ 100 mL gm = 55/100 mL	Objective met
		Jul. 22 - Aug. 21	7	<20 - 500/100 mL gm = 43/100 mL	Objective met
	1st-2nd Narrows: GVRD 5 1 km W Brockton Pt.	Jun. 17 - Jul. 13	6	20 - 500/100 mL gm = 87/100 mL	Objective met
		Jul. 21 - Aug. 19	6	<20 - 40/100 mL gm = 22/100 mL	Objective met
	GVRD 1 1.5 km W Brockton Pt.	Jun. 17 - Jul. 13	6	20 - 1100/100 mL gm = 160/100 mL	Objective met
		Jul. 21 - Aug. 19	6	20 - 3000/100 mL gm = 128/100 mL	Objective met

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <200/100 mL geometric mean (gm) May - Oct	Outer Burrard: GVRD 14 Ambleside Beach	Jun. 11 - Jul. 10	7	<20 - 500/100 mL gm = 96/100 mL	Objective met
		Jul. 14 - Aug. 10	6	<20 - 80/100 mL gm = 20/100 mL	Objective met
	GVRD 101 3rd Beach	Jun. 29 - Jul. 29	10	<20 - 80/100 mL gm <20/100 mL	Objective met
		Aug. 5 - Sep. 2	10	<20 - 70/100 mL gm = 20/100 mL	Objective met
	GVRD 200 2nd Beach	Jun. 17 - Jul. 15	9	<20 - 300/100 mL gm = 39/100 mL	Objective met
		Jul. 21 - Aug. 19	10	<20 - 1300/100 mL gm = 30/100 mL	Objective met
	GVRD 304 English Bay Beach	Jun. 17 - Jul. 15	9	40 - 700/100 mL gm = 122/100 mL	Objective met
		Jul. 21 - Aug. 19	10	<20 - 130/100 mL gm = 34/100 mL	Objective met
	GVRD 703 Locarno Beach	Jun. 16 - Jul. 16	10	<20 - 800/100 mL gm = 43/100 mL	Objective met
		Jul. 22 - Aug. 20	10	<20 - 230/100 mL gm = 38/100 mL	Objective met
	False Creek: GVRD 16 at the mouth	Jun. 16 - Jul. 16	7	<20 - 500/100 mL gm = 56/100 mL	Objective met
		Jul. 28 - Aug. 24	6	<20 - 1100/100 mL gm = 53/100 mL	Objective met
Enterococci <20/100 mL geometric mean (gm) May - Oct	Indian Arm: GVRD 35 Deep Cove Beach N	Jun. 17 - Jul. 17	9	2 - 80/100 mL gm = 27/100 mL	Objective not met
		Jul. 22 - Aug. 21	10	<1.1 - 560/100 mL gm = 27/100 mL	Objective not met
	2nd Narrows-Roche Pt. GVRD 36 Cates Park Beach	Jun. 17 - Jul. 17	7	<1.1 - 80/100 mL gm = 8/100 mL	Objective met
		Jul. 22 - Aug. 21	7	<1.1 - 140/100 mL gm = 8/100 mL	Objective met

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Enterococci <20/100 mL geometric mean (gm) May - Oct	Outer Burrard: GVRD 14 Ambleside Beach	Jun. 15 - Jul. 14	7	3 - 700/100 mL gm = 29/100 mL	Objective met
		Jul. 27 - Aug. 31	7	<1.1 - 22/100 mL gm = 7/100 mL	Objective met
	GVRD 101 3rd Beach	Jun. 15 - Jul. 15	10	<1.1 - 86/100 mL gm = 3/100 mL	Objective met
		Jul. 21 - Aug. 19	10	<1.1 - 14/100 mL gm = 3/100 mL	Objective met
	GVRD 200 2nd Beach	Jun. 15 - Jul. 15	10	<1.1 - 370/100 mL gm = 14/100 mL	Objective met
		Jul. 21 - Aug. 19	10	1.1 - 360/100 mL gm = 13/100 mL	Objective met
	GVRD 304 English Bay Beach	Jun. 15 - Jul. 15	10	1.1 - 170/100 mL gm = 12/100 mL	Objective met
		Jul. 21 - Aug. 19	10	2 - 470/100 mL gm = 11/100 mL	Objective met
	GVRD 703 Locarno Beach	Jun. 16 - Jul. 16	10	<1.1 - 33/100 mL gm = 5/100 mL	Objective met
		Jul. 22 - Aug. 20	10	<1.1 - 76/100 mL gm = 11/100 mL	Objective met
	Port Moody Arm 1st-2nd Narrows False Creek	1992	0	no data collected	Omitted 1992
Suspended Solids 10 mg/L max increase	Indian Arm 0300080 3 km E of Deep Cove	Sept. 7	1 1	9 mg/L at 0 m 8 mg/L at 25 m	Control Site
	Port Moody Arm: E207823 100m off loco disch.	Sept. 7	2	0, 10 m: 6, 10 mg/L max inc. = 2 mg/L	Objective met
	2nd Narrows-Roche Pt: E207822 50m off Shellburn dis	Sept. 7	2	0, 17 m: 8, 5 mg/L max inc. = 0 mg/L	Objective met
	E207821 50m off Chevron disch	Sept. 7	2	0, 9 m: 8, 7 mg/L max inc. = 0 mg/L	Objective met
	E207820 100 m S Can-Occ. disch.	Sept. 7	2	0, 14 m: 3, 4 mg/L max inc. = 0 mg/L	Objective met

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Suspended Solids 10 mg/L max increase	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Sept. 7	2	0, 20 m: 4, 7 mg/L max inc. = 0 mg/L	Objective met
	E207818 off Clark Drive CSO	Sept. 7	2	0, 11m: 13, 8 mg/L max inc. = 4 mg/L	Objective met
	E207816 100-500m E Vn Wharves	Sept. 7	2	0, 12 m: 4, 12 mg/L max inc. = 4 mg/L	Objective met
	E207813 100m off Coal Hbr CSO	Sept. 7	2	0, 9 m: 12, 9 mg/L max inc. = 3 mg/L	Objective met
	Outer Burrard: E207812 off Locarno Park CSO	Sept. 7	1	0 m: 15 mg/L max inc. = 6 mg/L	Obj. met
			1	11 m: 27 mg/L max inc. = 19 mg/L	Obj. not met
	0300076 English Bay	Sept. 7	2	0, 17 m: 9, 8 mg/L max inc. = 0 mg/L	Objective met
	False Creek: E207814 100m E Science World	Sept. 7	2	0, 8 m: 8, 7 mg/L max inc. = 0 mg/L	Objective met
	E207815 at mid-point	Sept. 7	1	8 m: 11 mg/L max inc. = 2 mg/L	Obj. met
			1	0 m: 20 mg/L max inc. = 11 mg/L	Obj. not met
Turbidity 5 NTU max increase	Indian Arm Port Moody Arm 2nd Narrows-Roche Pt. 1st-2nd Narrows Outer Burrard False Creek	1992	0	no data collected	Objective not checked
Cl2-Produced Oxidants 3 ug/L av	Port Moody Arm	1992	0	no data collected	Obj not chkd
	2nd Narrows-Roche Pt.	1992	0	no data collected	Omitted 1992
Ammonia-N <1.0 mg/L av 2.5 mg/L max	Port Moody Arm: E207698 50 m E Pacific Coast	Aug. 12 - Sep. 7 (0 - 17.5 m)	10	<0.005 - 0.165 mg/L av = 0.079 mg/L	Objectives met
	E207823 100m off loco disch.	Aug. 12-Sep. 7 (0 - 11.7 m)	10	<0.005 - 0.213 mg/L av = 0.067 mg/L	Objectives met
	2nd Narrows-Roche Pt: E207822 50m off Shellburn dis	Aug. 12 - Sep. 7 (0 - 24.4 m)	10	<0.005 - 0.105 mg/L av = 0.032 mg/L	Objectives met

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <1.0 mg/L av 2.5 mg/L max	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug. 12 - Sep. 7 (0 - 9.5 m)	10	<0.005 - 0.072 mg/L av = 0.029 mg/L	Objectives met
	E207820 100m S Can-Occ. disch	Aug. 12 - Sep. 7 (0 - 14.8 m)	10	<0.005 - 0.098 mg/L av = 0.046 mg/L	Objectives met
	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug. 12 - Sep. 7 (0 - 19.7 m)	10	<0.005 - 0.076 mg/L av = 0.025 mg/L	Objectives met
	E207818 off Clark Drive CSO	Aug. 12 - Sep. 7 (0 - 11.6 m)	10	0.017 - 0.092 mg/L av = 0.037 mg/L	Objectives met
	E207816 100-500m E Vn Wharves	Aug. 12 - Sep. 7 (0 - 14.4 m)	10	0.006 - 0.116 mg/L av = 0.046 mg/L	Objectives met
	E207813 100m off Coal Hbr CSO	Aug. 12 - Sep. 7 (0 - 8.9 m)	10	<0.005 - 0.152 mg/L av = 0.058 mg/L	Objectives met
	False Creek: E207814 100m E Science World	Aug. 12 - Sep. 7 (0 - 7.7 m)	9	0.005 - 0.156 mg/L av = 0.070 mg/L	Objectives met
	E207815 at mid-point	Aug. 12 - Sep. 7 (0 - 7.8 m)	10	<0.005 - 0.1 mg/L av = 0.027 mg/L	Objectives met
Dissolved Oxygen 6.5 mg/L min	Indian Arm 0300080 3 km E of Deep Cove	Aug 12 - Sep 7 Sep 2 - 7 Aug 12 - 25	5 2 3	0 m: 7.4 - 8.4 mg/L 25 m: 6.6 - 7.0 mg/L 25 m: 6.2 - 6.4 mg/L	Obj. met Obj. met Obj. not met
	Outer Burrard: E207812 off Locarno Park CSO	Aug 12 - Sep 7 Aug 12 - 25 Sep 2 - 7	5 3 2	0 m: 7.4 - 8.2 mg/L 7-9 m: 7.2 - 7.4 mg/L 9-10 m: 5.6 - 6.4 mg/L	Obj. met Obj. met Obj. not met
	0300076 English Bay	Aug 12 - Sep 7 Aug 18,25, Sep 7 Aug 12, Sep 2	5 3 2	0 m: 7.6 - 8.4 mg/L 17-18 m: 6.6 - 7.4 mg/L 16-18 m: 5.9 - 6.2 mg/L	Obj. met Obj. met Obj. not met
	False Creek: E207814 100m E Science World	Aug 12 - Sep 7 Aug 12 - Sep 7	5 5	0 m: 7.4 - 10.2 mg/L 6-8 m: 4.8 - 6.4 mg/L	Obj. met Obj. not met
	E207815 at mid-point	Aug 12 - Sep 7 Aug 12 - 25 Sep 2 - 7	5 2 2	0 m: 7.4 - 8.1 mg/L 7-8 m: 7.0 mg/L 7 m: 6.0 - 6.4 mg/L	Obj. met Obj. met Obj. not met

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 6.5 mg/L min (long-term)	Port Moody Arm: E207698 50 m E Pacific Coast	Aug 12 - Sep 7 Sep. 2 Aug 12 - Sep 7	4 1 5	0 m: 7.2 - 8.4 mg/L 0 m: 6.4 mg/L 13-17 m: 5.6 - 6.4 mg/L	Obj. met Obj. not met Obj. not met
	E207823 100m off loco disch.	Aug 12 - Sep 7 Aug. 25 Aug 12 - Sep 7	5 1 4	0 m: 6.8 - 8.6 mg/L 11 m: 6.8 mg/L 10-12 m: 5.4 - 6.2 mg/L	Obj. met Obj. met Obj. not met
	2nd Narrows-Roche Pt: E207822 50m off Shellburn dis	Aug 12 - Sep 7 Aug 18 - Sep 7 Aug. 12	5 4 1	0 m: 6.8 - 8.2 mg/L 16-24 m: 7.0 - 8.4 mg/L 18 m: 6.2 mg/L	Obj. met Obj. met Obj. not met
	E207821 50m off Chevron disch	Aug 18 - Sep 2 Aug 12 - Sep 7 Aug 12, Sep 7	3 5 2	0 m: 7.2 - 9.8 mg/L 8-10 m: 6.8 - 7.6 mg/L 0 m: 6.2 - 6.4 mg/L	Obj. met Obj. met Obj. not met
	E207820 100m S Can-Occ. disch	Aug 12 - Sep 7 Aug 12 - Sep 7	5 5	0 m: 7.0 - 7.4 mg/L 14-15 m: 6.5 - 7.4 mg/L	Obj. met Obj. met
	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug 12 - Sep 7 Aug 18 - Sep 7 Aug. 12	5 4 1	0 m: 7.4 - 7.8 mg/L 19-20 m: 6.6 - 7.0 mg/L 20 m: 6.4 mg/L	Obj. met Obj. met Obj. not met
	E207818 off Clark Drive CSO	Aug 12 - Sep 7 Aug 12,25, Sep 2 Aug 18,Sep 7	5 3 2	0 m: 6.6 - 8.0 mg/L 10-12 m: 6.5 - 7.0 mg/L 10 m: 6.4 mg/L	Obj. met Obj. met Obj. not met
	E207816 100-500m E Vn Wharves	Aug 12 - Sep 7 Aug 18,25, Sep 7 Aug 12, Sep 2	5 3 2	0 m: 7.0 - 8.2 mg/L 11-14 m: 7.0 - 7.2 mg/L 12-14 m: 6.4 mg/L	Obj. met Obj. met Obj. not met
	E207813 100m off Coal Hbr CSO	Aug 18,25, Sep 7 Aug. 25 Aug 12. Sep 2 Aug 12 - Sep 7	3 1 2 4	0 m: 7.2 - 8.0 mg/L 7 m: 7.0 mg/L 0 m: 6.4 mg/L 6-9 m: 5.8 - 6.4 mg/L	Obj. met Obj. met Obj. not met Obj. not met
WAD-CN 0.001 mg/L max	Port Moody Arm:	1992	0	no data collected	Omitted 1992
H2S 0.002 mg/L max	Port Moody Arm 1st-2nd Narrows	1992	0	no data collected	Omitted 1992
pH 6.5 - 8.5	2nd Narrows-Roche Pt: E207822 50m off Shellburn dis	Aug 12 - Sep 7	10	0-24 m: 7.4 - 8.1	Objective met

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 - 8.5	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 12 - Sep 7	10	0-10 m: 7.2 - 8.1	Objective met
	E207820 100m S Can-Occ. disch	Aug 12 - Sep 7	10	0-15 m: 7.2 - 7.9	Objective met
Total As 0.010 mg/L max	2nd Narrows-Roche Pt. E207822 50m off Shellburn dis	Sept. 7	2	< 0.001 mg/L (0 - 17 m)	Objective met
	E207821 50m off Chevron disch	Sept. 7	2	< 0.001 mg/L (0 - 8.8 m)	Objective met
	E207820 100m S Can-Occ. disch	Sept. 7	2	< 0.001 mg/L (0 - 14 m)	Objective met
	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Sept. 7	2	< 0.001 mg/L (0 - 19.7 m)	Objective met
	E207818 off Clark Drive CSO	Sept. 7	2	< 0.001 mg/L (0 - 10.5 m)	Objective met
	E207816 100-500m E Vn Wharves	Sept. 7	2	< 0.001 mg/L (0 - 11.5 m)	Objective met
	E207813 100m off Coal Hbr CSO	Sept. 7	2	< 0.001 mg/L (0 - 8.9 m)	Objective met
Total As <20 ug/g av in sediment (long-term)	1st-2nd Narrows: E207818 off Clark Drive CSO	Sept. 10	3	all < 25.0 ug/g	Indefinite result
	E207813 100m off Coal Hbr CSO	Sept. 10	3	all < 25.0 mg/g	Indefinite result
	False Creek: E207814 100m E Science World	Sept. 10	3	all < 25.0 mg/g	Indefinite result
	Port Moody Arm	1992	0	no data collected	Omitted 1992
Total As <20 ug/g av in sediment	Outer Burrard: E207812 off Locarno Park CSO	Sept. 10	3	all < 25 ug/g	Indefinite result
Total Ba 0.5 mg/L max	2nd Narrows-Roche Pt:	1992	0	no data collected	Omitted 1992

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cd <0.009 mg/L av 0.043 mg/L max	Indian Arm 0300080 3 km E of Deep Cove	Aug. 12,18,25 Sep. 2, 7	10	all < 0.0005 mg/L (0 - 25 m)	Objectives met
	Port Moody Arm: E207698 50 m E Pacific Coast	Aug. 12,18,25 Sep. 2, 7	10	all < 0.0005 mg/L (0 - 17.5 m)	Objectives met
	E207823 100m off loco disch.	Aug. 12,18,25 Sep. 2, 7	10	all < 0.0005 mg/L (0 - 11.7 m)	Objectives met
	2nd Narrows-Roche Pt: E207822 50m off Shellburn dis	Aug. 12,18,25 Sep. 2, 7	10	all < 0.0005 mg/L (0 - 24 m)	Objectives met
	E207821 50m off Chevron disch	Aug. 12,18,25 Sep. 2, 7	10	all < 0.0005 mg/L (0 - 9.5 m)	Objectives met
	E207820 100m S Can-Occ. disch	Aug. 12,18,25 Sep. 2, 7	10	all < 0.0005 mg/L (0 - 14.8 m)	Objectives met
	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug. 12,18,25 Sep. 2, 7	10	all < 0.0005 mg/L (0 - 19.7 m)	Objectives met
	E207818 off Clark Drive CSO	Aug. 12,18,25 Sep. 2, 7	10	all < 0.0005 mg/L (0 - 11.6 m)	Objectives met
	E207816 100-500m E Vn Wharves	Aug. 12,18,25 Sep. 2, 7	10	all < 0.0005 mg/L (0 - 14.4 m)	Objectives met
	E207813 100m off Coal Hbr CSO	Aug. 12,18,25 Sep. 2, 7	10	all < 0.0005 mg/L (0 - 8.9 m)	Objectives met
	False Creek: E207814 100m E Science World	Aug. 10,12,18,25 Sep. 2, 7	10	all < 0.0005 mg/L (0 - 7.7 m)	Objectives met
	E207815 at mid-point	Aug. 10,12,18,25 Sep. 2, 7	10	all < 0.0005 mg/L (0 - 7.8 m)	Objectives met
Total Cd <1.0 ug/g av in sediment (long-term)	1st-2nd Narrows: E207818 off Clark Drive CSO	Sept. 10	3	all = 2 ug/g	Objective not met
	E207813 100m off Coal Hbr CSO	Sept. 10	3	<1 - 1 ug/g av < 1 ug/g	Objective met
	False Creek: E207814 100m E Science World	Sept. 10	3	2 - 3 ug/g av = 2.33 ug/g	Objective not met

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cd <1.0 ug/g av in sediment (long-term)	Port Moody Arm	1992	0	no data collected	Omitted 1992
Total Cd <1.0 ug/g av in sediment	Outer Burrard: E207812 off Locarno Park CSO	Sept. 10	3	<1 - 6 ug/g av = 2.67 ug/g	Objective not met
	2nd Narrows-Roche Pt.	1992	0	no data collected	Omitted 1992
Total Cr 0.050 mg/L max	Port Moody Arm	1992	0	no data collected	Omitted 1992
	2nd Narrows-Roche Pt False Creek	1992	0	no data collected	Objective not checked
Total Cr <60 ug/g av in sediment	1st-2nd Narrows: E207818 off Clark Drive CSO	Sept. 10	3	40 - 54 ug/g av = 46 ug/g	Objective met
	E207813 100m off Coal Hbr CSO	Sept. 10	3	13 - 44 ug/g av = 30 ug/g	Objective met
	Outer Burrard: E207812 off Locarno Park CSO	Sept. 10	3	22 - 41 ug/g av = 30.7 ug/g	Objective met
	Port Moody Arm 2nd Narrows-Roche Pt.	1992	0	no data collected	Omitted 1992
Total Cr <60 ug/g av in sediment (long-term)	False Creek: E207814 100m E Science World	Sept. 10	3	26 - 40 ug/g av = 31 ug/g	Objective met
Total Cu <2 ug/L av 3 ug/L max (long-term)	Port Moody Arm: E207698 50 m E Pacific Coast	Aug. 12 - Sep. 7 Aug. 18 Aug. 12 - Sep. 7	10 1 9	0-17m: av = 2.3ug/L 0 m: max = 9 ug/L 0-17m: max = 3 ug/L	Av not met Max not met Max obj. met
	E207823 100m off loco disch.	Aug. 12 - Sep. 7	10	0-12m: av = 1.7ug/L max = 3 ug/L	Objectives met
	Indian Arm 0300080 3 km E of Deep Cove	Aug. 12 - Sep. 7	10	0-26m: av = 1.4 ug/L max = 3 ug/L	Objectives met
	2nd Narrows-Roche Pt: E207822 50m off Shellburn dis	Aug. 12 - Sep. 7 Aug. 25 Aug. 12 - Sep. 7	10 1 9	0-24 m: av = 1.7 ug/L 24 m: max = 6 ug/L 0-24 m: max = 2 ug/L	Av obj met Max not met Max obj. met

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cu <2 ug/L av 3 ug/L max (long-term)	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug. 12 - Sep. 7	10	0-10 m: av = 1.2 ug/L max = 3 ug/L	Objectives met
	E207820 100m S Can-Occ. disch	Aug. 12 - Sep. 7	10	0-15 m: av = 1.4 ug/L max = 3 ug/L	Objectives met
	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug. 12 - Sep. 7	10	0-20 m: av = 1.3 ug/L m: max = 2 ug/L	Objectives met
	E207818 off Clark Drive CSO	Aug. 12 - Sep. 7 Aug. 25, Sep. 2,7 Aug. 12 - Sep. 7	10 3 7	0-12 m: av = 4.8 ug/L 0-11m: max = 7 - 21 ug/L 0-12 m: max = 3 ug/L	Av not met Max not met Max obj. met
	E207816 100-500m E Vn Wharves	Aug. 12 - Sep. 7 Aug. 25, Sep. 2,7 Aug.12,18, Sep.7	10 5 5	0-14 m: av = 3.4 ug/L 0-14 m: max = 4 - 8 ug/L 0-14 m: max = 1 ug/L	Av not met Max not met Max obj. met
	E207813 100m off Coal Hbr CSO	Aug. 12 - Sep. 7 Aug. 25, Sep. 2 Aug. 12 - Sep. 7	10 3 7	0-9m: av = 2.5 ug/L 0-9m: max = 5-6 ug/L 0-9m: max = 2 ug/L	Av not met Max not met Max obj. met
	Outer Burrard: E207812 off Locarno Park CSO	Aug. 12 - Sep. 7 Aug. 25 Aug. 12 - Sep. 7	10 2 8	0-11 m: av = 1.9 ug/L 0-9 m: max = 4 - 5 ug/L 0-11 m: max = 2 ug/L	Av obj. met Max not met Max obj. met
	0300076 English Bay	Aug. 12 - Sep. 7 Aug. 25, Sep.2 Aug. 12 - Sep. 7	10 2 8	0-18 m: av = 1.9 ug/L 0-18 m: max = 4 - 5 ug/L 0-18 m: max = 2 ug/L	Av obj. met Max not met Max obj. met
	False Creek: E207814 100m E Science World	Aug. 12 - Sep. 7 Aug. 25 Aug. 12 - Sep. 7	10 1 9	0-8 m: av = 1.6 ug/L 0 m: max = 4 ug/L 0-8 m: max = 3 ug/L	Av obj. met Max not met Max obj. met
	E207815 at mid-point	Aug. 12 - Sep. 7	10	0-8 m: av = 1.4 ug/L max = 3 ug/L	Objectives met
Total Cu <100 ug/g av in sediment	Port Moody Arm	1992	0	no data collected	Omitted 1992
Total Cu <100 ug/g av in sediment (long-term)	1st-2nd Narrows: E207818 off Clark Drive CSO	Sep. 10	3	372 - 381 ug/g av = 375 ug/g	Objective not met
	E207813 100m off Coal Hbr CSO	Sep. 10	3	82 - 261 ug/g av = 201 ug/g	Objective not met

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cu <100 ug/g av in sediment (long-term)	Outer Burrard: E207812 off Locarno Park CSO	Sep. 10	3	37 - 9550 ug/g av = 3304 ug/g	Objective not met
	False Creek: E207814 100m E Science World	Sep. 10	3	157 - 160 ug/g av = 159 ug/g	Objective not met
Total Fe 0.3 mg/L max (long-term)	Port Moody Arm	1992	0	no data collected	Omitted 1992
	False Creek	1992	0	no data collected	Objective not checked
Total Fe 0.3 mg/L max	Indian Arm 0300080 3 km E of Deep Cove	Sept. 7	2	all < 0.005 mg/L (0 - 25 m)	Objective met
	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Sept. 7	2	<0.005 - 0.013 mg/L (0 - 20 m)	Objective met
	E207818 off Clark Drive CSO	Sept. 7	2	all < 0.005 mg/L (0 - 10.5 m)	Objective met
	E207816 100-500m E Vn Wharves	Sept. 7	2	all < 0.005 mg/L (0 - 14.4 m)	Objective met
	E207813 100m off Coal Hbr CSO	Sept. 7	2	<0.005 - 0.015 mg/L (0 - 8.9 m)	Objective met
	Outer Burrard: E207812 off Locarno Park CSO	Sept. 7	2	0.009 - 0.025 mg/L (0 - 10.5 m)	Objective met
	0300076 English Bay	Sept. 7	2	<0.005 - 0.005 mg/L (0 - 17 m)	Objective met
Total Pb <2 ug/L av (long-term) 140 ug/L max	Port Moody Arm: E207698 50 m E Pacific Coast	Aug. 12 - Sep. 7	10	0-17m: av < 1.0 ug/L max = 1.0 ug/L	Objectives met
	E207823 100m off loco disch.	Aug. 12 - Sep. 7	10	0-12m: av < 1.0 ug/L max < 1.0 ug/L	Objectives met
	Indian Arm 0300080 3 km E of Deep Cove	Aug. 12 - Sep. 7	10	0-25m: av < 1.0 ug/L max < 1.0 ug/L	Objectives met

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Pb <2 ug/L av (long-term) 140 ug/L max	2nd Narrows-Roche Pt: E207822 50m off Shellburn dis	Aug. 12 - Sep. 7	10	0-24 m: av < 1.0 ug/L max = 1.0 ug/L	Objectives met
	E207821 50m off Chevron disch	Aug. 12 - Sep. 7	10	0-10 m: av < 1.0 ug/L max < 1.0 ug/L	Objectives met
	E207820 100m S Can-Occ. disch	Aug. 12 - Sep. 7	10	0-15m: av < 1.0 ug/L max = 1.0 ug/L	Objectives met
	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug. 12 - Sep. 7	10	0-20 m: av = 1.2 ug/L max = 3.0 ug/L	Objectives met
	E207818 off Clark Drive CSO	Aug. 12 - Sep. 7	10	0-12 m: av = 1.8 ug/L max = 7 ug/L	Objectives met
	E207816 100-500m E Vn Wharves	Aug. 12 - Sep. 7	10	0-14 m: av = 1.5 ug/L max = 4.0 ug/L	Objectives met
	E207813 100m off Coal Hbr CSO	Aug. 12 - Sep. 7	10	0-9 m: av = 1.6 ug/L max = 6.0 ug/L	Objectives met
	Outer Burrard: E207812 off Locarno Park CSO	Aug. 12 - Sep. 7	10	0-11 m: av = 1.1 ug/L max = 2.0 ug/L	Objectives met
	0300076 English Bay	Aug. 12 - Sep. 7	10	0-18 m: av < 1.0 ug/L max = 1.0 ug/L	Objectives met
	False Creek: E207814 100m E Science World	Aug. 12 - Sep. 7	10	all < 1.0 ug/L (0 - 8 m)	Objectives met
	E207815 at mid-point	Aug. 12 - Sep. 7	10	0-8 m: av = 1.1 ug/L max = 2.0 ug/L	Objectives met
Total Pb <30 ug/g av in sediment (long-term)	1st-2nd Narrows: E207818 off Clark Drive CSO	Sep. 10	3	181 - 219 ug/g av = 198 ug/g	Objective not met
	E207813 100m off Coal Hbr CSO	Sep. 10	3	41 - 102 ug/g av = 81 ug/g	Objective not met
	Outer Burrard: E207812 off Locarno Park CSO	Sep. 10	3	14 - 1020 ug/g av = 384 ug/g	Objective not met

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Pb <30 ug/g av in sediment (long-term)	False Creek: E207814 100m E Science World	Sep. 10	3	155 - 165 ug/g av = 159 ug/g	Objective not met
	Port Moody Arm 2nd Narrows-Roche Pt.	1992	0	no data collected	Omitted 1992
Total Pb 0.8 ug/g max wet weight in fish tissue	Indian Arm: 0300080 3 km E of Deep Cove	Sep. 11	15	all < 10 ug/g	Indefinite results
	Outer Burrard False Creek	1992	0	no data collected	Objective not checked
	Port Moody Arm 2nd Narrows-Roche Pt. 1st-2nd Narrows	1992	0	no data collected	Omitted 1992
Total Hg <0.02 ug/L av 2.0 ug/L max	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug.12 - Sep. 7	11	all < 0.005 ug/L	Objectives met
	E207818 off Clark Drive CSO	Aug.12 - Sep. 7	11	< 0.005 - 0.009 ug/L av <0.006 ug/L	Objectives met
	E207816 100-500m E Vn Wharves	Aug.12 - Sep. 7	12	< 0.005 - 0.007 ug/L av = 0.005 ug/L	Objectives met
	E207813 100m off Coal Hbr CSO	Aug.12 - Sep. 7	12	< 0.005 - 0.007 ug/L av = 0.005 ug/L	Objectives met
	Outer Burrard: E207812 off Locarno Park CSO	Aug.12 - Sep. 7	12	< 0.005 - 0.007 ug/L av = 0.005 ug/L	Objectives met
	0300076 English Bay	Aug.12 - Sep. 7	12	< 0.005 - 0.009 ug/L av = 0.005 ug/L	Objectives met
	False Creek: E207814 100m E Science World	Aug.12 - Sep. 7	12	< 0.005 - 0.006 ug/L av = 0.005 ug/L	Objectives met
	E207815 at mid-point	Aug.12 - Sep. 7	11	< 0.005 - 0.009 ug/L av = 0.005 ug/L	Objectives met
	2nd Narrows-Roche Pt.	1992	0	no data collected	Omitted 1992
Total Hg 0.5 ug/g max wet weight in fish tissue	Outer Burrard: E207812 off Locarno Park CSO	Sep. 10	2 3	0.892 - 1.010 ug/g 0.079 - 0.094 ug/g	Obj. not met Obj. met

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Hg 0.5 ug/g max wet weight in fish tissue	False Creek: E207814 100m E Science World	Sep. 10	3	0.542 - 0.699 ug/g	Objective not met
	2nd Narrows-Roche Pt. 1st-2nd Narrows	1992	0	no data collected	Omitted 1992
Total Hg <0.15 ug/g av in sediment	Port Moody Arm 2nd Narrows-Roche Pt.	1992	0	no data collected	Omitted 1992
Total Hg <0.15 ug/g av in sediment (long-term)	1st-2nd Narrows: E207818 off Clark Drive CSO	Sep. 10	3	0.968 - 4.03 ug/g av = 2.166 ug/g	Objective not met
	E207816 100-500m E Vn Wharves	Sep. 10	4	0.378 - 0.425 ug/g av = 0.407 ug/g	Objective not met
	E207813 100m off Coal Hbr CSO	Sep. 10	4	0.670 - 1.01 ug/g av = 0.838 ug/g	Objective not met
	Outer Burrard: E207812 off Locarno Park CSO	Sep. 10, Nov. 9	9	0.033 - 0.094 ug/g av = 0.057 ug/g	Objective met
	False Creek: E207814 100m E Science World	Sep. 10	3	0.542 - 0.699 ug/g av = 0.620 ug/g	Objective not met
Total Ni <8 ug/L av 75 ug/L max	2nd Narrows-Roche Pt: E207822 50m off Shellburn dis	Aug. 12 - Sep. 7	10	0 - 24 m: all <10 ug/L	Objectives met
	E207821 50m off Chevron disch	Aug. 12 - Sep. 7	10	0-9m: all <10 ug/L	Objectives met
	E207820 100m S Can-Occ. disch	Aug. 12 - Sep. 7	10	0-15 m: all <10 ug/L	Objectives met
	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug. 12 - Sep. 7	10	0-20 m: all <10 ug/L	Objectives met
	E207818 off Clark Drive CSO	Aug. 12 - Sep. 7	10	0-11.6 m: all <10 ug/L	Objectives met
	E207816 100-500m E Vn Wharves	Aug. 12 - Sep. 7	10	0-14 m: all <10 ug/L	Objectives met
	E207813 100m off Coal Hbr CSO	Aug. 18-Sep. 7	8	0-9 m: all <10 ug/L	Objectives met

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Ni <8 ug/L av 75 ug/L max	False Creek: E207814 100m E Science World	Aug. 12 - Sep. 7	10	0-8 m: all <10 ug/L	Objectives met
	E207815 at mid-point	Aug. 12 - Sep. 7	10	0-8 m: all <10 ug/L	Objectives met
Total Ni <45 ug/g av in sediment	1st-2nd Narrows: E207818 off Clark Drive CSO	Sep. 10	3	38 - 40 ug/g av = 39 ug/g	Objective met
	E207813 100m off Coal Hbr CSO	Sep. 10	3	12 - 34 ug/g av = 26 ug/g	Objective met
	Outer Burrard: E207812 off Locarno Park CSO	Sep. 10	3	32 - 117 ug/g av = 61 ug/g	Objective not met
	False Creek: E207814 100m E Science World	Sep. 10	3	all 33 ug/g	Objective met
	Port Moody Arm 2nd Narrows-Roche Pt	1992	0	no data collected	Omitted 1992
Total Zn <86 ug/L av 95 ug/L max	Port Moody Arm: E207698 50 m E Pacific Coast	Aug. 12 - Sep. 7	10	0-17 m: av = 12.2 ug/L max = 77 ug/L	Objectives met
	E207823 100m off loco disch.	Aug. 12 - Sep. 7 Sep. 2 Aug. 12 - Sep. 7	10 1 9	0-12 m: av = 19 ug/L 0 m: max = 101 ug/L 0-12 m: max = 49 ug/L	Av obj met Max not met Max obj. met
	Indian Arm 0300080 3 km E of Deep Cove	Aug. 12 - Sep. 7 Sep. 2 Aug. 12 - Sep. 7	10 1 9	0-26 m: av =16.6 ug/L 25 m: max = 99 ug/L 0-25 m: max = 27 ug/L	Av obj met Max not met Max obj. met
	2nd Narrows-Roche Pt: E207822 50m off Shellburn dis	Aug. 12 - Sep. 7	10	0-24 m: av = 13.3 ug/L max = 88 ug/L	Objectives met
	E207821 50m off Chevron disch	Aug. 12 - Sep. 7 Aug. 25 Aug. 12 - Sep. 7	10 1 9	0-9 m: av = 33 ug/L 0 m: max = 97 ug/L 0-9 m: max = 92 ug/L	Av obj met Max not met Max obj. met
	E207820 100m S Can-Occ. disch	Aug. 12 - Sep. 7	10	0-15 m: av = 16 ug/L max = 70 ug/L	Objectives met
	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug. 12 - Sep. 7	10	0-20 m: av = 7 ug/L max = 30 ug/L	Objectives met
	E207818 off Clark Drive CSO	Aug. 12 - Sep. 7 Sep. 2 Aug. 12 - Sep. 7	10 1 9	0-12 m: av = 23 ug/L 10.5 m: max = 144 ug/L 0-12 m: max = 43 ug/L	Av obj met Max not met Max obj. met

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Zn <86 ug/L av 95 ug/L max	1st-2nd Narrows E207816 100-500m E Vn Wharves	Aug. 12 - Sep. 7 2-Sep Aug. 12 - Sep. 7	10 1 9	0-14 m: av = 18 ug/L 14.4 m: max = 135 ug/L 0-14 m: max < 5 ug/L	Av obj met Max not met Max obj. met
	E207813 100m off Coal Hbr CSO	Aug. 12 - Sep. 7	10	0-9 m: av = 9.8 ug/L max = 53 ug/L	Objectives met
	Outer Burrard: E207812 off Locarno Park CSO	Aug. 12 - Sep. 7	10	0-11 m: av = 11.5 ug/L max = 41 ug/L	Objectives met
	0300076 English Bay	Aug. 12 - Sep. 7	10	0-18 m: av = 11.5 ug/L max = 57 ug/L	Objectives met
	False Creek: E207814 100m E Science World	Aug. 10 - Sep. 7	10	0-8 m: av = 8.7 ug/L max = 42 ug/L	Objectives met
	E207815 at mid-point	Aug. 10 - Sep. 7	10	0-8 m: av = 12.2 ug/L max = 43 ug/L	Objectives met
Total Zn <150 ug/g av in sediment	1st-2nd Narrows: E207818 off Clark Drive CSO	Sep. 10	3	312 - 324 ug/g av = 318 ug/g	Objective not met
	E207813 100m off Coal Hbr CSO	Sep. 10	3	87 - 188 ug/g av = 154 ug/g	Objective not met
	Outer Burrard: E207812 off Locarno Park CSO	Sep. 10	3	76 - 1430 ug/g av = 570 ug/g	Objective not met
	False Creek: E207814 100m E Science World	Sep. 10	3	359 - 379 ug/g av = 367 ug/g	Objective not met
Total Zn <150 ug/g av in sediment	Port Moody Arm 2nd Narrows-Roche Pt. E207822	1992	0	no data collected	Omitted 1992
Chlorophenols (tri + tetra + penta) 0.2 ug/L max in water <0.1 ug/g av in sediment 0.1 ug/g max wet weight in fish	1st-2nd Narrows	1992	0	no data collected	Omitted 1992

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PCBs <0.03 ug/g av in sediment	1st-2nd Narrows: E207818 off Clark Drive CSO	Sep. 10	3	<0.02 - 0.06 ug/g av = 0.04 ug/g	Objective not met
	E207813 100m off Coal Hbr CSO	Sep. 10	3	all <0.02 ug/g	Objective met
	Outer Burrard: E207812 off Locarno Park CSO	Sep. 10	3	all < 0.02 ug/g	Objective met
	False Creek: E207814 100m E Science World	Sep. 10	3	0.06 - 0.08 ug/g av = 0.07 ug/g	Objective not met
	Port Moody Arm 2nd Narrows-Roche Pt.	1992	0	no data collected	Omitted 1992
PCBs 0.5 ug/g max wet weight in fish	Outer Burrard False Creek off Locarno Park CSO	1992	0	no data collected	Objective not checked
	Port Moody Arm 2nd Narrows-Roche Pt. 1st-2nd Narrows	1992	0	no data collected	Omitted 1992
TBT 10 ng/L	Indian Arm 0300080 3 km E of Deep Cove	Sep. 7	1	0 m: < 500 ng/L	Indefinite result
	1st-2nd Narrows E216035 Coal Harbour Marina	Sep. 7	2	0-5.3 m: < 500ng/L	Indefinite results
	Port Moody Arm Outer Burrard	1992	0	no data collected	Omitted 1992
	False Creek	1992	0	no data collected	Objective not checked
Ethylene Dichloride <0.2 mg/L av 2.0 mg/L max	1st-2nd Narrows	1992	0	no data collected	Omitted 1992
Phenols 1 ug/L max	2nd Narrows-Roche Pt: E207822 50m off Shellburn dis	Sep. 7	2	0-17 m: < 2 ug/L	Objective met
	E207821 50m off Chevron disch	Sep. 7	1 1	0 m: 2 ug/L 9 m: < 2 ug/L	Obj. not met Obj. met

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Phenols 1 ug/L	2nd Narrows-Roche Pt E207820 100m S Can-Occ. disch	Sep. 7	1 1	0 m: < 2 ug/L 14 m: 4 ug/L	Obj. met Obj. not met
	Port Moody Arm:	1992	0	no data collected	Omitted 1992
Styrene 0.05 mg/L max	Port Moody Arm	1992	0	no data collected	Objective not checked
L-PAH in sediment: (max) naphthy 0.20 ug/g acenphyl 0.06 ug/g acenaphe 0.05 ug/g fluor 0.05 ug/g phenant 0.15 ug/g anthrac 0.10 ug/g total 0.5 ug/g (long-term)	Port Moody Arm: E207823 100m Off loco disch.	Sep. 10 (3 reps)	 3 3 3 3 3 3	av of 3 replicates: naphthy: 0.107 ug/g acenphyl: 0.082 ug/g acenaphe: 0.040 ug/g fluor: 0.130 ug/g phenant: 0.56 ug/g anthrac: 0.47 ug/g total: 1.389 ug/g	 Obj. met Obj. not met Obj. met Obj. not met Obj. not met Obj. not met Obj. not met
	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Sep. 10 (3 reps)	 3 3 3 3 3 3	av of 3 replicates: naphthy: 0.009 ug/g acenphyl: 0.030 ug/g acenaphe: 0.044 ug/g fluor: 0.055 ug/g phenant: 0.41 ug/g anthrac: 0.136 ug/g total: 0.684 ug/g	 Obj. met Obj. met Obj. met Obj. not met Obj. not met Obj. not met Obj. not met
	1st-2nd Narrows: E207818 off Clark Drive CSO	Sep. 10 (3 reps)	 3 3 3 3 3 3	av of 3 replicates: naphthy: 0.077 ug/g acenphyl: 0.056 ug/g acenaphe: 0.065 ug/g fluor: 0.104 ug/g phenant: 0.92 ug/g anthrac: 0.33 ug/g total: 1.552 ug/g	 Obj. met Obj. met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met
	E207813 100m off Coal Hbr CSO	Sep. 10 (3 reps)	 3 3 3 3 3 3	av of 3 replicates: naphthy: 0.022 ug/g acenphyl: 0.018 ug/g acenaphe: 0.138 ug/g fluor: 0.187 ug/g phenant: 1.30 ug/g anthrac: 0.315 ug/g total: 1.98 ug/g	 Obj. met Obj. met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met
	Outer Burrard: E207812 off Locarno Park CSO	Sep. 10 (3 reps)	 3 3 3 3 3 3	av of 3 replicates: naphthy: 0.034 ug/g acenphyl: 0.037 ug/g acenaphe: 0.016 ug/g fluor: 0.019 ug/g phenant: 0.088 ug/g anthrac: 0.029 ug/g total: 0.223 ug/g	 Obj. met Obj. met Obj. met Obj. met Obj. met Obj. met Obj. met

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
L-PAH in sediment (max) naphthy 0.20 ug/g acenphyl 0.06 ug/g acenaphe 0.05 ug/g fluor 0.05 ug/g phenant 0.15 ug/g anthrac 0.10 ug/g total 0.5 ug/g (long-term)	False Creek: E207814 100m E Science World	Sep. 10 (3 reps)	 3 3 3 3 3 3	av of 3 replicates: naphthy: 0.24 ug/g acenphyl: 0.23 ug/g acenaphe: 0.068 ug/g fluor: 0.109 ug/g phenant: 0.68 ug/g anthrac: 0.37 ug/g total: 1.697 ug/g	 Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met
H-PAH in sediment: (max) fluorant 0.17 ug/g pyrene 0.26 ug/g bz-a-an 0.13 ug/g chrysene 0.14 ug/g bz-a-fl 0.14 ug/g bz-a-py 0.32 ug/g ind-pyr 0.06 ug/g dibz-an 0.06 ug/g bz-pery 0.07 ug/g total 1.2 ug/g (long-term)	Port Moody Arm: E207823 100m Off loco disch.	Sep. 10 (3 reps)	 3 3 3 3 3 3 3 3 3 3	av of 3 replicates: fluorant: 1.78 ug/g pyrene: 2.9 ug/g bz-a-an: 1.43 ug/g chrysene: 2.1 ug/g bz-a-fl: 2.37 ug/g bz-a-py: 0.73 ug/g ind-pyr: 0.43 ug/g dibz-an: 0.13 ug/g bz-pery: 0.34 ug/g total: 12.21 ug/g	 Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met
	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Sep. 10 (3 reps)	 3 3 3 3 3 3 3 3 3 3	av of 3 replicates: fluorant: 0.85 ug/g pyrene: 0.73 ug/g bz-a-an: 0.31 ug/g chrysene: 0.46 ug/g bz-a-fl: 0.53 ug/g bz-a-py: 0.52 ug/g ind-pyr: 0.18 ug/g dibz-an: 0.103 ug/g bz-pery: 0.256 ug/g total: 3.63 ug/g	 Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met
	1st-2nd Narrows: E207818 50m off Chevron disch	Sep. 10 (3 reps)	 3 3 3 3 3 3 3 3 3 3	av of 3 replicates: fluorant: 2.0 ug/g pyrene: 1.8 ug/g bz-a-an: 0.75 ug/g chrysene: 0.97 ug/g bz-a-fl: 1.5 ug/g bz-a-py: 0.80 ug/g ind-pyr: 0.6 ug/g dibz-an: 0.101 ug/g bz-pery: 0.557 ug/g total: 9.08 ug/g	 Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met

TABLE 31 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
H-PAH in sediment (max) fluorant 0.17 ug/g pyrene 0.26 ug/g bz-a-an 0.13 ug/g chrysene 0.14 ug/g bz-a-fl 0.14 ug/g bz-a-py 0.32 ug/g ind-pyr 0.06 ug/g dibz-an 0.06 ug/g bz-pery 0.07 ug/g total 1.2 ug/g (long-term)	1st-2nd Narrows: E207813 100m off Coal Hbr CSO	Sep. 10 (3 reps)		av of 3 replicates:	
			3	fluorant: 1.029 ug/g	Obj. not met
			3	pyrene: 1.383 ug/g	Obj. not met
			3	bz-a-an: 0.635 ug/g	Obj. not met
			3	chrysene: 0.645 ug/g	Obj. not met
			3	bz-a-fl: 0.852 ug/g	Obj. not met
			3	bz-a-py: 0.636 ug/g	Obj. not met
			3	ind-pyr: 0.363 ug/g	Obj. not met
			3	dibz-an: 0.141 ug/g	Obj. not met
			3	bz-pery: 0.337 ug/g	Obj. not met
				total: 6.02 ug/g	Obj. not met
	Outer Burrard: E207812 off Locarno Park CSO	Sep. 10 (3 reps)		av of 3 replicates:	
			3	fluorant: 0.21 ug/g	Obj. not met
			3	pyrene: 0.25 ug/g	Obj. met
			3	bz-a-an: 0.14 ug/g	Obj. not met
			3	chrysene: 0.16 ug/g	Obj. not met
			3	bz-a-fl: 0.22 ug/g	Obj. not met
			3	bz-a-py: 0.149 ug/g	Obj. met
			3	ind-pyr: 0.109 ug/g	Obj. not met
			3	dibz-an: 0.026 ug/g	Obj. met
			3	bz-pery: 0.100 ug/g	Obj. not met
				total: 1.364 ug/g	Obj. not met
	False Creek: E207814 100m E Science World			av of 3 replicates:	
			3	fluorant: 1.3 ug/g	Obj. not met
			3	pyrene: 1.87 ug/g	Obj. not met
			3	bz-a-an: 0.90 ug/g	Obj. not met
			3	chrysene: 0.96 ug/g	Obj. not met
			3	bz-a-fl: 1.67 ug/g	Obj. not met
			3	bz-a-py: 1.11 ug/g	Obj. not met
			3	ind-pyr: 0.68 ug/g	Obj. not met
			3	dibz-an: 0.14 ug/g	Obj. not met
			3	bz-pery: 0.64 ug/g	Obj. not met
				total: 9.27 ug/g	Obj. not met

TABLE 32

BURRARD INLET TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <200 /100 mL geometric mean (gm)	Lynn Creek: 0300085 2 km from mouth	Jul. 6 - Aug. 4	5	44 - 740/100 mL gm = 137/100 mL	Objective met
	Capilano River: 0300083 near mouth	Jul. 6 - Aug. 4	5	21 - 121/100 mL gm = 47/100 mL	Objective met
E. Coli <77/100 mL geometric mean (gm)	Lynn Creek Capilano River	1992	0	no data collected	Omitted 1992
Enterococci < 20/100 mL geometric mean (gm)	Lynn Creek Capilano River	1992	0	no data collected	Omitted 1992
Ammonia-N <1.84 mg/L av 20.5 mg/L max at pH = 7.0 temp = 10 C	Lynn Creek: 0300085 2 km from mouth	Jul. 6 - Aug. 4	5	av = 0.055 mg/L max = 0.089 mg/L	Objectives met
	Capilano River: 0300083 near mouth	Jul. 6 - Aug. 4	5	av = 0.006 mg/L max = 0.007 mg/L	Objectives met
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Lynn Creek: 0300085 2 km from mouth	Jul. 6 - Aug. 4	5	av = 0.005 mg/L max = 0.007 mg/L	Objectives met
	Capilano River: 0300083 near mouth	Jul. 6 - Aug. 4	5	av = 0.007 mg/L max = 0.010 mg/L	Objectives met
Chlorophyll-a 50 mg/m2 max	Capilano River 0300083 near mouth	Sep. 14	4	0.7 - <1.3 mg/m2	Objective met
	Lynn Creek	1992	0	no data collected	Objective not checked
Diss. Oxygen 8-11 mg/L min	Lynn Creek: 0300085 2 km from mouth	Jul. 13 - Aug. 4	4	9.5 - 10 mg/L	Objective met
	Capilano River: 0300083 near mouth	Jul. 13 - Aug. 4	4	8.9 - 9.8 mg/L	Objective met

TABLE 32 continued

BURRARD INLET TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Phenols 1 ug/L max	Lynn Creek Capilano River School House Brook	1992	0	no data collected	Objective not checked
Temperature max increase: 1 C	School House Brook: u/s site	1992	0	no data collected	Control site
	School House Brook: E207825	Jul. 13 - Aug. 4	4	15.6 - 17.5 C	Indef. result (no control)
pH 6.5 - 9.0	School house Brook	1992	0	no data collected	Objective not checked
Total Cd 0.2 ug/L max	Lynn Creek Capilano River	1992	0	no data collected	Objective not checked
Total Cr 2 ug/L max	Lynn Creek Capilano River	1992	0	no data collected	Objective not checked
	School House Brook	1992	0	no data collected	Omitted 1992
Total Co 50 ug/L max	Lynn Creek Capilano River	1992	0	no data collected	Objective not checked
Total Cu <2 ug/L av 3 ug/L max (assume hard.= 10 mg/L)	School House Brook	1992	0	no data collected	Objectives not checked
	Lynn Creek: 0300085 2 km from mouth	Jul. 6 - Aug. 4	5	all < 1 ug/L	Objectives met
	Capilano River: 0300083 near mouth	Jul. 6 - Aug. 4	5	all < 1 ug/L	Objectives met
Total Fe 0.3 mg/L max	School House Brook Lynn Creek Capilano River	1992	0	no data collected	Objective not checked
Total Pb <3.5 ug/L av 4.3 ug/L max (assume hard.= 10 mg/L)	School House Brook	1992	0	no data collected	Objectives not checked

TABLE 32 continued

BURRARD INLET TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Hg 0.02 ug/L av 0.1 ug/L max (long term for Lynn Creek)	Lynn Creek: 0300085 2 km from mouth	Jul. 6 - Aug. 4	6	all < 0.005 ug/L	Objectives met
	Capilano River: 0300083 near mouth	Jul. 6 - Aug. 4	9	all < 0.005 ug/L	Objectives met
Total Hg 0.5 ug/g max wet weight in fish	Lynn Creek Capilano River	1992	0	no data collected	Omitted 1992
Total Zn 0.015 mg/L max	School House Brook Lynn Creek Capilano River	1992	0	no data collected	Objective not checked
Chlorophenols 0.2 ug/L max	Lynn Creek Capilano River	1992	0	no data collected	Objective not checked
Chlorophenols 0.01 ug/g max in sediment	Lynn Creek Capilano River	1992	0	no data collected	Objective not checked
Chlorophenols 0.1 ug/g max wet wt in fish	Lynn Creek Capilano River	1992	0	no data collected	Omitted 1992
PCBs 1 ng/L max	Lynn Creek Capilano River	1992	0	no data collected	Objective not checked
PCBs 0.03 ug/g max in sediment	Lynn Creek Capilano River	1992	0	no data collected	Objective not checked
PCBs 0.1 ug/g max wet wt in fish	Lynn Creek Capilano River	1992	0	no data collected	Omitted 1992

TABLE 33

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms 200/100 mL max (short-term) <100/100 mL 90th perc (np) (long-term)	Kanaka Creek: 0300025 112 Ave (mid-length)	Oct. 6,13,20,26 Nov. 2	5	30 - 200/100 mL np = 140/100 mL	Max obj. met np not met
	0300024 near mouth	Oct 6 - Nov 2 Oct. 20, Nov. 2 Oct. 6,13,26	5 2 3	59 - 580/100 mL np = 447/100 mL 315 - 580/100 mL 59 - 106/100 mL	np not met Max not met Max obj. met
	Pitt River: E216028 u/s Alouette River	1992	0	no data collected	Omitted 1992
	0300012 near mouth	Jul. 6,13,21,26 Aug. 4	5	13 - 48/100 mL np = 44/100 mL	Objectives met
	Alouette River: 0300015 232 St (u/s Haney)	Jul 6 - Aug 4 Jul. 6,21, Aug. 4 Jul. 13, 26	5 3 2	87 - 910/100 mL np = 622/100 mL 216 - 910/100 mL 87 - 120/100 mL	np not met Max not met Max obj. met
	0300014 208 St (d/s Haney)	Jul 6 - Aug 4 Jul. 6,21, Aug. 4 Jul. 13,26	5 3 2	79 - 9650/100 mL np = 5187/100 mL 705 - 9650/100 mL 79 - 99/100 mL	np not met Max not met Max obj. met
Fecal Coliforms <10/100 mL 90th perc. (np)	Pitt Lake 0300013 near outlet	Jul. 6,13,21,26 Aug. 4	5	1 - 5/100 mL np = 3/100 mL	Objective met
	Alouette Lake 0300016 near outlet	Jul. 13,21,26 Aug. 4	4	<2 - 2/100 mL	Indefinite result
	Or Creek 1189002 near mouth	Oct. 6,13,20,26 Nov. 2	5	1 - 37/100 mL np = 19/100 mL	Objective not met
Fecal Coliforms <100/100 mL 90th perc. (np)	North Alouette River: 0300018 u/s Haney	Jul. 13, 26	2	44 - 240/100 mL	Indefinite result
	0300017 near mouth	Jul. 6,13,21,26 Aug. 4	5	17 - 146/100 mL np = 117/100 mL	Objective not met
	Coquitlam River 0300011 u/s Coquitlam R. Park	Oct. 6,13,20,26	4	6 - 76/100 mL	Indefinite result

TABLE 33 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <200/100 mL geometric mean (gm)	Hoy Creek E216030 near mouth	Oct. 6,13,20,26 Nov. 2	5	18 - 385/100 mL gm = 108/100 mL	Objective met
	Scott Creek 1189007 d/s Hoy Creek	Oct. 6,13,20,26 Nov. 2	5	28 - 970/100 mL gm = 258/100 mL	Objective not met
	Coquitlam River 0300010 near mouth	Oct. 6,13,20,26 Nov. 2	5	40 - 590/100 mL gm = 143/100 mL	Objective met
Fecal Coliforms <200/100 mL geometric mean (gm) <400/100 mL 90th perc (np)	Burnaby Lake 0300009 near outlet	Jul. 6,13,21,26	4	400 - 3150/100 mL	Indefinite results
	Deer Lake E216032 at mid-lake	Jul. 6,13,21,26 Aug. 4	5	28 - 760/100 mL gm = 147/100 mL np = 497/100 mL	gm obj. met np not met
E. Coli 200/100 mL max (short-term) <100/100 mL 90th perc (np) (long-term)	Kanaka Creek: 0300025 112 Ave (mid-length)	Oct. 6,13,20,26 Nov. 2	5	32 - 152/100 mL np = 116/100 mL	Max obj. met np not met
	0300024 near mouth	Oct 6 - Nov 2 Oct. 20, Nov. 2 Oct. 6,13,26	5 2 3	53 - 580/100 mL np = 417/100 mL 255 - 580/100 mL 53 - 106/100 mL	np not met Max not met Max obj. met
E. Coli <77/100 mL geometric mean (gm) (short-term) <100/100 mL 90th perc. (np) (long-term)	Pitt River: E216028 u/s Alouette River	Jul. 6,13,21,26 Aug. 4	5	gm = 46/100 mL np = 128/100 mL	gm obj. met np not met
	0300012 near mouth	Jul. 6,13,21,26 Aug. 4	5	gm = 26/100 mL np = 42/100 mL	Objectives met
	Alouette River: 0300015 232 St (u/s Haney)	Jul. 6,13,21,26 Aug. 4	5	gm = 210/100 mL np = 630/100 mL	Objectives not met
	0300014 208 St (d/s Haney)	Jul. 6,13,26 Aug. 4	4	64 - 685/100 mL	Indefinite results
E. Coli <10/100 mL 90th perc (np)	Pitt Lake 0300013 near outlet	Jul. 6,13,21,26 Aug. 4	5	1 - 2/100 mL np = 2	Objective met

TABLE 33 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
E. Coli <10/100 mL 90th perc. (np)	Alouette Lake 0300016 near outlet	Jul. 13,21,26 Aug. 4	4	all < 2/100 mL	Indefinite result
	Or Creek 1189002 near mouth	Oct. 6,13,20,26 Nov. 2	5	1 - 20/100 mL np = 11/100 mL	Objective not met
E. Coli <100/100 mL 90th perc. (np)	North Alouette River: 0300018 u/s Haney	Jul. 13, 26	2	46 - 259/100 mL	Indefinite result
	0300017 near mouth	Jul. 6,13,26 Aug. 4	4	16 - 77/100 mL	Indefinite result
	Coquitlam River 0300011 u/s Coquitlam R. Park	Oct. 6,13,20,26	4	4 - 70/100 mL	Indefinite result
E. Coli <77/100 mL geometric mean (gm)	Hoy Creek E216030 near mouth	Oct. 6,13,20,26 Nov. 2	5	6 - 380/100 mL gm = 72/100 mL	Objective met
	Scott Creek 1189007 d/s Hoy Creek	Oct. 6,13,20,26 Nov. 2	5	16 - 810/100 mL gm = 190/100 mL	Objective not met
	Coquitlam River 0300010 near mouth	Oct. 6,13,20,26 Nov. 2	5	29 - 600/100 mL gm = 134/100 mL	Objective not met
E. Coli <77/100 mL geometric mean (gm) (long-term)	Burnaby Lake 0300009 near outlet	Jul. 13,21,26 Aug. 4	4	260 - 3350/100 mL	Indefinite result
	Deer Lake E216032 at mid-lake	Jul. 6,13,21,26 Aug. 4	5	21 - 675/100 mL gm = 121/100 mL	Objective not met
Enterococci 50/100 mL max (short-term) <25/100 mL 90th perc (np) (long-term)	Kanaka Creek: 0300025 112 Ave (mid-length)	Oct 6 - Nov 2 Oct. 13,20, Nov. 2 Oct. 6,26	5 3 2	30 - 215/100 mL np = 207/100 mL 140 - 215/100 mL 30 - 41/100 mL	 np not met Max not met Max obj. met
	0300024 near mouth	Oct 6 - Nov 2 Oct. 20,26, Nov. 2 Oct. 6,13	5 3 2	32 - 590/100 mL np = 427/100 mL 120 - 590/100 mL 32 - 34/100 mL	 np not met Max not met Max obj. met

TABLE 33 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Enterococci <200/100 mL geometric mean (gm) (short-term) <25/100 mL 90th perc (np) (long-term)	Pitt River: E216028 u/s Alouette River	Jul. 6,13,21,26 Aug. 4	5	gm = 11/100 mL np = 17/100 mL	Objectives met
	0300012 near mouth	Oct. 6,13,20,26 Nov. 2	5	gm = 13/100 mL np = 28/100 mL	gm obj. met np not met
	Alouette River: 0300015 232 St (u/s Haney)	Jul. 6,13,21,26 Aug. 4	5	gm = 114/100 mL np = 465/100 mL	gm obj. met np not met
	0300014 208 St (d/s Haney)	Jul. 6,13,21,26 Aug. 4	5	gm = 105/100 mL np = 757/100 mL	gm obj. met np not met
Enterococci <3/100 mL 90th perc (np)	Pitt Lake 0300013 near outlet	Jul. 6,13,21,26 Aug. 4	5	1 - < 2/100 mL np < 2/100 mL	Objective met
	Alouette Lake 0300016 near outlet	Jul. 13,21,26 Aug. 4	4	1 - <2/100 mL	Indefinite result
Enterococci <25/100 mL 90th perc. (np)	North Alouette River: 0300018 u/s Haney	Jul. 13 , 26	2	69 - 520/100 mL	Indefinite result
	0300017 near mouth	Jul. 6,13,21,26 Aug. 4	5	3 - 98/100 mL np = 55/100 mL	Objective not met
	Or Creek 1189002 near mouth	Oct. 6,13,20,26	4	2 - 118/100 mL	Indefinite result
	Coquitlam River 0300011 u/s Coquitlam R. Park	Oct. 6,13,20,26	4	7 - 2100/100 mL	Indefinite result
Enterococci <20/100 mL geometric mean (gm)	Hoy Creek E216030 near mouth	Oct. 6,13,20,26 Nov. 2	5	28 - 1800/100 mL gm = 142/100 mL	Objective not met
	Scott Creek 1189007 d/s Hoy Creek	Oct. 6,13,20,26 Nov. 2	5	70 - 4270/100 mL gm = 540/100 mL	Objective not met
	Coquitlam River 0300010 near mouth	Oct. 6,13,20,26 Nov. 2	5	68 - 1600/100 mL gm = 246/100 mL	Objective not met

TABLE 33 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Enterococci <20/100 mL geometric mean (gm) (long-term)	Burnaby Lake 0300009 near outlet	Jul. 6,13,21,26 Aug. 4	5	127 - 5500/100 mL gm = 469/100 mL	Objective not met
	Deer Lake E216032 at mid-lake	Jul. 6,13,21,26 Aug. 4	5	3 - 116/100 mL gm = 30/100 mL	Objective not met
Pseudomonas aeruginosa <2/100 mL 75th perc.	Coquitlam R. d/s Park 0300011	Oct. 6,13,20,26	4	<2 - 2/100 mL	Indefinite result
	Scott Creek 1189007 d/s Hoy Creek	Oct. 6,13,20,26 Nov. 2	5	<2 - 150/100mL 75th perc. = 27/100 mL	Objective not met
	Hoy Creek E216030	Oct. 6,13,20,26 Nov. 2	5	<2 - 195/100 mL 75th perc. = 31/100 mL	Objective not met
	Burnaby Lake 0300009 near outlet	Jul. 6,13,21,26 Aug. 4	5	<2 - 415/100 mL 75th perc. = 16/100 mL	Objective not met
	Deer Lake E216032	Jul. 6,13,21,26 Aug. 4	5	<2 - 19/100 mL 75th perc. = <2/100 mL	Objective met
Suspended Solids max increase: 10 mg/L	Kanaka Creek: 0300025 112 Ave (mid-length)	Oct. 20	1	39 mg/L	Control site
	0300024 near mouth	Oct. 20	1	47 mg/L inc. = 8 mg/L	Objective met
	Pitt River Alouette River North Alouette River	1992	0	no data collected	Objective not checked
	Coquitlam River: 0300011 u/s Coquitlam R. Park	Oct. 20	1	30 mg/L	Control site
	0300010 near mouth	Oct. 20	1	19 mg/L	Objective met
	Or Creek 1189002 near mouth	Oct. 20	1	10 mg/L	Indefinite result (no control)

TABLE 33 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Suspended Solids max increase: 10 mg/L or 10%	Scott Creek 1189007 d/s Hoy Creek	Oct. 20	1	41 mg/L	Indefinite result (no control)
	Hoy Creek E216030 near mouth	Oct. 20	1	35 mg/L	Indefinite result (no control)
	Still Creek 0300008 near Burnaby L. inlet	Oct. 20	1	85 mg/L	Indefinite result (no control)
	Burnaby Lake 0300009 near outlet	Oct. 20	1	12 mg/L	Indefinite result (no control)
	Brunette River 0300111 near mouth	Oct. 20	1	87 mg/L	Indefinite result (no control)
	Deer Lake E216032 at mid-lake	Oct. 20	1	34 mg/L	Indefinite result (no control)
	Pitt Lake Alouette Lake	1992	0	no data collected	Objective not checked
Turbidity max increase: 1NTU, u/s <5 5NTU, u/s <50 or 10%	Kanaka Creek: 0300025 112 Ave (mid-length)	Oct. 20	1	1.6 NTU	Control site
	0300024 near mouth	Oct. 20	1	inc. = 5.4 NTU	Objective not met
	Pitt River Alouette River North Alouette River Alouette Lake	1992	0	no data collected	Objective not checked
	Coquitlam River: 0300011 u/s Coquitlam R. Park	Oct. 20	1	19 mg/L	Control site
	0300010 near mouth	Oct. 20	1	7.1 NTU	Objective met
	Or Creek 1189002 near mouth	Oct. 20	1	1.9 NTU	Indef result (no control)

TABLE 33 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Turbidity max increase: 1NTU, u/s <5 5NTU, u/s <50 or 10%	Scott Creek 1189007 d/s Hoy Creek	Oct. 20	1	18 NTU	Indef result (no control)
	Hoy Creek E216030 near mouth	Oct. 20	1	26 NTU	Indef result (no control)
	Still Creek 0300008 near Burnaby L. inlet	Oct. 20	1	19 NTU	Indef result (no control)
	Deer Lake E216032 at mid-lake	Oct. 20	1	14 mg/L	Indef result (no control)
Substrate Sedimentation 10% max increase in weight of particles <3 mm dia	Kanaka Creek: 0300025 112 Ave (mid-length)	Nov. 25	5	<3 mm: 10.0 kg	Control site
	0300024 near mouth	Nov. 25	5	<3 mm: 11.8 kg	Objective not met
	Coquitlam River: 0300019 d/s Or Creek	Nov. 2	2	<3 mm: 3.7 kg	Control site
	0300011 u/s Coquitlam R. Park	Nov. 2	1	<3 mm: 0.6 kg	Objective met
	Brunette River Pitt River Alouette River North Alouette River Or Creek Scott Creek Hoy Creek Pitt Lake Alouette Lake	1992	0	no data collected	Objective not checked
Ammonia-N <1.79 mg/L av 9.31 mg/L max at pH = 7.7 temp = 15 C	Kanaka Creek: 0300025 112 Ave (mid-length)	Oct. 6,13,20,26 Nov. 2	5	av = 0.007 mg/L max = 0.011 mg/L	Objectives met
	0300024 near mouth	Oct. 6,13,20,26 Nov. 2	5	av = 0.024 mg/L max = 0.036 mg/L	Objectives met
	Pitt River E216028 u/s Alouette River	Jul. 6,13,21,26 Aug. 4	5	av = 0.006 mg/L max = 0.009 mg/L	Objectives met

TABLE 33 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <1.79 mg/L av 9.31 mg/L max at pH = 7.7 temp = 15 C	Pitt River 0300012 near mouth	Jul. 6,13,21,26 Aug. 4	5	av = 0.005 mg/L max = 0.006 mg/L	Objectives met
	Alouette River: 0300015 232 St (u/s Haney)	Jul. 6,13,21,26 Aug. 4	5	av = 0.009 mg/L max = 0.012 mg/L	Objectives met
	0300014 208 St (d/s Haney)	Jul. 6,13,21,26 Aug. 4	5	av = 0.023 mg/L max = 0.035 mg/L	Objectives met
	North Alouette River: 0300018 u/s Haney	Jul. 26	1	0.006 mg/L	Max Obj. met
	0300017 near mouth	Jul. 6,13,21,26 Aug. 4	5	av = 0.009 mg/L max = 0.021 mg/L	Objectives met
	Coquitlam River: 0300011 u/s Coquitlam R. Park	Oct 6,13,20,26	4	<0.005 - 0.012 mg/L	Max obj. met
	0300010 near mouth	Oct. 6,13,20,26 Nov. 2	5	av = 0.024 mg/L max = 0.032 mg/L	Objectives met
	Or Creek 1189002 near mouth	Oct. 6,13,20,26 Nov. 2	5	av = 0.005 mg/L max = 0.007 mg/L	Objectives met
	Scott Creek 1189007 d/s Hoy Creek	Oct. 6,13,20,26 Nov. 2	5	av = 0.025 mg/L max = 0.051 mg/L	Objectives met
	Hoy Creek E216030 near mouth	Oct. 6,13,20,26 Nov. 2	5	av = 0.018 mg/L max = 0.030 mg/L	Objectives met
	Still Creek 0300008 near Burnaby L. inlet	Oct. 6,13,20,26 Nov. 2	5	av = 0.137 mg/L max = 0.285 mg/L	Objectives met
	Burnaby Lake 0300009 near outlet	Oct. 6,20,26, Nov. 3	4	0.053 - 0.286 mg/L	Max obj. met av not checked
	Brunette River 0300111 near mouth	Oct. 6,13,20,26 Nov. 2	5	av = 0.086 mg/L max = 0.179 mg/L	Objectives met
	Pitt Lake 0300013 near outlet	Jul. 6,13,21,26 Aug. 4	5	av = 0.006 mg/L max = 0.010 mg/L	Objectives met

TABLE 33 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <1.79 mg/L av 9.31 mg/L max at pH = 7.7 temp = 15 C	Alouette Lake 0300016 near outlet	Jul. 13,21,26 Aug. 4	4	<0.005 - 0.006 mg/L	Max obj. met av not checked
	Deer Lake E216032 at mid-lake	Oct. 6,13,20,26 Nov. 2	5	av = 0.081 mg/L max = 0.164 mg/L	Objectives met
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Kanaka Creek: 0300025 112 Ave (mid-length)	Oct. 6,13,20,26 Nov. 2	5	av = 0.005 mg/L max = 0.007 mg/L	Objectives met
	0300024 near mouth	Oct. 6,13,20,26 Nov. 2	5	all < 0.005 mg/L	Objectives met
	Pitt River E216028 u/s Alouette River	Jul. 6,13,21,26 Aug. 4	5	av = 0.005 mg/L max = 0.006 mg/L	Objectives met
	0300012 near mouth	Jul. 6,13,21,26 Aug. 4	5	all < 0.005 mg/L	Objectives met
	Alouette River: 0300015 232 St (u/s Haney)	Jul. 6,13,21,26 Aug. 4	5	all < 0.005 mg/L	Objectives met
	0300014 208 St (d/s Haney)	Jul. 6,13,21,26 Aug. 4	5	av = 0.006 mg/L max = 0.012 mg/L	Objectives met
	North Alouette River: 0300018 u/s Haney	Jul. 26	1	0.006 mg/L	Max obj. met Av not chked.
	0300017 near mouth	Jul. 6,13,21,26 Aug. 4	5	all < 0.005 mg/L	Objectives met
	Coquitlam River 0300011 u/s Coquitlam R. Park	Oct. 6,13,20,26	4	all < 0.005 mg/L	Max obj. met
	0300010 near mouth	Oct. 6,13,20,26 Nov. 2	5	all < 0.005 mg/L	Objectives met
	Or Creek 1189002 near mouth	Oct. 6,13,20,26 Nov. 2	5	all < 0.005 mg/L	Objectives met
	Scott Creek 1189007 d/s Hoy Creek	Oct. 6,13,20,26 Nov. 2	5	all < 0.005 mg/L	Objectives met

TABLE 33 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Hoy Creek E216030 near mouth	Oct. 6,13,20,26 Nov. 2	5	all < 0.005 mg/L	Objectives met
	Brunette River 0300111 near mouth	Oct. 6,13,20,26 Nov. 2	5	av = 0.010 mg/L max = 0.019 mg/L	Objectives met
	Pitt Lake 0300013 near outlet	Jul. 6,13,21,26 Aug. 4	5	all < 0.005 mg/L	Objectives met
	Alouette Lake 0300016 near outlet	Jul. 13,21,26 Aug. 4	4	all < <0.005 mg/L	Max obj met Av not chked.
	Deer Lake E216032 at mid-lake	Oct. 6,13,20,26 Nov. 2	5	av = 0.007 mg/L max = 0.012 mg/L	Objectives met
Nitrite-N <0.20 mg/L av 0.60 mg/L max at Cl > 10 mg/L	Still Creek 0300008 near Burnaby L. inlet	Oct. 6,13,20,26 Nov. 2	5	av = 0.017 mg/L max = 0.025 mg/L	Objectives met
	Burnaby Lake 0300009 near outlet	Oct. 6, 20,26 Nov. 3	4	0.005 - 0.025 mg/L	Max obj. met Av not chked.
Chlorophyll-a <50 mg/m2 av	Coquitlam River 0300019 d/s Or Creek	Sept. 13	6	<0.3 - 1.9 mg/m2 av = 1.3 mg/m2	Objective met
	E216030 Hoy Cr. near mouth	Sept. 13	5	<0.3 - 1.1 mg/m2 av = 0.48 mg/m2	Objective met
	Kanaka Creek Scott Creek Or Creek	1992	0	no data collected	Objective not checked
Chlorophyll-a <100 mg/m2 av	Alouette River: 0300014 208 St. (d/s Haney)	Sept. 13	6	<0.3 - <1.6 mg/m2 av = 1.12 mg/m2	Objective met
	Brunette River: 0300111 near mouth	Sept.13	1	3.2 mg/m2	Objective met
	North Alouette River Pitt River Still Creek	1992	0	no data collected	Objective not checked
Total-P <0.015 mg/L av Apr - Oct (long-term)	Burnaby Lake 0300009 near outlet	Oct. 6,20,26	3	0.05 - 0.066 mg/L av = 0.056 mg/L	Indefinite result

TABLE 33 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 11.0 mg/L min Nov - Mar 8.0 mg/L min Apr - Oct	Kanaka Creek: 0300025 112 Ave (mid-length)	Oct. 6 - Nov. 2	5	10.6 - 11.6 mg/L	Objective met
	0300024 near mouth	Oct. 6 - Nov. 2	5	9.4 - 10.3 mg/L	Objective met
	Pitt River: E216028 u/s Alouette River	Jul. 13 - Aug. 4	4	9.5 - 9.8 mg/L	Objective met
	0300012 near mouth	Jul. 13 - Aug. 4	4	8.6 - 9.7 mg/L	Objective met
	Alouette River: 0300015 232 St (u/s Haney)	Jul. 13 - Aug. 4	4	9.6 - 10.4 mg/L	Objective met
	0300014 208 St (d/s Haney)	Jul. 21, Aug. 4 Jul 13,26	2 2	6.4 - 7.8 mg/L 8.3 mg/L	Obj. not met Obj. met
	North Alouette River: 0300018 u/s Haney	Jul. 13 - Aug. 4	4	9.5 - 9.9 mg/L	Objective met
	0300017 near mouth	Jul. 21 Jul.13 - Aug. 4	1 3	6.9 mg/L 8.3 - 9.3 mg/L	Obj. not met Obj. met
	Coquitlam River: 0300019 d/s Or Creek	Oct. 6 - Nov. 2	5	10.7 - 11.9 mg/L	Objective met
	0300010 near mouth	Oct. 6 - Nov. 2	5	9.3 - 10.5 mg/L	Objective met
	Or Creek 1189002 near mouth	Oct. 6 - Nov. 2	5	10.5 - 11.8 mg/L	Objective met
	Scott Creek 1189007 d/s Hoy Creek	Oct. 6 - Nov. 2	5	9.7 - 10.6 mg/L	Objective met
	Hoy Creek E216030 near mouth	Oct. 6 - Nov. 2	5	9.8 - 10.8 mg/L	Objective met

TABLE 33 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 6.0 mg/L min (short-term) 8.0 mg/L min (long-term) 11.0 mg/L min Nov - Mar (long-term)	Still Creek 0300008 near Burnaby L. inlet	Oct. 6 - Nov. 2	5	6.7 - 9.4 mg/L	Objective met
	Burnaby Lake 0300009 near outlet	Oct. 6 - Nov. 3	5	6.8 - 10.3 mg/L	Objective met
	Deer Lake E216032 at mid-lake	Oct. 6 - Nov. 2	5	6.3 - 10.4 mg/L	Objective met
Diss. Oxygen 8.0 mg/L min 11.0 mg/L min Nov - Mar (long-term)	Brunette River E208821 Hume Park	Oct. 6 - Nov. 2	5	9.2 - 9.9 mg/L	Objective met
	0300111 near mouth	Oct. 6 - Nov. 2	5	9.0 - 10.1 mg/L	Objective met
pH 6.5 - 8.5 (long-term)	Kanaka Creek	1992	0	no data collected	Objective not checked
pH 6.5 - 8.5 or max change 0.2 if u/s pH <6.5	Pitt River 0300012 near mouth	Jul. 6,13,21,26 Aug. 4	5	7.2 - 7.8	Objective met
	Alouette River: 0300015 232 St (u/s Haney)	Jul. 6,13,21,26 Aug. 4	5	6.9 - 7.4	Objective met
	0300014 208 St (d/s Haney)	Jul. 6,13,21,26 Aug. 4	5	7.0 - 7.2	Objective met
	North Alouette River: 0300018 u/s Haney	Jul. 26	1	7.3	Objective met
	0300017 near mouth	Jul. 6,13,21,26 Aug. 4	5	6.8 - 7.1	Objective met
	Pitt Lake 0300013 near mouth	Jul. 6,13,21,26 Aug. 4	5	7.1 - 7.4	Objective met
	Alouette Lake 0300016 near mouth	Jul. 13,21,26 Aug. 4	4	7.0 - 7.3	Objective met

TABLE 33 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 - 8.5 or max change 0.2 if u/s pH <6.5	Coquitlam River Or Creek Scott Creek Hoy Creek	1992	0	no data collected	Objective not checked
pH 6.5 - 8.5	Still Creek Burnaby Lake Brunette River Deer Lake	1992	0	no data collected	Objective not checked
Total Cr 0.020 mg/L max (long-term)	Still Creek 0300008 near Burnaby L. inlet	Oct. 6,13,20,26 Nov. 2	5	<0.002 - 0.009 mg/L	Objective met
	Burnaby Lake 0300009 near outlet	Oct. 6,13,20,26 Nov. 2	5	<0.002 - 0.009 mg/L	Objective met
	Brunette River 0300111 near mouth	Oct. 6,13,20,26 Nov. 2	5	<0.002 - 0.007 mg/L	Objective met
	Deer Lake E216032 at mid-lake	Oct. 6,13,20,26 Nov. 2	5	<0.002 - 0.007 mg/L	Objective met
Total Cu <0.002 mg/L av 0.005 mg/L max hard. >30 mg/L (long-term)	Still Creek 0300008 near Burnaby L. inlet	Oct. 6,13,20,26 Nov. 2	5	0.01 - 0.03 mg/L av = 0.016 mg/L	Objectives not met
	Burnaby Lake 0300009 near outlet	Oct 6,13,20,26,Nov 2 Oct. 20 Oct 6 - Nov 2	5 1 4	av = 0.004 mg/L 0.007 mg/L 0.002 - 0.004 mg/L	av not met max not met max obj. met
	Brunette River 0300111 near mouth	Oct 6,13,20,26,Nov 2 Oct. 20 - Nov. 2 Oct 6, 13,26	5 2 3	av = 0.004 mg/L 0.007 - 0.009 mg/L <0.001 - 0.002 mg/L	av not met max not met max obj. met
	Deer Lake E216032 at mid-lake	Oct 6,13,20,26,Nov 2 Oct.20,26, Nov.2 Oct 6,13	5 3 2	av = 0.007 mg/L 0.007 - 0.016 mg/L 0.002 - 0.003 mg/L	av not met max not met max obj. met
Total Cu <30 ug/g av in sediments (long-term)	Still Creek 0300008 near Burnaby L. inlet	Nov. 2	3	34 - 81 ug/g av = 58.3 ug/g	Objective not met
	Burnaby Lake 0300009 near outlet	Nov. 3	3	47 - 66 ug/g av = 56.3 ug/g	Objective not met

TABLE 33 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cu <30 ug/g av in sediments (long term)	Brunette River 0300111 near mouth	Nov. 2	3	44 - 55 ug/g av = 51.0 ug/g	Objective not met
	Deer Lake E216032 at mid-lake	Nov. 2	3	21 - 25 ug/g av = 23.7 ug/g	Objective met
Total Pb <0.004 mg/L av 0.018 mg/L max (long-term)	Still Creek 0300008 near Burnaby L. inlet	Oct. 6,13,20,26 Nov. 2	5	all < 0.02 mg/L	Indefinite results
	Brunette River 0300111 near mouth	Oct 6,13,20,26,Nov 2 Oct 6,13 Oct 20 - Nov 2	5 2 3	<0.001 - <0.02 mg/L <0.001 - 0.001 mg/L all < 0.02 mg/L	av indefinite max obj. met max indefinite
Total Pb <0.004 mg/L av 0.012 mg/L max (long-term)	Burnaby Lake 0300009 near outlet	Oct 6,13,20,26,Nov 2 Oct 6,13 Oct 20 - Nov 2	5 2 3	<0.02 - 0.005 mg/L 0.004 - 0.005 mg/L all < 0.02 mg/L	av indefinite max obj. met max indefinite
	Deer Lake E216032 at mid-lake	Oct 6,13,20,26,Nov 2 Oct 6,13 Oct 20 - Nov 2	5 2 3	<0.02 - 0.009 mg/L 0.006 - 0.009 mg/L all < 0.02 mg/L	av indefinite max obj. met max indefinite
Total Pb <5 ug/g av in sediments (long-term)	Still Creek 0300008 near Burnaby L. inlet	Nov. 2	3	41.0 - 48.0 ug/g av = 44.3 ug/g	Objective not met
	Burnaby Lake 0300009 near outlet	Nov. 3	3	48 - 93 ug/g av = 65.7 ug/g	Objective not met
	Brunette River 0300111 near mouth	Nov. 2	3	60 - 76 ug/g av = 67.7 ug/g	Objective not met
	Deer Lake E216032 at mid-lake	Nov. 2	3	23 - 32 ug/g av = 27.7 ug/g	Objective not met
Total Pb 0.8 ug/g wet weight in fish muscle	Still Creek Deer Lake Brunette River	1992	0	no data collected	Omitted 1992
	0300009 Burnaby Lake	Aug. 11	11	all <10 ug/g	Indefinite result

TABLE 33 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Hg <0.02 ug/L av 0.1 ug/L max (long-term)	Still Creek 0300008 near Burnaby L. inlet	Oct. 6 - Nov. 2	5	0.005 - 0.025 ug/L av = 0.010	Objectives met
	Burnaby Lake 0300009 near outlet	Oct. 6 - Nov. 3	4	0.005 - 0.010 ug/L	Max obj. met Av not checked
	Brunette River: E208821 Hume Park	Oct. 6 - Nov. 2	5	<0.005 - 0.010 ug/L av = 0.007 ug/L	Objectives met
	0300111 near mouth	Oct. 20 - Nov. 2	4	0.008 - 0.012 ug/L	Max obj. met
	Deer Lake E216032 at mid-lake	Oct. 6 - Nov. 2	5	<0.005 - 0.016 ug/L av = 0.013 ug/L	Objectives met
Total Hg <0.07 ug/g av in sediments (long-term)	Still Creek Burnaby Lake Brunette River Deer Lake	1992	0	no data collected	Objective not checked
Total Hg 0.05 ug/g wet weight in fish muscle	Still Creek Deer Lake Brunette River	1992	0	no data collected	Omitted 1992
	Burnaby Lake 0300009 near outlet	Aug. 11 Aug. 11	9 2	0.066 - 0.269 ug/g 0.048 - 0.050 ug/g	Obj. not met Obj. met
Total Zn 0.03 mg/L max (long-term)	Still Creek 0300008 near Burnaby L. inlet	Oct. 6, Nov. 2 Oct. 13,20,26	2 3	0.02 - 0.03 mg/L 0.04 - 0.14 mg/L	Obj. met Obj. not met
	Burnaby Lake 0300009 near outlet	Oct. 6,20,26 Nov. 3	4	0.01 - 0.02 mg/L	Objective met
	Brunette River 0300111 near mouth	Oct. 6,13,26, Nov 2 Oct. 20	4 1	0.004 - 0.018 mg/L 0.034 mg/L	Obj. met Obj. not met
	Deer Lake E216032 at mid-lake	Oct 6,13,20,26,Nov 2	5	0.003 - 0.025 mg/L	Objective met

TABLE 33 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Zn <70 ug/g av in sediments (long-term)	Still Creek 0300008 near Burnaby L. inlet	Nov. 2	3	113 - 139 ug/g av = 128 ug/g	Objective not met
	Burnaby Lake 0300009 near outlet	Nov. 3	3	161 - 264 ug/g av = 200 ug/g	Objective not met
	Brunette River 0300111 near mouth	Nov. 2	3	153 - 188 ug/g av = 174 ug/g	Objective not met
	Deer Lake E216032 at mid-lake	Nov. 2	3	78 - 87 ug/g av = 83 ug/g	Objective not met
Chlorophenols (tri + tetra + penta) in water 0.0002mg/L max	Pitt River 0300012 near mouth	Aug. 26	1	< 0.0001 mg/L for each homologue	Objective met
Chlorophenols (tri + tetra + penta) in sediments <0.01 ug/g av	Pitt River 0300012 near mouth	Aug. 26	3	penta: all < 0.005 ug/g tetra: all < 0.005 ug/g tri: all < 0.005 ug/g	Objective met
Chlorophenols (tri + tetra + penta) in fish 0.10 ug/g max (wet weight)	Pitt River	Aug.25, 28	5	penta: all < 0.01 ug/g tetra: all < 0.01 ug/g tri: all < 0.01 ug/g	Objective met

TABLE 34

PENDER HARBOUR WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Enterococci <35/100 mL geometric mean (gm)	Pender Harbour: E217030 Harbour entrance	Jul 9 - Oct 7	4	<2 - 2/100 mL	Indefinite result
	E217031 E from Skardon Island	Jul 9 - Oct 7	4	all < 2/100 mL	Indefinite result
	E207043 Hospital Bay Beach	Jul 9,15,30, Aug 6,13	5	<2 - 6/100 mL gm = 3/100 mL	Objective met
	E217042 Garden Bay Beach	Jul 9,15,30, Aug 6,13	5	2 - 79/100 mL gm = 13/100 mL	Objective met
	E217033 Gunboat Bay entrance	Jul 9 - Oct 7	4	1 - <2/100 mL	Indefinite result
	E217034 Gunboat Bay centre	Jul 9 - Oct 7	4	<2 - 4/100 mL	Indefinite result
	E217044 Beach S Gunboat Point	Jul 9,15,30, Aug 6,13	5	1 - 10/100 mL gm = 4/100 mL	Objective met
	E217045 Madeira Park Beach	Jul 9,15,30, Aug 6,13	5	1 - 1770/100 mL gm = 9/100 mL	Objective met
	E217032 Gerrans Bay	Jul 9 - Oct 7	4	1 - <2/100 mL	Indefinite result
	E217041 Beach E Bargain Narrows	Jul 9,15,30, Aug 6,13	5	<2 - 15/100 mL	Objective met
	Bargain Bay: E217035 at centre	Jul 9 - Oct 7	4	1 - 125/100 mL	Indefinite result
Fecal Coliform <14/100 mL median <43/100 mL 90th percentile	Bargain Bay: E217035 at centre	Jul 9 - Oct 7	4	1 - 21/100 mL	Indefinite result
Ammonia-N <0.66 mg/L av 4.4 mg/L max at temp = 20 C pH = 8.2 salinity = 20 ppt	Pender Harbour: E217031 E from Skardon Island	Jul 21,30, Aug 6,13,23	20	<0.005 - 0.104 mg/L av = 0.026 mg/L (0-30 m, 4 depths/date)	Objectives met
	Bargain Bay	1992	0	no data collected	Omitted 1992
Total Cu <0.002 mg/L av 0.003 mg/L max	Pender Harbour: E217036 Madeira Park Wharf	Aug 6,13,23, Sep. 8	8	<0.001 - 0.002 mg/L (at 1-10 m, 2 depths/date)	Max obj. met Av not checked

TABLE 34 continued

PENDER HARBOUR WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cu <0.002 mg/L av 0.003 mg/L max	Bargain Bay: E217035 at centre	Aug 6,13,23, Sep. 8	7	all < 0.001 mg/L (at 1-12 m, 2 depths/date except Sep. 9)	Max obj. met Av not checked
Total Cu 100 ug/g max in sediment (av of replicates)	Pender Harbour: E217040 Hospital Bay Dock	Sep. 8	3	74 - 283 ug/g av = 171 ug/g	Objective not met
	E217036 Madeira Park Wharf	Sep. 8	3	63 - 93 ug/g av = 74 ug/g	Objective met
	Bargain Bay: E217035 at centre	Sep. 8	3	6 - 8 ug/g av = 7 ug/g	Objective met
Dissolved Zn 0.015 mg/L max (or as total Zn if low susp. solids)	Pender Harbour: E217036 Madeira Park Wharf	Aug 6,13,23, Sep. 8	8	all < 0.005 mg/L total Zn (at 1-10 m, 2 depths/date)	Objective met
	Bargain Bay: E217035 at centre	Aug 6,13,23, Sep. 8	7	all < 0.005 mg/L total Zn (at 1-12 m, 2 depths/date except Sep. 8)	Objective met
Total Zn 150 ug/g max in sediment (av of replicates)	Pender Harbour: E217040 Hospital Bay Dock	Sep. 8	3	102 - 824 ug/g av = 368 ug/g	Objective not met
	E217036 Madeira Park Wharf	Sep. 8	3	129 - 298 ug/g av = 230 ug/g	Objective not met
	Bargain Bay: E217035 at centre	Sep. 8	3	18 - 22 ug/g av = 20 ug/g	Objective met
Total Pb <0.002 mg/L av 0.140 mg/L max <0.003 mg/L 20th percentile (tp)	Pender Harbour: E217036 Madeira Park Wharf	Aug 6,13,23, Sep. 8	8	<0.001 - 0.002 mg/L (at 1-10 m, 2 depths/date)	Max obj. met Av & tp not checked
	Bargain Bay: E217035 at centre	Aug 6,13,23, Sep. 8	7	<0.001 - 0.006 mg/L (at 1-12 m, 2 depths/date except Sep. 8)	Max obj. met Av & tp not checked
Total Pb 30 ug/g max in sediment (av of replicates)	Pender Harbour: E217040 Hospital Bay Dock	Sep. 8	3	62 - 151 ug/g av = 99 ug/g	Objective not met
	E217036 Madeira Park Wharf	Sep. 8	3	30 - 62 ug/g av - 44 ug/g	Objective not met
	Bargain Bay: E217035 at centre	Sep. 8	3	all <10 ug/g	Objective met

TABLE 34 continued

PENDER HARBOUR WATER QUALITY OBJECTIVES - 1992

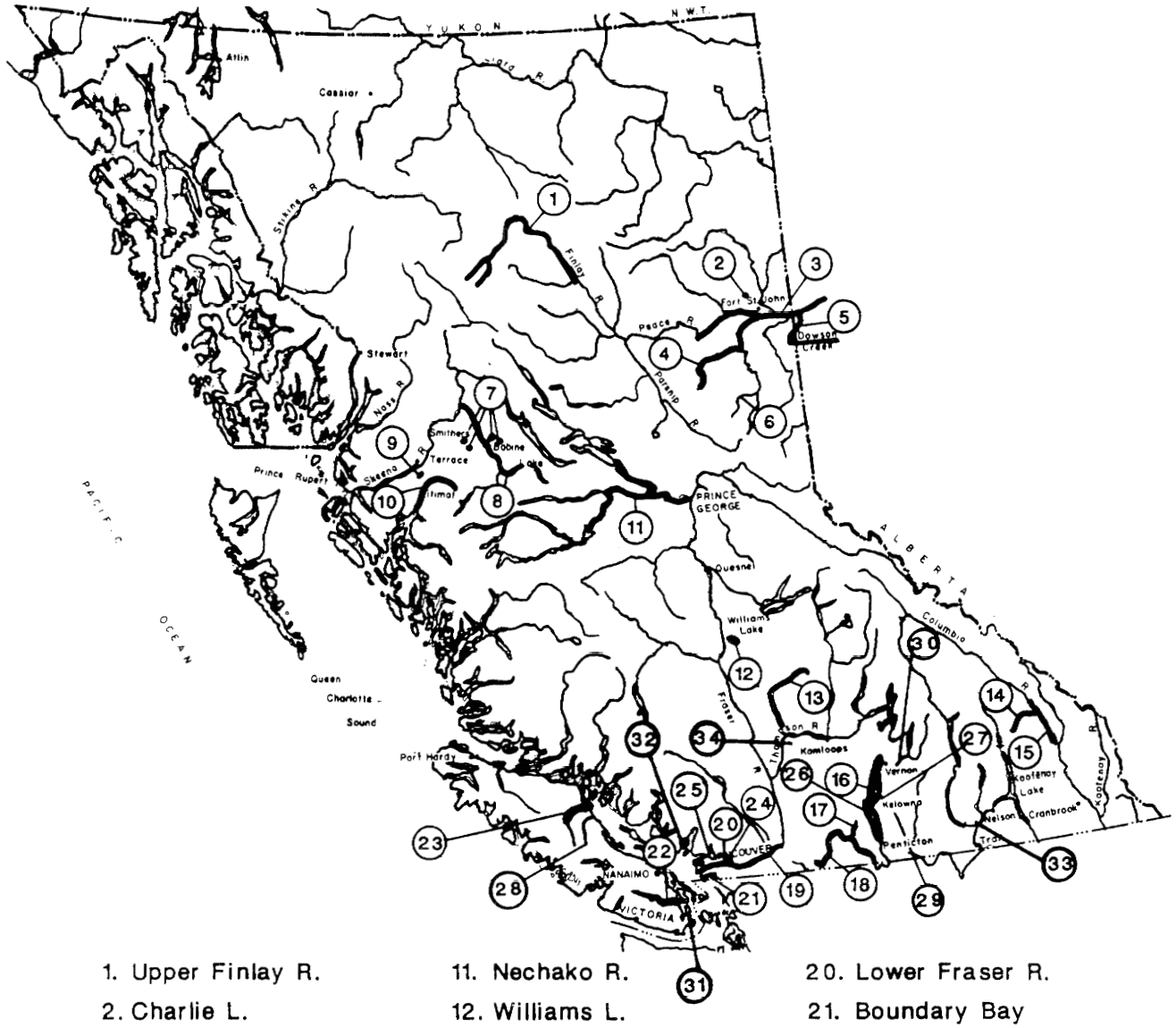
VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Pb 0.8 ug/g max in tissue (wet weight)	Pender Harbour E217038 Oyster Bay	Sep. 15	3	<0.2 - 0.2 ug/g av < 0.2 ug/g (wet wt. in oysters)	Objective met
	Bargain Bay E217039	Sep. 15	3	0.4 - 0.6 ug/g av = 0.5 ug/g (wet wt. in oysters)	Objective met
Total Fe 0.05 mg/L max	Pender Harbour: E217036 Madeira Park Wharf	Aug 6,13,23, Sep. 8	8	<0.005 - 0.049 mg/L (at 1-10 m, 2 depths/date)	Objective met
	Bargain Bay: E217035 at centre	Aug 6,13,23, Sep 8	6	<0.005 - 0.020 mg/L (at 1-11 m, 2 depths/date except Aug 23 & Sep 8)	Objective met
		Aug. 23	1	0.180 mg/L (at 11 m depth)	Objective not met
Tributyl Tin 0.001 ug/L max	Pender Harbour: E217036 Madeira Park Wharf	Aug. 6	2	all < 0.5 ug/L	Indefinite result
	Bargain Bay: E217035 at centre	Aug. 6	2	all < 0.5 ug/L	Indefinite result
L-PAH in sediment (max) naphthy 0.20 ug/g acenphyl 0.06 ug/g acenaphe 0.05 ug/g fluor 0.05 ug/g phenant 0.15 ug/g anthrac 0.10 ug/g total 0.5 ug/g	Pender Harbour: E217040 Hospital Bay Dock	Sep. 10 (3 reps)	3 3 3 3 3 3	av of 3 replicates: naphthy: 0.008 ug/g acenphyl: 0.030 ug/g acenaphe: 0.014 ug/g fluor: 0.040 ug/g phenant: 0.313 ug/g anthrac: 0.185 ug/g total: 0.59 ug/g	Obj. met Obj. met Obj. met Obj. met Obj. not met Obj. not met Obj. not met
H-PAH in sediment (max) fluorant 0.17 ug/g pyrene 0.26 ug/g bz-a-an 0.13 ug/g chrysene 0.14 ug/g bz-a-fl 0.14 ug/g bz-a-py 0.32 ug/g ind-pyr 0.06 ug/g dibz-an 0.06 ug/g bz-pery 0.07 ug/g total 1.2 ug/g	Pender Harbour: E217040 Hospital Bay Dock	Sep. 10 (3 reps)	3 3 3 3 3 3 3 3 3	av of 3 replicates: fluorant: 0.877 ug/g pyrene: 0.757 ug/g bz-a-an: 0.224 ug/g chrysene: 0.483 ug/g bz-a-fl: 0.467 ug/g bz-a-py: 0.174 ug/g ind-pyr: 0.079 ug/g dibz-an: 0.018 ug/g bz-pery: 0.063 ug/g total: 3.14 ug/g	Obj. not met Obj. not met Obj. not met Obj. not met Obj. not met Obj. met Obj. not met Obj. met Obj. met Obj. not met
Dissolved Oxygen 6.75 mg/L min	Pender Harbour: E217030 Harbour entrance	May 8 - Dec 21	96	0 - 30m: 7.0 - 15.3 mg/L	Objective met
		Jun 23 - Nov 23	18	6-30 m: 4.8 - 6.7 mg/L	Objective not met

TABLE 34 continued

PENDER HARBOUR WATER QUALITY OBJECTIVES - 1992

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 6.75 mg/L min	Pender Harbour: E217031 E from Skardon Island	May 8 - Dec 21	95	0-29 m: 6.8 - 13.8 mg/L	Objective met
		May 30 - Nov 23	19	8-30 m: 3.5 - 6.6 mg/L	Objective not met
	E217033 Gunboat Bay entrance	May 8 - Dec 21	81	0-14 m: 7.0 - 14.1 mg/L	Objective met
		May 8 - Oct 7	11	6-15 m: 2.2 - 6.7 mg/L	Objective not met
	E217034 Gunboat Bay centre	May 8 - Dec 21	91	0-15: 7.5 - 12.0 mg/L	Objective met
		May 8 - Jul 21	2	10-14 m: 6.2 - 6.3 mg/L	Objective not met
	E217032 Gerrans Bay	May 8 - Dec 21	78	0-15 m: 6.8 - 13.3 mg/L	Objective met
		May 30 - Nov 4	13	8-16 m: <1.0 - 6.6 mg/L	Objective not met
	Bargain Bay: E217035 at centre	May 30 - Dec 21	78	0-16 m: 6.9 - 14.2 mg/L	Objective met
		Oct. 7	5	7-12 m: 5.1 - 6.1 mg/L	Objective not met

FIGURE 1
Water Basins Where Water Quality Objectives Have Been Set



1. Upper Finlay R.
2. Charlie L.
3. Peace R.
4. Pine R.
5. Pouce Coupe R.
6. Bullmoose Cr.
7. Kathlyn, Seymour, Round, and Tyhee L's.
8. Bulkley R.
9. Lakelse L.
10. Lower Kitimat R. and Arm
11. Nechako R.
12. Williams L.
13. Bonaparte R.
14. Toby Cr.
15. Columbia and Windermere L.
16. Okanagan Valley Lakes
17. Cahill Cr.
18. Similkameen R.
19. Lower Fraser R.
20. Lower Fraser R.
21. Boundary Bay
22. Cowichan – Koksilah R.
23. Quinsam R.
24. Lower Fraser R. tributaries
25. Burrard Inlet
26. Okanagan Tribs., Westbank
27. Okanagan Tribs., Kelowna
28. Oyster River
29. Hydraulic Creek
30. Bessette Creek
31. Elk Lake
32. Pender Harbour
33. Columbia R. (to Birchbank)
34. Thompson River

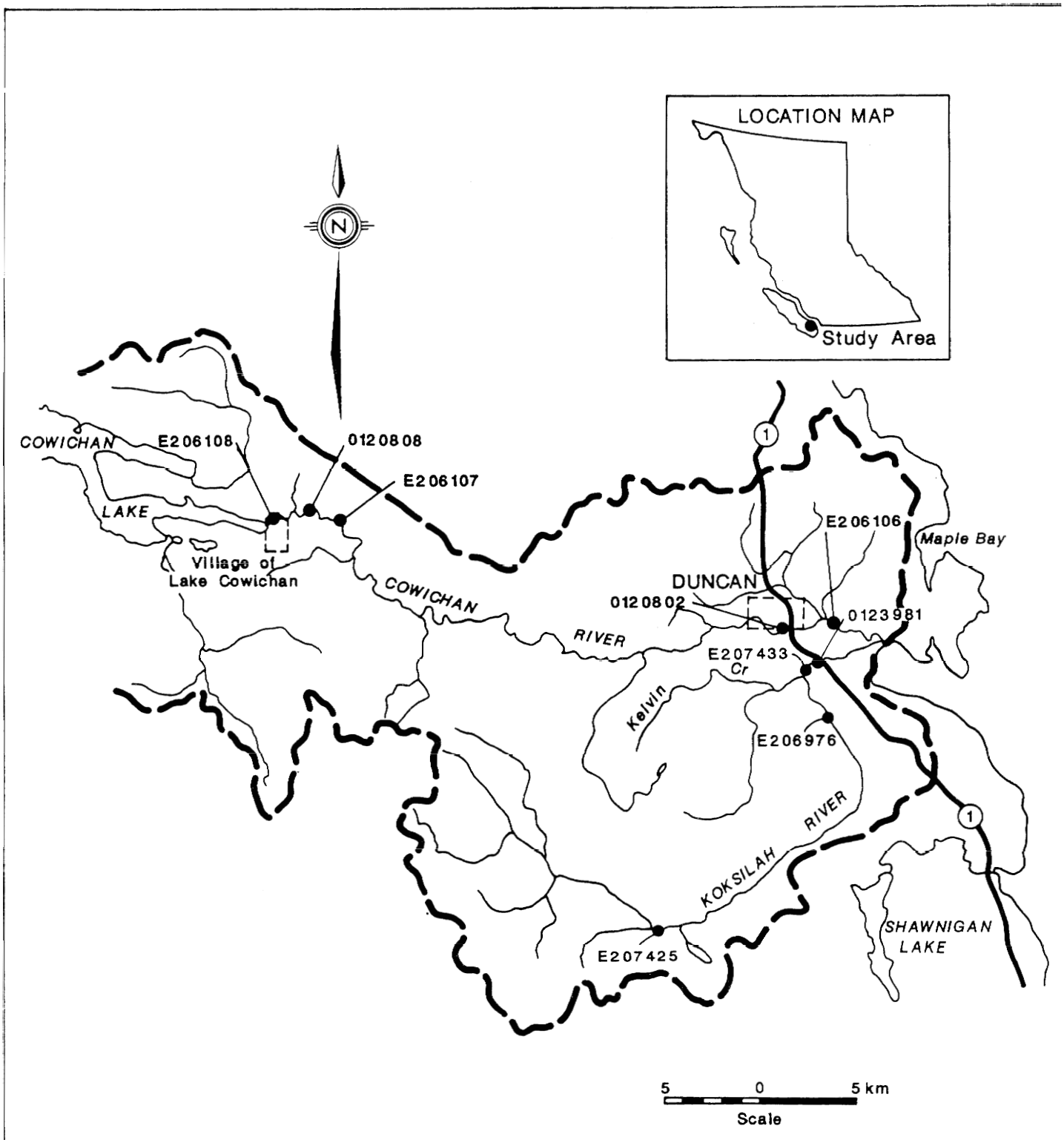


FIGURE 2 Cowichan – Koksilah Rivers

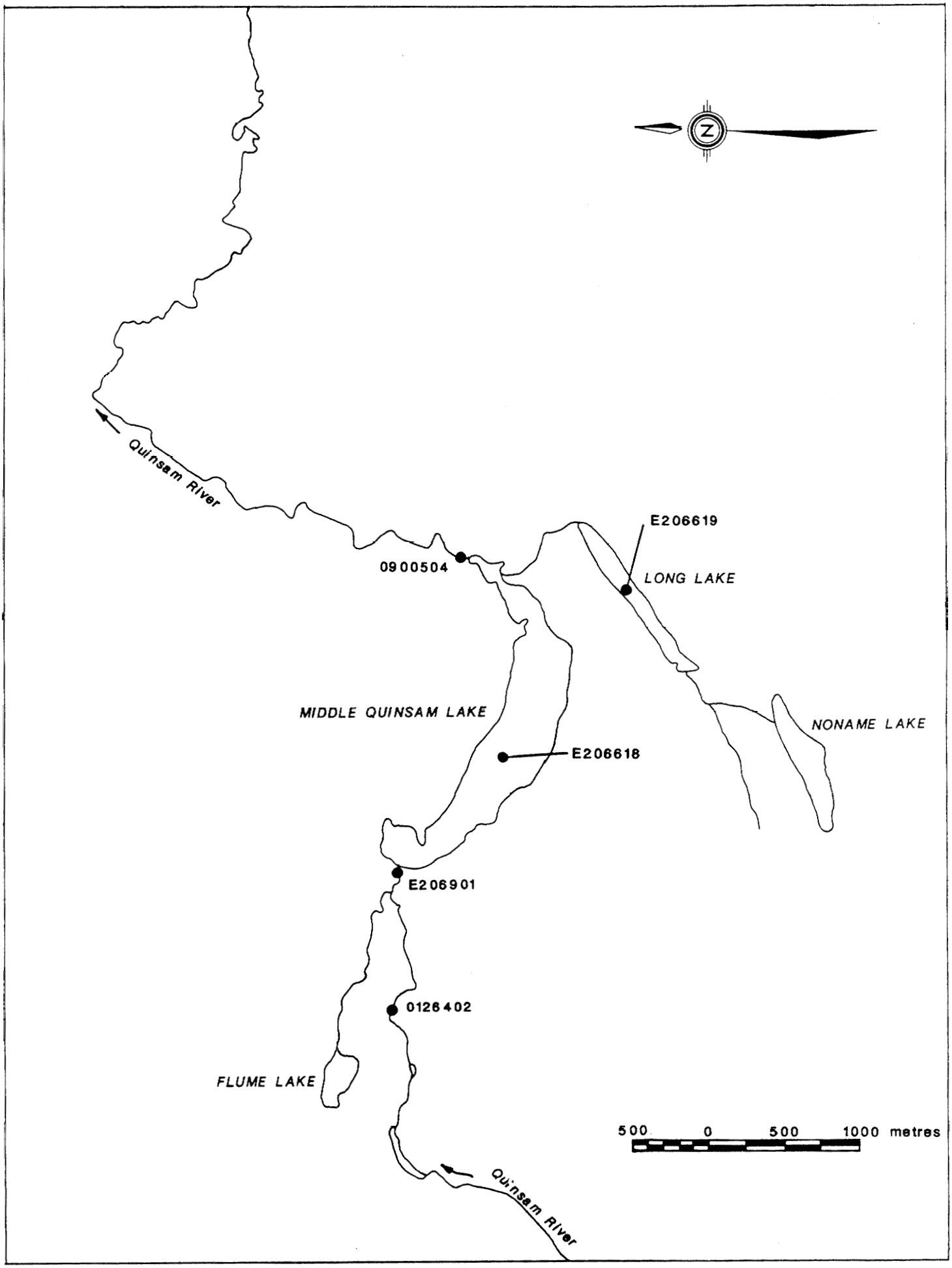


FIGURE 3 Middle Quinsam Lake

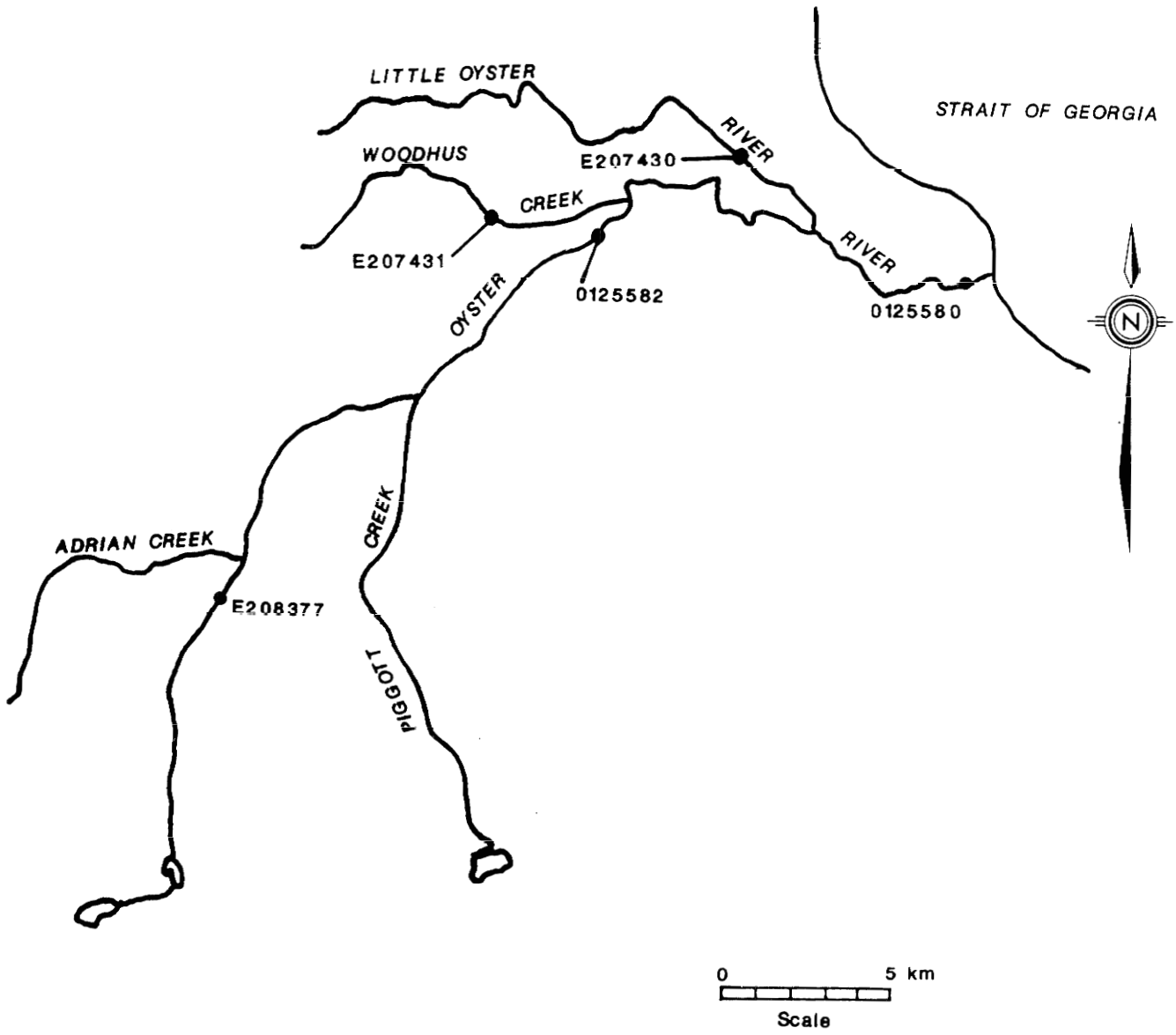


FIGURE 4 Oyster River

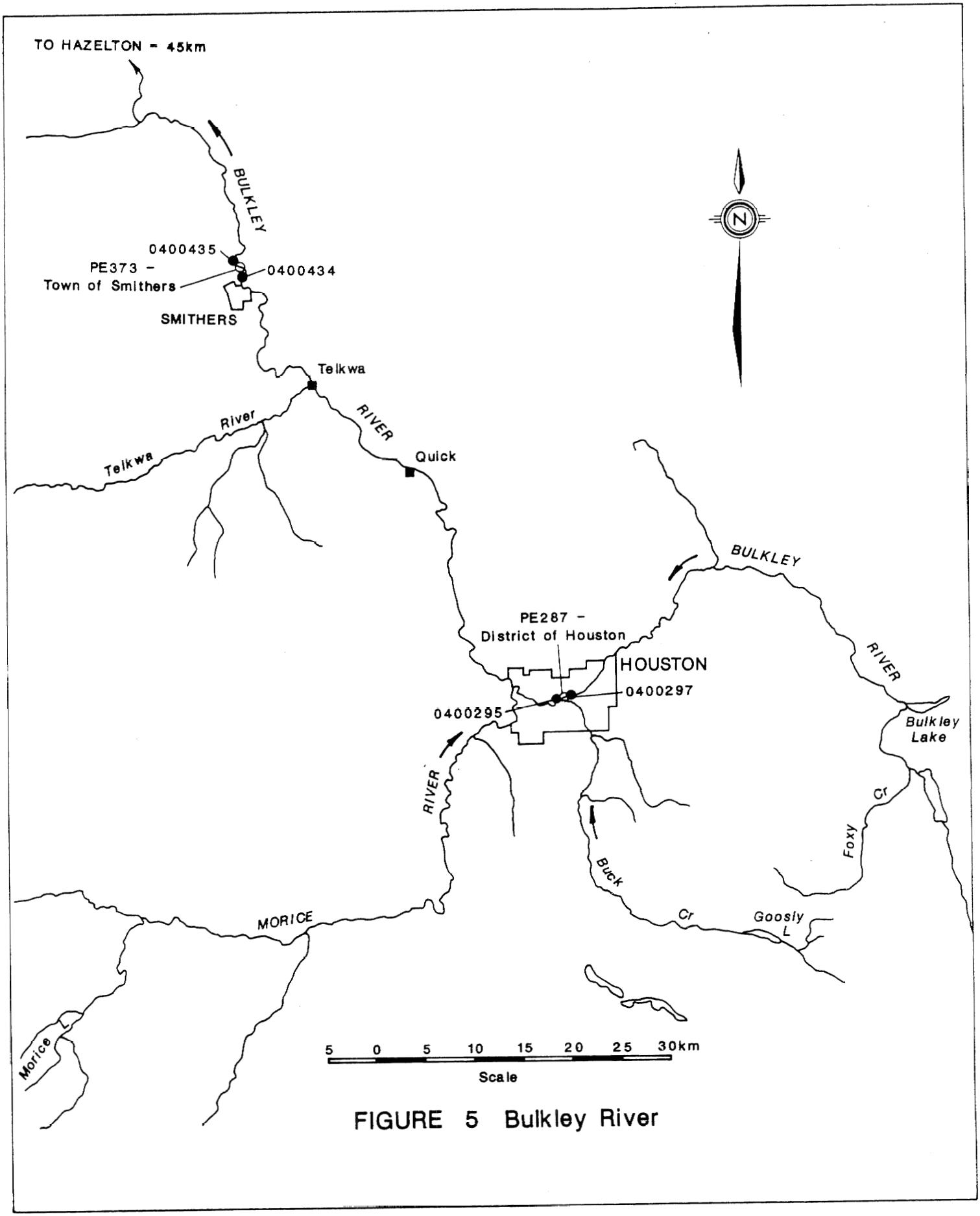


FIGURE 5 Bulkley River

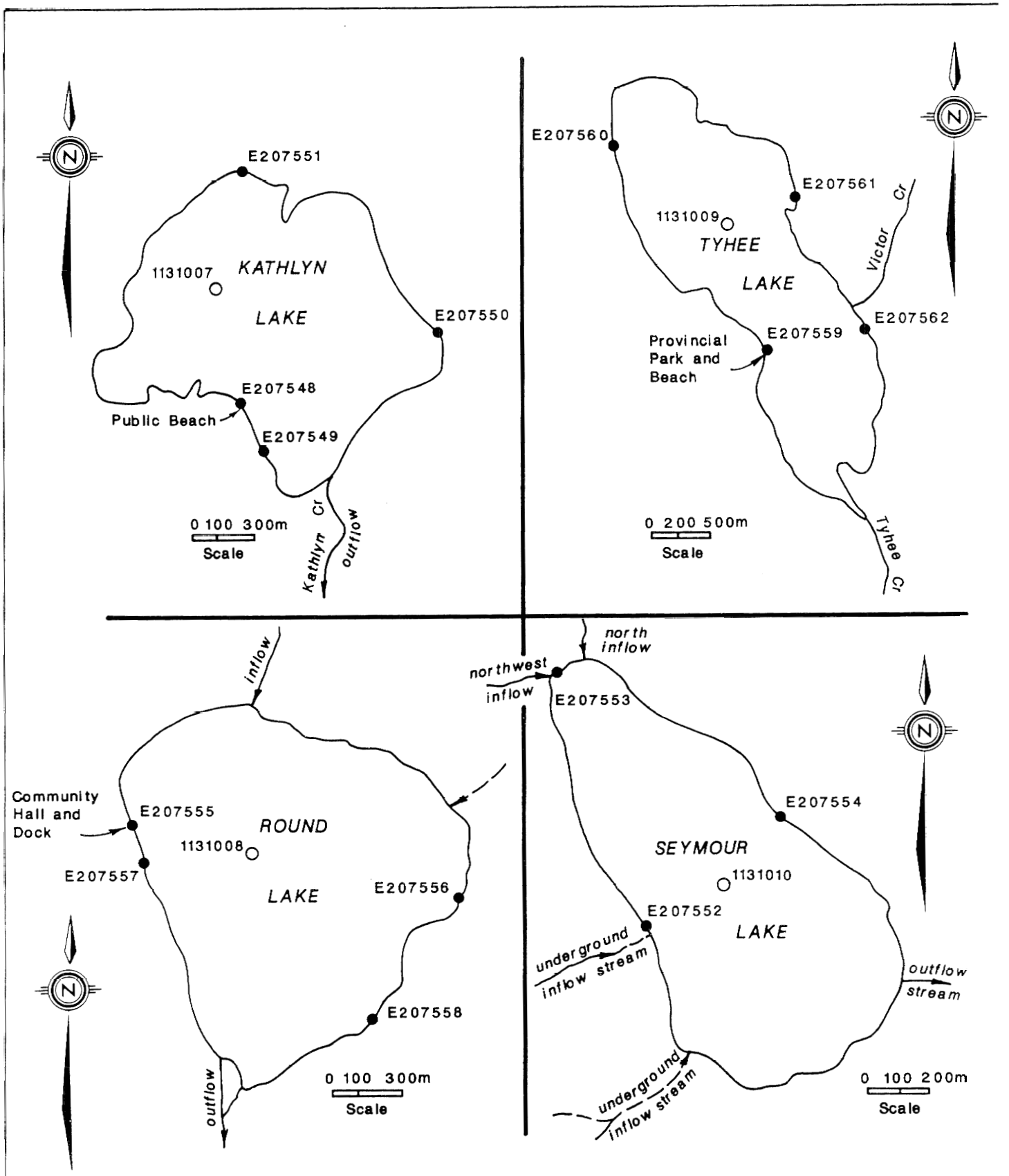


FIGURE 6 Kathlyn, Seymour, Round and Tyhee Lakes

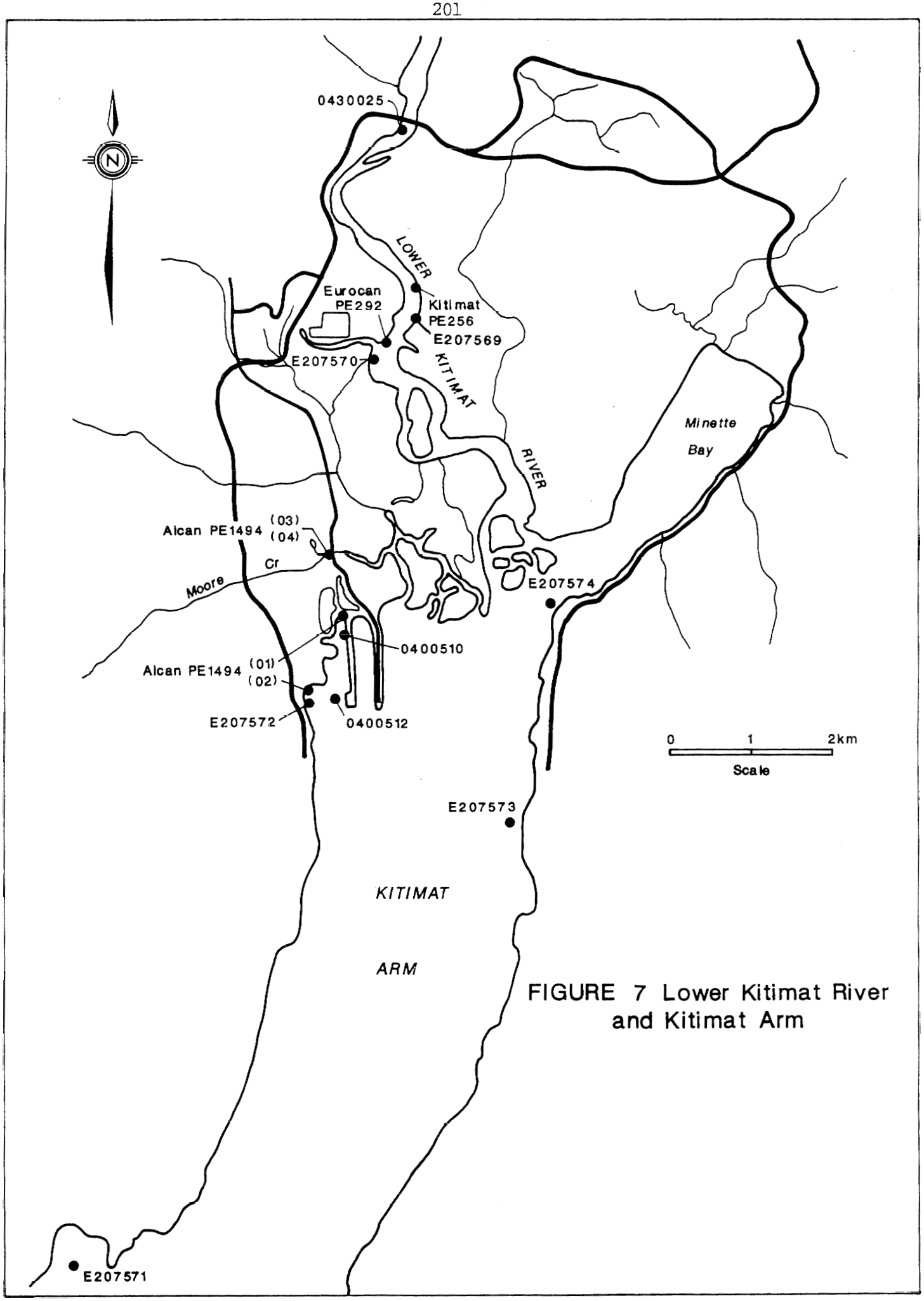


FIGURE 7 Lower Kitimat River and Kitimat Arm

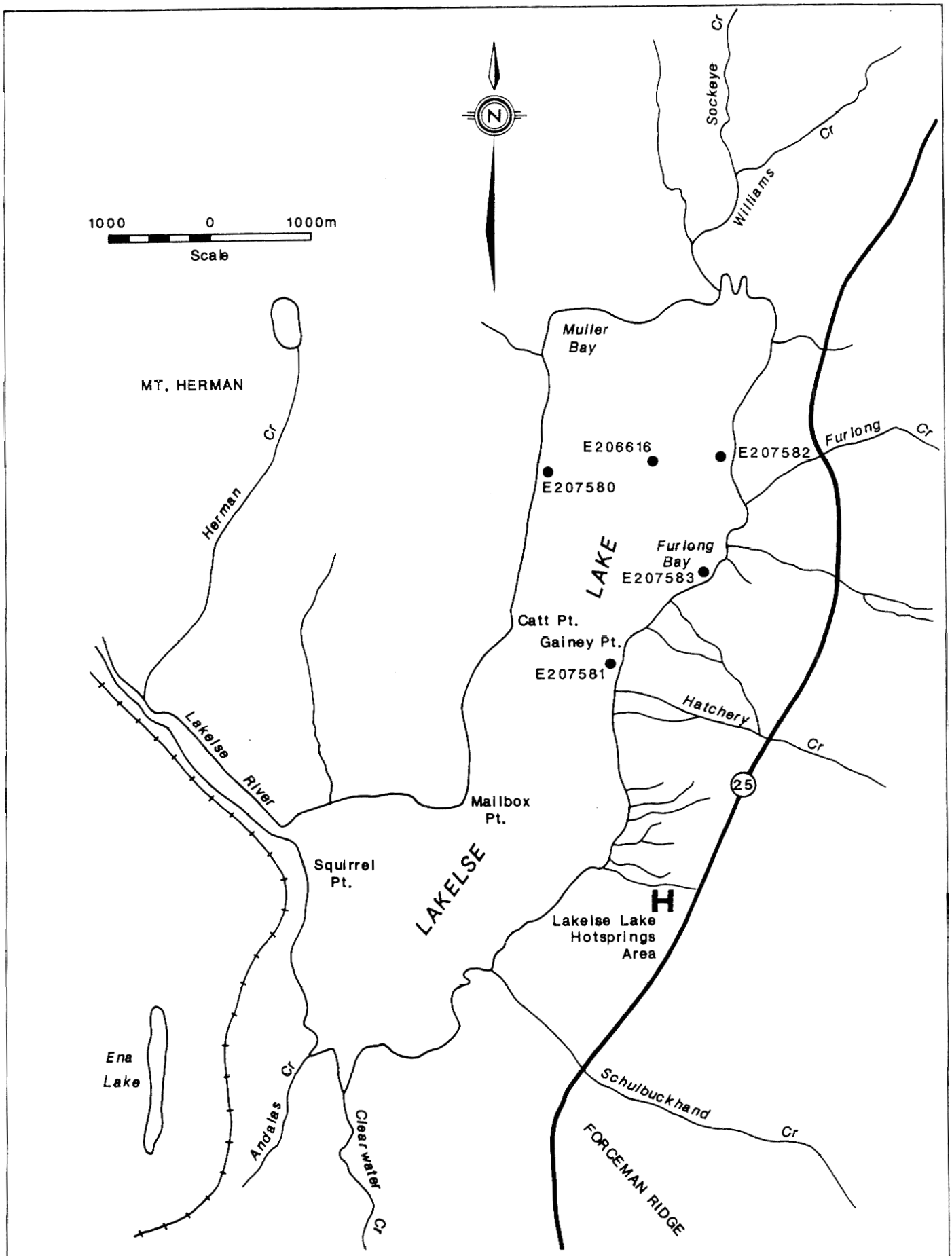


FIGURE 8 Lakelse Lake

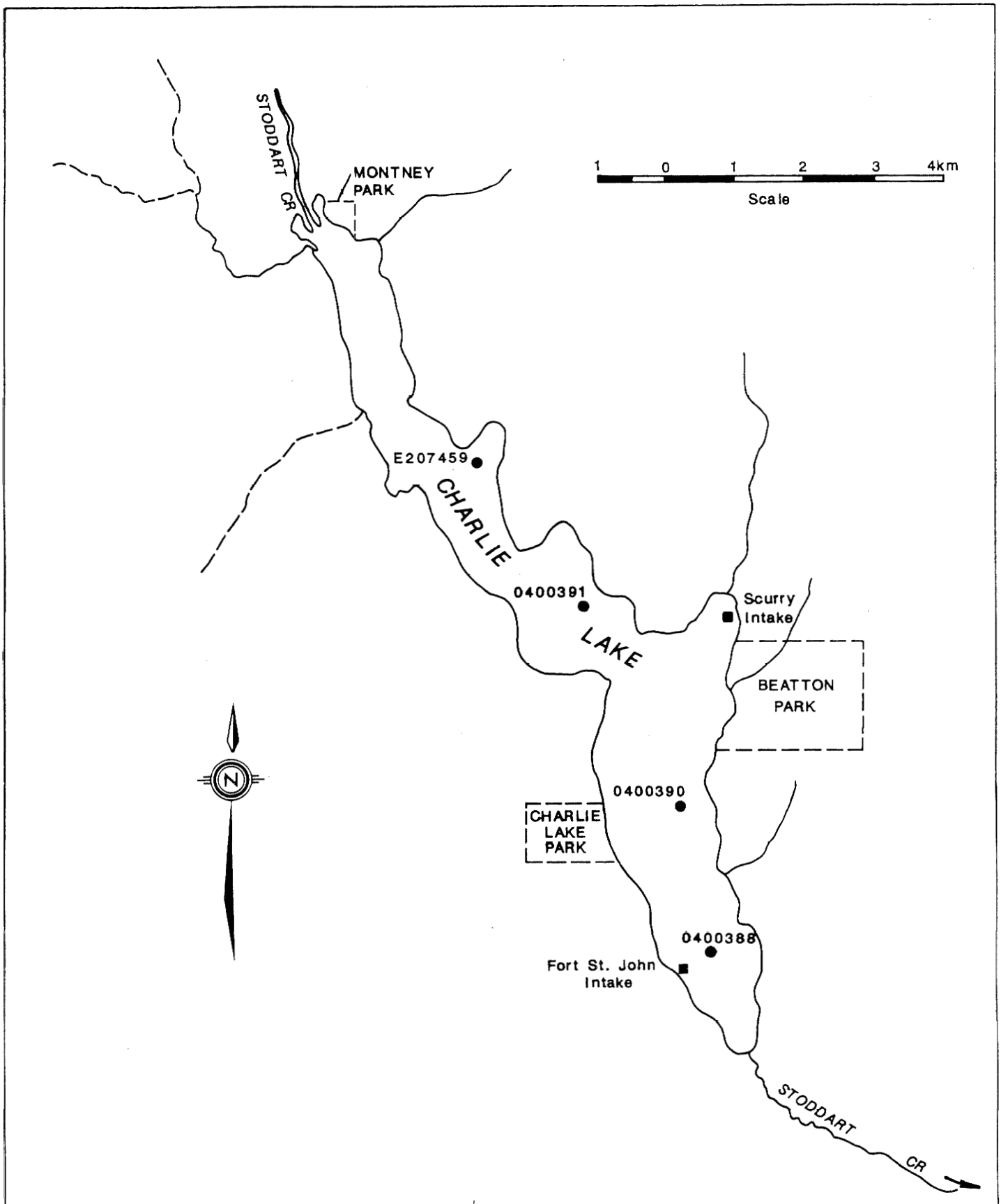


FIGURE 9 Charlie Lake

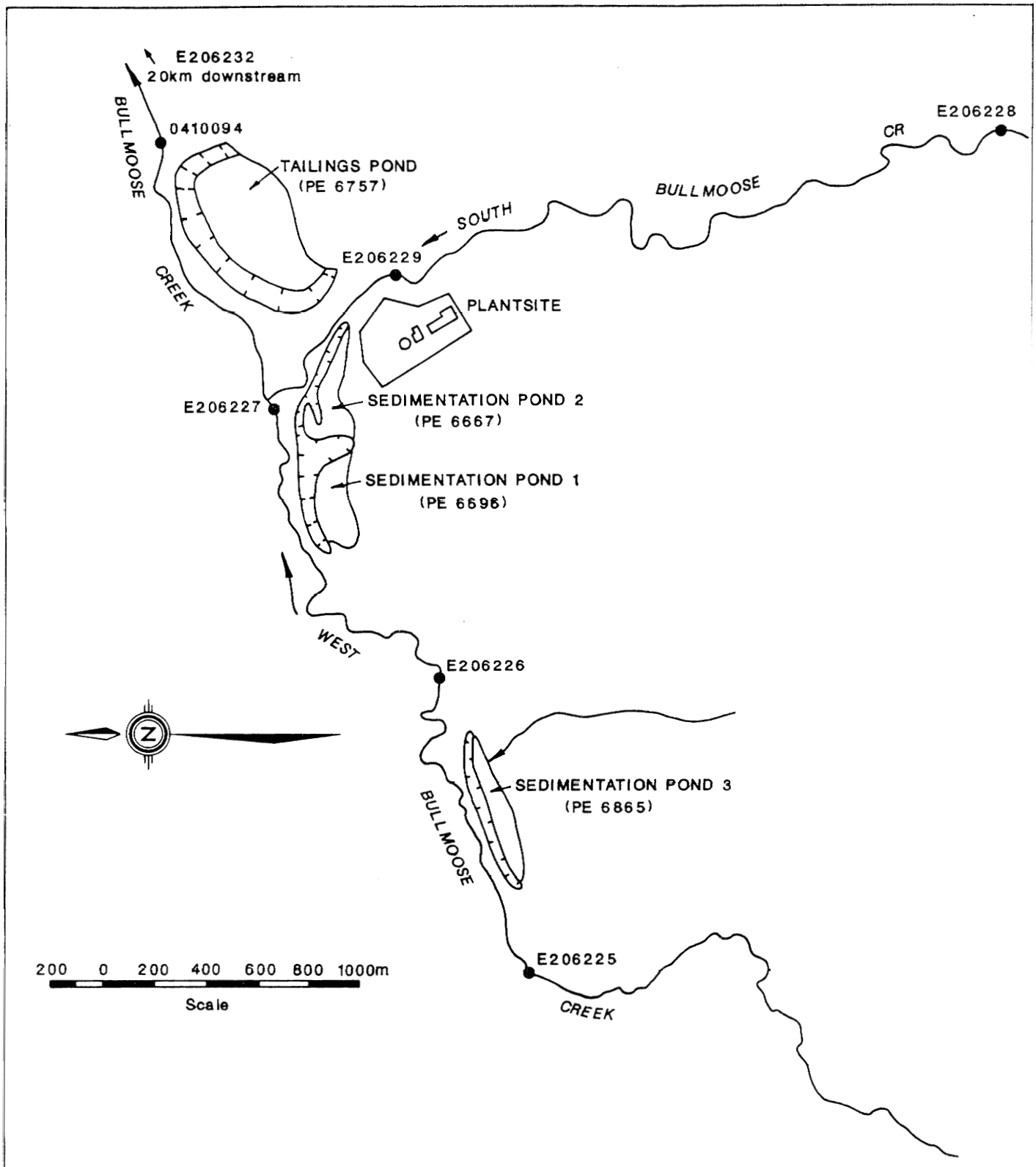


FIGURE 10 Bullmoose Creek

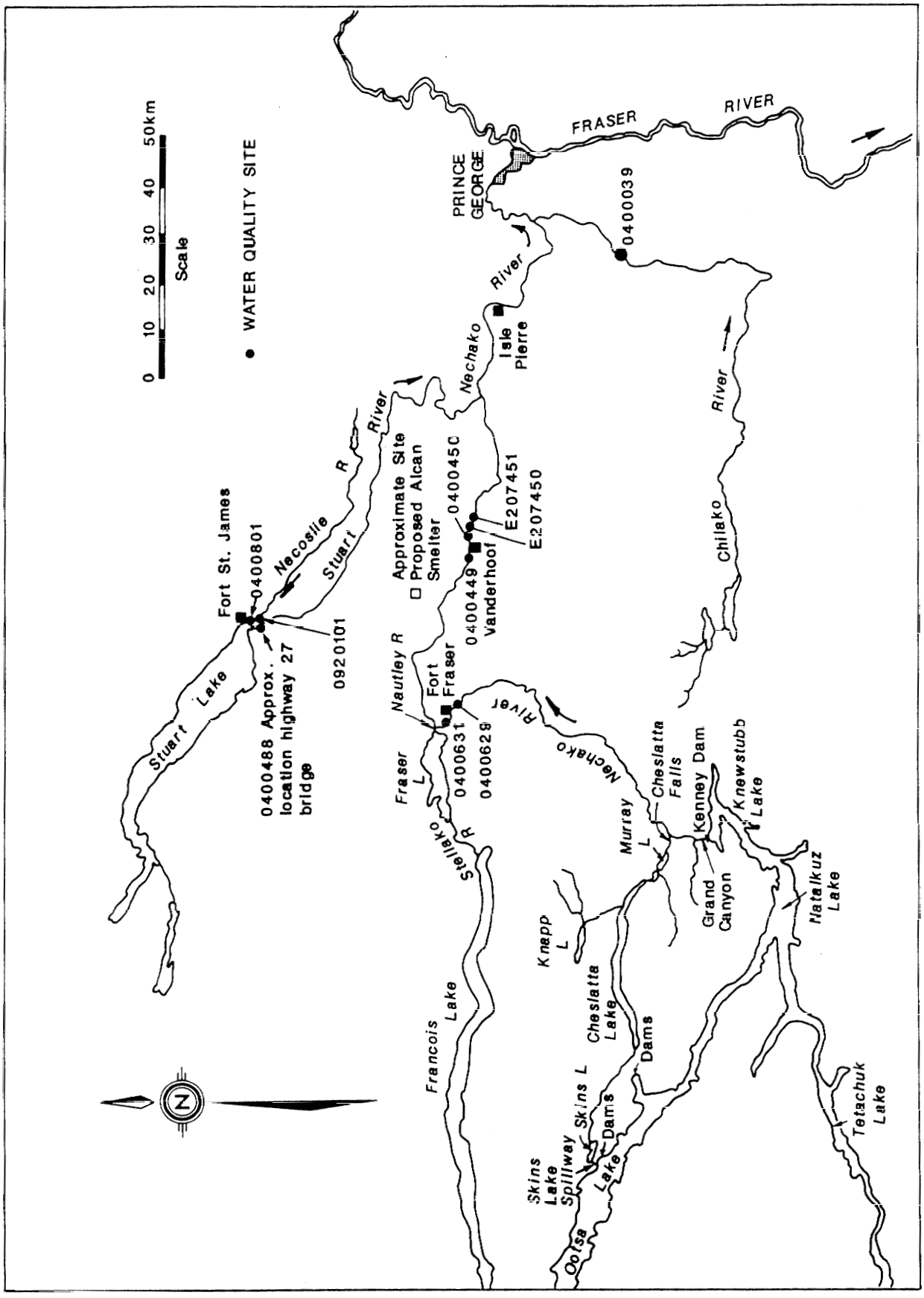


FIGURE 11 Nechako River

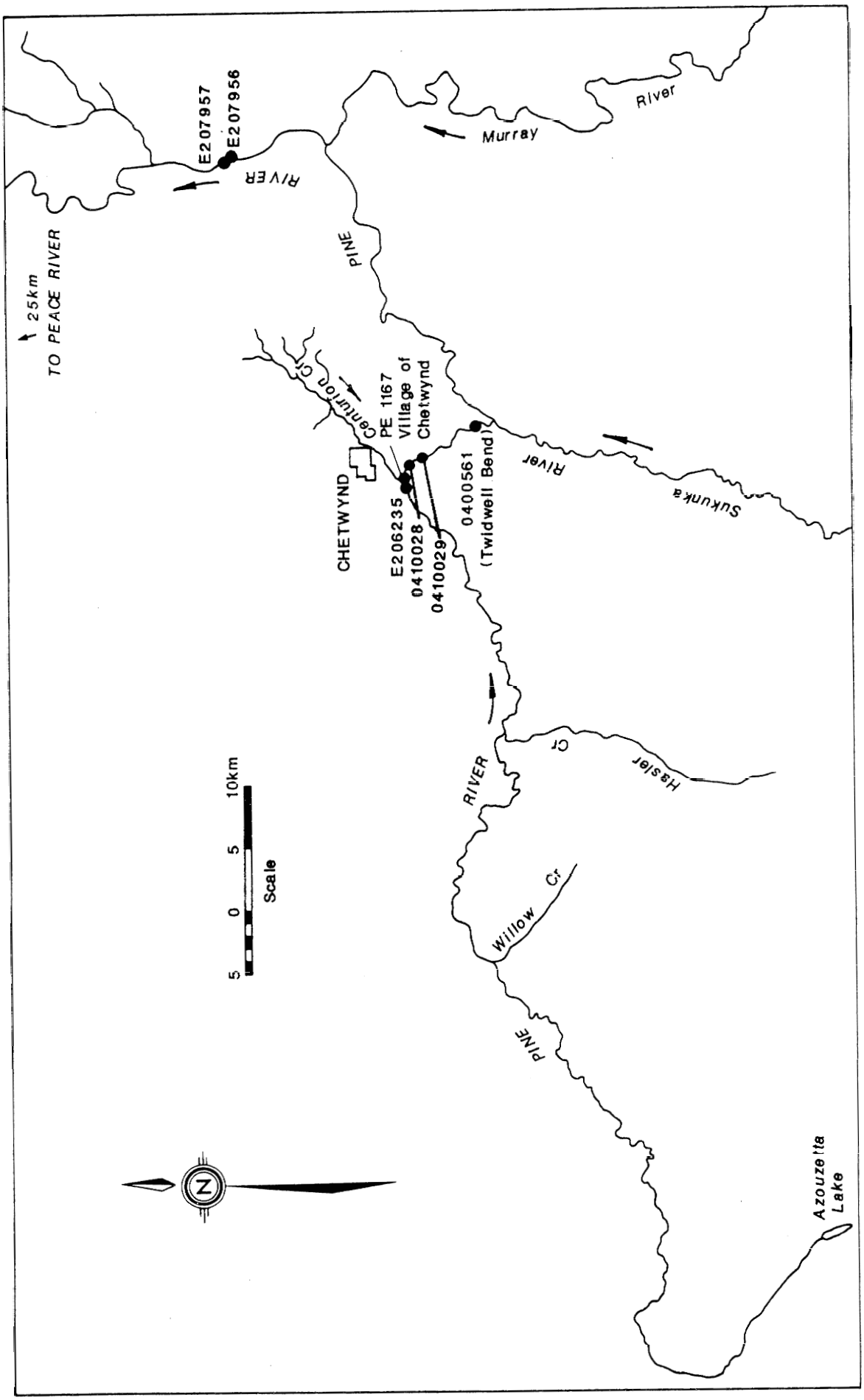


FIGURE 12 Pine River

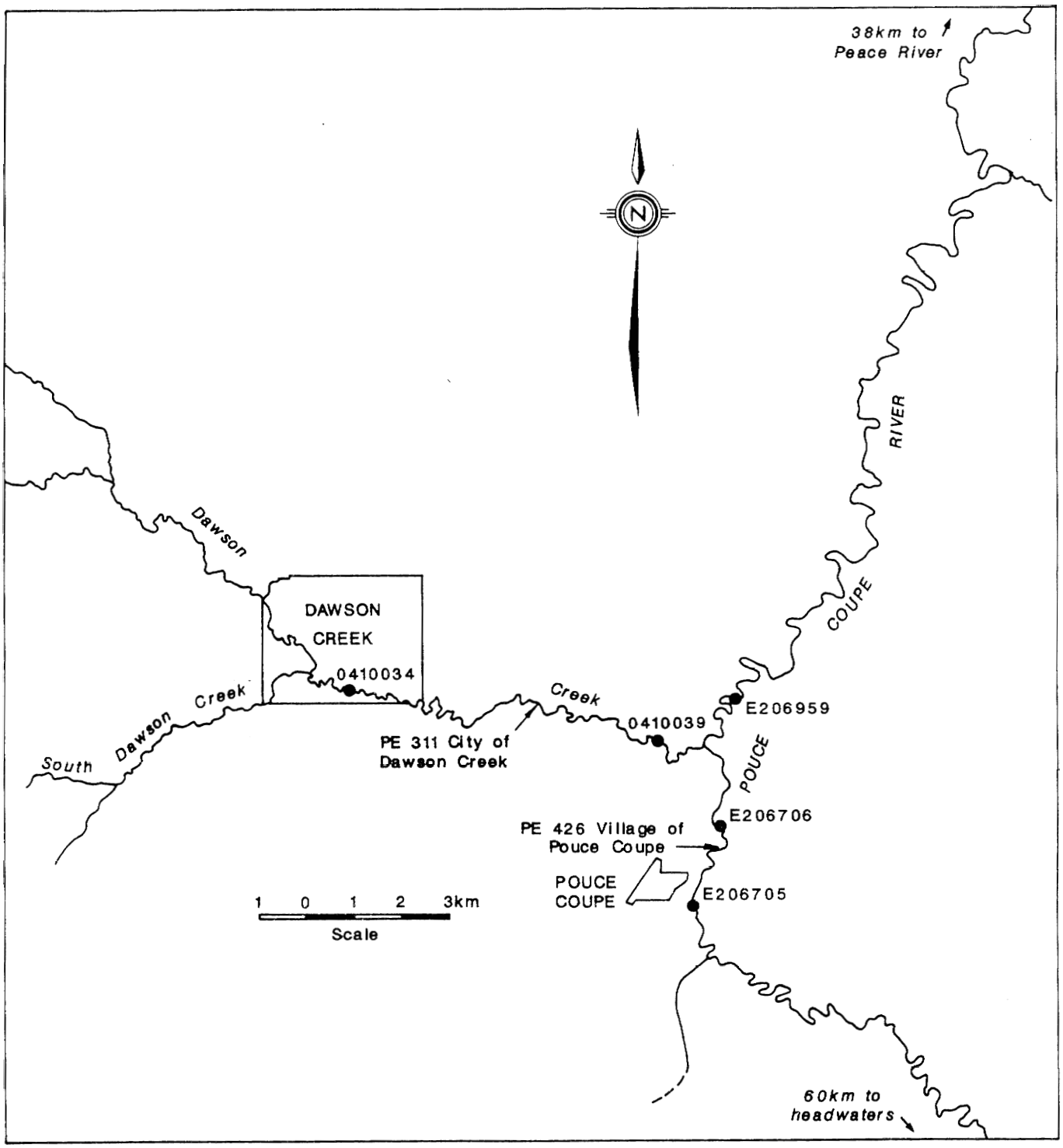


FIGURE 13 Pouce Coupe River

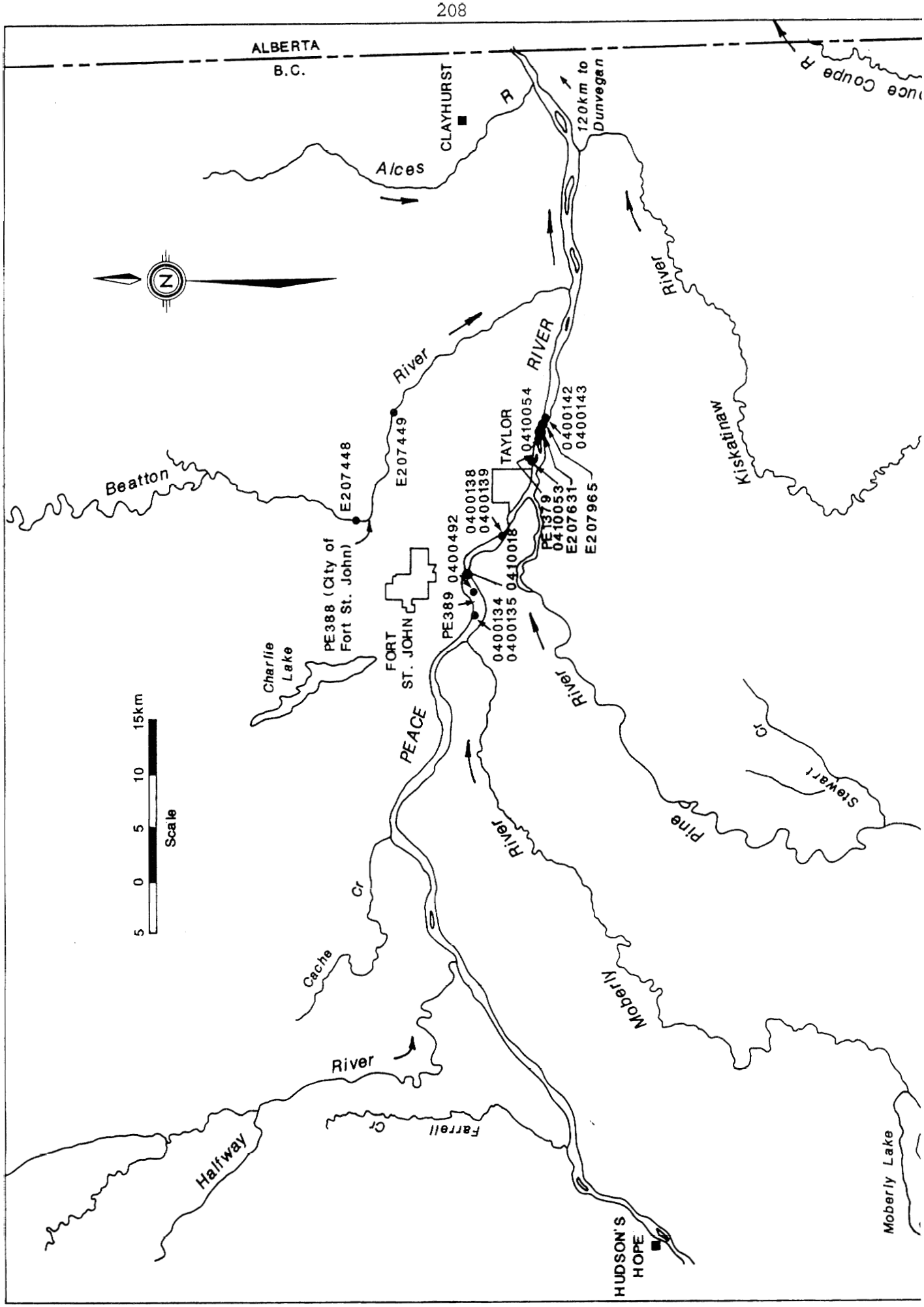


FIGURE 14 Peace River Mainstem

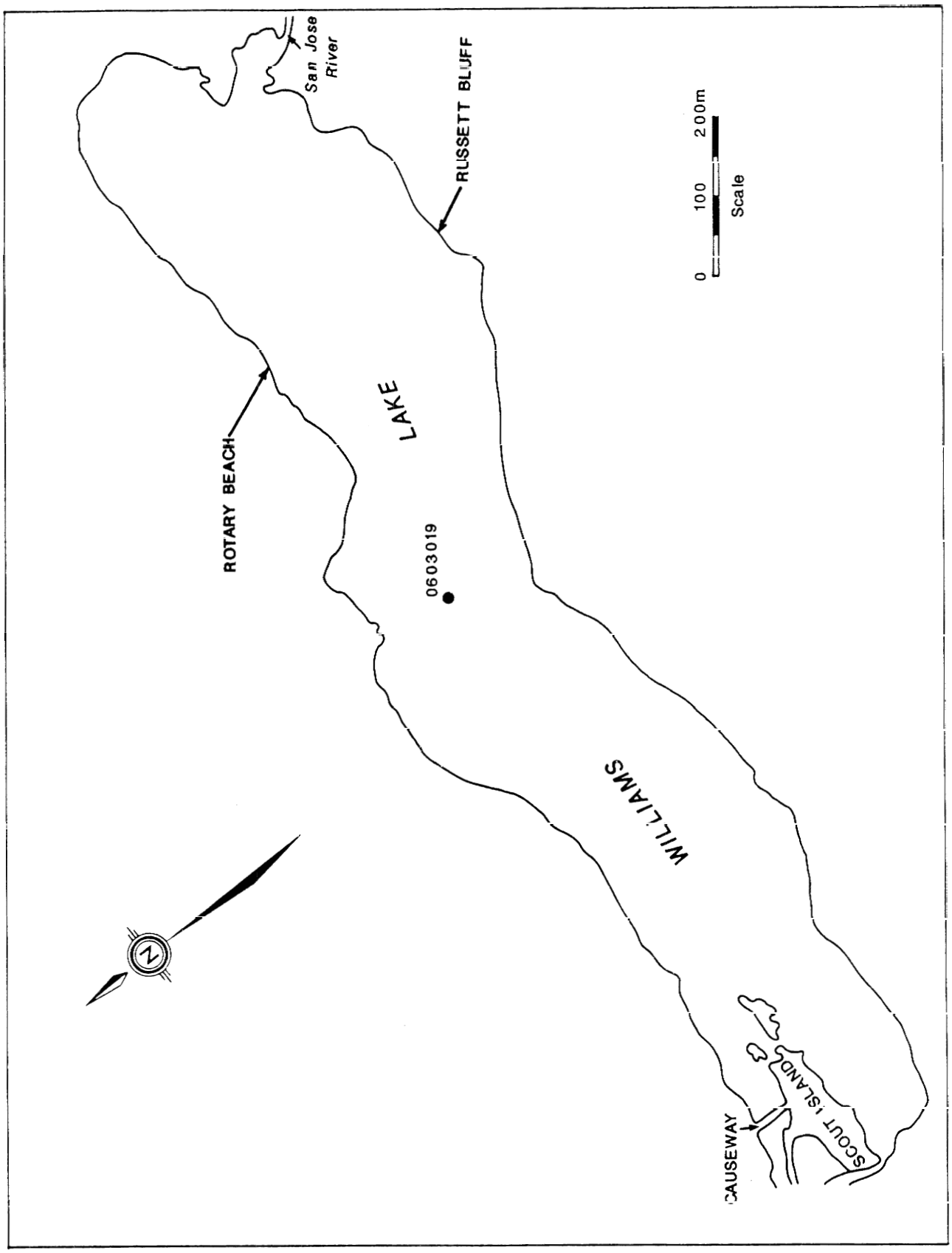


FIGURE 15 Williams Lake

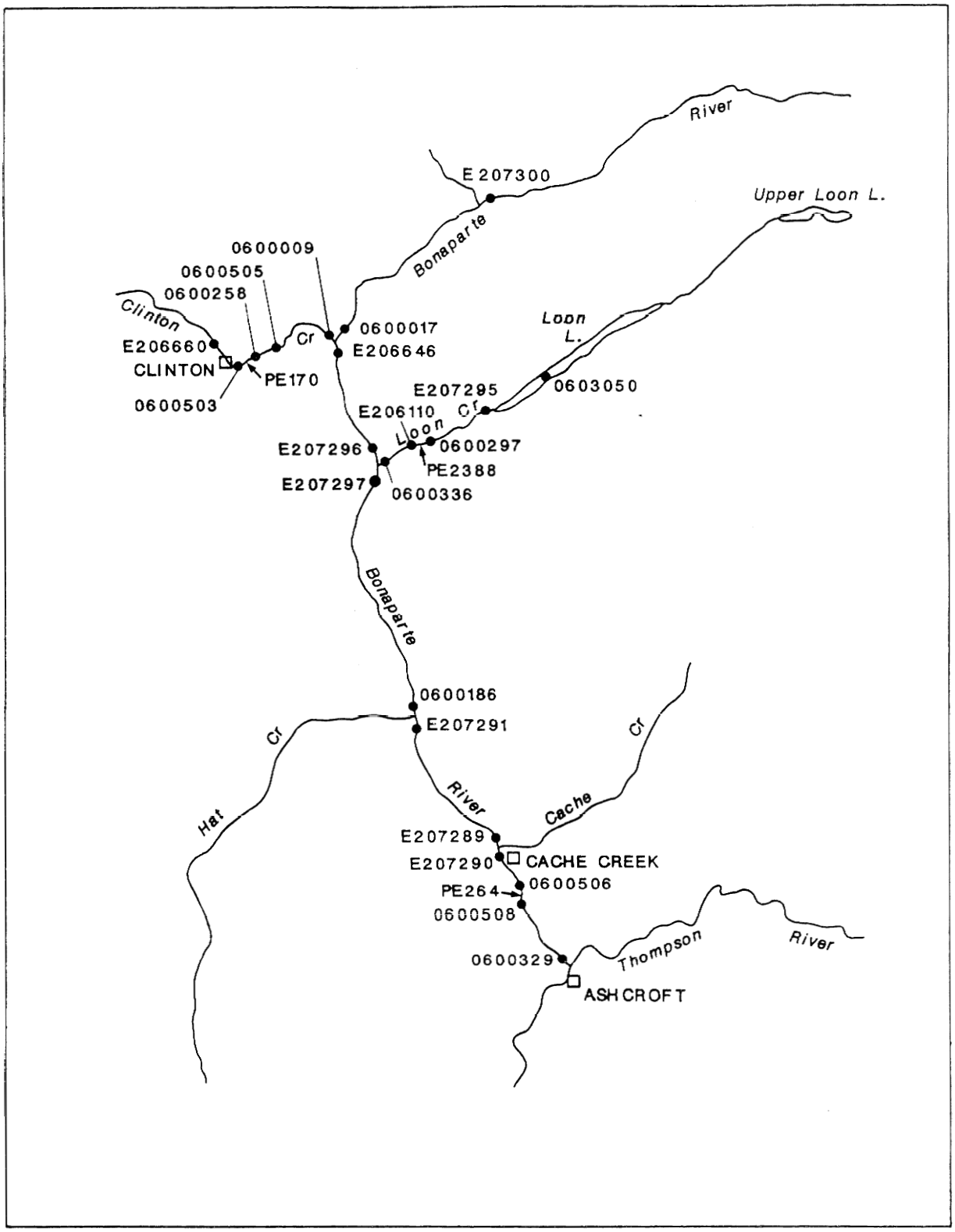


FIGURE 16 Bonaparte River

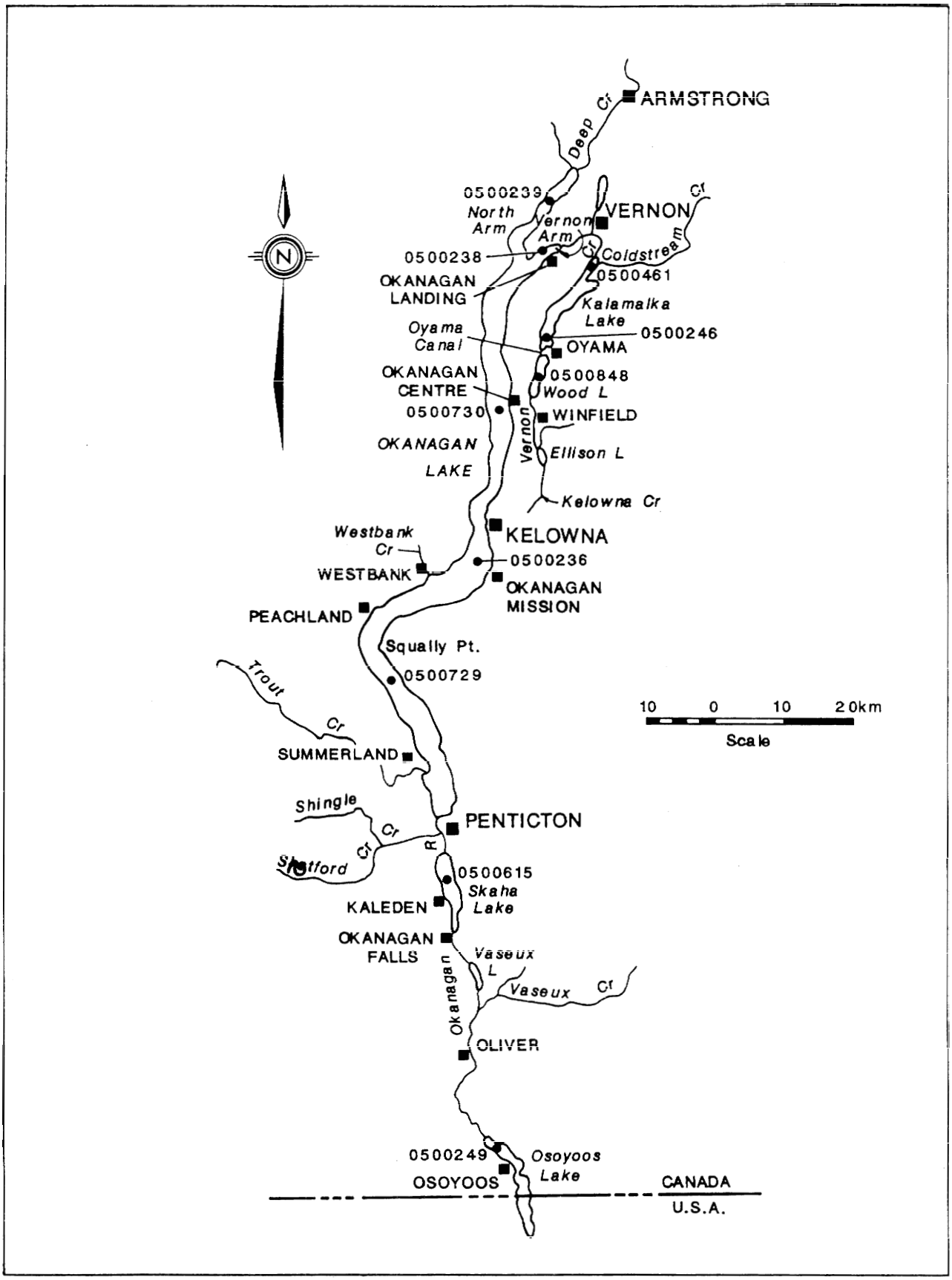


FIGURE 17 Okanagan Valley Lakes

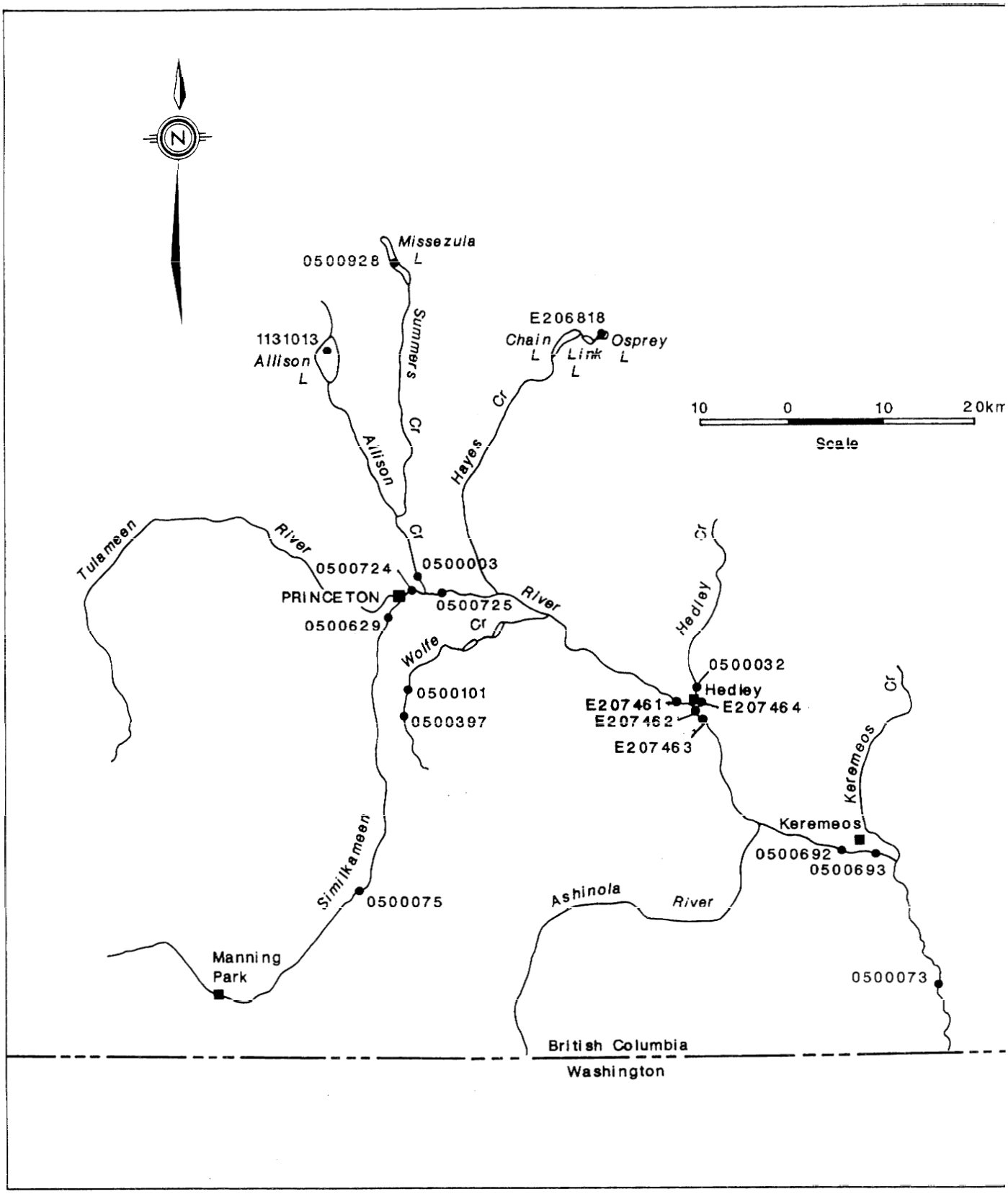


FIGURE 18 Similkameen River

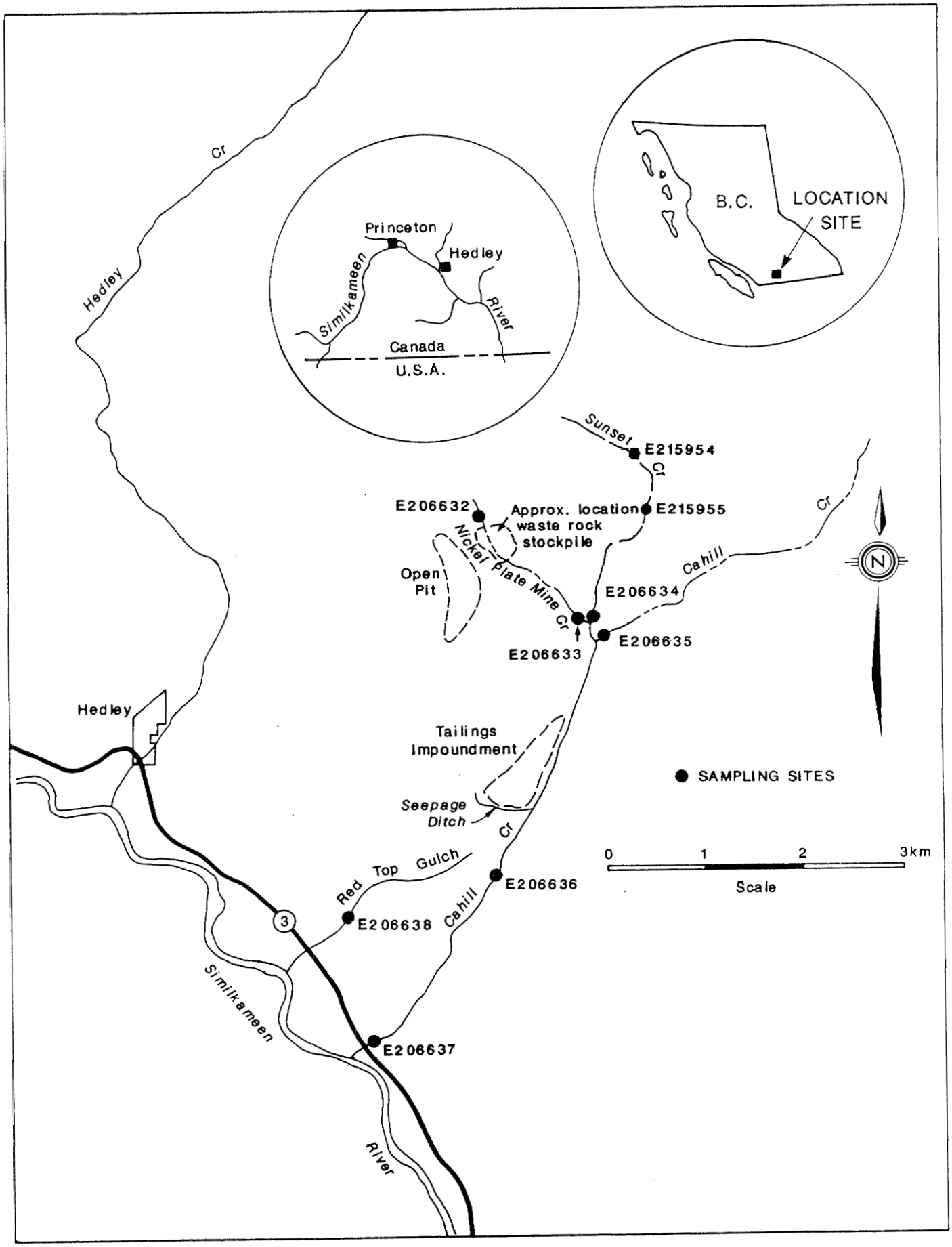


FIGURE 19 Cahill Creek

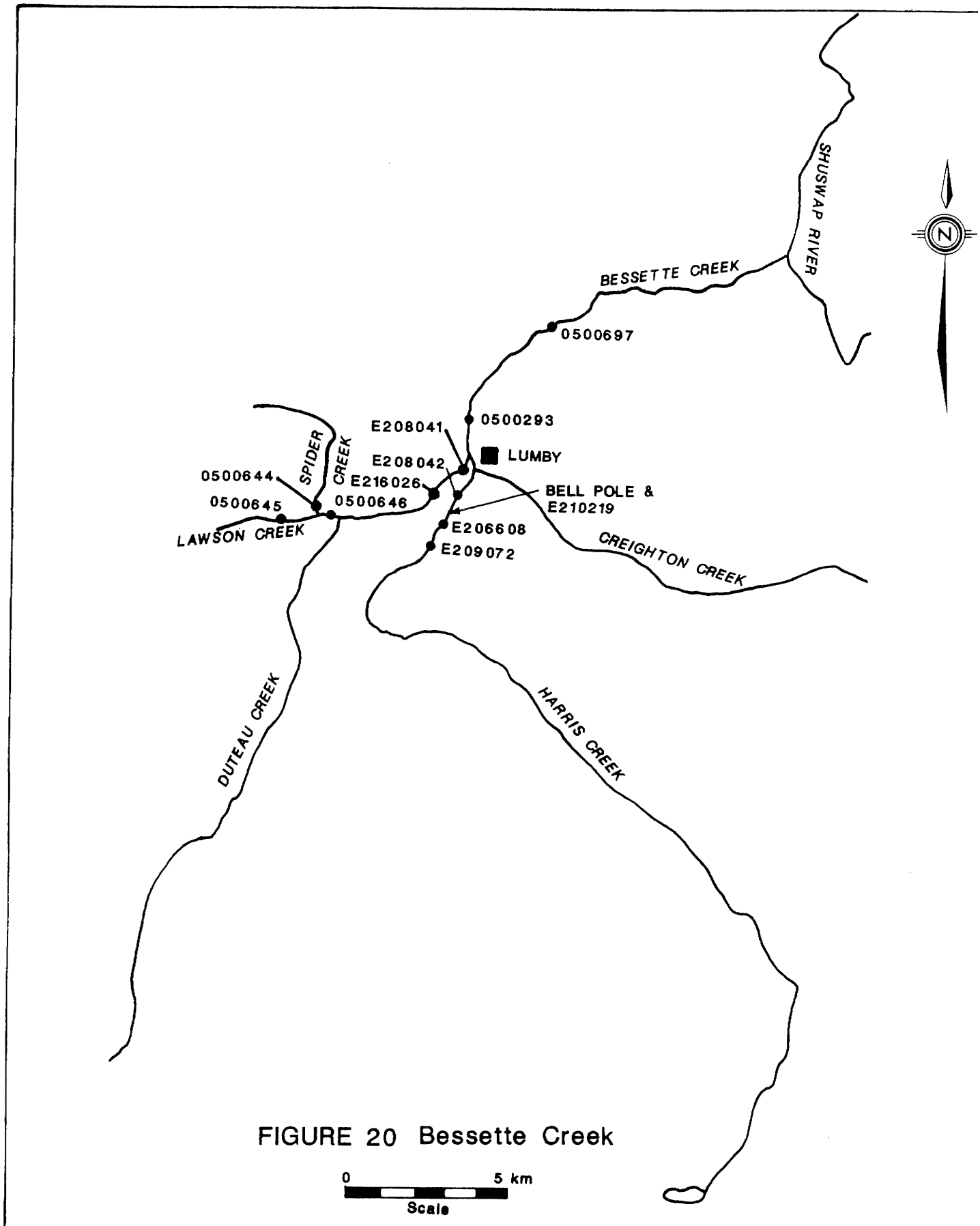


FIGURE 20 Bessette Creek

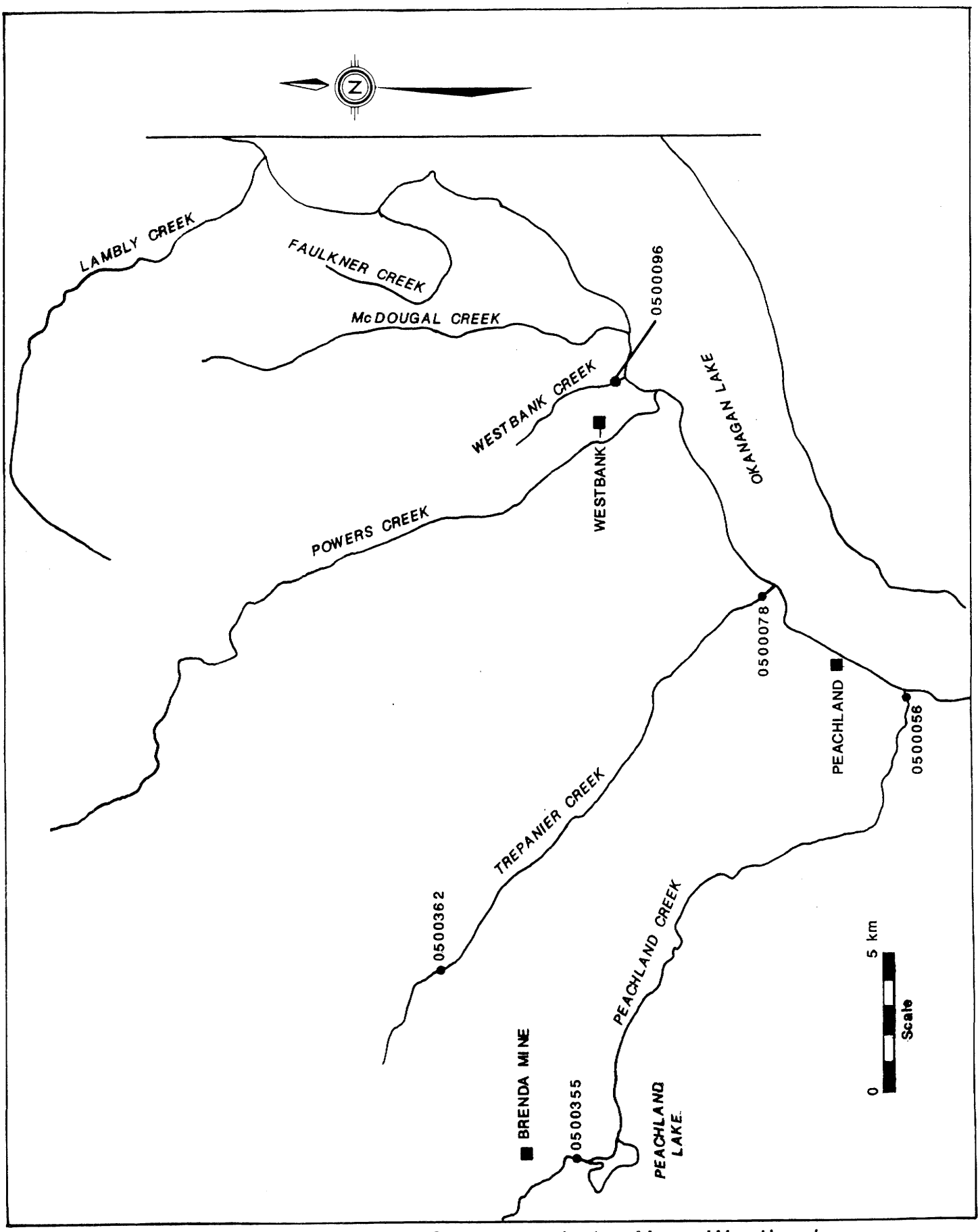


FIGURE 21 Tributaries to Okanagan Lake Near Westbank

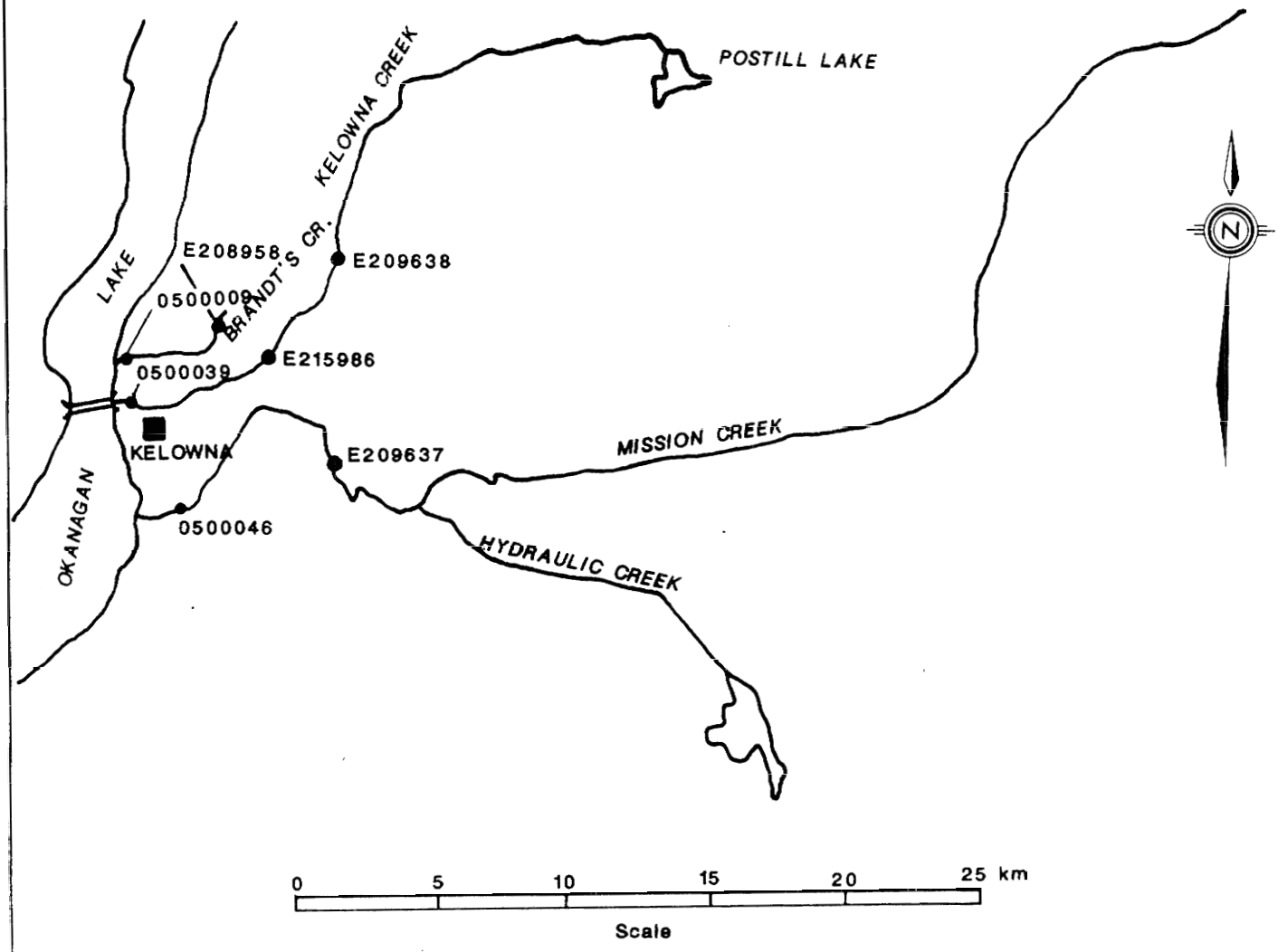


FIGURE 22 Tributaries to Okanagan Lake Near Kelowna

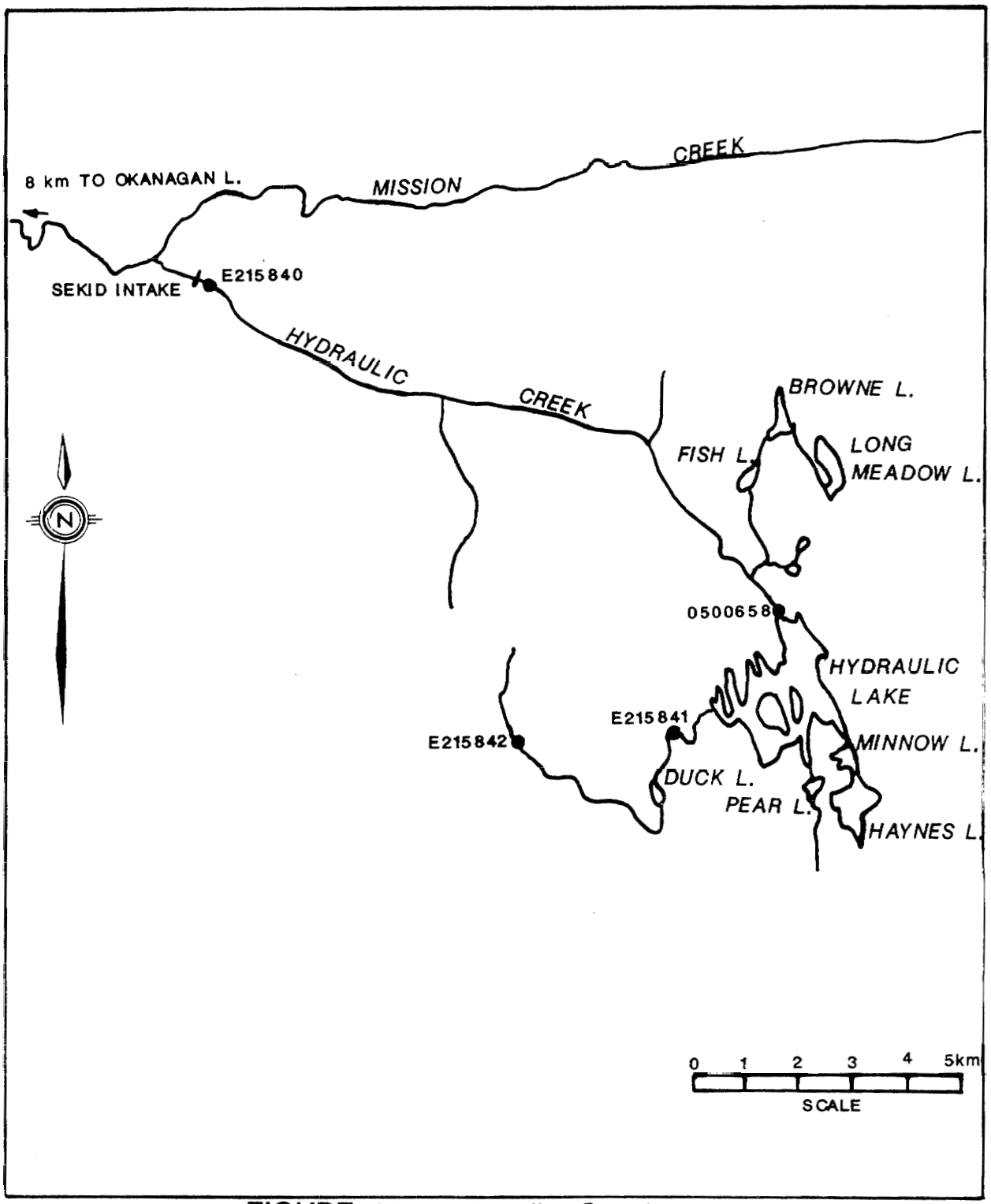


FIGURE 23 Hydraulic Creek

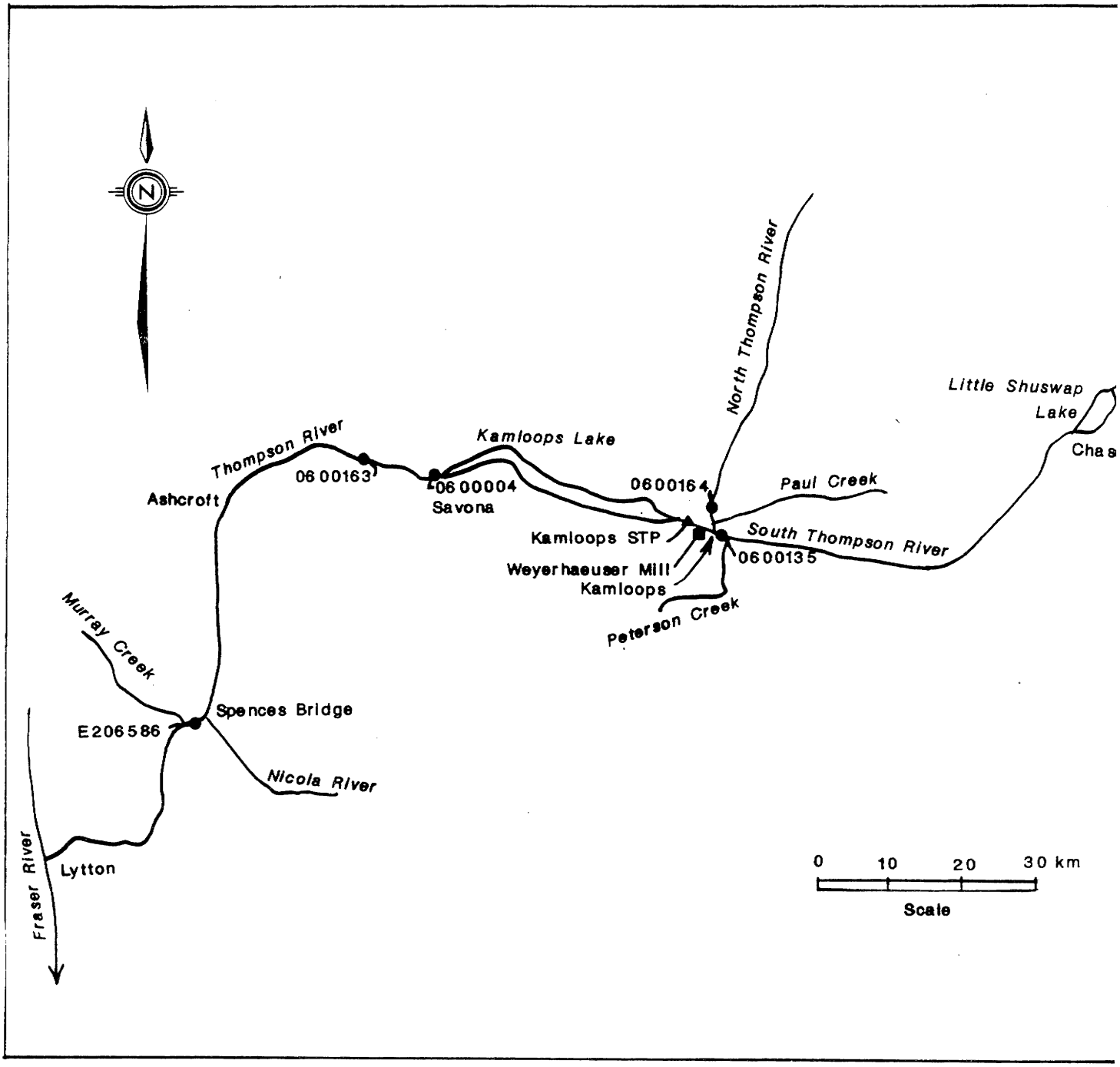


FIGURE 24 Thompson River

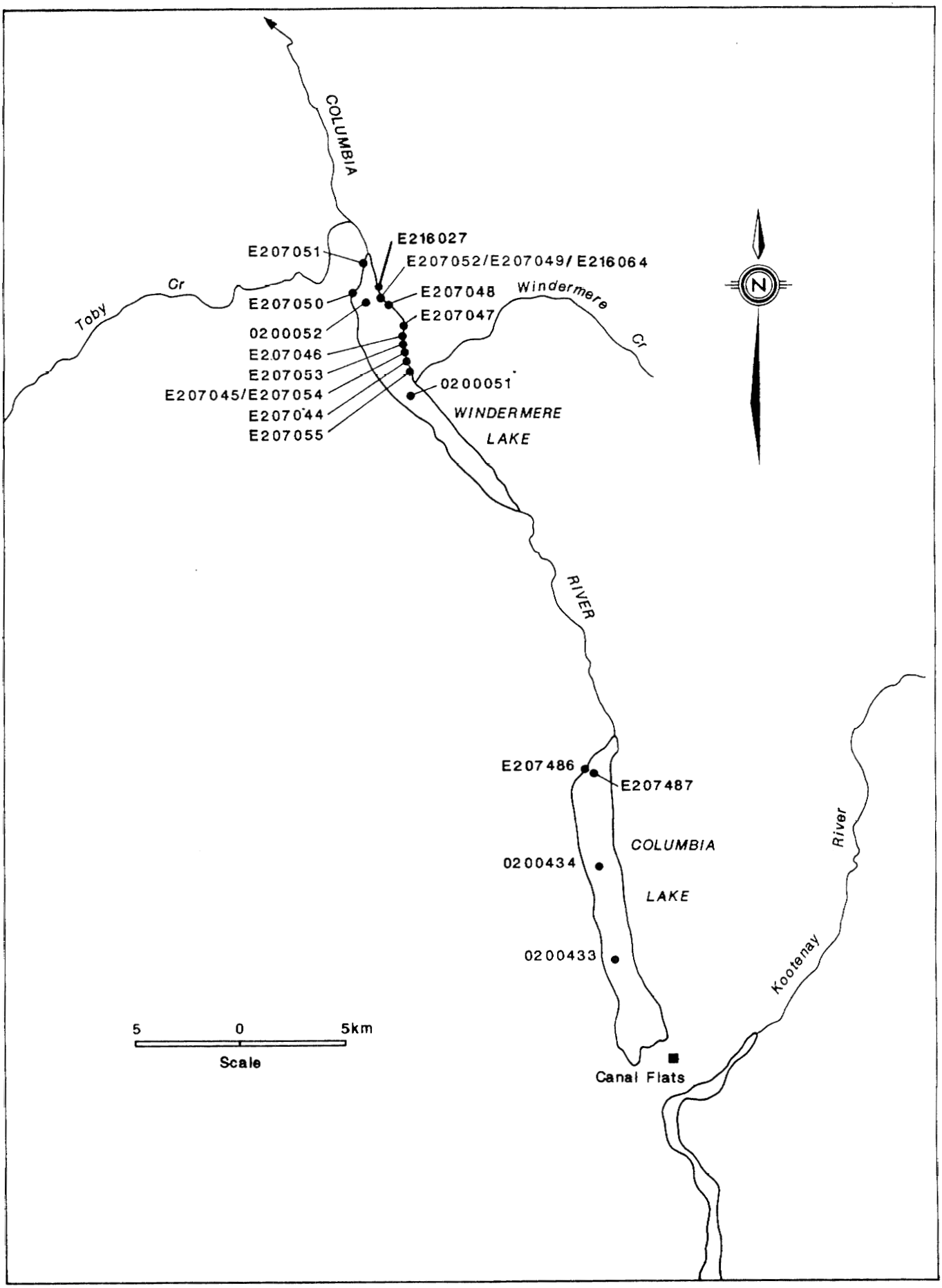


FIGURE 25 Columbia and Windermere Lakes

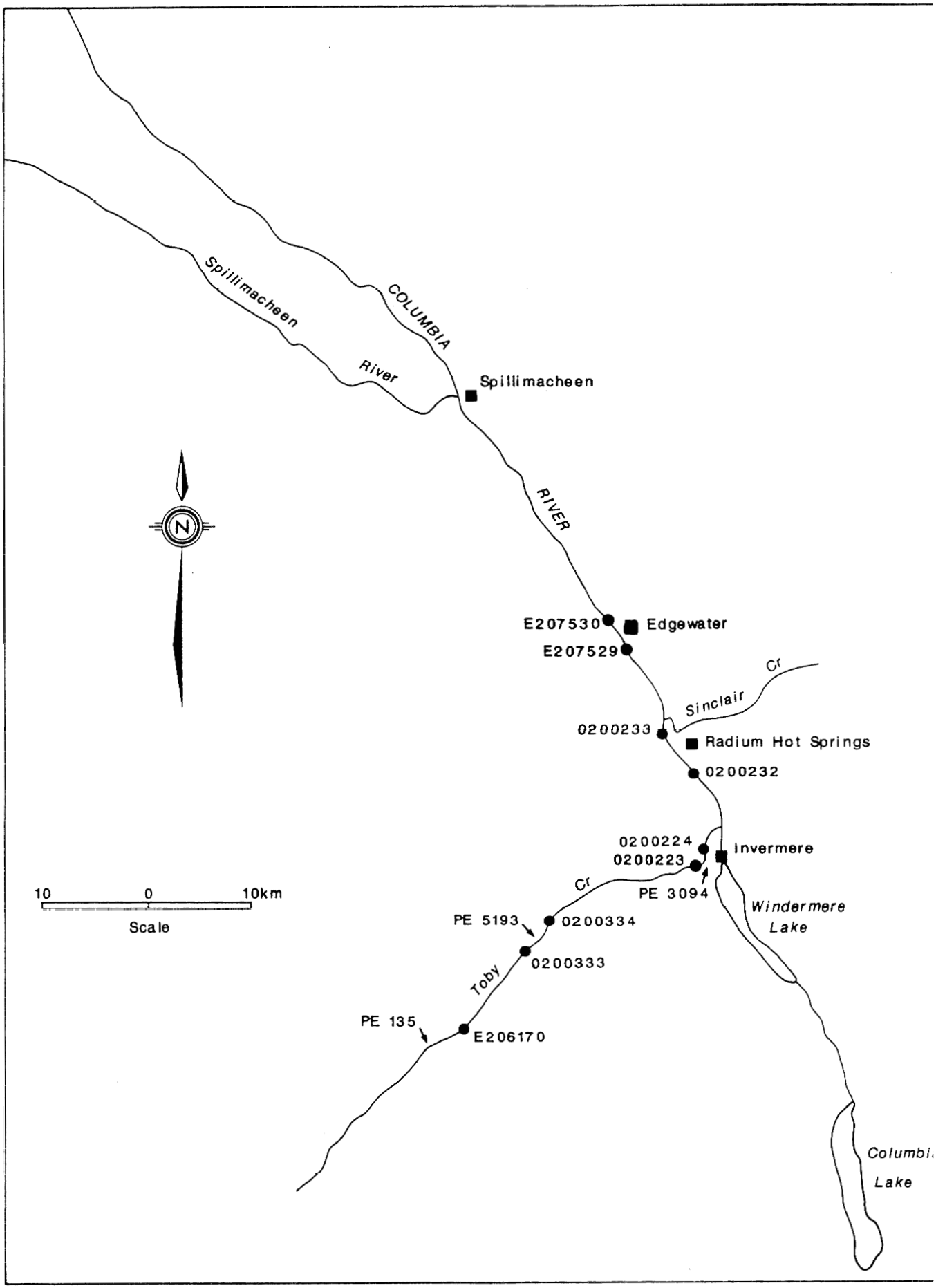


FIGURE 26 Toby Creek and the Upper Columbia River

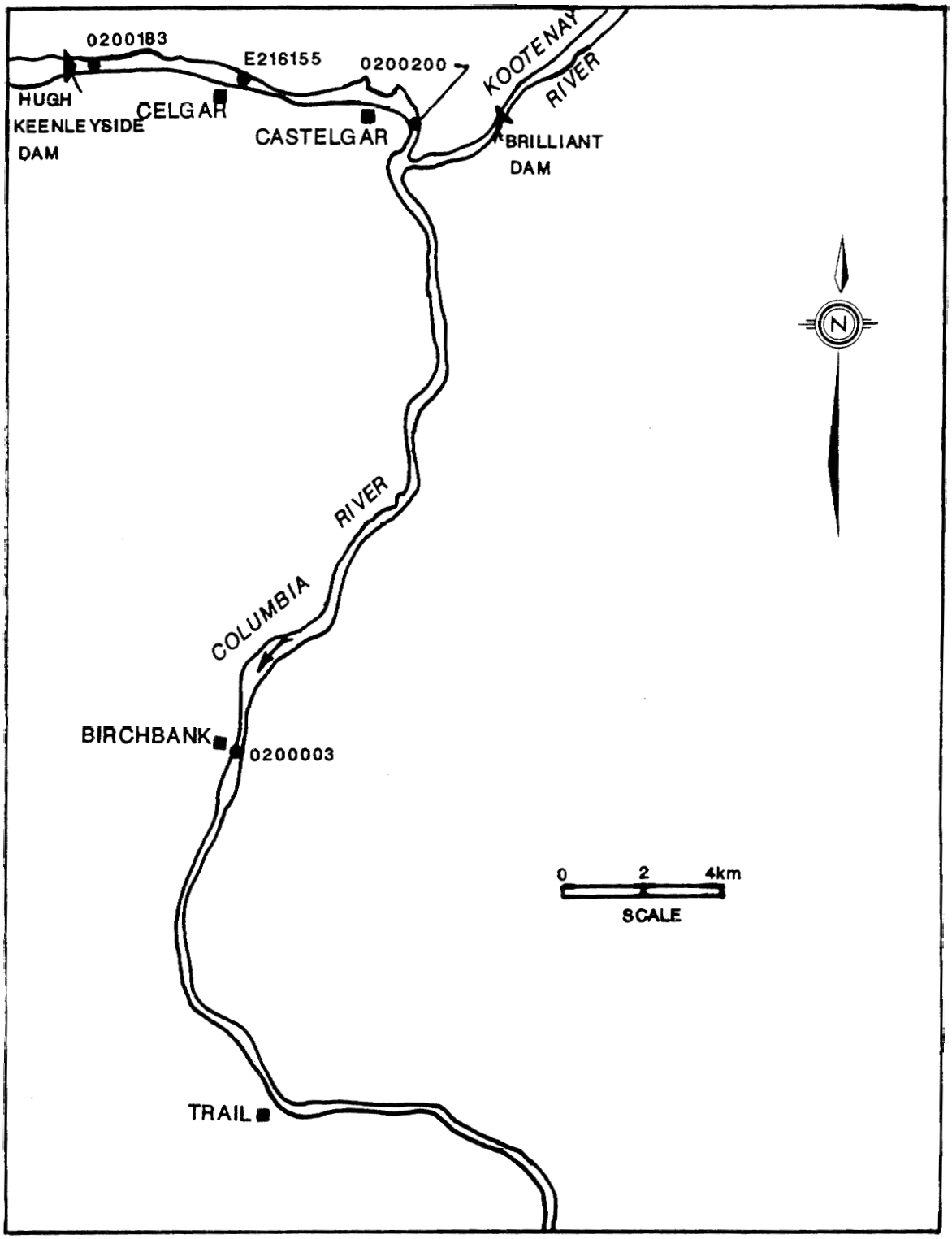


FIGURE 27 Columbia River from Keenleyside to Birchbank

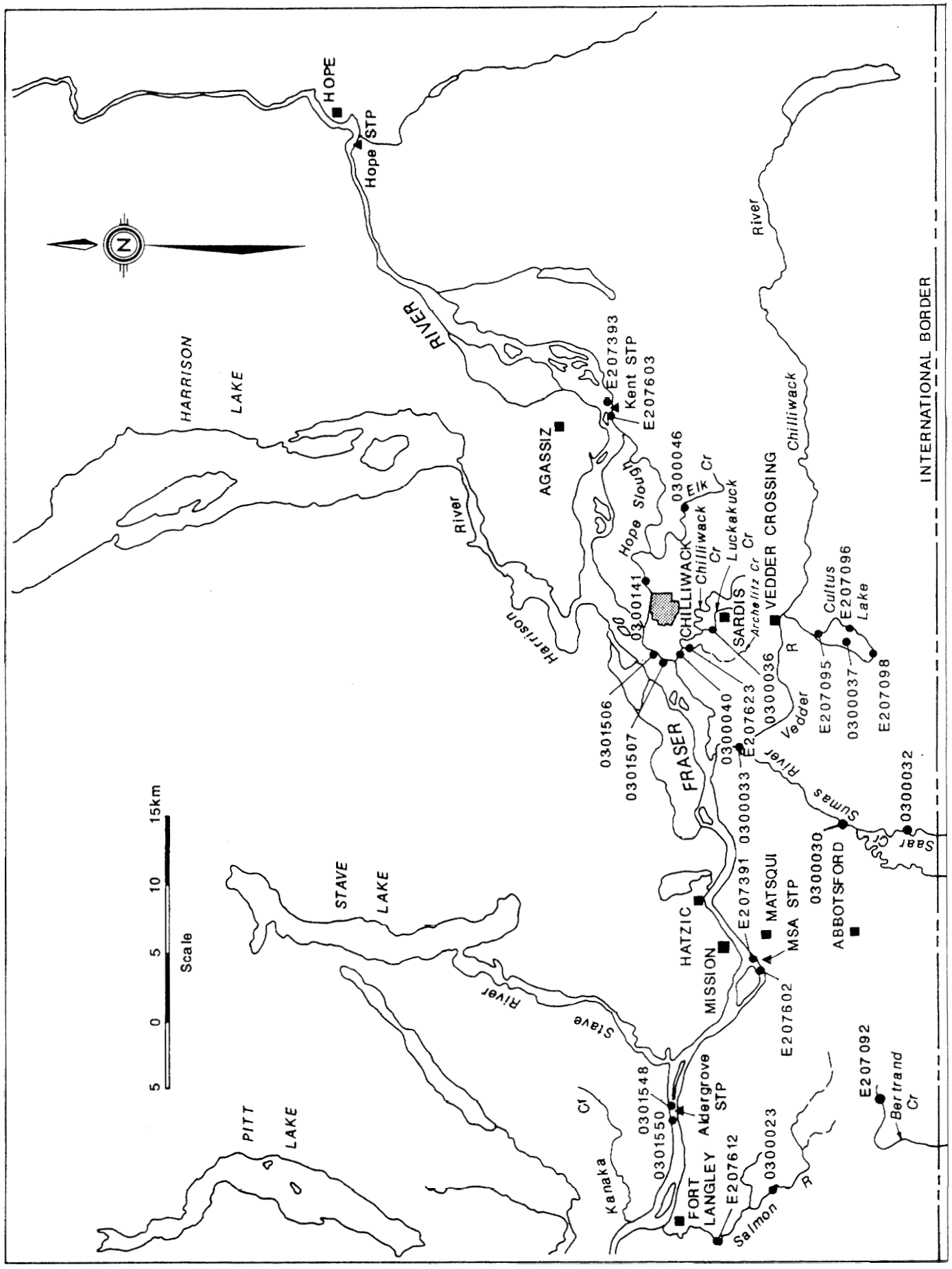


FIGURE 28 Fraser River from Hope to Kanaka Creek

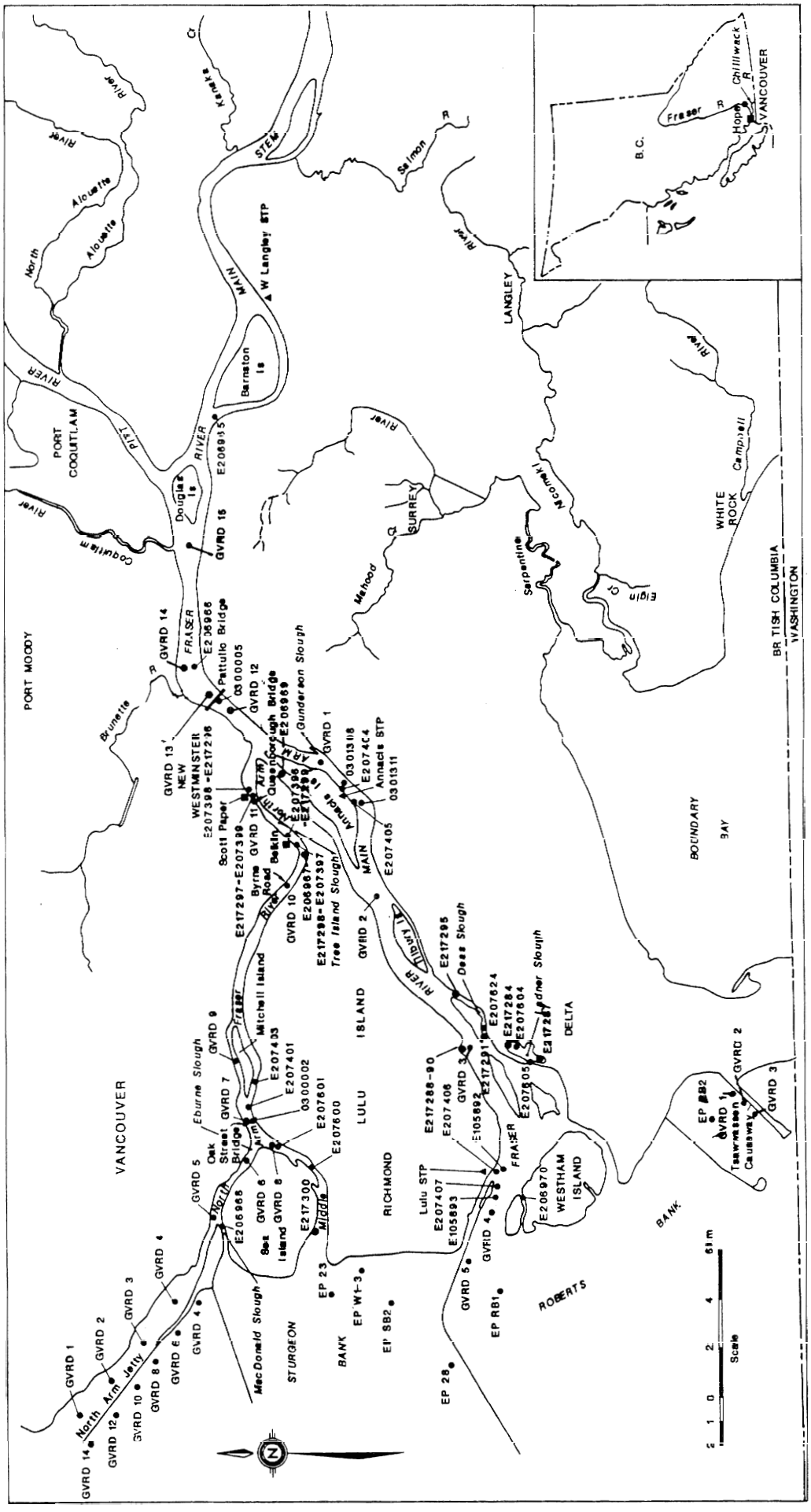


FIGURE 29 Fraser River From Kanaka Creek to the Mouth

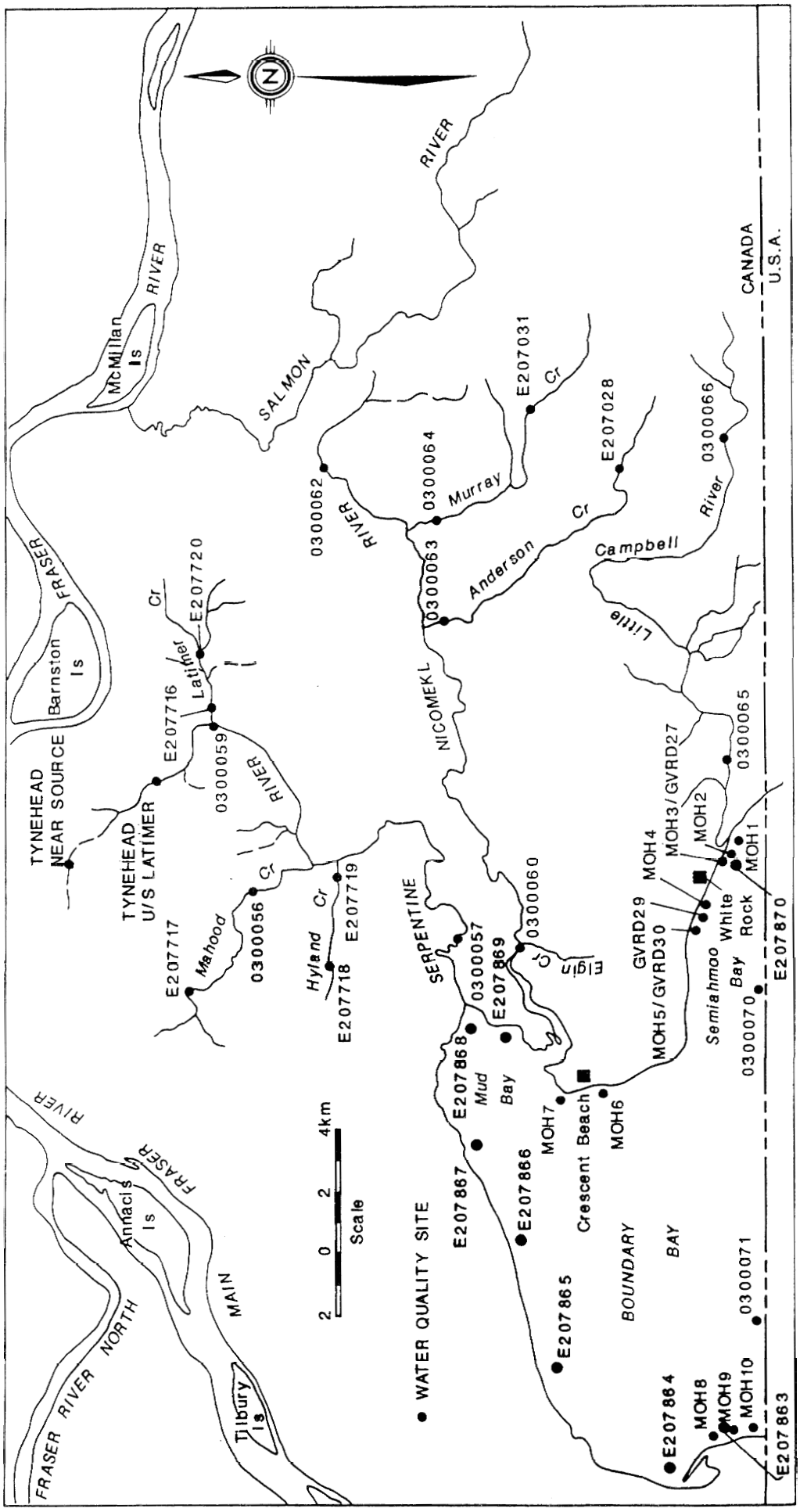


FIGURE 30 Boundary Bay

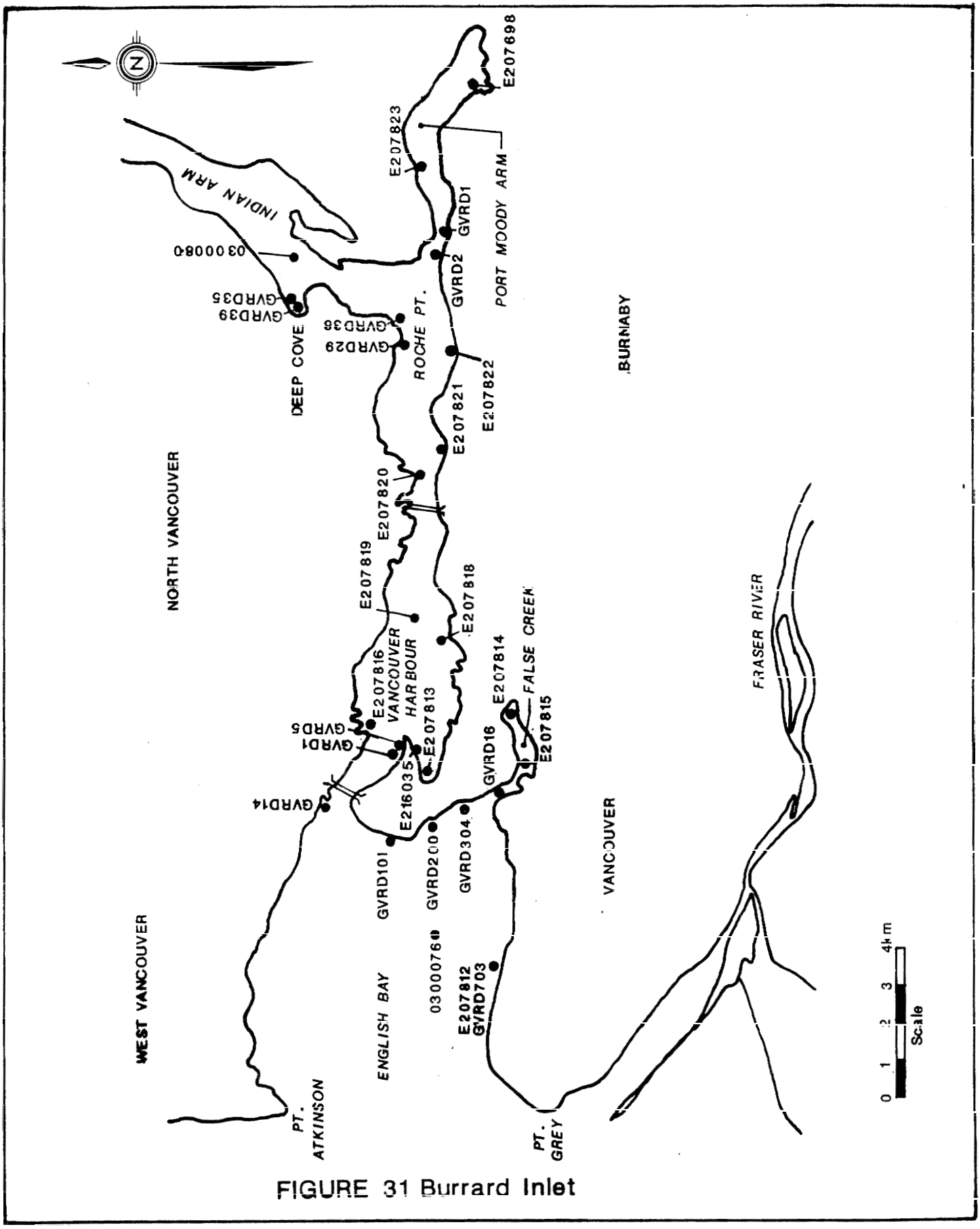


FIGURE 31 Burrard Inlet

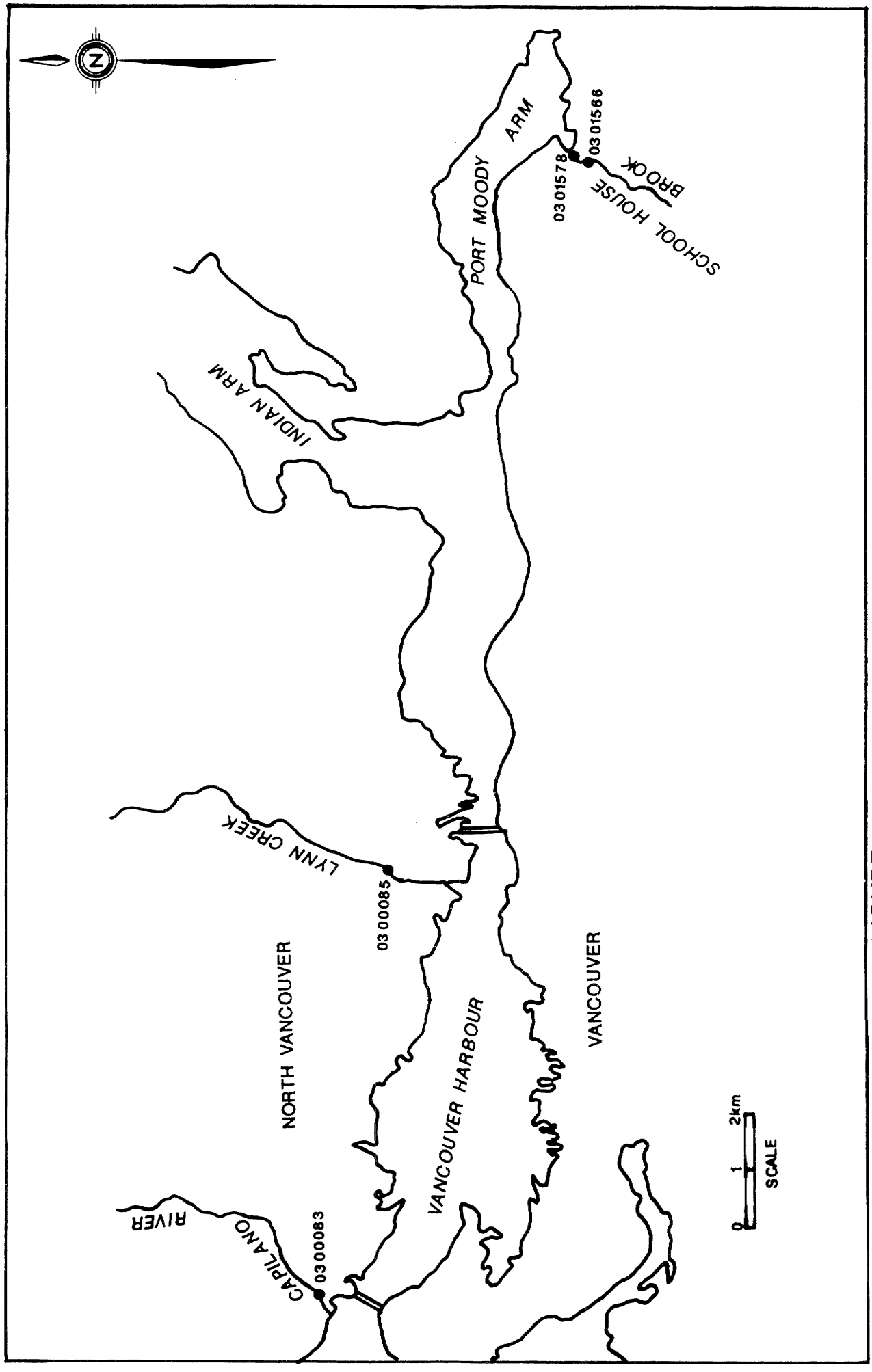


FIGURE 32 Burrard Inlet Tributaries

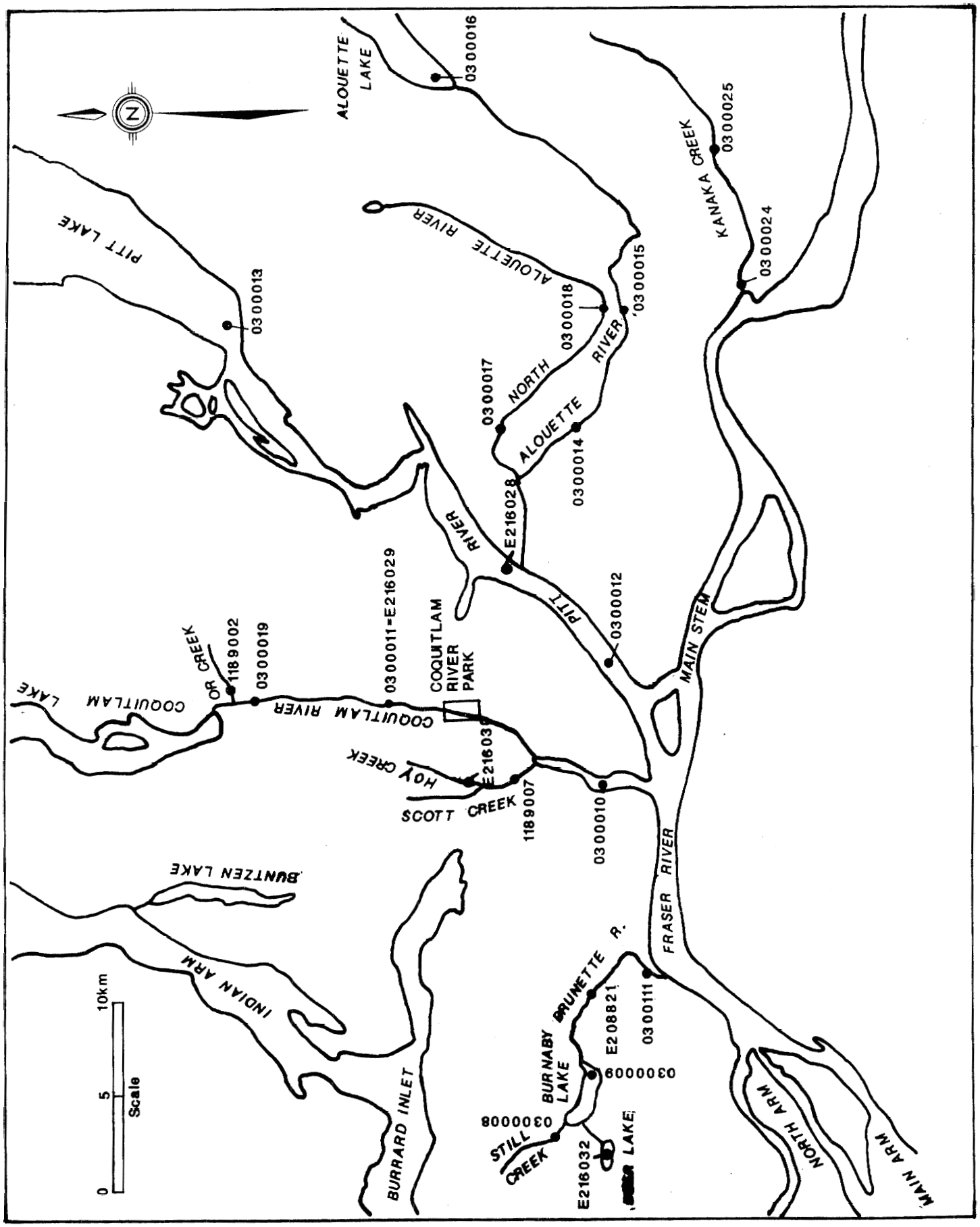


FIGURE 33 North Shore Tributaries to the Lower Fraser River

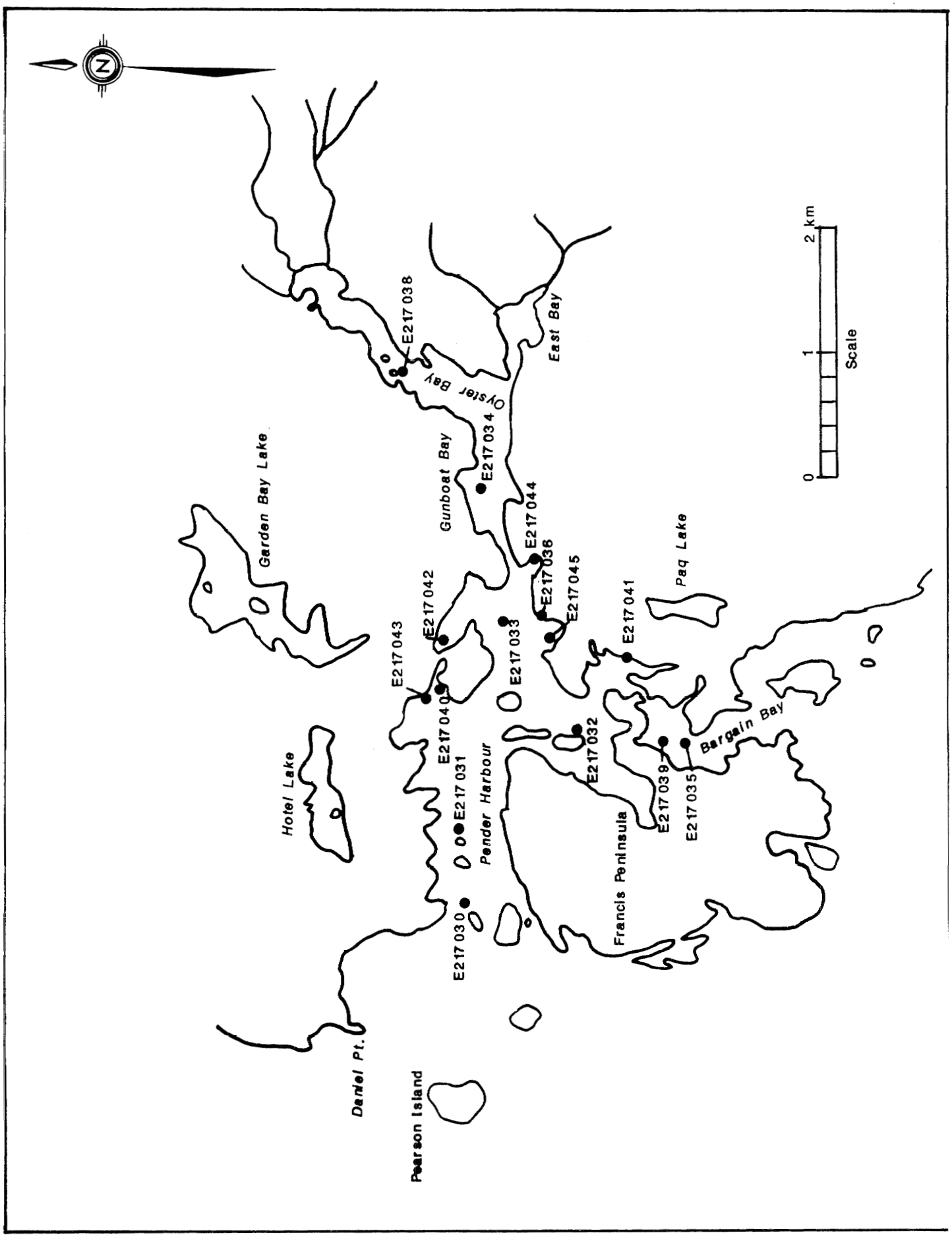


FIGURE 34 Pender Harbour