
Water Supply

(December)

Operations Group
(December)

Operations Group Review of Operations For the Period Ended 31 December 1998

1. Items of Note

The recent period of hot weather has resulted in high demands being placed on the production of water by the treatment plants. It was interesting to note that the demand peaked at 214 ML, the highest individual demand experienced over the past eight years.

2. Water Quality

A total of 564 samples from trunk mains were tested for coliform organisms. None of these samples tested positive.

Secchi disc water clarity in the Te Marua north lake varied between 2.4 and 8.1 m, and in the south lake between 7.2 and 10.6 m. These are considered satisfactory. Along with the change in water clarity (Secchi) there was a corresponding change in phytoplankton levels. The dominant phytoplankton were as follows:

- North Lake: *Oscillatoria*, *Navicula*, *Asterionella*
- South Lake: *Staurastrum*, *Cosmarium*, *Botryococcus*

When present in high concentrations *Oscillatoria*, *Navicula* and *Asterionella* may cause filter clogging and *Staurastrum* and *Asterionella* may cause taste and odour in treated water.

Dissolved oxygen and pH readings are also satisfactory.

Twenty four water samples were tested for *Giardia* and *Cryptosporidium*. The results were as follows:

Te Marua:	Treated water	nil detected
	Intakes (including lakes)	nil detected

Wainuiomata:	Treated Water	nil detected
	Intakes:	

- Big Huia and Orongorongo River Intakes - both had low levels of *Giardia* but no *Cryptosporidium* detected.
- Wainuiomata River Intake - low levels of both *Giardia* and *Cryptosporidium* detected.

- Georges Creek Intakes - low levels of both *Giardia* and *Cryptosporidium* detected.

In addition 14 artesian samples were tested for the presence of macro-organisms - none were detected. This testing is necessary to prove security of the groundwater.

There were several instances where the Guideline limits were not met during the November/December period. Transgressions reported by the Laboratory were:

- 5 low chlorine residual
- 9 high turbidity
- 5 low pH
- 6 high pH
- 1 high alkalinity
- 60 low fluoride
- 1 high fluoride

The transgressions identified above have in the main been caused by the following factors:

- Low chlorine residuals* - Dosing equipment malfunction at Wainuiomata. This has now been resolved.
- High turbidity* - A change in sampling procedures resulted in the false identification of high turbidity levels at Wainuiomata, the procedures have now been revised and since the middle of November no transgressions have been identified.
- Low fluoride* - This is the first occasion when a report has been issued on fluoride level transgressions. During the two month period, 235 samples were taken with the greater majority of transgressions being measured at Waterloo, Wainuiomata and Gear Island. These transgressions were the result of equipment malfunction as identified below.

Wainuiomata

Following the recent installation of a new fluoride feeder, a control software problem affecting the flow-proportional dosing was identified and resolved. Subsequently, it was discovered that the feeder motor has been stalling at low plant flows. This will be rectified by the installation of a low ratio gearbox, which is currently being sourced.

Waterloo

Recent test results, showing lower than expected levels of fluoride, have led to identification of an intermittent fault on the fluoride feeder solenoid valve. This fault has been compounded by changes in the plant flow signal scaling associated with the current plant upgrade project. Repair of the solenoid fault, together with the installation of a new fluoride feeder motor, will rectify the problem.

Gear Island

Low fluoride levels have also been recorded at Gear Island water treatment plant. Due to the fact that the plant is not always required to meet production needs, fluoride has been settling out in the dosing solution so that the quantity of fluoride per dose is irregular. A new mixer is to be installed in order to overcome this problem.

3. **Supply Situation**

Situation as at 7 January:

The SOI is our measure of the La Nina and this has remained steady in December at 13. Latest information suggests the current La Nina will hold its value during January and February and probably peak in March, and then be weak or gone by May, but this will have to be watched closely.

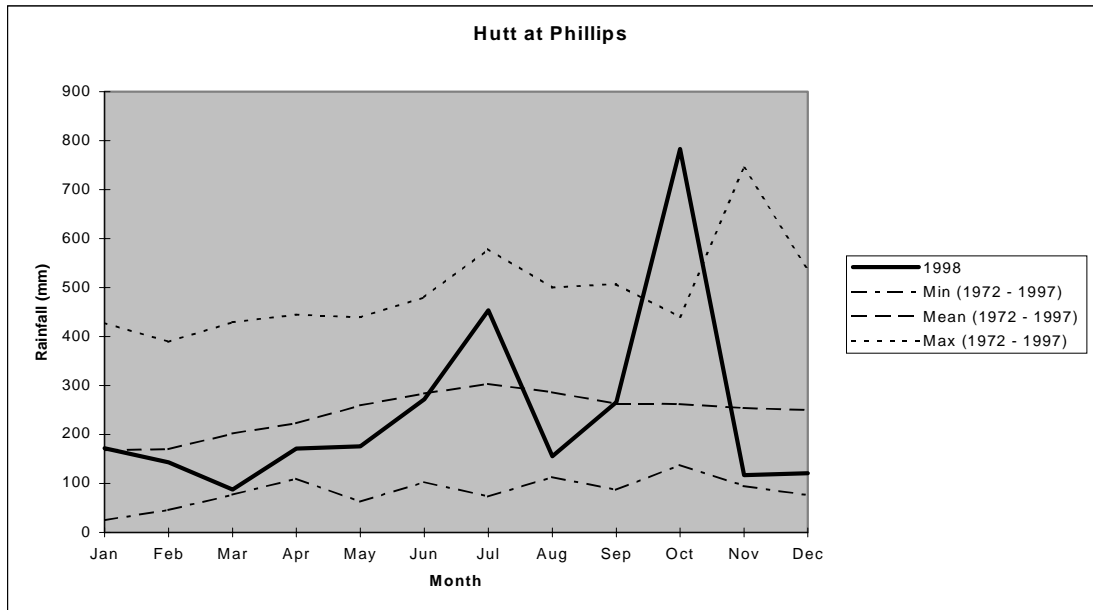
We have seen La Nina periods in the 10 to 20 category several times before, back in the summers of 96/97, 88/89 75/76 and 73/74.

The main weather pattern for Wellington will be the recurrences of a pattern of three or four light windy days followed by two days of gusty north or north-west winds, then followed 50 percent of the time by brief cool southerly changes. If a southerly change takes place on a hot summer's afternoon there will be a high risk of some storms with hail. Rain should occur once every seven to 10 days in brief bursts of weak intensity. The best possibility for moderate to heavy rain is for a low pressure system to cross the north of the country bringing periods of vigorous winds lasting a day or two. There may be such an event in mid to late January and two or three in February. Normal to above normal sunshine is expected.

Hutt River Flows

The mean monthly river flow for the month of December was below average. The monthly mean flows are shown in Figure 1.

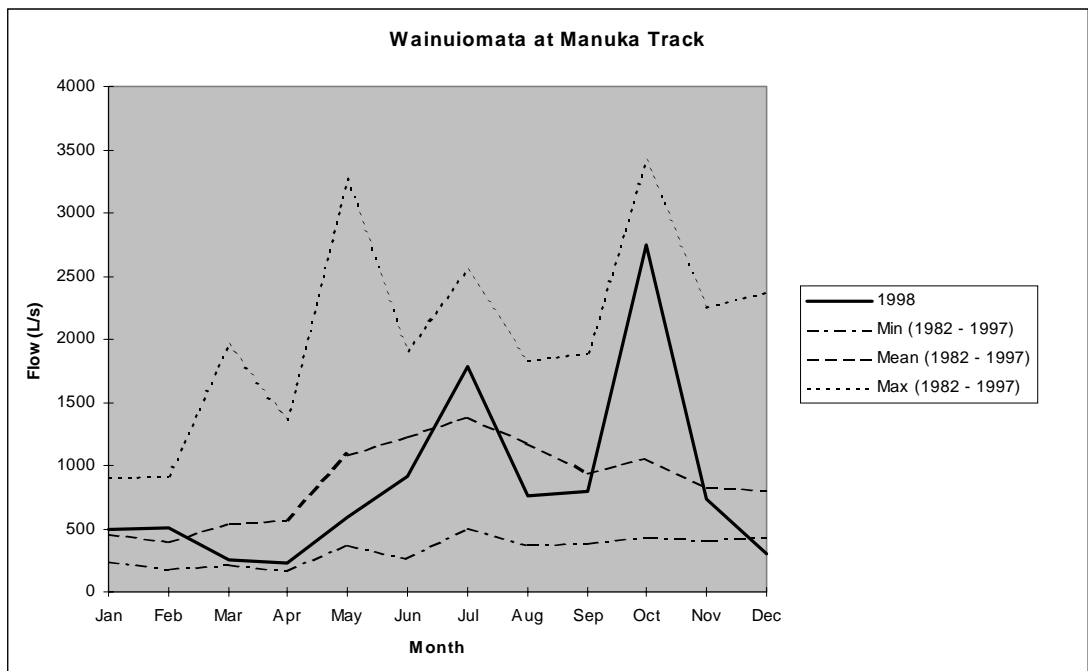
Figure 1. Kaitoke Mean Monthly Flows



Wainuiomata River Flows

The river flows for the month of December are the lowest since records began in 1982. The monthly mean flows are shown in Figure 2.

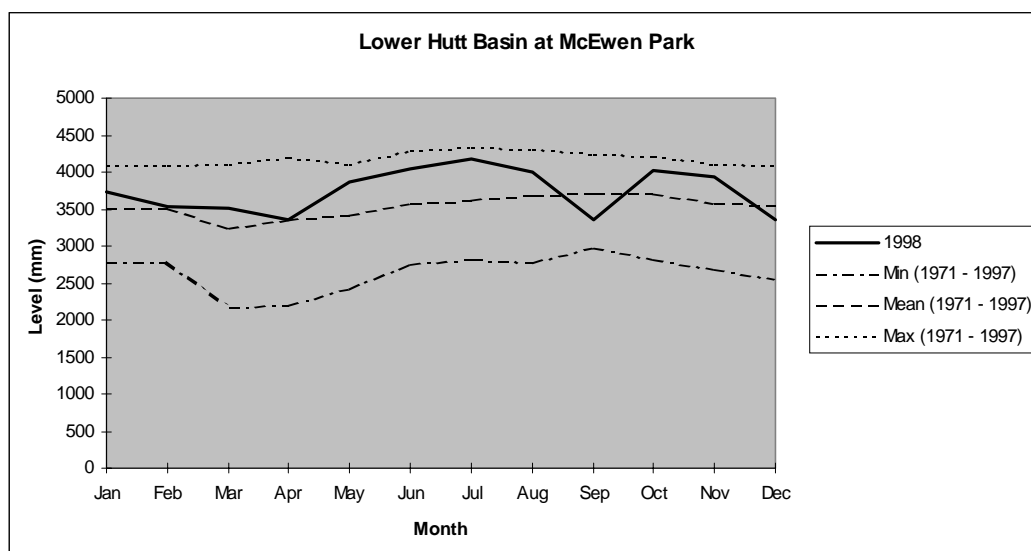
Figure 2. Wainuiomata Mean Monthly Flows



Aquifer Levels

The Aquifer level in December was below normal. The monthly mean flows are shown in Figure 3.

Figure 3. Aquifer Mean Monthly Levels



4. Production

4.1 Te Marua

Supernatant and Sludge Lagoons

All installation work has been completed and commissioning is underway. Supernatant can now be discharged to the Hutt river.

Power Monitoring

Power monitoring equipment has been successfully commissioned and is now providing online information on power consumption in order to provide instantaneous production costs of treating water.

After the first month of operation (December) the accuracy of the new equipment was checked against the values recorded and charged by TransAlta. The results were excellent and confirmed we can confidently rely on our own information when optimising power consumption.

WRC metering 269.91 kVA max demand

TransAlta 269.00 kVA max demand

(WRC equipment is more accurate)

Kaitoke Upgrade

The upgrade of electrical and control systems at Kaitoke is now complete and operational. Some minor installation work is still being carried out by Te Marua staff and should be completed early in the New Year.

Smart Lake Filling

Work has begun on a control system to automate lake filling. This system (currently manual) will continuously monitor treatment plant inlet flow requirements and automatically divert any excess available supply into Lake 1.

Boost and Treatment Pump Drive Shafts

Servicing of drive shafts on the large Te Marua pumps is underway. Each shaft is to be sent to Auckland for bearing replacement (if required) and specialised balancing.

This work will be delayed over the high demand summer period to ensure all pumps are available if required.

Plant Tours

13.11.98	Dental School	15 people
18.11.98	Wellington Regional Council Induction	17 people
16.12.98	City Mission Youth Group	18 people

4.2 Wainuiomata Water Treatment Plant

During the past two months the Treatment Plant has been operating at the maximum capacity that the river flows have allowed.

Following the recent outbreak of *Giardia* and *Cryptosporidium* in the catchment it has been decided to monitor third party activities. This has been made possible by the appointment of a Ranger who has been based at Wainuiomata.

The increase in third party activities within the catchment and around the Treatment Plant has increased noticeably since the three Council houses became empty at the beginning of November. Since that date, two of the houses have been let. One for Ranger accommodation and one to a member of the firm responsible for monitoring the security of the area.

The interim discharge consent which enables discharge of the supernatant to the river has been extended until the middle of February. By this time it is hoped that optimisation of the operation of the wash water plant will permit the supernatant to be returned to the front of the Treatment Plant. The actual construction of the contact tank has been completed, however, the final installation of the mechanical and electrical equipment is dependent upon receipt of an acceptable commissioning plan.

Modifications to the mixing tanks and the incoming flow penstock are in hand at present.

The centrifuge pump in the sludge removal plant has been overhauled.

4.3 **Waterloo**

The Waterloo water treatment plant has been running at maximum flows.

The capacity increase upgrade is still progressing. The first of the new motors arrived on site on 30 December along with the new lime feeders.

The pipe work modifications and electromagnetic flow meter installations were completed by the Distribution section.

Gracefield No.2 and Naenae No.3 motors have been replaced with reconditioned motors to improve supply security.

Penrose Street variable speed and Penrose fixed speed well pumps have been repaired and are back in service.

Colin Grove well pump has been removed for overhaul.

Tours

No tours occurred during this period.

4.4 **Gear Island**

The Gear Island water treatment plant has been averaging 22 million litres per day.

Due to high demands, it was impractical to carry out modifications to the chlorine plant.

The Distribution section installed the flow meter on the Wellfield delivery main.

5. **Distribution**

Electrical Section

Telemetry Upgrade

Remote control and indication for the Alexander Road Reservoir on Mt Victoria has been completed.

Cruickshank Reservoir

The new control valve for the old Cruickshank Reservoir has been installed, and is now remotely controlled through the telemetry system. New level measuring equipment has also been installed.

Pipeline Section

Gear Island Wellfield

The underground isolating valves at each well have been removed, and a new scour valve has been installed on the collector main.

6. **Health and Safety**

Total Injury/Illness/Incident Record:

Production: 0

Distribution: 0

Network 10 non-serious harm injuries. Sprain/strain and superficial injuries, including one reported case of dermatitis.

- Results of the Production Group's Sodium Fluorosilicate dust monitoring were discussed with staff. A hazard control plan has been developed with practical completion due at Te Marua and Waterloo Treatment Plants end of May 1999. Wainuiomata fluoride controls to be confirmed.
- A preliminary noise hazard assessment was carried out at three of the water treatment plants. The assessment identified machinery and areas with noise levels having a potential to provide excessive exposure to Production staff.
- Network Group staff undertook traffic management training for work on city roads. The wearing of appropriate personal safety equipment along with the selection and placement of signs and cones were explained as important features of work site safety.
- The following health and safety procedures were drafted to ensure the provision of appropriate safe work practices for the various activities:
 - Work on High Capacity Highways; and
 - Personal Protective Clothing for; Sodium Fluorosilicate, Chlorine and Mercury.

Operations Group Health and Safety Data : Total Injuries

Production

1998	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	2,006	2,365	2,521	2,006	2,195	2,411	2,182	2,364	2,042	2,366	2,552	2,548
Employee numbers	18	18	18	15	15	14	14	15	14	14	16	16
Injuries	0	1	0	1	0	0	1	0	0	0	0	0
Days lost	0	0	0	0	0	0	1	0	0	0	0	0
Incidence rate (number of injuries per 100 workers)	0	6	0	7	0	0	7	0	0	0	0	0
Frequency rate (injuries per 1,000,000 hours exposure)	0	423	0	499	0	0	458	0	0	0	0	0
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	458	0	0	0	0	0

Distribution

1998	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	1,560	1,585	1,994	1,585	1,529	1,620	1,525	1,612	1,574	1,488	1,499	1,557
Employee numbers	12	12	12	12	12	11	11	12	11	11	11	11
Injuries	0	0	0	1	1	1	0	0	0	0	0	0
Days lost	0	0	0	5	5	0	0	0	0	0	0	0
Incidence rate (number of injuries per 100 workers)	0	0	0	8	8	9	0	0	0	0	0	0
Frequency rate (injuries per 1,000,000 hours exposure)	0	0	0	630	654	617	0	0	0	0	0	0
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	3,154	3,270	0	0	0	0	0	0	0

Network

1998	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	3,668	4,200	5,064	4,699	3,494	6,154	4,497	4,466	4,738	4,745	4,276	5,295
Employee numbers	33	32	32	30	30	30	30	30	28	30	30	31
Injuries	0	4	1	1	2	2	0	0	0	1	6	4

Attachment 1 to Report 99.28
Page 12 of 38

Days lost	0	3	0	5	36	12	0	0	0	0	1	0
Incidence rate (number of injuries per 100 workers)	0	13	3	3	7	7	0	0	0	3	20	13
Frequency rate (injuries per 1,000,000 hours exposure)	0	952	197	213	572	325	0	0	0	211	1,403	755
Severity rate (days lost to injury per 1,000,000 hours worked)	0	714	0	1,064	10,303	1,950	0	0	0	0	234	0

Wellington City Water
(December)

Wellington City Water Review of Operations For the Period Ended 31 December 1998

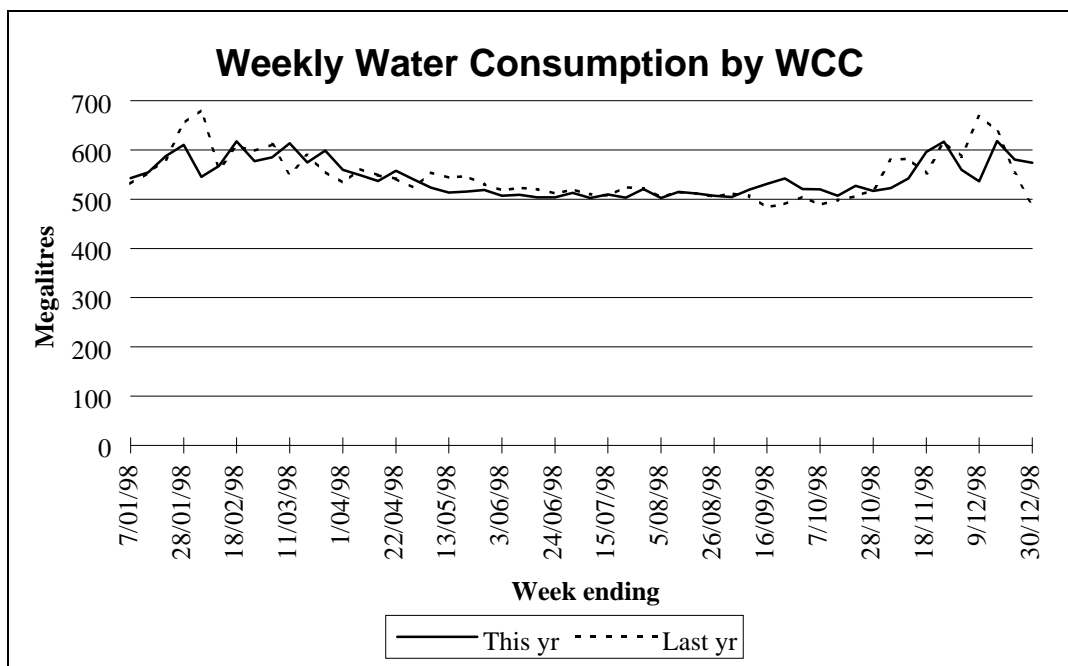
1. Items of Note

During the two month period the demand on the supply system has risen steadily due to the period of hot weather.

Problems continue to be experienced with the contractors working for Saturn Communications. During the months 161 repairs were carried out on damage caused by these contractors.

There were 16 major burst mains reported during the month of November and December.

2. Water Supply (PT 30.1)



3. Financial

3.1 Facilities Management Contract

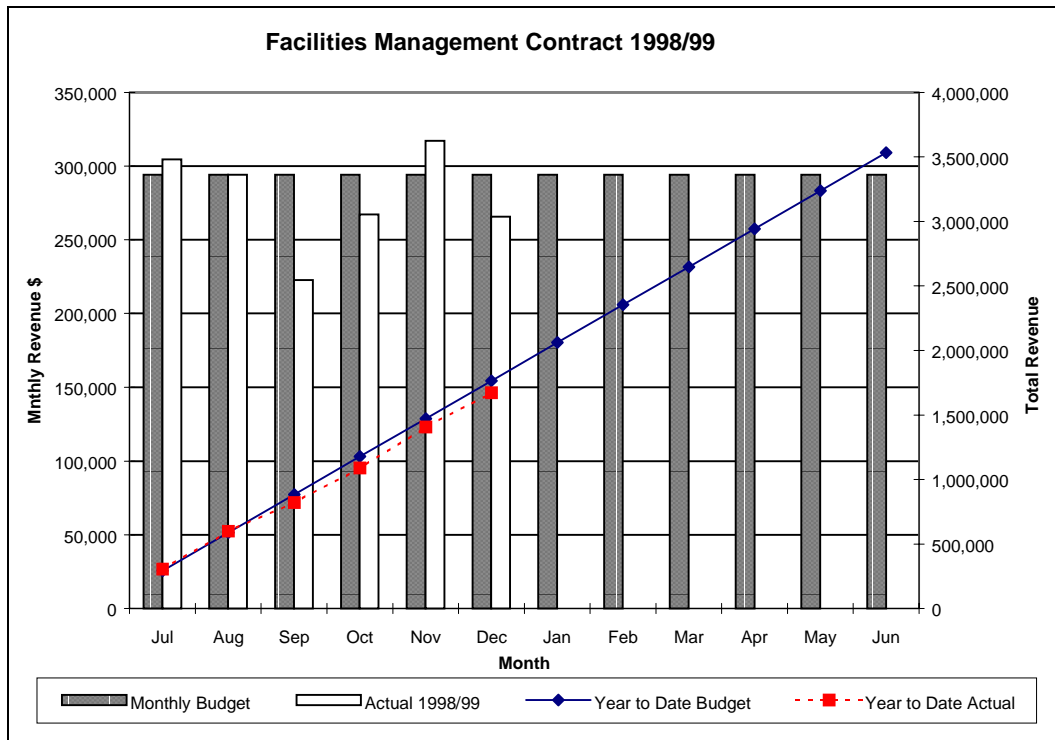
Contract Amounts : Wellington, including Tawa

	Actual \$	Budget \$	Variance %	Year to Date \$	Budget \$	Variance %
November	288,468	294,31	-1.99	1,377,22	1,471,	-6.41

December	265,845	294,31	-0.90	1,671,76	1,765,	-0.95
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Expected outturn for November: \$3,437,421

Expected outturn for December: \$3,437,650



4. Water Quality

Routine Testing (PT 1.1)

The water quality was monitored and the appropriate laboratory tests were completed for this period. There were 212 samples from the reticulation system tested for bacteriological compliance in November and 211 for December. Compliance for both months is 100 percent. Compliance for the year to date is 100 percent.

Water Tests Initiated by Customers (PT 2)

	November	December	Year to Date	Compliance (%) Year to Date
Number received	7	9	51	-
(PT 2.2) Within ability of Wellington City Water to control	2	2	25	-
(PT 2.1) Formal response within five days	5	9	46	90%

The non compliance due to formal response outside five days was due to the late receipt of analysis information from the Laboratory at the beginning of November. The contract for analysis of samples was changed during November with the result that analysis is now being received within the specified time scale.

5. Customer Services

5.1 Counter and Other Office Services (PT 3.1.) (PT 4.1) (PT 5.1)

Information has been provided to customers requesting information by letter, telephone and over the public counter. A total of 114 enquiries were received during the month of November and 94 during December.

	November	December
Counter enquiries	90 (+ 24 encroachments)	77 (+ 17 encroachments)
Proposals from other utilities	13	17
(PT 33.1) Plan records: New services recorded	11	18
Compliance with response time requirement	100%	100%

5.2 Complaints Register (Monthly Summary) (PT 5.1)

A complaints register is being maintained. A breakdown of the complaints received during the reporting period is as follows:

	November	December
(PT 2.2) Water quality	7	9
(PT 16.1.2) Pressure	20	10
(PT 20.1) Reinstatement	12	1
(PT 16.1.4) No-water	53	15
Contractors	1	0
Other	25	2

In November 15 of the 16 “pressure” complaints were responded to and completed within the performance criteria. Twenty-three of the 24 No-Water calls regarding “supply” were attended to within 30 minutes as required by the FMC.

For December all of the 10 “pressure” complaints were responded to and completed within the performance criteria. Twelve of the 15 No-Water calls regarding “supply” were attended to within 30 minutes as required by the FMC.

6. Response Maintenance

6.1 Compliance

	Number of Calls		Completed to Standard		Compliance %	
	November	December	November	December	November	December
<i>(PT 9.1)</i> Stopcocks	421	398	382	318	90	79
<i>(PT 9.1)</i> Hydrants	70	79	53	62	75	78
<i>(PT 9.1a)</i> Valves	13	9	13	9	100	100
<i>(PT 9.2)</i> Other Leaks	228	195	198	150	86	76
<i>(PT 10.1)</i> Mark Outs	91	52	91	52	100	100
<i>(PT 16.1.1)</i> Burst mains	9	7	8	6	90	85
<i>(PT 2.1)</i> Water Quality Complaints	7	9	6	8	100	88
Total	838	749	751	605	90%	80%

For November, in addition to the above numbers there were 103 repairs made to services/mains which had been damaged by other parties and 152 miscellaneous leaks attended to. There were a total of 18 new services connected.

The high number of damage repairs this month is due to the activities of Saturn contractors who continue to install cable TV in multiple suburbs of Wellington. This activity is expected to continue for several months.

For December, in addition to the above there were 58 repairs made to services/mains which had been damaged by other parties and 123 miscellaneous leaks attended to. There were a total of 23 new services connected.

6.2 Burst Mains *(PT 16.1)*

There was a total of nine burst mains during November and seven during December 1998. They were as follows:

November		December	
Cnr Bell St & Anthony St, Tawa	06.11.9 8	56 Kingsford St, Kilbirnie	01.12.9 8
Cochrane St, Kilbirnie	12.11.9 8	102 Tirangi Rd, Lyall Bay	01.12.9 8
7 Winchester St, Kaiwharawhara	16.11.9 8	34-36 Hawkestone St, Thorndon	08.12.9 8
Hobson St, Thorndon	18.11.9	21 King St, Mount Cook	12.12.9 8
42a Mahoe St, Tawa	13.11.9	Cnr Hobart St & Broadway, Miramar	17.12.9 8
4 Stephen St, Tawa	21.11.9	Cnr Tory and Tennyson St, Te Aro	19.12.9 8
Victoria St (Sams bike shop)	20.11.9	Cnr George Bolt St, Miramar	21.12.9 8
45 Cuba Street, Wellington	22.11.9		

100 Tremewan St, Linden	8 24.11.9 8	
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For November, 80 percent of the burst mains were attended to within 30 minutes and 90 percent repaired within eight hours.

For December, 86 percent of the burst mains were attended to within 30 minutes and 100 percent repaired within eight hours.

It is to be regretted that due to pressure of work in November/December the two non complying bursts were attended to within 45 minutes.

6.3 **Supply (PT 16.1)**

	November	December
Total calls received regarding loss of, or temporary loss of, supply due to broken mains or supply failure	24	15
Total calls attended within 30 minutes	23	12
Total Compliance	95%	80%

6.4 **Reinstatement (PT 20.1)**

There were three complaints received during November and one during December regarding trench reinstatements. The FMC target is less than 12.

6.5 **Shutdown Notification (PT 6.1)**

During November there was a total of three planned shutdowns, and during December there were two. All identifiable customers received notification within 24 hours prior to the shutdown.

6.6 **Locates and Investigations (PT 10.1)**

Work completed during the month comprised:

	November	December
Locate stopcocks	89	64
Leak location	158	106
Flow tests	6	6
Seepage/Investigations	13	8
Miscellaneous supply jobs	6	5

7. **Meters (PT 13.1)**

A total of 1,036 Suburb and High Use meters were read and entered into the system by 23 November 1998.

By 23 December a total of 1,311 City and High Use meters were read and entered into the system.

8. **Pumping Stations, Reservoirs and System Control**

8.1 **General**

Normal routine maintenance has resulted in the Wellington City system operating satisfactorily.

8.2 Control System (PT 30.1)

The following minor repairs were carried out:

Mt Wakefield Reservoir	Replace TDI hut door, replace vent cover, install conduct covers
Huntingdon Pump Station	Repair roof
Kelburn Reservoir	Cover dangerous hole
Onslow Reservoir	Repair hatches
Ruskin Road Pump Station	Faulty pump replaced

8.3 Telemetry

Telemetry units have been installed at Redwood reservoir, Redwood pump station, Greyfriars reservoir, Greyfriars pump station and the new Woodridge reservoir.

Pressure monitoring units have been installed at Adelaide Road, Seatoun Tunnel, Verviers Street pump station and Rajkot Terrace pump station.

A remote level indication and pump control have been installed at the Alexander Road Reservoir.

The motorised pump station outlet valve failed at the Broderick Road Pump Station. It is being repaired.

8.4 Maintenance Checks (PT 17.4)

November	
Round A	Round B
Rajkot Terrace	Huntington Street
Nassau Avenue	Warwick Street
Mark Avenue	Hay Street
Chapman Street	Epuni Street
Burnside Road	Mapuia Street/Mount Crawford
Ruskin Road	Sar Street
Broderick Road	Alexander Road
Broadmeadows High Pump Station	Redwood
Satara Street	Greyfriars Road
Kitchener Terrace	Bell Road CV
Davies Road CV	Webb Street CV
Birch Street CV	Prince of Wales CV
Ohariu CV	Vasanta CV
Glover Street CV	
Ironside CV	

December	
Round E	Round F
Johnsonville Pump Station	Randwick Pump Station
Ngauranga Reservoir/Pump Station	Tunnel Grove Chamber
Kaiwharawhara Pump Station	Rocky Pt Chamber
Thorndon Pump Station	Korokoro Valve Chamber
Karori Reservoir/Pump Station	Wainui Pump Station
Macalister Park Reservoir	Moore Valley Pump Station
Churton Park CV	Mabey Road Generator
Maldives Reg/Abb CV	Naenae Reservoir
Tawa	Gracefield Reservoir
Lindon	Rahui Reservoir
	Buick Street Pump Station

9. Development

9.1 Development Statistics

Subdivisions	November	December	Year to Date
Construction plans approved (lots/units)	0	5	14
Scheme plans approved	27	35	184
Subdivisions cleared (lots/units)	10	14	231

9.2 Development Projects

9.2.1 *Woodridge Reservoir*

Telemetry commissioned. Final inspections and outstanding requirements completed.

9.2.2 *Westpac Trust Stadium*

South water connection designed and installed.

9.2.3 *Churton Park Subdivision*

Reservoir construction plans approved.

9.2.4 *Burnside Subdivisions*

Three low pressure lots approved.

9.2.5 *Te Papa Museum*

Pressure and flow information supplied to fire sprinkler consultant.

9.2.6 ***Fire Services Recently Priced (PT 12.1) Domestic Services Recently Connected***

- 24 Mallard Grove
- 5 Kent Terrace
- 5 Molly Malones, Taranaki Street
- Pak N' Save, Kilbirnie

9.2.7 ***Domestic Services Priced Domestic Services (PT 12.2.) Recently Connected***

- 11 Egmont Street
- Newlands Shopping Mall
- 201 Victoria Street
- Johnsonville Shell/Burger King
- 13 Bute Street
- 5 Kent Terrace
- Te Aro toilets
- Scots College (irrigation)
- 41 Webb Street

9.3 **Building Development Appraisals**

	Commercial		Domestic	
	November	December	November	December
Building consents	2	4	36	24
PIMS applications	2	4	36	24
Compliance with response time requirement	100%	100%	100%	100%

9.4 **Land Information Memoranda**

	November	December
Applications processed	24	33
Compliance with response time requirement	100%	100%

10. **Capital Works**

10.1 **Main Laying City**

10.1.1 ***Courtenay Place***

The contract is in the maintenance period.

10.1.2 ***Marion Street***

The contract is in the maintenance period.

10.1.3 ***Hall and Riddiford Streets***

The contract is in the maintenance period.

10.1.4 ***The Terrace***

The contract for replacement of the main between Bolton and Bowen Streets has been awarded to Pipeline Techniques Ltd. The work will be undertaken in January 1999.

10.2 **Main Laying Suburbs**

10.2.1 ***Rakau Road, Hapua Street and Upoko Road***

The contract is in the maintenance period.

10.2.2 ***Broderick Road***

The contract is in the maintenance period.

10.2.3 ***Miles Crescent/Lyndfield Lane***

The contract is in the maintenance period.

10.2.4 ***Chelmsford Street***

The contract is in the maintenance period.

10.2.5 ***Johnsonville Road***

The contract for installation of rider mains to replace an existing main was completed by N Forsyth Ltd on 20 November 1998. The contract is now in the maintenance period.

10.2.6 ***Bracken Road***

The tender from Tatana Contracting Ltd for replacing the AC main has been accepted. Work will start in January 1999.

10.2.7 ***Breaker Bay Road***

The tender from HP Contractors for replacing the AC main has been accepted. Work will start in January 1999.

10.2.8 ***Tirangi Road, McGregor Street, Kingsford Smith Street, and George Bolt Street***

The contract for replacing the AC main has been advertised for tender.

10.2.9 ***Owhiro Bay Parade***

Investigations have started on replacement of a section of the 150 mm Eternit main.

10.2.10 ***Helston Road, Newlands***

Investigations have started on replacement of the 200 mm Eternit main.

10.3 **High Level Distribution and Storage**

10.3.1 ***Karori South Reservoir***

The contract for the construction of the reservoir has been awarded to Juno Construction Ltd. Work will start on site in January 1999.

10.3.2 ***Lyndhurst Road Pumping Station***

Installation work is substantially complete and both pumps are operational. There are some minor items to be attended to, to complete the work.

10.3.3 ***Level Monitoring System***

The contract has been completed and is now in the maintenance period.

10.3.4 ***Grenada North High Level***

The contract for the pumping station building extension has been awarded to B&L Construction Ltd. Construction work will start when the resource consent has been issued.

Arrangements are being made for purchasing the land for the proposed reservoir.

10.3.5 ***Wadestown Reservoir***

Preliminary investigations and a site survey have been carried out. A brief has been sent to Consultants to obtain consents and the design of the proposed reservoir.

10.3.6 ***Onslow Reservoir***

Preliminary investigations have been initiated.

10.4 **Low Level Zone Storage**

10.4.1 ***Eastern Suburbs Storage Enhancement***

Investigations into the potential sites and proposed level for this reservoir is continuing. A proposal for network modelling and pressure monitoring has been developed.

11. **Health and Safety (PT 27.1)**

One minor injury was reported during November and five minor ones during December.

Strategy and Asset Group

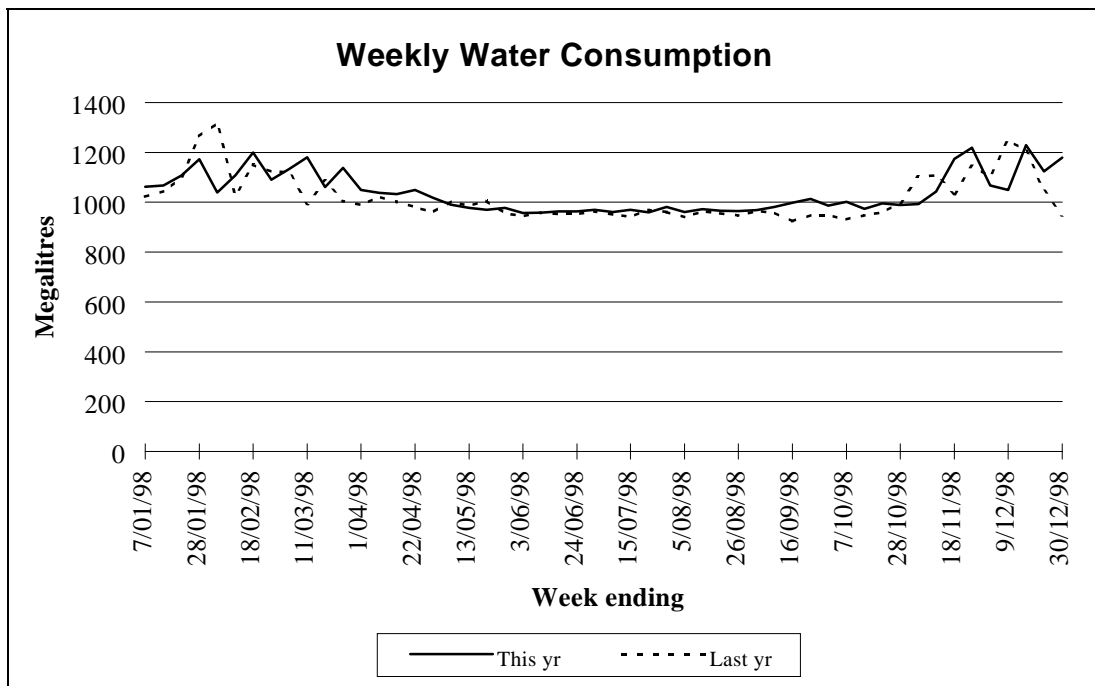
(December)

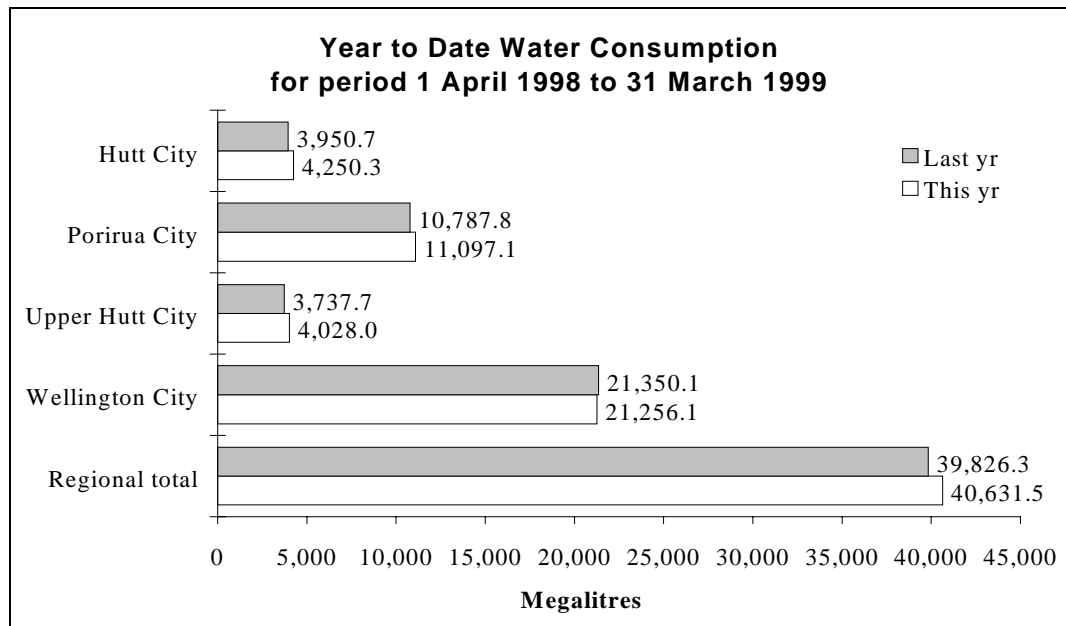
Strategy and Asset Group Review of Operations For the Period Ended 31 December 1998

1. Items of Note

- Progress with the Karori reservoir land disposal is slow. A binding ruling is still awaited from the IRD.
- Controlling possum numbers and other animals in the Wainuiomata/Orongorongo water catchment will be a key project during the first half of 1999.
- Over the last few years we have been able to take advantage of lower electricity charges. Unfortunately the improvements we have made relating to the network, such as using smaller transformers, has been more than offset by increased network charges. The system control project, described in the economics section, will enable us to minimise both our energy and network costs.
- Progress with the Wholesale Water Supply contract is slow. A further customer meeting was held in December.

2. Sales Volume





3. Asset Management

- Good progress has been made loading pipeline data into the Hansen Asset Management System. Data associated with production assets is being collected and compiled on a spreadsheet in preparation for loading directly into Hansen. Target date for implementation with Production Assets is 1 February 1999.
- Design briefs have been prepared for all new projects in the 1998/99 Capital Works Programme.
- A process expert has been contracted to take control of investigations into increasing the capacity of the Te Marua water treatment plant. He will start work in January.
- Landcare has employed a ranger to manage the Wainuiomata Catchment. The overall security of the catchment will be reviewed when the ranger has reported his initial findings. Disposal of two houses at Wainuiomata has been postponed pending a review of security arrangements. One house will be sold for removal.
- A draft brief has been prepared for improvements to the Haywards reservoir, which is programmed for upgrading in 1999/2000.
- Catchment vegetation management work undertaken to date has been reported by the Natural Forestry Department. Measures to control possums in the Wainuiomata and Orongorongo catchments are being considered and are reported as a separate Committee paper. An informal survey of slip prone areas in the Hutt catchment showed no sign of damage during October's heavy rainfall.
- Good progress is being made on the 1998/99 Capital Works programme. Full year expenditure a little below budget is forecast. A detailed review of likely expenditure is in progress.

- A consultant's brief has also been prepared for the preparation of Resource Consent applications for surface water take consents at Kaitoke, Wainuiomata and Orongorongo. These "Notified Use" consents expire in October 2001.

4. **Quality Assurance**

- Work is continuing on the ten work streams identified as necessary to establish the proposed Environmental Management system under ISO 14001.
- During November and December a number of problems were experienced with fluoride dosing equipment at Waterloo, Wainuiomata and Gear Island, resulting in fluctuating fluoride levels. Fluoride levels are not covered by the Drinking Water Standard, but are included in the Draft Wholesale Water Supply Agreement.
- The Wainuiomata Treatment Plant is discharging its supernatant, rather than recycling it back to the head of the plant, until improvements to the waste water treatment plant are completed. A resource consent is held for this discharge.

5. **Marketing**

Summer Water Conservation Campaign

Work for this campaign continued. The main activities involved:

- The 'Water conservation in the garden' brochure was mailed to every household in the Wellington metropolitan region.
- Press advertising and a media release written and campaign launch publicity arranged to support mailing.
- All participating garden and hardware retailers were visited prior to the launch to deliver brochures and display stands, and to encourage their active involvement in the campaign.
- Radio advertisements have been written, these reiterate water-wise gardening advice and encourage careful use of water in the garden. Broadcasting these will commence in mid January.
- A newspaper advertorial, supporting the brochure content was also written. This will be placed in newspaper Gardening sections in early February.
- Artwork for a weekly water-use information notice was designed and produced. This will appear in Contact newspaper from January until the end of March.
- A questionnaire, seeking feedback about the campaign's launch was written and sent to all participating retailers. The results will form part of the post campaign assessment.

Photography for 1998-99 Business Report

Managers' views were sought and a list compiled of suitable subjects for the Water Group's next Report of Business Activity. Photographs will be taken during the first months of 1999.

Customer Contact

A further meeting with customers about the Draft Wholesale Water Supply contract appears to have settled the few outstanding wording issues.

Following further discussion about Leak Detection funding, a letter was sent to our customers with a proposal for continuing with the system. This will be followed up in the New Year.

Print Production

A Christmas card for the Water Group was designed and produced.

"Supply Interruption" notification cards were produced for the Network Section of the Operations Group.

6. Economics

Wholesale Water Database

Project description: develop a database which stores all the telemetered and manual meter readings from each of the treatment plants, reservoirs, and supply points. The resulting 'datamart' will make it easier to investigate and analyse the vast amounts of data that the control system produces.

Work to date: A consultant has been engaged to establish the systems architecture, functionality, and user interface design for the part of the database which captures and stores manual meter readings.

Current status: The first draft was completed just before Christmas. Revisions have been suggested and a final draft is expected before the end of January. The finished functional specification document will be used to call for tenders to develop the database.

System Control

Project description: 'smarten' the controls in the network system to balance demand variation using available storage. The resulting programme logic will save power costs and is expected to improve the quality of water leaving the plants.

Work to date: The project brief has been written and agreed. An advertisement was placed and 15 proposals were sent in from prospective organisations. Four were invited to meet with the project team to present their proposal. Three took up that offer and presentations were held from 10-12 November 1998.

Current status: One consultant is to be asked to prepare a detailed proposal. Details of the workings of the network are being gathered to build a hydraulic model which the Consultant will use to analyse the dynamics of the wholesale water supply system.

Differential Pricing

Project description: Consultant engaged to investigate and compare other logical methods for allocating Wholesale Water's fixed costs to the territorial authorities. The resulting discussion document will establish a source for future work into water pricing.

Current status: PriceWaterhouseCoopers were employed and provided a first draft just prior to Christmas. Revisions have been made and the final report is expected about the end of January.

7. Projects undertaken by Engineering Consultancy for the Strategy and Asset Group

Te Marua Site Rehabilitation

The maintenance period for the earthworks ended and all minor items have been attended to. The planting contract is still within maintenance.

Te Marua Site Development

Contract documents are under preparation for the final stage of landscaping and sealing of the lower access road. The contract for installation of a ford, pipe headwalls and rip-rap for bank toe protection has been awarded to Works Civil Construction Ltd.

Access Road at Te Marua

The maintenance period for the sealing of the access road ended. This project is complete.

Te Marua Sludge Lagoon

The maintenance period for the construction of the sludge lagoon ended. This project is complete.

Te Marua Supernatant Pipeline to River

The maintenance period for the installation of the supernatant pipeline ended. This project is now complete.

Kaitoke Intake Controls

Both contracts for the electrical and control equipment and the cable laying are in the maintenance period. The controls have been commissioned. There are some minor items to be completed by the cabling laying contractor.

Wainuiomata Reaction Tank

All concrete structural work is complete. The mixers and steel work are about to be installed.

Orongorongo Intake to Tunnel Pipeline

The 600 mm diameter pipe has been ordered and will be delivered in January 1999. The contract for installing the pipe was awarded to EN Ramsbottom Ltd. Work should start on site in February 1999.

Waterloo Capacity Increase

Pipework pump and control panel installation within the water treatment plant is complete. Delivery of the motors has been delayed due to problems at the manufacturing plant in Germany. One motor has been airfreighted to New Zealand at no additional cost to the WRC. The other two motors are due to arrive in March 1999.

Rahui Reservoir Inlet Main

The maintenance period for the installation of the inlet main has ended. A small slip at the top of the hill is being attended to.

Orongorongo Pipeline Petone Esplanade

Connections are being made to the Waterloo system at Randwick and the Rahui reservoir rising main at Korokoro.

Pipeline Tunnel near Raroa Road

The maintenance period for the rehabilitation of the pipeline has ended. This project is now complete.

Revenue Meter Project

Tenders were invited for the first stage of the installation of electromagnetic flow meters at the delivery points to the TLA reservoirs.

Engineering Consultancy Group
(December)

Engineering Consultancy Group Review of Operations For the Period Ended 31 December 1998

1. Work Carried Out for the Strategy and Asset Group

The main capital projects are itemised in the Strategy and Asset Group report.

2. Work Carried Out for the Operations Group

The Engineering Consultancy Group has continued to provide support for smaller projects arising from the operation and maintenance of the wholesale water supply system.

The work in this period has included checking that the chemical storage tanks will resist earthquake loadings.

3. Work Carried Out for Wellington City Council

3.1 Capital Works

The group continues to manage parts of the water supply capital works programme for the City Council. Current projects underway are as follows:

Pipeline Projects

Construction in Johnsonville Road to replace a main which has suffered significant failures is complete.

Design and preparation of contract documents is complete and tenders received and reported on for pipeline replacement projects in Bracken Road and Breaker Bay Road. Tenders have been invited for Tirangi Road and design is underway in Helston Road and Ohiro Bay Parade. A contract has been awarded for the replacement main on the Terrace between Bowen and Bolton Street with work to commence in early January. Approval has been received for design to commence on some other central city projects.

Wadestown Reservoir

Preliminary scoping has been carried out on the replacement of this undersized, structurally deficient reservoir. A brief has been prepared requesting submissions from consultants for obtaining resource consents and construction contract preparation.

Karori South Reservoir

Tenders were received and a contract awarded for the construction of an 800 cubic metre reservoir adjacent to the existing Makara tanks, at the top of the Makara Hill Road. Work will commence early in the new year.

3.2 Lyndhurst Road Pumping Station

The rehabilitation of this pumping station involving pipework alterations, electrical and controls upgrading is completed and the station has been recommissioned.

3.3 System Monitoring Project

The Contract for the fourth and final stage in this scheme to provide remote monitoring and indications from the pumping stations and reservoirs is now complete.

3.4 Grenada North High Level Zone

Contracts have been awarded for the modification of this building, installation of new pumps, starters and controls. Work has been delayed because of the unanticipated requirement for a resource consent.

3.5 Work Related to the Facilities Management Contract

Maintenance of the plan record system so that these are up-to-date, incorporating any alterations, has continued. Assistance has been given to the City Council in the transfer of plan records into the City Council system. Subdivisions are assessed for compliance with the Code of Practice and approval given.

Project Information Memoranda (PIMs) and Land Information Memoranda (LIMs) are processed on a regular basis for the City.

Laboratory Services

(December)

Laboratory Services Department Review of Operations For the Period Ended 31 December 1998

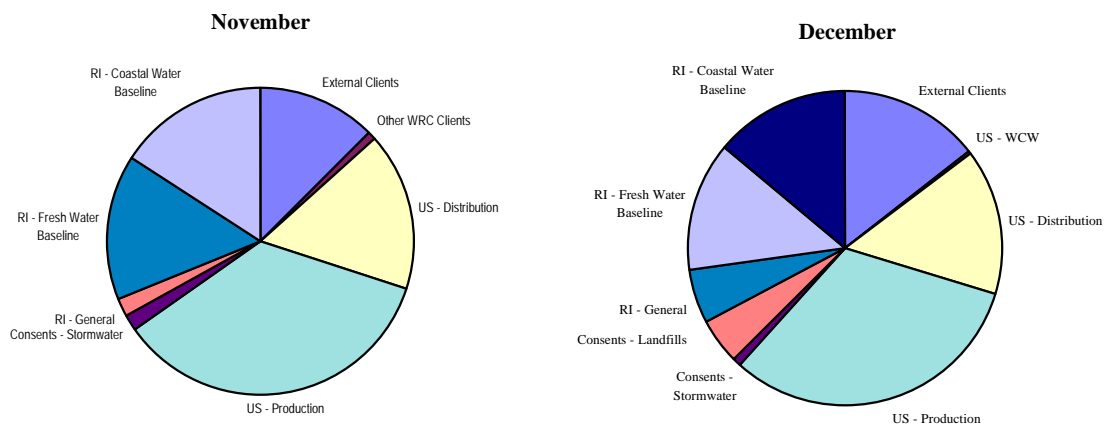
1. Items of Note

- *Giardia* and *Cryptosporidium* samples (potable water) continued to be received from external clients.
- The summer beach sampling programme commenced 1 November (increase in frequency from monthly to fortnightly) programmed to 31 March 1999.
- The summer macroinvertebrate sample collection and analysis commenced December and is programmed until February 1999.

2. Financial

Financial position for the year to date shows the Laboratory is meeting the budgeted surplus. The charts below show the sources of revenue received by the Laboratory in November and December.

Note: RI - Resource Investigations (Environment Division)
Consents - Consents Management (Environment Division)
US - Utility Services Division



3. Business Summary

Measure

3.1 Quality

There were no client request for re-testing samples.

- International New Zealand Accreditation is being maintained.
- Test reports are being sent out within agreed time frames.

3.2 *Health and Safety*

One staff member diagnosed with work related OOS. No formal OSH inspection required due to the staff member not requiring time off work.

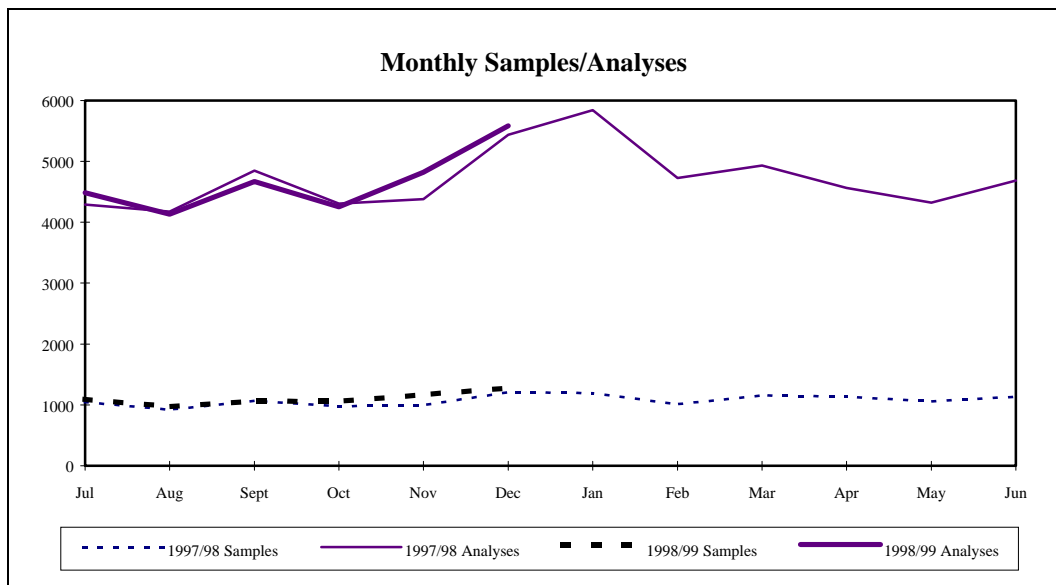
3.3 *Number of Samples analysed*

November

- 1,167 samples
- 4,820 tests

December

- 1,276 samples
- 5,586 tests



Plantation Forestry

(December)

Plantation Forestry Department Review of Operations For the Period Ended 31 December 1998

1. Log Harvest Contract

November

Overall a better month with a total of 4,774 tonnes harvested for a total royalty of \$55,557. Given the delays caused by the October floods this is a satisfactory result. Renalls reopened for pulp and with export available for both pulp and rough grade every effort was made to fell as much as possible of the poorer stands in Pakuratahi. In addition to the 1200t of pulp sent to Renalls, 790t was exported. Just over 2000t of K grade was exported. Prices were maintained at October levels on the domestic market with some slight easing in the K export price which was more than compensated for by the generous specifications.

There is increasing pressure on pruned prices with reductions anticipated.

December

Despite logging ceasing for the year on 18 December, it was a good month weather wise and a total of 6,672 tonnes were despatched. This produced a royalty of \$102,993. The relatively good return was due to 1,456 tonnes from Hukinga which included pruned logs which grossed up to \$160 per tonne.

The export shipments appear to have settled at a minimum of one per month so at present there is no difficulty in disposing of the lesser grades of timber. Export prices appear to be improving in small but regular increments.

Output by grade was:

	November		December	
Pruned	219.5	4.6%	133.6t	2.0%
S Grade	106.5t	2.2.7%	812.1t	12.2%
A grade	296.5t	6.2%	423.0t	6.3%
L grade	152.8t	3.2%	57.0t	0.9%
B grade				
Pulp	1,200t	25.1%	1,461.6t	21.9%
Douglas Fir			48.0t	0.7%
Macrocarpa			27.2t	0.4%
Export	2,798.9t	28.6%	3,710.2t	55.6%
Total	4774.5		6,672.7	
Average royalty	\$11.64/t		\$15.42/t	
Total royalty	\$55,557		\$102,993	

2. **Silviculture Contracts**

Two hundred and thirty eight point four hectares (238.4 ha) out of a total of 556ha in the current contract had been completed by 30 November with a further 28.3ha in December. During December young trees at Maymorn were fertilized and selective releasing (weed suppression) was carried out.

3. **Plantation Forestry Operations**

Although the rain which resulted in the floods was welcome from a tree growing perspective it has since become both dry and more latterly, windy. More rain is required to maintain the good progress shown by last winter's plantings. It appears that the weather pattern may be following the earlier predictions of reasonable dry periods followed by short but severe rain events.

The Ministry of Forestry recently carried out their annual "forest health" inspection. These results are expected in the near future and are expected to show an increase in Dothistroma as a consequence of the unusually mild winter.

4. **Forest Access**

Full access has been restored to all blocks.

Reinstating roads and water tables after the two October floods cost access to all silviculture blocks has been reinstated to at least four wheel drive standard.

Those roads used for the current harvesting are now passable with the only long-term problems being in the Hukinga Valley where the Akatarawa River West has undermined the road in a number of places and advice is being sought from Rivers on a longer term solution.

There are also slips and washout on other roads which will be addressed as access is required.

5. **Market Trends**

Export markets appear to be recovering with Rayonier of at least one export shipment per month. These are likely to include India as a destination which will benefit Council as much of the product from the present block in Pakuratahi is particularly suitable for the Indian market. When such shipments occur every effort will be made to clear the poorer part of the block and avoid having to sell the logs at a loss as pulp grade.

Pruned logs continue to attract a premium with suggestions of trucking logs as far as Thames and the local Upper Hutt mill accepting regular loads.

6. **Health and Safety**

Following the OSH investigation of the accident in August it appears that both this Council's and the prime contractor's procedures were satisfactory and no further action is anticipated. The injured person has since recommenced work albeit on light duties.