

---

# **Water Supply**

## **November/December 2001 and January 2002**

---

---

Operations Group  
November/December 2001  
and January 2002

---

## Operations Group Review of Operations for the Period Ended 31 January 2002

### 1. Items of Note

- It should be noted that the Network Section report only covers the month of November, as the Water Services Agreement terminated on 30 November 2001.

### 2. Water Quality

A total of 764 samples from trunk mains were tested for coliform organisms. One of these samples tested positive.

A total of 158 samples of treated water from treatment plants were tested for faecal coliforms. None of these samples tested positive.

Secchi disc water clarity in the Te Marua north lake varied between 2.9 m and 5.9 m, and in the south lake between 4.0 m and 6.0 m. These are considered satisfactory.

The dominant phytoplankton were as follows:

- North Lake: *Oscillatoria*, *Staurastrum*, *Synedra*
- South Lake: *Synedra*, *Staurastrum*, *Cosmarium*

*Oscillatoria* is a filter clogging algae when present in high concentrations. *Botryococcus* often blooms in hard water lakes. *Cosmarium* and *Staurastrum* produce a grassy smell when abundant. *Synedra* produces a musty smell and slick tongue sensation when abundant.

Dissolved oxygen (7.9-10.9 mg/L) was satisfactory.

pH values were satisfactory (7.0-7.8).

*Giardia* and *Cryptosporidium* results were as follows:

#### Te Marua

Lakes	) No <i>Giardia</i>
	) No <i>Cryptosporidium</i>
Intake	) No <i>Giardia</i>
	) No <i>Cryptosporidium</i>
Treated Water	) No <i>Giardia</i>

) No *Cryptosporidium*

### Wainuiomata

Treated Water ) No *Giardia*  
) No *Cryptosporidium*

Lower George Creek and ) Low *Giardia*  
George Creek south arm ) Low *Cryptosporidium*  
combined )

Orongorongo and Big Huia ) Low *Giardia*  
Intake combined ) Low *Cryptosporidium*

Wainuiomata intake ) Low *Giardia*  
) Low *Cryptosporidium*

### Guidelines Criteria

0-10 oocysts per 100 litres = low  
10-50 oocysts per 100 litres = medium  
>50 oocysts per 100 litres = high

## 3. Supply Situation

The bi-monthly seasonal forecast for December 2001 and January 2002 issued by the Meteorological Service is as follows:

### For Wellington

**Rain:** Above normal for December but returning to near normal in January

**Wind:** Fewer southerlies than normal

**Temperature:** Continuing above normal

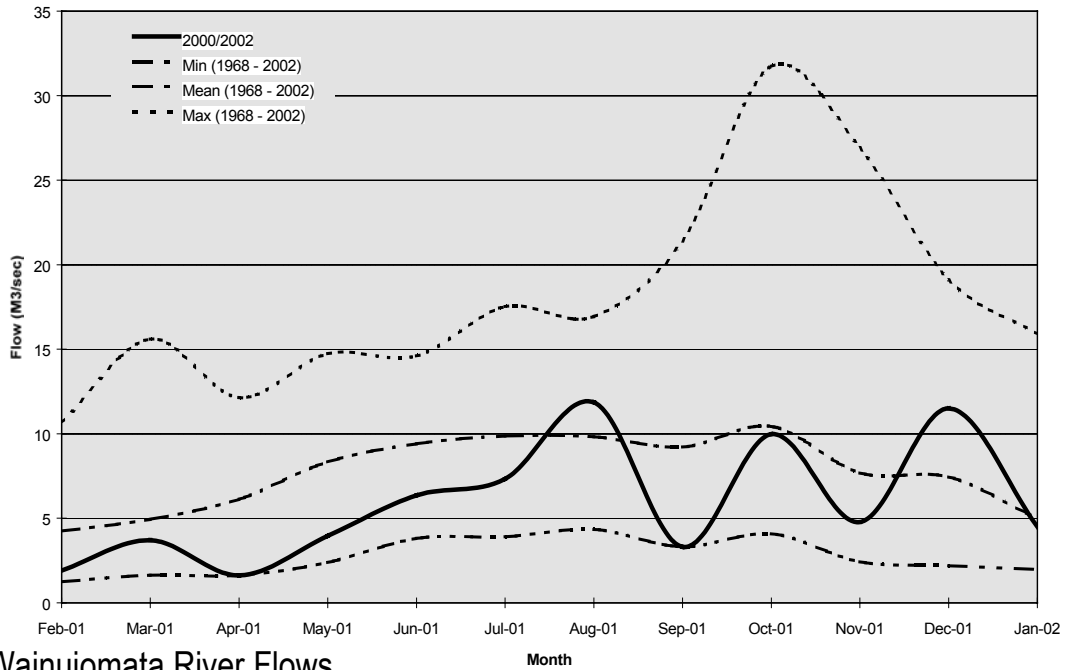
**Sunshine:** About normal after a cloudy November

**Confidence:** Moderate

Fronts arriving from the Tasman Sea are expected to get weaker and further apart as summer kicks in. By January, we are expected anticyclones to cross central or southern New Zealand and bring extended periods of sunny, hot and dry weather; good for haymaking. The number of southerly wind events may well be less than normal but when one does arrive it should be noticeably chilly.

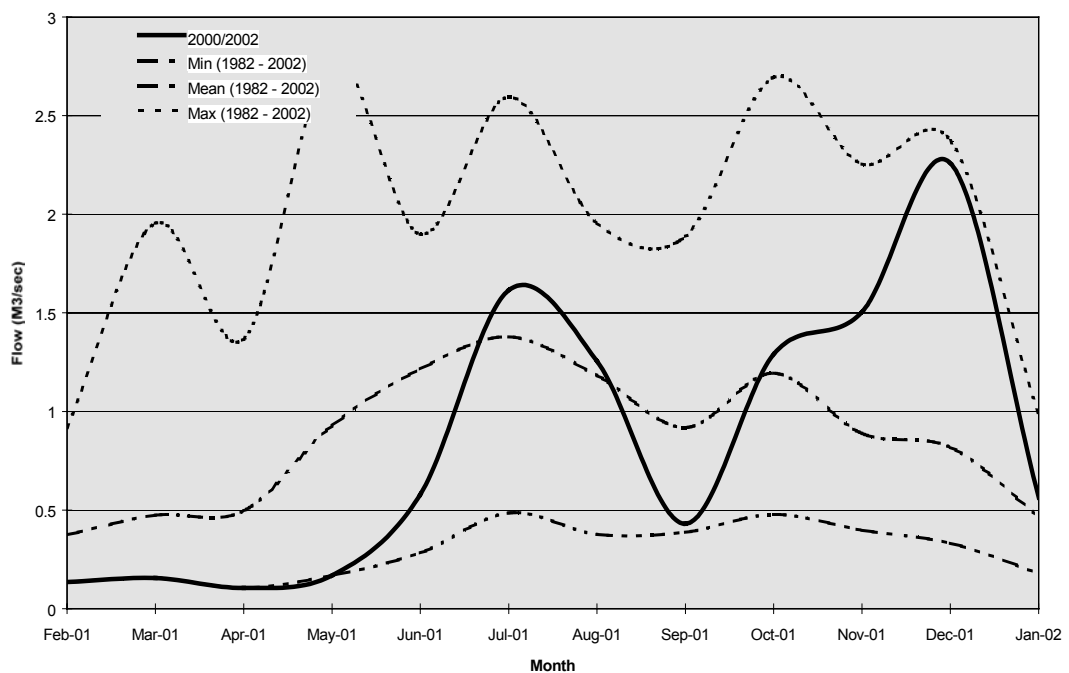
### Hutt River Flows

The mean monthly flow in the Hutt River during November/December 2001 rose above average. Flow in January 2002 was about average.



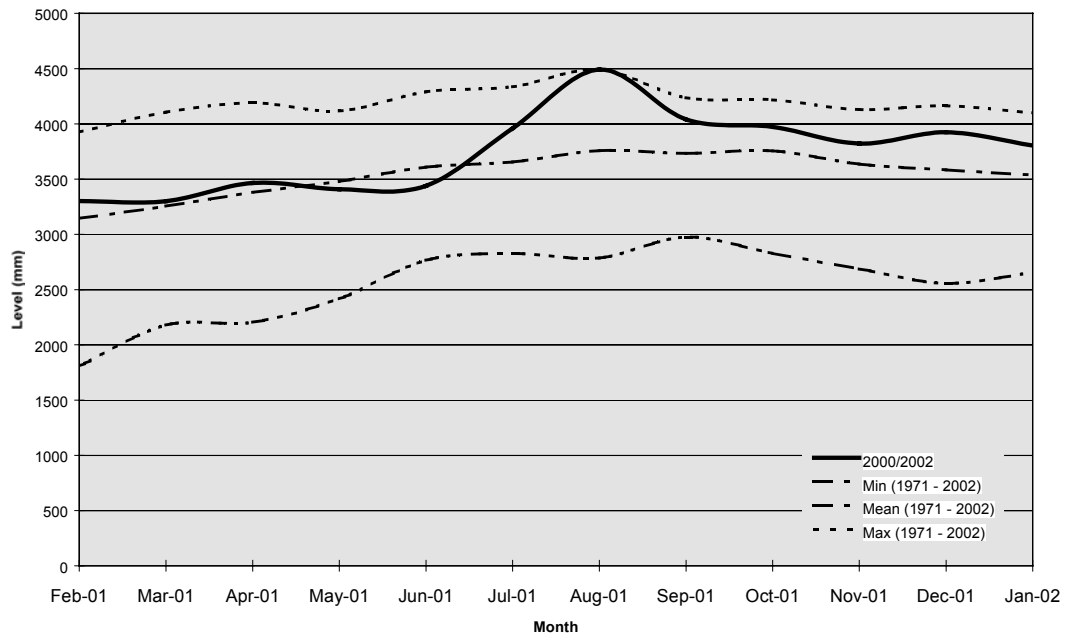
### Wainuiomata River Flows

Flows in the Wainuiomata River were approaching maximum during November/December 2001. Flow in the Wainuiomata River was average during January 2002.



## Aquifer Levels

The water level in the Waiwhetu aquifer remained high during November/December 2001 and January 2002.



### 4. Production

#### 4.1 Wainuiomata

##### 4.1.1 Quality

There are no quality issues to report

##### 4.1.2 Safety

There are no accidents or incidents to report.

##### 4.1.3 Operations

There are no items to report.

##### 4.1.4 Projects

There are no items to report.

##### 4.1.5 Plant Tours

27 November

Czech Embassy

28 November

Fairdale School students - 65

3 December

Asian politicians

6 December Asian engineers  
14 December Utility Services Division barbecue

#### 4.1.6 General

- With the high rainfall during the period, the plant was turned off a couple of times because of high river conditions.
- There were numerous slips in the Orongorongo Catchment, which made it unusable for a period of time.
- There have been amazing results with the dry powder polymer trial. We are trying to keep the polymer blender until we get our own. It is cheaper to dose using the dry powder than with the emulsion polymer.

### 4.2 Waterloo Water Treatment Plant

#### 4.2.1 Quality

There are no quality issues to report.

#### 4.2.2 Safety

During November 2001 a worker's finger was hurt while they were moving a metal plant in the mixing tank.

#### 4.2.3 Operations

There are no items to report.

#### 4.2.4 Plant Tours

There were no tours during the period.

#### 4.2.5 Projects

- Capital Works
  - ◆ Contractors are installing beams for the motor hall floor to try and reduce vibration problems.

### 4.3 Gear Island

#### 4.3.1 Quality

There are no quality issues to report.

#### 4.3.2 Safety

There are no accidents or incidents to report.

#### 4.3.3 Operations

There are no items to report.

#### 4.3.4 Plant Tours

There were no tours during the period.

#### 4.3.5 Projects

##### ➤ Capital Works

- ◆ The new gas chlorine plant was commissioned and put in service mid-December. The gas plant is going well. There are some teething problems with the chemical boost pumps to be sorted out.

### 4.4 Te Marua

#### 4.4.1 Quality

Date	Transgression	Cause
28 November 2001	Low Fluoride	Feeder fault
30 November 2001	Low Fluoride	Feeder fault
10 December 2001	Low Fluoride <0.7 (0.64)	Poor quality Fluoride
11 December 2001	Low Fluoride <0.7 (0.68)	Poor quality Fluoride

#### 4.4.2 Safety

There are no accidents or incidents to report.

#### 4.4.3 Operations

Date	Problem	Cause
2 November 2001	High chemical sump alarm	Stormwater entering sump during heavy rain
12 November 2001	High pumping station pH	Caustic dose adjustment
19 November 2001	Filter No. 1 sequence fault	North outlet valve failed to open within allotted time
23 November	High streaming current	Technician error



<b>Date</b>	<b>Problem</b>	<b>Cause</b>
2001	alarm	
3 December 2001	Low inlet flow	Operator error
6 December 2001	High streaming current alarm	Flow fluctuation through plant
7 December 2001	pH transmitter alarm	Calibration drift
9 December 2001	Lake No. 1 high underdrain turbidity	Heavy rain
11 December 2001	High treated water colour	Split tube in colour meter
12 December 2001	Low treated water reservoir	Tunnel transmitter failed
12 December 2001	Lake No. 2 alarm	Power fluctuation
23 December 2001	Intruder alarm	Fault on new system
25 December 2001	Filter turbidity alarm	Polymer dosing
25 December 2001	High treated water turbidity	False alarm, bio-film in instrument
26 December 2001	Filter turbidity alarm	Polymer dosing
29 December 2001	Filter turbidity alarm	Polymer dosing
30 December 2001	Filter turbidity alarm	Polymer dosing
10 January 2002	High treated water pH	Flow fluctuation through plant
15 January 2002	High streaming current alarm	Slug of high colour water in tunnel
17 January 2002	High treated water pH	Flow fluctuation through plant
20 January 2002	High filter outlet turbidity	Contractor knocked turbidity instrument
21 January 2002	Kaitoke inlet valve fault	Failed fuse
26 January 2002	Low treated water pH	Flow fluctuation through plant
27 January 2002	Filter turbidity alarm	Polymer dosing
27 January 2002	High treated water turbidity	False alarm, bio-film in instrument
28 January 2002	Low treated water pH	Tuning

#### 4.4.4 Plant Tours

7 November	NZCE Stage 5 - 8
9 November	Wellington Regional Council staff induction - 8
29 January	Wellington Regional Council summer programme - 17

#### 4.4.5 General

- Kaitoke Abstraction (New Consent Conditions)
  - ◆ The new control system software has been installed and partially commissioned. Higher than normal river flows during November, December and January have hampered commissioning and prevented the system being fully tested under summer low flow conditions.

### 5. Distribution

#### 5.1 Health and Safety

During November 2001 a worker slipped on the grassy slope by a reservoir and badly injured their knee.

#### 5.2 Pipeline Section

##### 5.2.1 Maintenance/Repairs

- Ongoing maintenance on the 1050 mm pipeline between the ski club valve chamber and Korokoro.
- The Gear Island valve chamber pipework was refurbished and new valves installed.
- At Korokoro valve chamber all pipework was sandblasted and painted, and new walkways were installed.
- Track maintenance was carried out on the branch line easements.
- A new pressure tapping was installed on the Porirua High Level.
- Repairs were carried out to the 1050 mm main in Hutt Park Road.
- Repairs were carried out to the 525 mm cast iron interconnection main in Hutt Park Road.
- Repairs were carried out to the 900 mm inlet main from the connection chamber up to Te Marua Water Treatment Plant.

##### 5.2.2 Kelburn Reservoir Alterations

- The rising main was connected to the high level inlets only.

- A new 200 mm outlet valve was cut in on the north reservoir.
- The old inlet main from the north reservoir was blanked off.
- The north reservoir was tied into the new 300 mm outlet main.
- The southern reservoir was disconnected and drained for the Contractor.
- The new outlet main was connected to the old outlet main in Disley Street.

### 5.2.3 Pukerua Bay Deviation

- New pipework and valves were installed on the closing sections.

### 5.2.4 OK Main Refurbishment

- New pipework, cross connections and valves were installed from the Gear Island valve chamber.
- The Rahui branch line was shut down between Randwick and Korokoro for the refurbishment Contract Works.

### 5.2.5 Hydraulic Model

- A new tapping was installed on the 450 mm Porirua branch line. The tapping was housed and a TDI hut installed.

## 5.3 Electrical Section

### 5.3.1 Pressure Transmitter Installation

- Pressure transmitters were installed at Pukerua Bay and on the Porirua branch line at Judgeford and Thorndon pumps for hydraulic model testing.

### 5.3.2 Kelburn Reservoir

- Level monitoring equipment was installed on Kelburn Reservoir as an extra safety measure during the new reservoir construction programme.

## 6. Health and Safety : Total Injury/Illness/Incident Record

### ➤ Production

During November 2001 a worker's finger was hurt while they were moving a metal plant in the mixing tank.

### ➤ Distribution

During November 2001 a worker slipped on the grassy slope by a reservoir and badly injured their knee.

➤ **Network**

During November 2001 an employee's thumbnail was split when he had his hand placed over a hole on a water main. A rock fell from the top of the excavation (less than 1 m deep) and split his nail in half. He saw a doctor immediately. This injury did not result in any time off work.

# Water Group Health and Safety Data 2001 : Total Injuries

## PRODUCTION (+ 1 OPS ADMIN)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Hours worked	1,909	2,468	2,526	2,041	2,710	2,381	2,510	2,568	2,220	2,542	2,554	2,124	Mar = breathed in chlorine fumes whilst opening HTH container	
Employee numbers	16	16	15	15	15	15	15	15	15	15	15	15	15	Mar = Overalls caught on mixer shaft
Injuries	0	0	2	1	0	0	0	0	0	0	0	1	0	Apr = Near Miss - exploding glass from light fitting - TM Control Room
Days lost	0	0	0	0	0	0	0	0	0	0	0	0	0	Nov = Squashed finger when moving metal plant in mixing tank
Incidence rate (number of incidents per 100 workers)	0	0	13.3	6.6	0	0	0	0	0	0	0	6.66	0	
Frequency rate (incidents per 1,000,000 hours exposure)	0	0	791.7	489.9	0	0	0	0	0	0	0	391.6	0	
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	0	0	0	0	0	0	0	

## DISTRIBUTION

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Hours worked	1,671	1,524	1,810	1,539	2,135	1,589	1,851	1,963	1,747	1,707	1,516	1,204.5	Feb = welding up pipe & received burn by arc splatter	
Employee numbers	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	10.5	9.5	9.5	9.5	9.5	Mar = minor sprain
Injuries	0	1	1	0	2	1	1	0	0	2	1	0	0	May = lower back strain from lifting & jarred right wrist using big hammer
Days lost	0	0	0	0	0	5	0	0	0	0	4	0	0	Jun = stood on nail - went through boot into foot
Incidence rate (number of incidents per 100 workers)	0	8.7	8.7	0	17.4	8.7	8.7	0	0	21	10.5	3	0	Jul = minor back sprain
Frequency rate (incidents per 1,000,000 hours exposure)	0	656	552	0	936.7	629	540	0	0	1,117	659.8	0	0	Oct = slight back sprain and foreign body in eye
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	3,147	0	0	0	0	0	0	0	Nov = slipped on grassy slope by reservoir - badly hurt knee

## NETWORK

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Hours worked	3,603	3,699	3,926	3,207	4,059	3,489	3,441	3,638	3,202	3,367	2,973	684	Jan/Feb /Mar = Days lost due to worker on ACC. Incident recorded in Dec 00	
Employee numbers	24	24	24	23	22	21	21	21	21	20	20	20	4	Mar = Dislocated finger
Injuries	0	0	2	3	0	0	0	1	0	0	2	0	0	Mar = Body stress to trunk
Days lost	20	15	22	21	0	0	0	0.5	0	0	0	0	0	Apr = twisting back, knee injury, damage to gas pipe (near miss)
Incidence rate (number of incidents per 100 workers)	0	0	8.3	13	0	0	0	4.76	0	0	10	0	0	Apr = 18 days lost due to worker on ACC. Incident recorded in Dec 00
Frequency rate (incidents per 1,000,000 hours exposure)	0	0	509	935	0	0	0	275	0	0	672.8	0	0	Aug = back strain from lifting taping set out of ute

Severity rate (days lost to injury per 1,000,000 hours worked) 5,551 4,055 5,603.6 6,548 0 0 0 137 0 0 0 0 Nov = Rock from top of trench fell on thumb - split nail completely

Nov = Salmonella - incident at home

<b>ENGINEERING CONSULTANCY</b>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Hours worked	1,773	1,855	2,209	2,050	2,767	2,289	2,296	2,365	1,814	1,991	2,037	1,355	Jan = Tree branch struck right elbow
Employee numbers	15	15	15	15	15	15	15	15	15	15	15	14	Feb = Tripped on road marker
Injuries	1	1	0	0	2	0	0	0	0	0	0	0	May = strained back whilst shutting valve
Days lost	0	0	0	0	0	0	0	0	0	0	0	0	May = head on crash aggravated an ankle strain
Incidence rate (number of incidents per 100 workers)	6.6	6.6	0	0	13.3	0	0	0	0	0	0	0	
Frequency rate (incidents per 1,000,000 hours exposure)	564	539	0	0	722.8	0	0	0	0	0	0	0	
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	0	0	0	0	0	0	

<b>UTILITY SERVICIES SUPPORT</b>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Hours worked	1,004	1,160	1,137	1,116	1,340	1,132	1,332	1,352	1,160	1,276	1,348	964	Mar = punctured elbow with staple whilst leaning on pile of documents
Employee numbers	8	8	8	8	8	8	8	8	8	9	9	9	9 Jun = silt thumb on sharp vacuum seal of new coffee container
Injuries	0	0	1	0	0	1	0	0	0	0	0	0	
Days lost	0	0	0	0	0	0	0	0	0	0	0	0	
Incidence rate (number of incidents per 100 workers)	0	0	12.5	0	0	12.5	0	0	0	0	0	0	
Frequency rate (incidents per 1,000,000 hours exposure)	0	0	879.5	0	0	883	0	0	0	0	0	0	
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	0	0	0	0	0	0	

<b>LABORATORY</b>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Hours worked	1,228	1,254	1,368	1,110	1,428	1,299	1,390	1,327	1,206	1,370	1,377	1,141.5	Jan/Feb = days lost due to possible chemical exposure during acid washing
Employee numbers	10	10	10	10	10	10	10	10	10	9	10	10	Feb = cut thumb on sharp metal in sink
Injuries	0	1	0	0	0	0	1	2	0	0	1	0	Mar = days lost due to possible chemical exposure during acid washing
Days lost	3	3	0	7	0	0	0	0	0	0	0	0	Jul = pulled left wrist and hand whilst pulling on handbrake in car
Incidence rate (number of incidents per 100 workers)	0	10	0	0	0	0	10	20	0	0	10	0	Aug = hit head on doorway of TDI hut at Gracefield Reservoir
Frequency rate (incidents per 1,000,000 hours exposure)	0	797	0	0	0	0	719	1,507	0	0	726.2	0	Aug = upper body sprain from trying to close lock at Gracefield Reservoir
Severity rate (days lost to injury per 1,000,000 hours worked)	2,443	2,392	0	6,306	0	0	0	0	0	0	0	0	Oct = burn to three fingers

Nov = motor vehicle accident - no personal injury sustained

**STRATEGY AND ASSET**

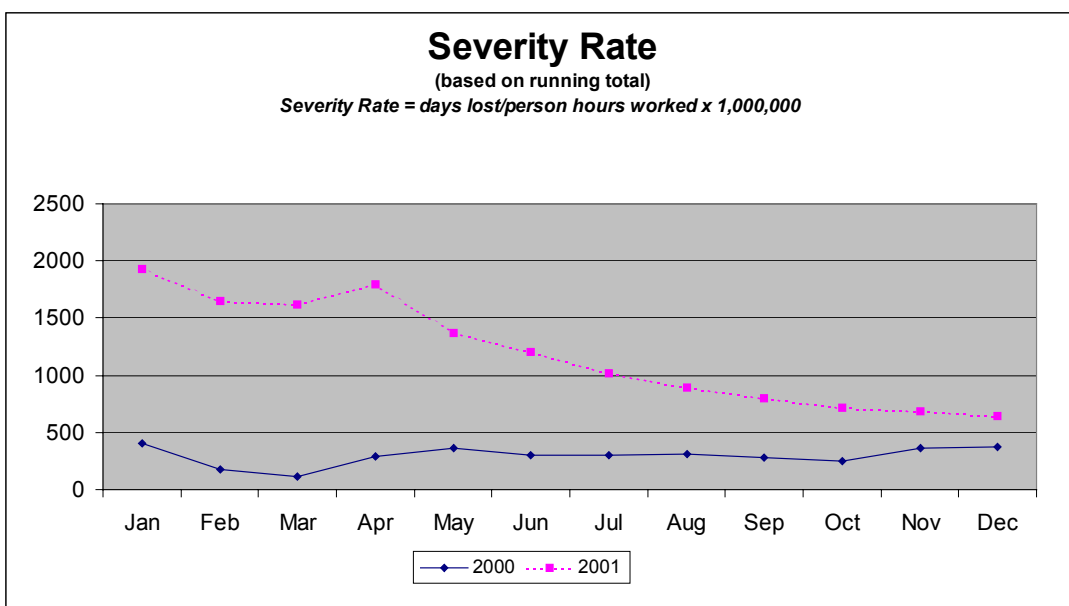
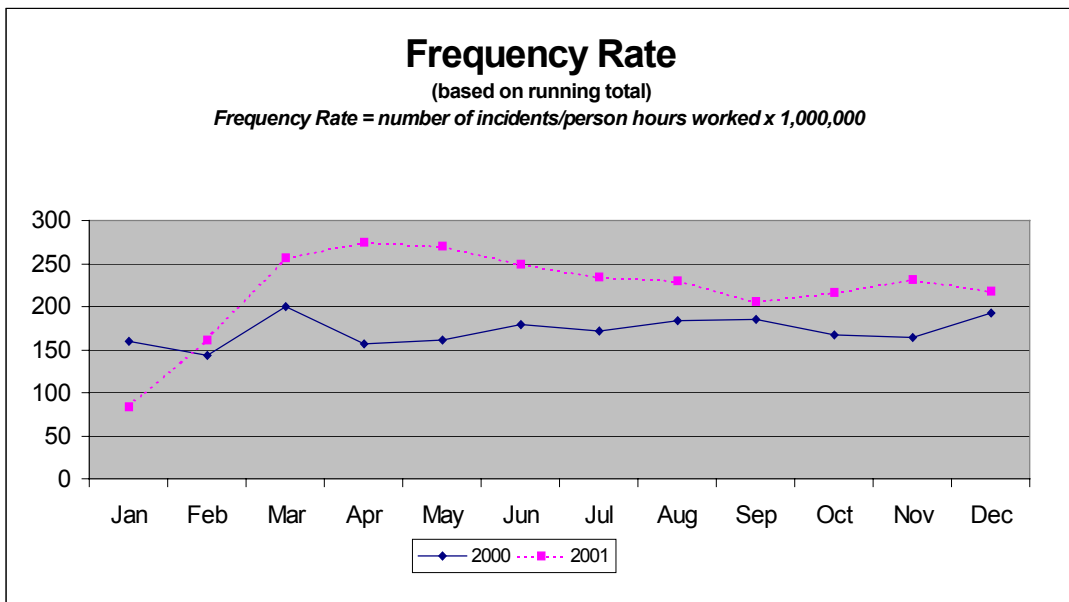
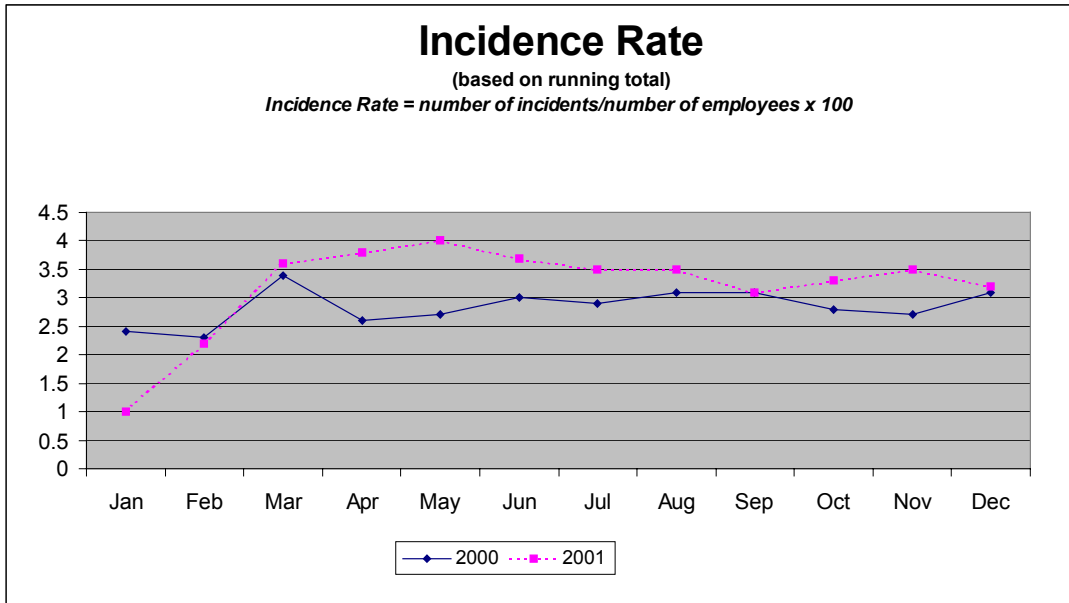
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	480	576	620	504	848	760	868	880	760	642	716	528
Employee numbers	4	4	4	4	5	5	5	5	5	5	5	5
Injuries	0	0	0	0	0	0	0	0	0	0	0	0
Days lost	0	0	0	0	0	0	0	0	0	0	0	0
Incidence rate (number of incidents per 100 workers)	0	0	0	0	0	0	0	0	0	0	0	0
Frequency rate (incidents per 1,000,000 hours exposure)	0	0	0	0	0	0	0	0	0	0	0	0
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	0	0	0	0	0	0

**FORESTRY**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	263	390	447	362	473	441	507	500	362	452	408.	354.8
Employee numbers	3	3	3	3	3	3	3	3	3	3	3	3
Injuries	0	0	0	0	0	0	0	0	0	0	0	0
Days lost	0	0	0	0	0	0	0	0	0	0	0	0
Incidence rate (number of incidents per 100 workers)	0	0	0	0	0	0	0	0	0	0	0	0
Frequency rate (incidents per 1,000,000 hours exposure)	0	0	0	0	0	0	0	0	0	0	0	0
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	0	0	0	0	0	0

Utility Services Division Combined	Jan	Feb	Runnin g Total from 1/1/01	Mar	Runnin g Total from 1/1/01	Apr	Runnin g Total from 1/1/01	May	Runnin g Total from 1/1/01	Jun	Runnin g Total from 1/1/01	Jul	Runnin g Total from 1/1/01	Aug	Runnin g Total from 1/1/01	Sep	Runni ng Total from 1/1/01	Oct	Runni ng Total from 1/1/01	Nov	Runnin g Total from 1/1/01	Dec	Runni ng 12 month Total
Hours worked	11,929	12,925	24,854	14,042	38,896	11,928	50,824	15,759	66,583	13,378	79,961	14,195	94,156	14,592	108,748	12,470	121,218	13,347	134,565	12,928	147,492	8,356	155,848
Employee numbers	92	92	92	91	92	90	91	90	91	89	91	89	90	89	90	88	90	87	89	87	89	70	88
Injuries	1	3	4	6	10	4	14	4	18	2	20	2	22	3	25	0	25	3	28	5	34	0	34
Days lost	23	18	41	22	63	28	91	0	91	5	96	0	96	0.5	97	0	97	0	97	4	101	0	101
Incidence rate (number of incidents per 100 workers)	1	3	2.2	7	3.6	4	3.8	4	4.0	2	3.7	2	3.5	3	3.1	0	3.1	3	3.1	6	3.5	0	3.2
Frequency rate (incidents per 1,000,000 hours exposure)	84	232	161	427	257	335	275	254	270	150	250	141	234	206	206	0	206	225	208	387	231	0	218
Severity rate (days lost to injury per 1,000,000 hours worked)	1,928	1,393	1,650	1,567	1,620	2,347	1,790	0	1,367	374	1,201	0	1,020	34	796	0	796	0	717	309	681	0	645

Incidence rate = (number of incidents/number of employees) x 100  
 Frequency rate = (number of incidents/person hours worked) x 1,000,000  
 Severity rate = (days lost/person hours worked) x 1,000,000





## Operations Network Review of Operations for the Period Ended 30 November 2001

### 1. Items of Note

- During the month there was one burst main, which was attended to in conformance with the performance targets.

### 2. Water Quality

#### 2.1 Routine Testing (A1)

The water quality was monitored and the appropriate laboratory tests were completed for November. There were 160 samples from the reticulation system tested for bacteriological compliance during November.

Compliance for the month is 100 percent. Compliance for the year to date is 100 percent.

#### 2.2 Water Tests Initiated by Customers (A2)

	Month	Year to Date	Compliance Year to Date (%)
Number received	5	34	-
Within ability of Operations Network to control	0	2	-
Formal response within five days	5	32	94%

### 3. Customer Services

#### 3.1 Counter and Other Office Services (E)

Information has been provided to customers requesting information by letter, telephone and over the public counter.

A breakdown of enquiries received during November is as follows:

Counter enquiries	81 + 13 encroachments
Proposals from other utilities	3
Response time requirement compliance	100%

### 3.2 Performance Standards (G)

November 2001				
	Expected Compliance	Number of Activities	Completed to Standard	Compliance Achieved
<b>Miscellaneous</b>				
<b>A</b> Quality complaints (samples)	85-95%	5	5	100%
<b>A</b> System Flushing ( <b>M1.4</b> )	85-95%	21	21	100%
<b>B</b> Pressure and flow	85-95%	12	12	100%
<b>B</b> Loss of Supply ( <b>M1.5</b> )	85-95%	11	11	100%
<b>C</b> Planned Shutdowns	95%	12	12	100%
<b>C</b> Unplanned Shutdowns	95%	5	5	100%
<b>D</b> Mark-outs	90-95%	63	47	74%
<b>G</b> Workmanship (joint audit results for November 2001)	90-95%	8	8	100%
<b>O</b> Meter Reading	100%	<i>Achieved</i>	<i>Achieved</i>	<i>Achieved</i>
<b>Significant Leaks (M1.2 or o/e)</b>				
<b>H</b> Burst Mains ( 3 O&E)	85-95%	1	1	100%
<b>H</b> Other	85-95%			
<b>Non-significant Leaks</b>				
<b>H</b> Mains ( <b>M1.2</b> ) (includes 4 o & e)	85-95%	17	15	88%
<b>H</b> Valves ( <b>M1.3</b> )	85-95%	23	16	70%
<b>H</b> Hydrants ( <b>M1.4</b> )	85-95%	43	34	79%
<b>H</b> Domestic Services ( <b>M1.5</b> )	85-95%	165	151	92%
<b>H</b> Stopcocks ( <b>M1.6</b> )	85-95%	23	21	91%
<b>H</b> Water Meters ( <b>M2.1</b> )	85-95%	9	9	100%
<b>L</b> Damages ( <b>Variation</b> )	85-95%	17	15	88%

Locates and Investigations (Wellington Regional Council Internal Target of Three Working Days)

<b>November 2001</b>		
Locate stopcocks	54/66	81%
Leak locations	50/74	67%
Flow tests	1/1	100%
Seepage/investigations	1/1	100%

### Failures

	<b>Jobs Failed by 1-24 Hours</b>	<b>Jobs Failed by 1- 5 Working Days</b>	<b>Jobs Failed &gt;5 Working Days</b>
Burst mains			
Stopcocks		2	
Hydrants	3	6	
Valves			7
Mains			2
Domestic services	1	12	1
Water meters			
Damages	2		
Quality complaints			
System flushing			
Pressure and flow			
Loss of supply			
Mark-outs		16	
Workmanship			

### Additional Work Carried Out

Variations (exclusive of burst mains)	3
Service renewals >4m	1

### Burst Mains

There was one burst main during November 2001:

83 Kemp Street, Kilbirnie

1 November 2001

### Overs and Extras

3 Tawa Street	Major mains repair	12 November 2001
14a Aparima Avenue	Service blown off rider main	20 November 2001
89-92 Adelaide Road	Blown rider main	21 November 2001
43-45 Kemp Street	Two services blown off rider main	25 November 2001

#### 4. Health and Safety

An employee split his thumbnail when he had his hand placed over a hole on a water main. A rock fell from the top of the excavation (less than 1 m deep) and split his nail in half. He saw a doctor immediately. This injury has not resulted in any time off work.

#### 5. Meters

A total of 1,520 suburbs and high use meters were read and entered into the system by 23 November 2001.

#### 6. Pumping Stations, Reservoirs and System Control

##### 6.1 General

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

##### 6.2 Control System

The control system continues to operate satisfactorily. A successful hand-over of Wellington City Council telemetry sites to the Wellington City Council master station was achieved on Thursday, 29 November. Wellington City Council has now taken over operation and maintenance of their pumping stations and reservoirs, and associated telemetry sites.

##### 6.3 Kelburn Reservoir

Preliminary work for the decommissioning of Kelburn Reservoir in preparation for the new reservoir to be built was completed. We are waiting for the new main to be laid by others, so we can connect it to the reservoir.

##### 6.4 Maintenance Checks

Maintenance was carried out during the period as follows:

Round A	Round B
Rajkot Terrace	Huntington Street
Nassau Avenue	Warwick Street
Mark Avenue	Hay Street
Chapman Street	Epuni Street
Burnside Road	Maupuia Street/Mt Crawford

Ruskin Road Broderick Road Broadmeadows High Pump Station Satara Street Kitchener Terrace Davies Road CV Birch Street CV Ohariu CV Glover Street Ironsides CV	Sar Street Alexander Road Redwood Greyfriars Road Bell Road CV Webb Street CV Prince of Wales CV Vasanta CV
--	--

## 7. Development

### 7.1 Development Statistics (F2)

Subdivisions	Month	Year to Date
Construction plans approved (lots/units)	120	191
Scheme plans approved	17	150
Subdivisions cleared (lots/units)	29	225
Total subdivisions processed	37	301
Subdivisions processed on time	36	300
Response time compliance	97%	100%

### 7.2 Development Projects

#### 7.2.1 Churton North Reticulation

A recent inspection of the pressure reducing valve chambers showed 450 mm of water in the Waverton Terrace chamber and 50 mm of water in the Amesbury Drive chamber after the pumping out on 17 July 2001. We have requested Truebridge Callender Beach Ltd many times to repair the chamber but without success. This needs to be followed up.

#### 7.2.2 Construction and As-built Plans

##### 7.2.2.1 Construction Plans

Construction plans were considered for approval of the following subdivisions:

- Tacy Street, Kilbirnie (45 lots). Construction included deviation of a privately owned fire service after approval was received from the fire service owner. Approval was given on 1 November 2001.
- Monterey Development, Middleton Road, Johnsonville. The plans were considered and amendments requested but the plans were not ready for approval.

- Alanbrooke Place, Karori (7 lots). The plans were considered and a minor amendment was required. The plans were not ready for approval.

#### 7.2.2.2 As-built Plans

The following as-built plans were considered for approval during September:

- Rossaveel Heights (10 lots). The consultants were advised that the as-built plan is not satisfactory and further amendments were required. Some lots do not show the required water connections.

#### 7.2.3 Fire Services Recently Connected

There were no fire service connections installed during November.

<b>Applications Processed</b>	<b>Complying</b>	<b>Compliance</b>
2	2	100%

#### 7.2.4 New Commercial Metered Services

There were no metered services installed during November.

<b>Applications Processed</b>	<b>Complying</b>	<b>Compliance</b>
4	4	100%

#### 7.3 Building Development Appraisals (F1)

	<b>Commercial</b>	<b>Domestic</b>
Building consents	1	19
PIMS applications	1	21
Compliance with response time requirement	100%	100%

#### 7.4 Land Information Memorandum (F1)

<b>Applications Processed</b>	<b>Compliance with Response Time Requirement</b>
46	100%

---

Strategy and Asset Group  
November/December 2001  
and January 2002

---

## Strategy and Asset Group Review of Operations for the Period Ended 31 January 2002

### 1. Items of Note

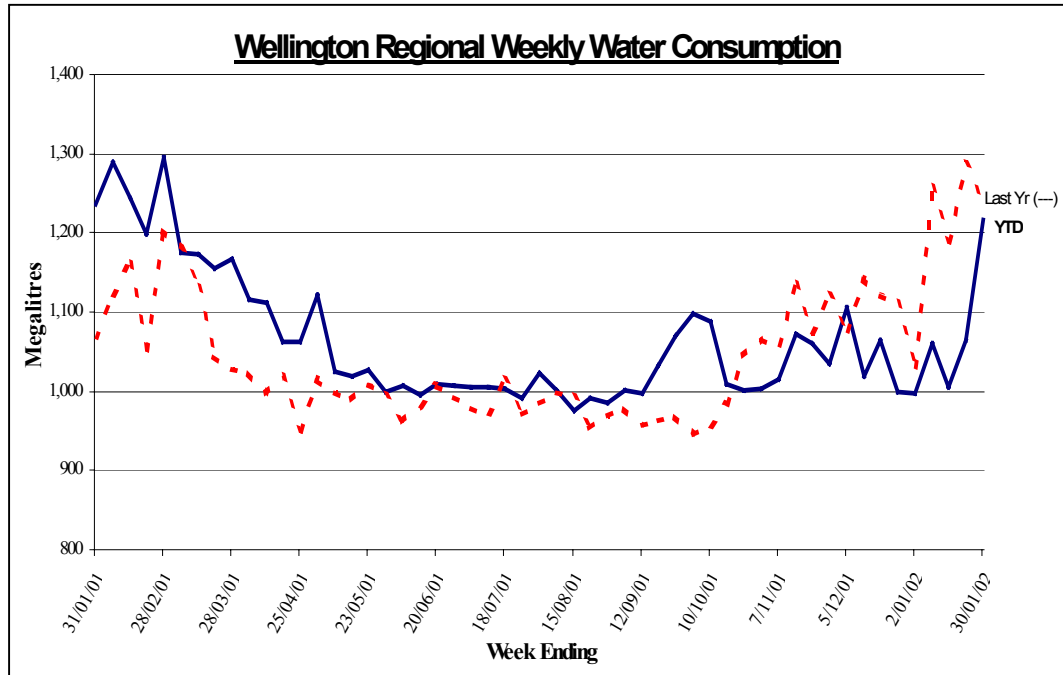
- With a particularly wet January, water consumption during the month was well below what is normally expected during summer. For the first three weeks of January, consumption was only slightly above the consumption experienced during a winter period. In the last week of the month, though, consumption returned to normal levels for the time of year. The highest consumption day for the month was 194 ML. This occurred just before the end of the month.
- Water consumption for the metering year, which starts on 1 April 2002, is almost identical to the previous year, even though the summer so far has been wet. This has come about because of the heavy consumption in early spring.
- The amount payable for the easement granted to Hutt City Council for the use of the Wainuiomata Tunnel has been resolved. This was reported to the Policy and Finance Committee for approval at the end of January.
- Under the *Drinking-Water Standards for New Zealand 2000* the Hutt aquifer can only be classified as a secure groundwater source if less than 0.005 percent of the water has been in the aquifer for less than one year (99.95 percent must be more than a year old). Water dating tests carried out over the last few years have now confirmed that the water just meets this requirement. The Public Health Service has been asked to concur that the groundwater can be classified as secure. A separate report on this important issue will be forwarded to the Committee at a later date.
- An easement has been granted to Housing New Zealand in Croft Grove, which is near the Estuary Bridge at Gracefield. This formalises an arrangement that has existed for many years. It provides access to Housing New Zealand properties over pipeline land.

### 2. Sales Volume

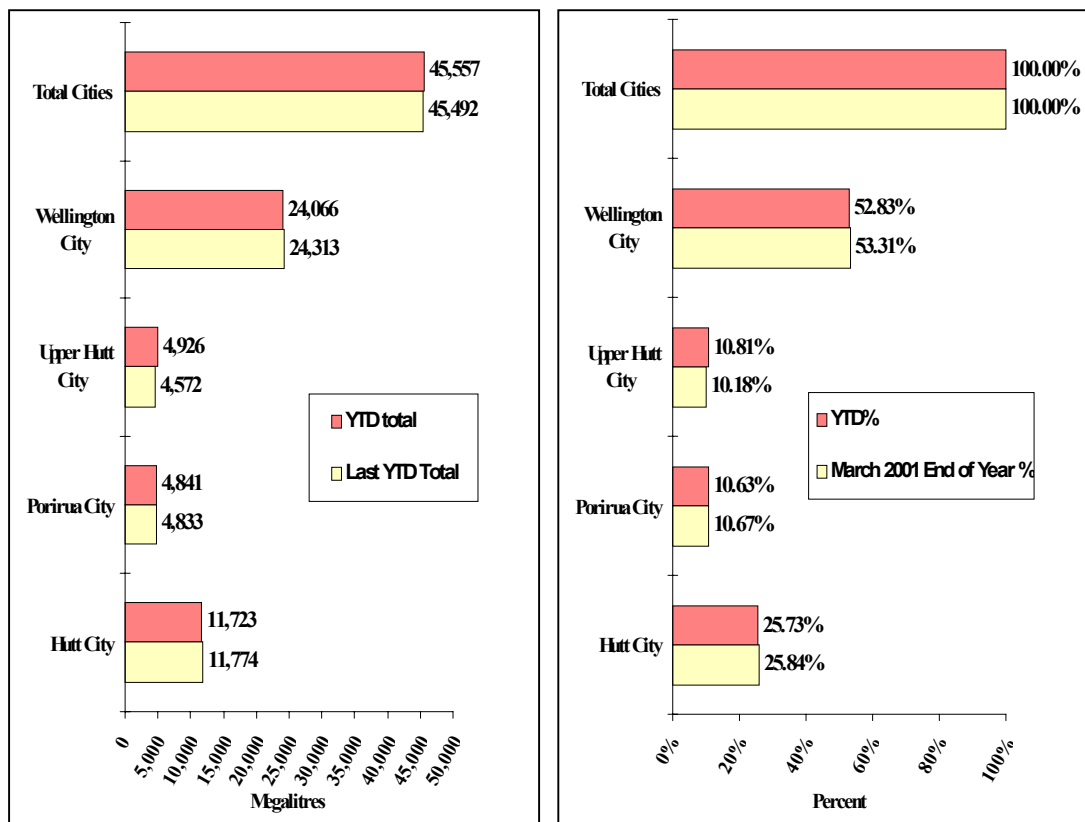
Graphs outlining sales volumes are on page 25.



Water Sold Over the Last 12 Months



Water Sold from 1 April 2001 to 31 January 2002



### 3. Asset Management

- The Hansen Financial Movement Report, which reports financial information from the Hansen asset management system for inclusion in the financial reports, now appears to be working reliably. Further tests will be conducted before the report is used for routine financial reporting of asset depreciation.
- A review of the June 1998 Asset Management Plan has been commenced but no significant changes will be made until the 2002/03 year.
- The 2001/02 Capital Works Programme is under way. Work is under way for the most substantial project, lining of the Rahui Reservoir supply main (part of the old Orongorongo/Karori pipeline). Lining this main will improve the quality of water supplied to Petone. The gas chlorination plant at Gear Island has been successfully commissioned after some initial technical difficulties. Other projects include:
  - ◆ Security improvements at the treatment plants
  - ◆ Replacement of the switchboard and pumps at Johnsonville Pumping Station
  - ◆ Noise insulation at Moores Valley Road Pumping Station
  - ◆ Noise and vibration suppression work at Waterloo Water Treatment Plant
  - ◆ Various minor improvements and replacements at the treatment plants
- A scheme plan for the subdivision of the Karori Reservoir land has been completed and a subdivision consent granted. Difficulties and delays are being experienced locating old survey data required for the preparation of the detailed survey plan. Further administrative approvals are required to complete the transfer of land to the Wellington City Council.
- Issues associated with our application to take water from the Moera aquifer are being worked through with IBM, whose fire protection system may be affected by our proposal.
- Good progress has been made on updating the Sustainable Yield Model, our primary strategic planning tool. This model will be refined and used in conjunction with the hydraulic model to improve our understanding of the potential capacity of the system. Some difficulty is currently being experienced matching the new Waiwhetu aquifer model developed by the Resource Investigations Section. Additional time and resources may be required to achieve this.
- A number of Transit New Zealand highway upgrading proposals that affect our distribution mains are in progress. The Council is required to meet

50 percent of the cost of this work. Planning is under way to relocate the branch main to the Plimmerton Reservoir, which will be affected by new State Highway 1 roading work at Plimmerton. Planning work is also under way to move our main onto the new duplicate Paremata Bridge. Tenders for this work have closed but an award has not yet been made.

- A draft Capital Works Plan for 2002/03 has been developed. The preliminary estimate of expenditure is \$2.3 million.
- Periods of wet weather have hampered forest monitoring activities in the catchment areas during December 2001 and January 2002. However, Victoria University students have been engaged in a study of the Orongorongo wetland and a small team has been conducting a botanical survey in the Wainuiomata/Orongorongo Catchment. They have noted significant plant diversity but a lack of palatable species.

Pro-hunt is about halfway through a culling programme as at the end of January. To date they have shot 5 deer, 5 pigs and 89 goats. Applications for ballot shooting in April have been called for. An illegal bivouac has been removed from the Eastern Hutt Catchment. A survey of the western and northern boundaries of the Wainuiomata Catchment has been completed as an aid to developing a strategy for security of those boundaries.

#### 4. Quality Assurance

- The new 2000 version of the *Drinking-Water Standards for New Zealand* require that turbidity be monitored at each filter and be analysed and reported on a daily basis. We are working with the Public Health Service on new control and reporting systems to achieve this. Control systems are in place but the volume of data required to report on continuous monitoring is causing problems.
- These rules are intended to reduce the risk of *Giardia* and *Cryptosporidium* passing through the plant. The plants incorporate “slam-shut” valves, so that any water that does not comply with the *Drinking-Water Standards for New Zealand* is not normally delivered to the customers.
- An application has been submitted to the Public Health Service for the Wainuiomata Water Treatment Plant to be upgraded to an A grading. Data to support the application is being assembled. The sheer volume of this data is creating problems.

#### 5. Marketing

##### 5.1 Summer Water Conservation Campaign

- Following extremely wet weather during the first two weeks of January,

television airtime scheduled during January was postponed for two weeks and will now recommence on 1 February and run until 9 March. Airtime has been cancelled and new time booked to accommodate this.

- A press release, *Being water-wise worthwhile, says WRC* was written and issued to coincide with the beginning of the television advertising.
- Radio advertising copy was written to take advantage of airtime available through the Corporate Communications' contract with Radio Network. This advertising was also rescheduled during January because of the wet weather experienced.
- Corporate Communications have been supported and advised in their trial of face-to-face communications about water conservation. Interviewers have conducted a door-to-door education campaign in Grenada and Paparangi to assess the effectiveness of this form of communication. Input has included questionnaire design, water wise gardening advice, brochure development, interviewer training and publicity. Awareness of the key messages from the campaign will be tested during February/March. Results will be used in a review of The Water Group's conservation communications.

## 5.2 Other Activities

- The Water Group's Report of Business Activity for 2000/01 was posted on the Wellington Regional Council Internet site in November 2001.
- *Fresh*, a new educational brochure covering the wholesale water system operated by the Wellington Regional Council, was completed and published in December 2001. The brochure provides an explanation of how the Council collects, treats and distributes water.
- Public tours were arranged to Wainuiomata and Te Marua Water Treatment Plants in conjunction with Wellington Regional Council Parks and Forests, as part of the Regional Outdoors Programme 2001/02 Wonderful Water Walks. Five other groups visited a treatment plant during the period.
- Presentations regarding water supply issues were arranged for visiting delegations from China (two), the Czech Republic and Mongolia.
- A review of the content of The Water Group's treatment plant tours was commenced, with a view to giving greater profile to the role that water supply plays in promoting a sustainable region.
- A review of the 1997 water supply video, *Wellington Regional Water Supply - A Brief History* was commenced, with a view to updating the content.

## 6. Projects Undertaken by Engineering Consultancy for Strategy and Asset

### ➤ Orongorongo River Intake

A report has been drafted assessing the current condition of the Orongorongo River intake. Remedial work to prevent further scouring of the toe of the weir is proposed.

### ➤ Orongorongo River Crossing

The condition of the piers and abutments of the existing pipe bridge and options for a vehicle crossing of the river have been assessed.

### ➤ Stuart Macaskill and Wainuiomata Roads Reseal

The Contractor is patching and resealing sections of road at Te Marua and Wainuiomata. Wet weather has delayed the completion of this work.

### ➤ *Stuart Macaskill Lakes Emergency Action Plan*

Work on reviewing the *Stuart Macaskill Emergency Action Plan* is proceeding.

### ➤ Waterloo Water Treatment Plant Vibration and Noise

The Contractor has fabricated four columns to stiffen the motor hall floor and reduce the vibration. The columns should be installed in February. This is the first stage of the proposed remedial works.

### ➤ Gear Island Sewer

A pumped sewer system is being installed at Gear Island Water Treatment Plant. This system connects to the Hutt City Council sewer. It replaces an existing septic tank.

### ➤ Halford Place/Gear Island

Stormwater drainage along Halford Place has been regraded and cleaned.

### ➤ Refurbishment of the OK Main, Petone

Refurbishment of the OK main between Hutt Park and Korokoro was started on 22 January 2002. The Contractor has cleaned the pipe from Hutt Park to Croft Grove in preparation for inserting the PE liner.

➤ **Paremata Bridge, State Highway 1**

Transit New Zealand is proposing to construct a new bridge at Paremata. The 300 mm pipeline supplying water to Plimmerton and Pukerua Bay will be relocated on to this new bridge. Design of the pipeline for the new bridge is proceeding.

➤ **Deviation of Branch Pipeline to Plimmerton No. 2 Reservoir**

The proposed realignment of State Highway 1 requires Plimmerton No. 2 branch pipeline to be relocated. Contract Documents are being prepared for this deviation.

➤ **Stokes Valley Branch Main**

An assessment is being made of the strength and remaining operational life of the asbestos cement section of this branch main. Two sections of pipe will be cut out and tested in April 2002.

➤ **Johnsonville Pumping Station Switchboard and Pumpsets**

Replacement of the Johnsonville Pumping Station switchboard and pumpsets is being arranged. The pumpsets have been ordered and quotations invited for the supply of variable speed drives.

➤ **Warwick Street Pumping Station**

A report on the condition of the Warwick Street Pumping Station switchboard and pumpsets is being finalised. Replacement of the switchboard is proposed.

➤ **Karori Pumping Station**

A report on the condition of the Karori Pumping Station switchboard and pumpsets is being finalised. Replacement of the switchboard and the pumpsets is proposed.

➤ **Wainuiomata Main Valve Chambers**

Pipework around the Gear Island valve chamber on the Wainuiomata main has been modified. This simplifies the connection of the OK main to the Wainuiomata main and removes unused pipe, reducing the risk of contamination.

➤ **Pipe Holding Down Straps in Tunnels and Tunnel Access**

Pipe securing straps are being designed for installation in the Kaitoke

pipeline tunnels. Access into these tunnels is very restricted. New gates, access chambers and covers are being designed to allow safe access into these tunnels.

➤ **Flow Meters**

An order has been placed for a new head for the Ngauranga interconnection flow meter.

A chemical dosing flow meter has been installed at Wainuiomata Water Treatment Plant.

A flow meter has been installed on the supply from Little Huia intake in the Orongorongo Valley.

➤ **Review of Seismic Repair Stock**

A report assessing the quantity of stock held for repair of water distribution pipelines following a major seismic event is being reviewed.

---

Engineering Consultancy Group  
November/December 2001  
and January 2002

---



## Engineering Consultancy Group Review of Operations for the Period Ended 31 January 2002

### 1. Work Carried Out for the Strategy and Asset Group

The main capital projects for which the Engineering Consultancy Group has responsibility are itemised in the Strategy and Asset Group report. Support is also provided for other projects being undertaken by this group.

### 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.

### 3. Work Carried Out for Wellington City Council

#### 3.1 General

Current projects underway are detailed in the following sections.

#### 3.2 Thorndon Quay

This project is for the replacement of a 200 mm asbestos cement main for the full length of Thorndon Quay. This will be a challenging project, as Thorndon Quay has already had significant cable laying operations in recent months. Included in the Contract are short sections in Mulgrave Street and Kate Sheppard Place. A Contract has been awarded and work commenced from the north end.

#### 3.3 Bowen and Lower Cuba Streets

The replacement of short lengths of main in these two streets was split off from the Thorndon Quay project. Although the lengths to be laid were short, there were considerable difficulties arising from traffic flows and the presence of other underground services. This Contract was completed prior to December.

#### 3.4 The Esplanade, Island Bay

This project involves replacing water mains in various streets in Island Bay and Kingston. Tenders were invited and a Contract awarded and main laying completed. Final cut-ins and changeovers for service connections are nearing completion.

#### 3.5 Aramoana Reservoir, Miramar

There is a storage deficit in the Low Level Zone of 10 ML. This was identified and reported on at the time of approval of the Macalister Park 20 ML Reservoir. Of this storage, approximately 7 ML is required in the Eastern Suburbs (Miramar) and 3 ML in the Southern Suburbs (Island Bay). Proposals were invited from consultants and the selected consultant has carried out initial investigations. Drilling has established that the site is underlain by a deep gully, which will require the reservoir to be moved over.

### 3.6 Kelburn Reservoir

This reservoir will replace two existing reservoirs that are adjacent to the Karori Wildlife Sanctuary. The Contract has been awarded and work commenced with laying a water main and drain from the reservoir site. Pipework modifications in Disley Street are almost complete and Wellington Regional Council's Distribution Section has carried out some pipeline modifications adjacent to the reservoir, so the south reservoir can be isolated for demolition.

### 3.7 Southern Suburbs Reservoir

Additional investigations have been carried out at a potential site below Southgate Park. Subsurface investigations have been carried out, to determine the extent of landfill refuse that underlies the site and the issues to be managed in the moving of this material.

### 3.8 Water Services Agreement

This agreement expired on 30 November 2001. Arrangements were made for the transfer of the following functions to Wellington City Council:

- Building consents
- Subdivisions
- System records
- Counter service
- New services and fire services

In addition, the plans and records relating to the Wellington City reticulation system have been passed over. The loss of these functions represents a drop in income for the group of \$303,000 per annum. This is a significant effect. However, staff numbers have reduced by one internal transfer, one resignation and one retirement.

## 4. Miscellaneous Projects

### 4.1 Kapiti Water Supply

Following the presentations at the Kapiti Coast District Council Water Workshop, more work has been carried out to firm up the pipeline route from the Wellington Regional Council trunk main at Judgeford and the Kapiti Coast District Council's

Paraparaumu Reservoir. Because of the extensive road realignment that will take place in the MacKays Crossing area, and the difficulty of laying along the existing road, it is proposed that the pipeline be laid through Queen Elizabeth Park. Although the route is slightly longer, it will be easier to lay and will not require moving to suit the new roads.

An initial investigation has been made on the impact of this new supply on the Wellington Regional Council's wholesale water system. This will need to be analysed further, using the Sustainable Yield Model and the Hydraulic Model that is now in the calibration phase.

## 4.2 Emergency Water Supply

Following the Utility Services Committee meeting when this topic was presented, a preliminary discussion has been held with the civil defence/emergency management managers of Wellington Regional Council, Hutt City Council and Porirua City Council. A larger meeting of the water supply and civil defence/emergency management managers of all four city councils and the Regional Council has been arranged, to determine the current status of emergency water supply plans and to make plans as to how to move this issue forward.

## 5. Staff

Immediately before Christmas, Bez Bowles, Clerk of Works, Special Projects retired. Bez played a very active role in all aspects of the water supply construction over many years, including some very challenging projects.

---

Laboratory Services  
November/December 2001  
and January 2002

---

## Laboratory Services Department Review of Operations for the Period Ended 31 October 2001

### 1. Items of Note

- Our Laboratory Accreditation Audit by IANZ duly proceeded over 12 and 13 November 2001. The comprehensive biennial assessment, not unexpectedly, produced several improvement opportunities in meeting with the requirements of the new ISO/IEC 17025 Standard. We are progressing toward clearing these within the prescribed timelines. In conjunction with the audit we sought and achieved additional signatory power, as well as an extension to our previous scope of testing.
- Our tender of 5 November 2001 for the biennial Upper Hutt Water Quality Testing Contract No. 039 unfortunately came second in the face of keen competition from a record number of local and out of town laboratories.
- We submitted a tender for Wellington Regional Council SPE Water Quality Sampling Contract No. D970 on 19 December 2001. A tentative arrangement had been made with a third party to cover the urban sample collection component of the Contract.
- Sample collection has been managed without replacing either of the field officers who resigned earlier. The Christmas/New Year period would always prove to be a testing time but we coped by divvying up these and other duties amongst current staff. We did have had some voluntary assistance from people in work experience programmes.
- The laboratory has acquired a Suzuki Vitara by way of internal transfer and purchase. This four wheel drive capability has enabled us to conveniently negotiate formerly demanding sample sites, as well as access to additional new locations.
- Several new Environmental Division contracts kicked in this period with the advent of summer. Marine Water Quality Monitoring (Porirua City sites) and Contact Recreation Freshwater Monitoring programmes will extend into March. In connection with the latter programme, we undertook work for the Wairarapa Division over the Christmas and New Year weeks.

### 2. Business Summary

#### 2.1 Quality

There were no requests for retesting samples and test reports are timely.

## 2.2 Health and Safety

During November there was a motor vehicle accident. There was no personal injury sustained and no time off work was required.

---

Plantation Forestry  
November/December 2001  
and January 2002

---

## Plantation Forestry Department Review of Operations for the Period Ended 31 January 2002

### 1. Log Harvest Contract

Activity has continued at a low level, as a combination of bad weather and shortage of crews prevented full production from commencing. When the weather improved in late December and January, we were faced with the Christmas break and the annual closure of mills. The first hauler is expected on-site this month and this, together with the ground based crew doing the road lining, should markedly increase output.

Although the weather over Christmas was not much better than that of early December, it appears that the roads have bedded in well and only routine maintenance should be required in the future.

The route out includes private land and a significant hill. We have been looking at the options for a communications system to ensure separation between the trucks and the residents in this area. Our initial solution was costed at around \$15,000 and this was considered excessive. We are still exploring other options and in the meantime operating a simplified system whereby staff members provide the interface between the trucks and the residents.

As can be seen by the analysis below, only low grade logs have been produced to date. This is because the immediate priority was to open up the road lines and to construct the skid sites. These are sited on the ridge lines and the trees growing there have been exposed to the elements and have poor growth and form. As the haulers commence logging below the ridge lines, the quality of the timber will improve. Grade outputs for November and December were:

Grade	November 2001		December 2001	
	Tonnes		%	
Pruned Domestic	0	0	0	0
Pruned Export	0	0	0	0
Partial Pruned	0	0	0	0
S/A Grade	30.52	4.22	29.10	2.29
L Grade	30.96	4.28	60.22	4.73
R Grade	0	0	0	0
K Sawlog	14.48	2.00	206.20	16.21
K Rough	210.64	29.13	438.22	34.44
Pulp	29.44	4.07	253.23	19.90
O/S Pulp	0	0	0	0
Xport Pulp	407.07	56.29	285.32	22.43
Other	0	0	0	0
<b>Total</b>	<b>723.11</b>		<b>1,272.29</b>	



## 2. Silviculture Contracts

The contractors did not work through the Christmas break.

To date 39.1 hectares of a planned 119 hectares have been completed. It is anticipated that all work can be completed by year end.

## 3. Plantation Forestry Operations

Most work through this period was concentrated on the Puketiro harvest and the need to keep the road open following the frequent weather events. As stated above, the road now appears to have settled and ongoing difficulties are not anticipated.

The proposed 1080 drop finally took place in early October and, apart from a minor delay while the roads were “swept” to remove baits, there was little effect on forest operations. As yet, we have not received the post-drop analysis results but if they turn out to be as good as the earlier catch (almost nil residual) we will be happy.

## 4. Forest Access

Access to all areas, except Maungakotukutuku, remains good.

We have weed sprayed around 4 km of track in Valley View to ensure the maximum visibility with the logging trucks operating in the area and have opened up the tracks in the Kaitoke block above the treatment plant to allow continued access to the reservoir in the area.

The Curtis Flats block, which had been closed to recreational users because of fire risk, was opened to the four wheel drive group that stayed at Battle Hill over the Christmas break. Unless we continue to get regular rain in the area, it may well be necessary close the block again later this summer.

Planning is continuing for access routes into the blocks due for harvest later in the current contract. This planning takes into consideration the likelihood of further harvesting beyond the present contract and the need to minimise cartage distances.

In conjunction with Parks and Forests, an alternative has been constructed to reroute users of the Battle Hill loop tracks away from the area being logged. Later in the year it will be necessary to close this track for a period of one to two weeks while the trees on either side are logged. This closure will be publicly advertised.

## 5. Market Trends

As part of the new contract, Rayonier is required to submit an updated harvest plan each quarter. Set out below are their thoughts on the market prospects for the current quarter.

*Pruned prices have come under considerable pressure during the fourth quarter. This reflects a dramatic decline in the strength of key USA pruned markets which have been the main price driver for our domestic customers during 2001. Despite pressure from these domestic clients during Q4 (requests to drop P1 price by up to \$20/tonne) price was held firm. As a result domestic demand weakened substantially during Q4, a situation we countered with the development of alternative export pruned markets. Results of Q1 negotiations expect to see a slight reduction in domestic pruned prices offset by continued strong demand and price for our export cargo's.*

*Domestic sawlog prices look set to improve during Q1. S Grade demand is high reflecting a shortage of supply over the past two months. This shortage will be further accentuated in Q1 as increasingly more S and L grade type logs are exported as Chinese A grade business from the Port of Wellington. Accentuating this domestic supply pressure the Chinese A grade price is also forecast to improve during the 1<sup>st</sup> quarter which will provide considerable leverage for our domestic sawlog price negotiations.*

*Small sawlog (57K grade) demand is also at a high level with steady if unspectacular price improvements over the past four months. Given the expectation that traditional Korean volume will increasingly shift to China, we expect K grade sawlog prices to hold firm and increase during Q1. Domestically this means that sales prices to Renalls small sawlog plant in the Wairarapa will increase during Q1.*

*The rougher KI (or 58K) grade logs are expected to remain firm in both price and demand.*

*Pulp prices remain weak and no change is expected during Q1.*

This outlook is somewhat better than I would have anticipated after the events in the United States on 11 September 2001.