
Greater Wellington Water

November 2002 to February 2003

Operations Group

November 2002 to February 2003

Operations Group

Review of Operations for the Period Ended 28 February 2003

1. Items of Note

- Whilst no problems have been experienced in meeting the treated water requirements of the territorial authorities, it should be noted that the extended period of dry weather is resulting in low river flows in the Kaitoke Catchment and the catchment areas supplying Wainuiomata. The low flows in the Wainuiomata Catchment may result in the treatment plant being shut down if the resultant inflow drops below 12 ML per day for prolonged periods.

These low river flows have resulted in larger volumes of water to be extracted from the aquifer. If this situation continues over the next month, the level in the aquifer will drop towards the consent limit. The situation is under constant review.

2. Supply Situation

The bi-monthly seasonal forecast for February/March issued by the Meteorological Service is as follows:

For Wellington

Rain	Continuing below normal
Wind	Bursts of west or northwest winds
Temperature	Continuing about normal
Sunshine	Continuing above normal
Specials	Extended dry and sunny periods
Confidence	Moderate

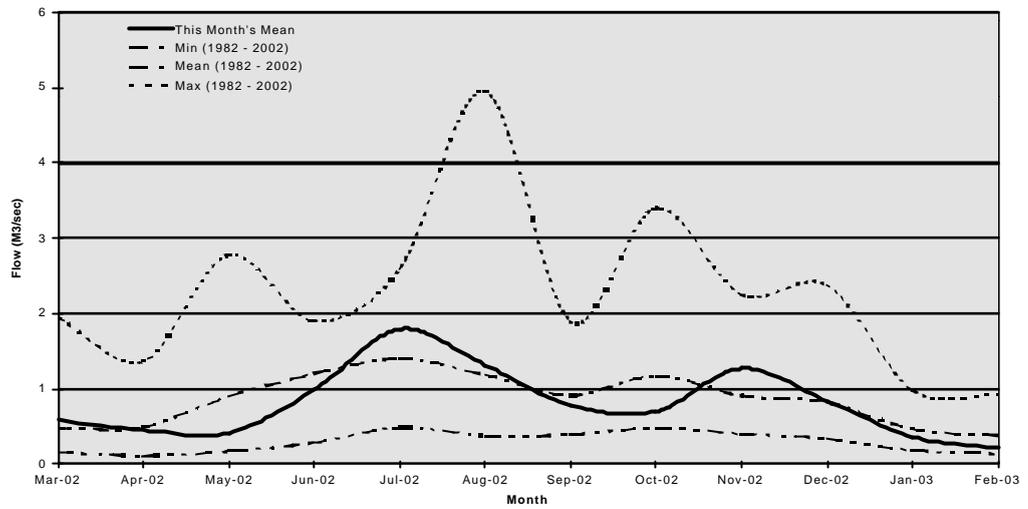
The main pattern is expected to be anticyclones crossing the north of the country, interspersed with frontal zones mainly crossing the south of the country. In the middle of the country these anticyclones should continue to bring extended periods of dry weather, and the fronts should bring bursts of west or northwest wind, but not much in the way of rain. The result should be high levels of soil-moisture deficit right through this season. Moisture levels in the passing fronts are expected to start to rise again in late March.

Hutt River Flows

The mean monthly flows in the Hutt River during the period were:

November	Just above average
December	Just above average

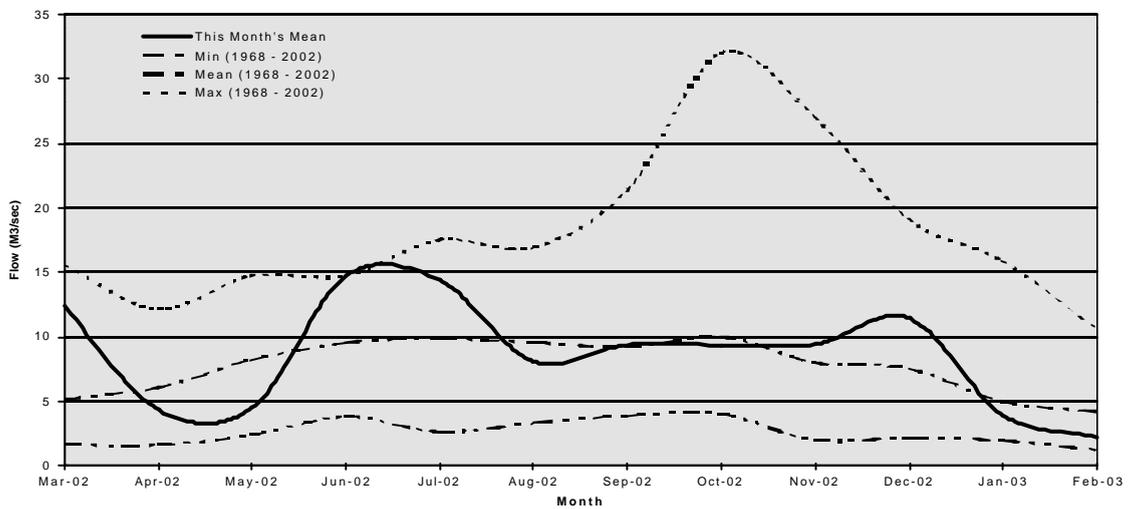
January Just below average
February Below average



Wainuiomata River Flows

The mean monthly flows in the Wainuiomata River during the period were:

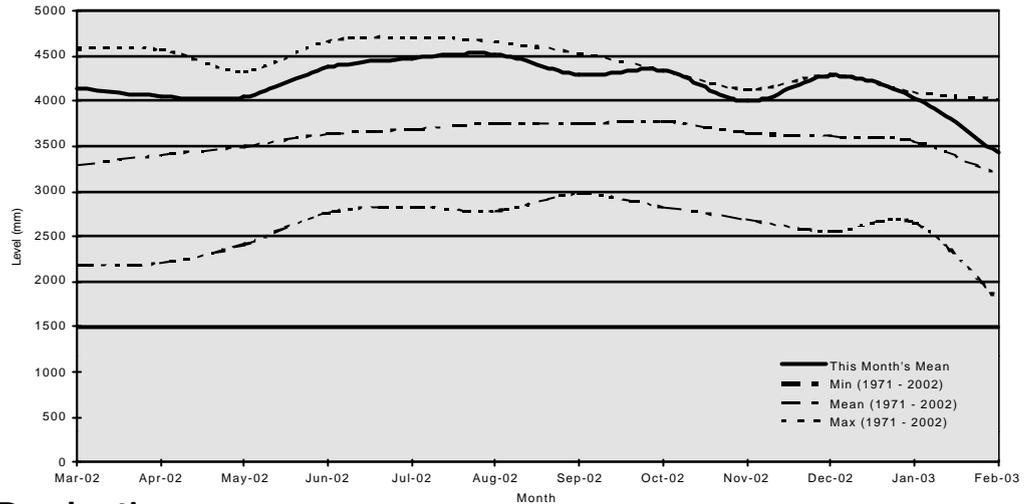
November Just above average
December Above average
January Just below average
February Near minimum



Aquifer Levels

The water level in the Waiwhetu aquifer during the period were:

November Just below the minimum
December At the maximum
January At the maximum
February Above average



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 incident to report.
- The annual Orongorongo Rail audit was carried out on 28 November 2002.
- An emergency evacuation exercise was held on 7 January 2003.

4.1.3 Operations

- The gatehouse valve was replaced on 8 November 2002.
- Blower No. 2 shaft sheared on 8 January 2003.
- The washwater plant's centrifuge bowl was sent to Alfa Laval for service between 14 to 17 January 2003.

4.1.4 Plant Tours

29 November 2002 St Patrick's Church Social Club

4.1.5 General

- The domestic water pump suction pipeline was replaced on 4 December 2002.
- The main front gate was rammed overnight on 11 December 2002.

4.2 **Waterloo Water Treatment Plant**

4.2.1 **Quality**

There are no quality issues to report.

4.2.2 **Safety**

- There was one incident involving a contractor.
- An emergency evacuation exercise was held on 7 January 2003.

4.2.3 **Operations**

- Repairs were carried out on the Gracefield delivery main on 12 November 2002.
- The Naenae and Wellington pumps' pressure reducing valves were serviced on 11 and 12 February 2003.
- The bearings on Naenae Pump No. 3 were replaced on 21 February 2003.

4.2.4 **Plant Tours**

There were no tours during the period.

4.2.5 **Projects - Capital Works**

- Trials for the new sample point for lime dosing pH control were successful.

4.2.6 **General**

- Air conditioning was installed in the main switchboard room on 28 February 2003.

4.3 **Gear Island**

4.3.1 **Quality**

There are no issues to report.

4.3.2 **Safety**

- There are no accidents or incidents to report.

4.3.3 **Operations**

- The DC Pump No. 2 non-return valve was repaired on 12 November 2002.

4.3.4 Plant Tours

There were no tours during the period.

4.4 Te Marua

4.4.1 Quality

4.4.1.1 Drinking-Water Standards for New Zealand

There are no transgressions to report.

4.4.1.2 ISO 9002 Quality System

Date	Transgression	Cause
16 December 2002	High fluoride 1.4 ppm	Sample taken from composite sampler. Cause unknown - all equipment operating normally.
20 December 2002	Te Marua Pumping Station pH <7.4 (7.16)	Problems with caustic dosing system.
23 January 2003	High fluoride 1.4 ppm	Sample taken from composite sampler. Cause unknown - all equipment operating normally.
24 February 2003	Te Marua Pumping Station pH <7.4 (7.2)	Caustic system shutdown to repair leak.

4.4.2 Safety

There are no accidents or incidents to report.

4.4.3 Operations

- Caustic Leak (24 February 2003)

A small leak in the caustic dosing pipe located in the concrete duct between the caustic building and the reaction chamber resulted in caustic and carrier water flowing from the duct into an adjacent chamber and via chamber drainage to Bengue Creek. The caustic system was temporarily shut down while repairs were made. Dilution water was flushed through the open drain to dilute any remaining caustic and downstream pH was closely monitored. A small increase in pH was measured in Bengue Creek. This returned to normal soon after the above actions had been taken.

4.4.4 Plant Tours

2 December 2002	Lifelines Meeting	40
28 January 2003	GWRC Summer Programme	12
31 January	GWRC Staff Induction	10

4.4.5 General

- New Filter Outlet Control Valves

These valves have now been fully commissioned. Filter flow control has been noticeably improved.

5. Distribution

5.1 Health and Safety

There were two minor incidents during October.

5.2 Repairs/Maintenance

- Shutdown the 1,050 mm main at Thorndon and Rocky Point, and installed a new bearing in the 900 mm line valve.
- Shutdown the 1,050 mm main at Randwick and Korokoro, and installed new bearings in both 900 mm line valves.
- Shutdown the 1,050 mm main at Gear Island plus the discharge from Gear Island Pumping Station. Removed the faulty 600 mm butterfly valve and installed a new one.
- All pipeline easements were completed.
- Water freshness parallel mains checks were carried.
- Wainuiomata Reserve - replaced the 600 mm line valve in the valve house with a new valve.
- Raroa Road/ Karori Tunnel - carried out the following:
 - Upgraded the whole track up to the tunnel.
 - Cleared the tunnel drain.
 - Installed gabion baskets to deflect the water from the tunnel.
 - Excavated all valves and installed risers around them.
- Repaired the 525 mm/375 mm main at Elizabeth Street, Moera. Fabricated a new 90 degree bend to replace the leaking "T" section.
- Repaired the broken scour valve tailpipe from the 1,050 mm main north of the Rocky Point valve chamber.
- Scour valve exercise on the Hutt main from Te Marua through to Karori.
- Paremata branch lines - housed in valve chambers two branch valves and two scour valves.

- Shutdown to carry out repairs to leaking single air valve on the Waterloo 750 mm pipeline. Installed new ball valve and air valve.
- Pipeline maintenance on the Wainuiomata 750 mm and OK mains, Randwick valve chamber and Point Howard branch line.
- Shutdown to carry out welding repairs to the Porirua low level branch line in Warspite Avenue.
- Cleared the slips around the access road at Ngauranga Terminal Reservoir.
- Started preparing Gear Island valve chamber for a complete refurbishment.

5.3 **Paremata Bridge Project**

- Ongoing work with the bridge contractor [shut down the 300 mm and 200 mm mains a number of times so pile driving could be carried out]
- Shut down the 300 mm main and anchored the southern end of the pipeline - welded bracing on.

5.4 **Wainuiomata Reserve**

- Installed two new double air valves on the Orongorongo main.

5.5 **Trentham No. 1 Reservoir**

- Removed the old float valve and installed a new inlet pipe into the reservoir.

5.6 **Porirua Low Level Reservoir**

- Installed a new double air valve.
- Removed the old float valve and installed a new inlet pipe into the reservoir.

5.7 **Pembroke Reservoir**

- Removed the old float valve and installed a new inlet pipe into the reservoir.

5.8 **Haywards**

- Installed a new sample line on the outlet from No. 2 Reservoir.

5.9 **Plimmerton Deviation**

- Cut in a new "T" section and branch valve on State Highway 1, Plimmerton.

5.10 **Hutt Park Deviation**

- Removed the line and bypass valves from the cross connection from the 1,050 mm main to the Rahui line for the roundabout contract.
- Refurbished all the valves and pipework.

5.11 **Oxford Terrace**

- Completed the shift of the Distribution Section from Mabey Road to the Waterloo administration centre.

5.12 **Single Air Valve Replacement on the 1,050 mm Main**

- Shut down the 1,050 mm main four times in January and February to remove air valves from the Gear Island valve chamber to south of the BP Service Station on State Highway 2 (two shutdowns were at night).

6. **Health and Safety - Total Injury/Illness/Incident Record**

6.1 **Production**

There are no accidents or incidents to report.

6.2 **Distribution**

There were two minor incidents during October.

Utility Services Division Health and Safety Data 2002 - Total Injuries

PRODUCTION (+ 1 OPS ADMIN)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Hours worked	2,042	2,481	2,600	2,689	3,380	2,626	3,838	2,523	2,419	2,377	2,272	2,232.5	Jun = fractured chemical line
Employee numbers	15	16	16	16	17	16	16	16	16	16	16	16	Jul = scratched hand on metal support
Injuries	0	0	0	0	0	1	1	1	0	0	1	0	Aug = back injury after falling off chair
Days lost	0	0	0	0	0	0	0	2	15	11	17	0	Nov = wrenched shoulder
Incidence rate (number of incidents per 100 workers)	0	0	0	0	0	6.25	6.25	6.25	0	0	6.25	0	
Frequency rate (incidents per 1,000,000 hours exposure)	0	0	0	0	0	380.8	260.55	396.35	0	0	440.14	0	
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	0	793	6,200.9	4,627.68	7,482	0	

DISTRIBUTION

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Hours worked	1,565	1,342	1,322	1,353	1,421	1,211	1,753	1,355	1,328	1,236	1,108	1,347	April = strained back
Employee numbers	9.5	9.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	Oct = twisted back from entering/existing cramped chamber
Injuries	0	0	0	1	0	0	0	0	0	2	0	0	Oct = hurt fingers while freeing pipe from plaster in valve manhole
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	11.8	0	0	0	0	0	23.52	0	0	
Frequency rate (incidents per 1,000,000 hours exposure)	0	0	0	739	0	0	0	0	0	1,618	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	

ENGINEERING CONSULTANCY

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Hours worked	1,576	1,632	1,744	1,772	1,908	1,568	2,423	1,652	1,581	1,685	1,472	1,400	March = barked shin on protruding pipe
Employee numbers	11	11	11	11	11	11	11	11	11	11	11	11	Jul = black eye (hit check on corner of car door)
Injuries	0	0	1	0	0	0	1	0	1	0	0	0	Sep = ankle and knee injury following knock from high pressure hose
Days lost	0	0	0	0	0	0	0	0	0	0	0	0	
Incidence rate (number of incidents per 100 workers)	0	0	7.1	0	0	0	7.1	0	7.1	0	0	0	
Frequency rate (incidents per 1,000,000 hours exposure)	0	0	573.3	0	0	0	412.71	0	632.51	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 SUPPORT

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Hours worked	1,136	1,020	1,024	1,064	1,040	876	1,396	920	776	840	840	878.75	
Employee numbers	9	9	8	8	8	8	8	7	7	7	7	7	
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	

LABORATORY

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Hours worked	1,207	1,242	1,335	1,364	1,124	1,097	1,641	1,102	956	1,085	1,053	1,104.5	Jan = twisted knee joint whilst collecting samples
Employee numbers	10	10	10	10	8	7	7	7	7	7	7	7	Jun = days lost due to incident occurred in January
Injuries	1	1	0	0	0	0	0	0	0	2	2	1	Jul = burn to right hand
Days lost	0	3	0	0	0	6	1	1	0	0	0	0	Oct = jammed finger in sliding cupboard doors
Incidence rate (number of incidents per 100 workers)	10	10	0	0	0	0	14.28	14.28	0	28.56	28.56	14.28	Oct = bruised ankle - slipped on rocks in riverbed
Frequency rate (incidents per 1,000,000 hours exposure)	828.5	797	0	0	0	0	609.38	907.44	0	921.65	1,899.33	905.38	
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	5,471.9	0	0	0	0	0	0	

STRATEGY AND ASSET

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	632	646	552	680	774	614	982	572	674	598	638	602
Employee numbers	5	5	5	5	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	404	328	497	516	476	396	673	496	465	418	409.3	372.6
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	Running Total from 1/1/02	Mar	Running Total from 1/1/02	Apr	Running Total from 1/1/02	May	Running Total from 1/1/02	Jun	Running Total from 1/1/02	Jul	Running Total from 1/1/02	Aug	Running Total from 1/1/02	Sep	Running Total from 1/1/02	Oct	Running Total from 1/1/02	Nov	Running Total from 1/1/02	Dec	Running 12 month Total
Hours worked	8,561	8,689	17,250	9,074	26,324	9,438	35,762	10,122	45,884	8,387	54,271	12,704	66,975	8,620	75,595	8,198	83,793	8,239	92,031	7,791	99,822	7,937	107,760
Employee numbers	63	64	63	62	63	62	63	61	62	59	62	59	65	58	65	58	65	58	65	58	65	58	65
Injuries	1	0	1	1	2	1	3	0	3	1	4	2	6	1	7	1	8	4	12	3	15	1	16
Days lost	0	0	0	0	0	0	0	0	0	6	6	1	7	3	10	15	25	11	36	17	53	0	53
Incidence rate (number of incidents per 100 workers)	2	0	0.8	1.6	1.1	2	1.2	0	1.0	2	1.1	3	1.3	2	1.5	2	1.4	7	2.1	5	2.1	2	2.1
Frequency rate (incidents per 1,000,000 hours exposure)	117	0	58	110	76	106	84	0	65	119	74	157	90	116	93	122	95	486	130	385	150	126	148
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	0	0	0	715	111	79	105	348	132	1,830	298	1,335	391	2,182	531	0	492

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

Utility Services Division Health and Safety Data 2003 - Total Injuries

PRODUCTION (+ 1 OPS ADMIN)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	2,574	2,202	0	0	0	0	0	0	0	0	0	0
Employee numbers	16	16	0	0	0	0	0	0	0	0	0	0
Injuries	1	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)	6.25	0	0	0	0	0	0	0	0	0	0	0
Frequency rate (incidents per 1,000,000 hours exposure)	389	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

0 Jan = Contractor - electric shock

DISTRIBUTION

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	1,390	1,258	0	0	0	0	0	0	0	0	0	0
Employee numbers	9	9	0	0	0	0	0	0	0	0	0	0
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

ENGINEERING CONSULTANCY

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	1,448	1,572	0	0	0	0	0	0	0	0	0	0
Employee numbers	11	11	0	0	0	0	0	0	0	0	0	0
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

0 March = barked shin on protruding pipe

0 Jul = black eye (hit check on corner of car door)

0 Sep = ankle and knee injury following knock from high pressure hose

UTILITY SERVICES SUPPORT

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	912	944	0	0	0	0	0	0	0	0	0	0
Employee numbers	7	8	0	0	0	0	0	0	0	0	0	0
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

LABORATORY

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	1,198	1,102	0	0	0	0	0	0	0	0	0	0
Employee numbers	7	7	0	0	0	0	0	0	0	0	0	0
Injuries	2	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)	28.57	0	0	0	0	0	0	0	0	0	0	0
Frequency rate (incidents per 1,000,000 hours exposure)	1,669	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

0 Jan = buried knee after fall

0 Jan = strained back

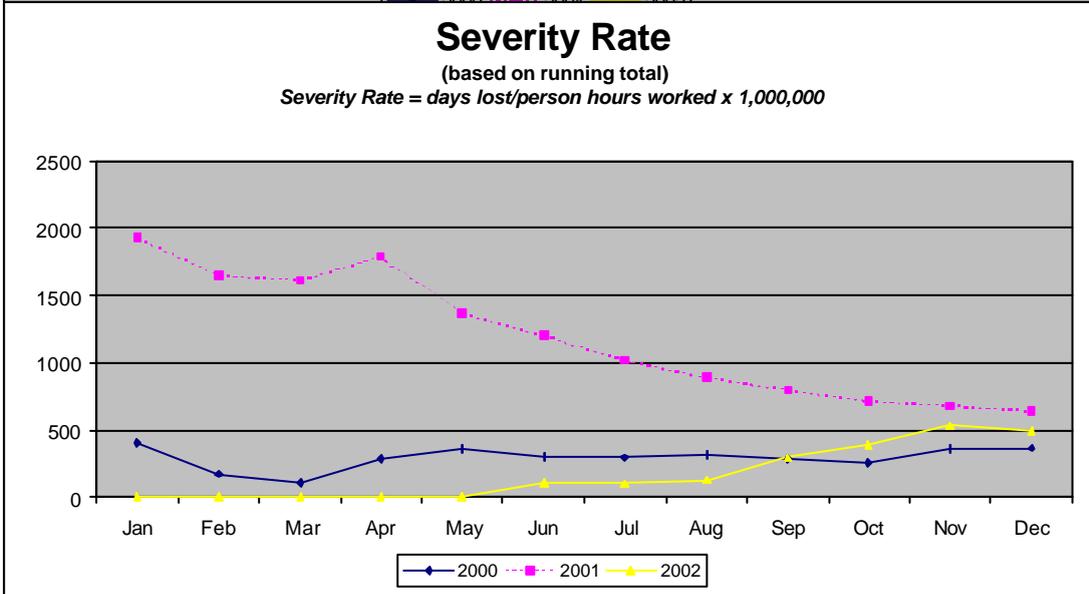
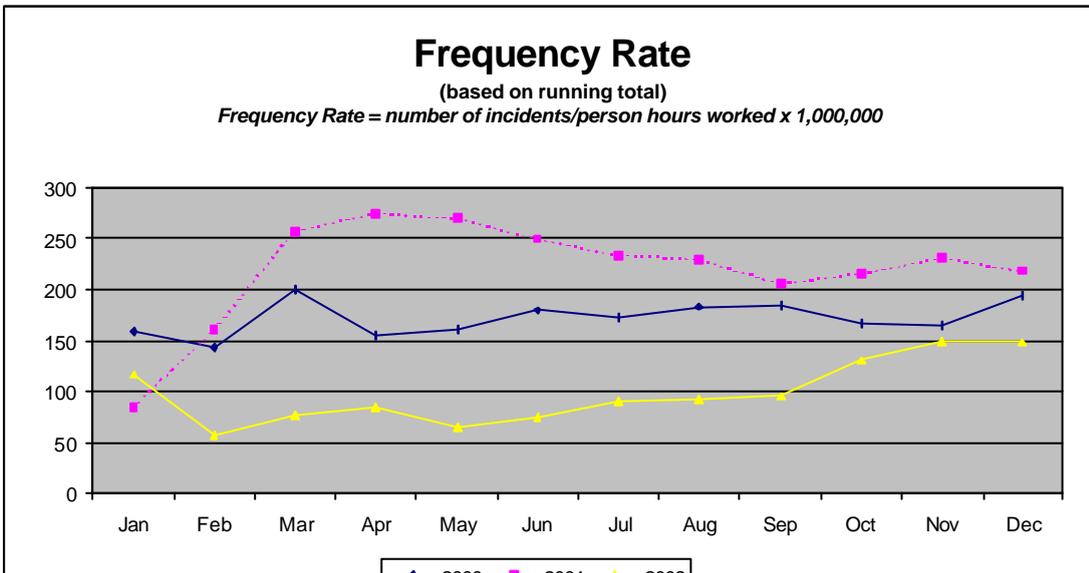
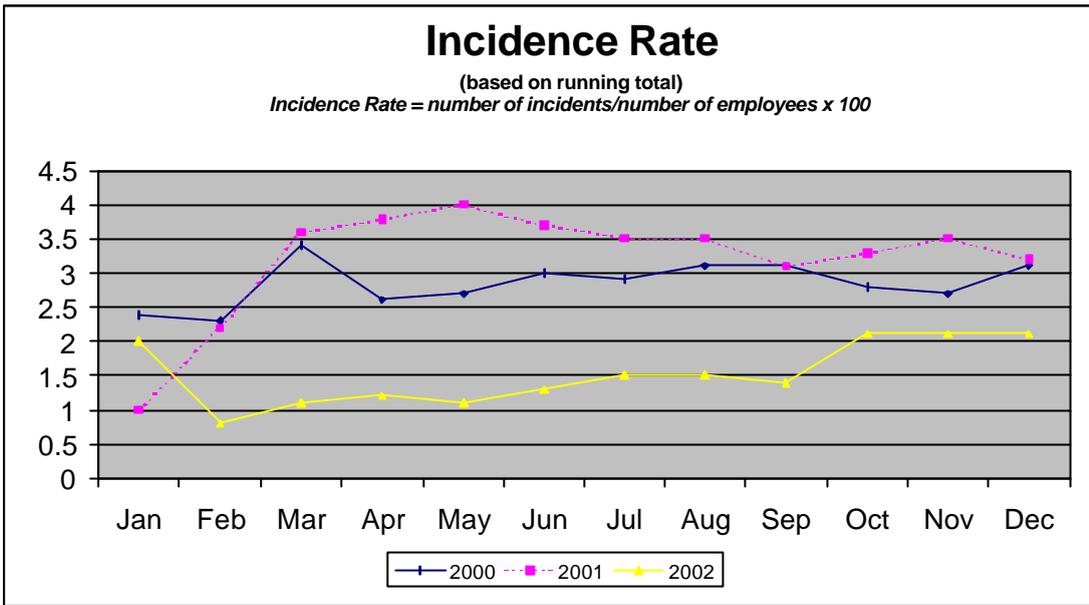
STRATEGY AND ASSET

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	518	602	0	0	0	0	0	0	0	0	0	0
Employee numbers	5	5	0	0	0	0	0	0	0	0	0	0
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	409	455	0	0	0	0	0	0	0	0	0	0
Employee numbers	3	3	0	0	0	0	0	0	0	0	0	0
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	Running Total from 1/1/02	Mar	Running Total from 1/1/02	Apr	Running Total from 1/1/02	May	Running Total from 1/1/02	Jun	Running Total from 1/1/02	Jul	Running Total from 1/1/02	Aug	Running Total from 1/1/02	Sep	Running Total from 1/1/02	Oct	Running Total from 1/1/02	Nov	Running Total from 1/1/02	Dec	Running 12 month Total
Hours worked	8,448	81,34	16,581																				
Employee numbers	58	59	63																				
Injuries	3	0	3																				
Days lost	0	0	0																				
Incidence rate (number of incidents per 100 workers)	5	0	2.4																				
Frequency rate (incidents per 1,000,000 hours exposure)	355	0	181																				
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0																				

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



Strategy and Asset Group

November 2002 to February 2003

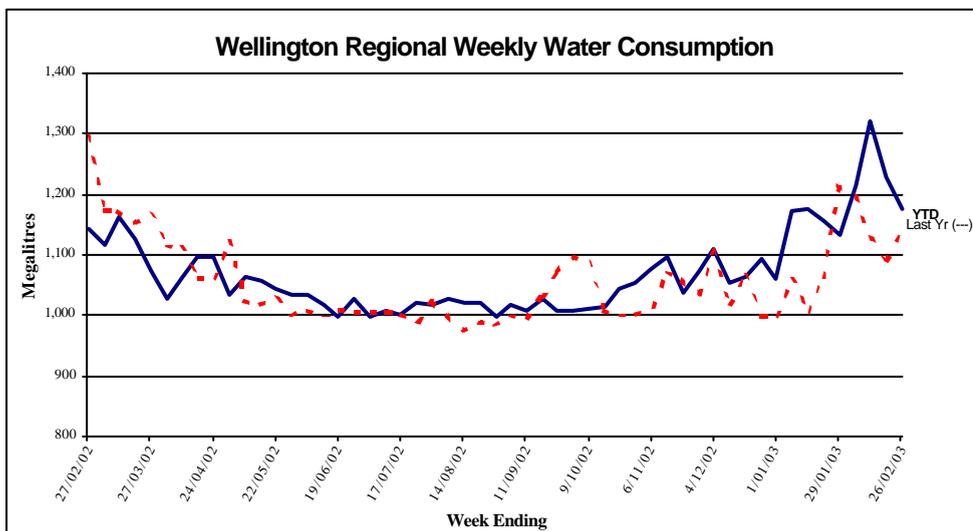
Strategy and Asset Group Review of Operations for the Period Ended 28 February 2003

1. Items of Note

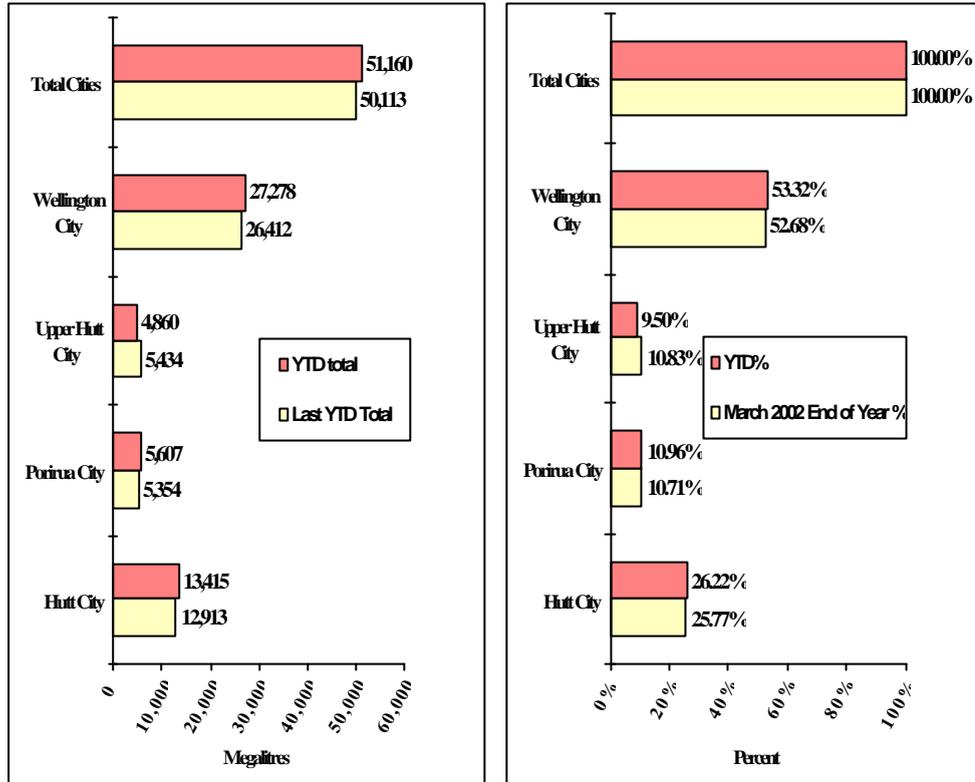
- Our customers have collectively responded to the draft Water Supply Agreement. The next step will probably be to meet with them to resolve a number of issues.
- Water consumption for the summer period up to about the third week in January was modest, with the rain being sufficiently frequent so that very high demand days were not experienced. Since then, Wellington has experienced a reasonably dry period resulting in reasonably high production figures for the month of February. The peak week was the week ending 12 February.
- The new television conservation advertisement was shown in January and February, and this will be followed up with market research to gauge its effectiveness.
- Discussions have started with Genesis Energy about a long-term contract based on the expansion of the Hau Nui wind farm in the Wairarapa.
- Work has started in identifying some potential sites for wind farm developments in conjunction with the Forestry Manager.
- Since the last report to the Committee, the Council's Policy, Finance and Strategy Committee approved the recommendations in a report for containerising of water to assist as part of the emergency water supply planning.

2. Sales Volume

Water Sold Over the Last 12 Months



Water Sold from 1 April 2002 to 28 February 2003



3. Asset Management

- A review of the June 1998 Asset Management Plan is under way and a detailed list of contents has been produced. The target date for completing a draft plan is 30 June 2003.
- The Capital Works budget for 2002/3 is \$2.752 million. Expenditure to date is \$1.09 million. As at 30 January 2003, the full year forecast expenditure was \$2.51 million. Savings have been generated by deferring the construction of a new pumping station at Ascot Park and the upgrading of the Karori Pumping Station. Additional costs have been created by difficulties experienced slip lining the OK main through Petone. The need to replace life expired air valves along the Hutt Road and the replacement of the Orongorongo motor trolley for safety reasons have also generated unbudgeted funding requirements.
- Preliminary investigations into the feasibility and cost of relocating the Karori Pumping Station to a less vulnerable location are nearing completion, and a report and recommendation will be brought to the Committee later in the year.
- A Contract has been let to repair the apron immediately downstream of the Orongorongo intake by relocating large boulders already in the riverbed. Upgrading of the intake structure itself is also to be undertaken.

- Other projects under way include the partial Wainuiomata/Orongorongo Catchment boundary fence, installing a larger standby generator at Waterloo, replacing the control system at Wainuiomata and replacing equipment at the Warwick Street Pumping Station. In addition, \$300,000 is budgeted for further seismic improvements and investigations.
- The lining of the Rahui Reservoir supply main (part of the old Orongorongo/Karori pipeline) is complete and the main has been recommissioned, supplying unchlorinated, unfluoridated water to Petone.
- The new pumps and switchboard at Johnsonville Pumping Station are partially commissioned.
- Final plans for the transfer of Karori Reservoir land to Wellington City Council have been received and approved. Following final administrative clearance, the land will be formally transferred Wellington City Council.
- The branch main to the Plimmerton Reservoir, which will be affected by new State Highway 1 roading work at Plimmerton, has been relocated but delays in achieving a successful test have delayed completion. The roading work is not being held up at this stage. Transit New Zealand has agreed to meet 100 percent of the cost of this work.
- A major development of the area of land above Porirua City known as the Aotea Block is in the planning stages. The development will require relocation of a significant length of the branch main to the Porirua Reservoir and staff are working closely with the developer's consultant on this. A formal agreement covering all aspects of the arrangements has been drafted by Greater Wellington Regional Council solicitors and is currently with the developer and Porirua City Council for comment. The developer will meet all costs of relocating the pipeline.
- Transit New Zealand has let a Contract for the upgrading of State Highway 2 near Te Marua. This work will require relocation of some drainage works adjacent to the Stuart Macaskill Lakes, at Transit New Zealand's cost. Staff are liaising closely with Transit New Zealand and the Contractor to ensure our requirements are met.
- A damage assessment of all water supply assets during a Wellington Fault earthquake has been completed as an input to the review of insurance policies and strategies. Revised premium estimates are awaited and will be considered before a final decision on our insurance strategy is taken.

4. **Catchment Management**

- In February Prohunt shot a further nine goats, bringing the total culled since January 2001 to 361. The "Judas" goat scheme is working well, with many of them being found alone, indicating that the goat population is currently under control.

- Places have been allocated to 40 balloted hunters who will shoot in the Wainuiomata and Orongorongo Catchments between 5 and 29 April.
- Planning is under way for the proposed drop of 1080 poison in the Hutt Catchment. The plan will be announced publicly in mid-March. The Kaitoke intake will be shut down during and for a period after the drop.
- Forest monitoring continues and in February an aerial and ground survey was conducted with the aim of identifying any introduced pests or diseases. Two areas of forest in the Hutt Catchment, which are in poor health, are to be investigated. Observations of exclosure plots in the Hutt Catchment confirm damage to the understorey by browsing animals.

5. Quality Assurance

- Detailed plant performance data regarding compliance with the Drinking-Water Standards is being assembled and collated for 2002. The performance of the Wainuiomata Water Treatment Plant has been improved by changes to the control system and the use of dry polymer flocculant to reduce turbidity “spikes”. However, compliance reporting is required at one minute intervals and compiling a complete and entirely unblemished record is a big challenge. A comprehensive compliance report will be provided to the Ministry of Health early in March.
- Work has begun on drafting Public Health Risk Management Plans required by the Ministry of Health. It is expected that new health legislation, to come into force in mid-2004, will make the provision and implementation of such plans mandatory. Good risk management procedures are already in place, so that significant changes to the way the plants and system are operated are not expected.
- A revised sampling programme for the wholesale distribution network has been agreed with the Hutt Valley District Health Board. Approximately 280 samples per quarter are now being taken instead of the previous 455. However, sampling is now required on weekends and holidays, reducing the cost saving achieved.

5. Environmental

- Tenders will be called soon for a wheel wash at the entrance to the Wainuiomata/Orongorongo Catchment. The purpose of the wheel wash is to reduce the risk of infestation of these catchments by exotic weeds.
- Massey University Institute of Natural Resources staff have completed a study of native fish above the Orongorongo intake. Their report concludes that there are opportunities to attract other migratory species above the intake, or to introduce non-migratory species. However, detailed investigation indicates that a fish ladder would be expensive to build and susceptible to damage during floods.

- Massey University Institute of Natural Resources staff have compiled a desktop study of how temperature and low flows might affect fish numbers in the Hutt River. Their report concludes that there is little information available on this subject and casts doubt on the efficacy of the commonly used IFIM method of assessing minimum acceptable river flows.
- The use of large boulders in the Orongorongo River intake weir repairs, rather than concrete, will result in a more natural appearance.

7. Marketing

- Further work was undertaken during November and early December to develop the Council's summer water conservation campaign. The advice contained in the advertising material was a minor evolution from that used over the previous four years. The changes were informed by research findings and designed to address three commonly held opinions that are barriers to watering behaviour change:
 - (1) Wellington has plenty of water.
 - (2) Gardening does not use much water.
 - (3) Water used on the garden is never wasted.

Three areas of water waste in gardens were identified in the advertising, with practical solutions given to reduce each. Television was used to achieve widespread awareness for the key messages of the campaign, while more detailed copy was placed in six community newspapers in mid-January. Radio was also employed, courtesy of Corporate Communications' annual contract with Radio Network, as were both Greater Wellington Regional Council's *Elements* newspaper and web site.

- Viewing figures for Television One during the period that the summer water conservation advertising was on air indicate that the campaign was seen by 87 percent of Women Aged 40-69 and 93 percent of Homeowners Aged 30+, the demographic groups used to represent our intended target audience - gardeners. The campaign achieved better than expected ratings for both Women Aged 40-69 (+14 percent) and Homeowners Aged 30-plus (+19 percent). A research project is under way to identify what our target audience remembers from the advertising and what if any action they took as a result.
- Further work was undertaken regarding the private initiative to paint a smiley face image on the top of our Ngauranga water reservoir. This included finalising the detail of the consultation document and process, managing suppliers and contractors, liaison with Wellington City Council, the media, concerned residents and the mural's proposer,

collating and analysing the results of the consultation process. Details are covered in a separate report to the Committee.

- A review of signage requirements at water treatment plants, pumping stations and reservoirs has commenced, following the introduction of the new brand and style guide on 7 January. Existing signage includes several different styles of previous Regional Council logos and is generally in a tired state. Replacement of signs has been held up for some two years pending the Greater Wellington's branding review. New signage is currently being designed in accordance with Greater Wellington's style guide. Signs will carry the sub-branding Greater Wellington Water.
- Communications planning and customer contact work commenced, in conjunction with Landcare and Corporate Communications, regarding the planned possum control operation in the Hutt Water Catchment scheduled for June-September 2003.
- A variety of tasks were undertaken, in consultation with Corporate Communications, relating to implementing Greater Wellington's new branding.
- November to February saw six visits to water treatment plants arranged, involving approximately 125 visitors. The Open Polytechnic (Lower Hutt) filmed footage of the water treatment process at Wainuiomata for use as a teaching aid.
- Three media releases were made or contributed to during the period. *Smiley face goes to consultation* (29 November 2002), *Care for gardens and environment says Greater Wellington* (10 January 2003) and *Hunters' ballot for water catchment access* (24 January 2003).

8. **Projects Undertaken by Engineering Consultancy for Strategy and Asset**

- Orongorongo River Intake

A Contract to construct a rock mattress below the Orongorongo weir was awarded to Groundworks Ltd. Work is about to start on-site.

- Wainuiomata/Orongorongo Catchment Wheel Wash

The resource consent for the construction of a vehicle wheel wash at the entrance to the catchment area has been received. A Contract will be prepared for construction of the wheel wash.

- Wainuiomata/Orongorongo Catchment Fence

Contract Documents are being prepared for erection of a deer fence

along the northern boundary of the water collection area. This fence will prevent the reinfestation of deer, pigs and goats from the adjacent farmland.

- Wainuiomata Water Treatment Plant Outlet Control Valve

Replacement and relocation of this control valve is being investigated.

- Waterloo Water Treatment Plant Vibration and Noise

An assessment is being made to determine whether further work is required to ensure that a fatigue failure of the motor hall floor does not occur.

- Garaging for Waterloo Wellfield Generators

A consultant has been commissioned to design an extension to the treatment plant to house the mobile generators.

- Gear Island Collector Main Scour

Detailed drawings for the installation of a metered scour on the wellfield collector main have been prepared.

- Wainuiomata to Wellington Pipeline

Detailed drawings for the installation of a flow meter on the Wainuiomata to Wellington pipeline at Gear Island have been prepared.

- Refurbishment of the OK Main, Petone

Negotiations are continuing with the Contractor to finalise the cost of the work.

- Stream Crossing and Fault Crossings

A report assessing the seismic performance of the distribution pipelines at a number of stream crossings has been prepared. The crossings assessed in this investigation are expected to perform satisfactorily.

- Plimmerton No. 2 Reservoir Branch

The 200 mm ductile iron pipe to relocate the branch pipeline at Plimmerton Drive has been installed. A leaking joint in the vicinity of the stream crossing is being addressed. This relocation is required to facilitate the realignment of State Highway 1. Transit New Zealand will be funding this work.

- Hutt Park Deviation

The construction of a new access road into Hutt Park necessitates the

deviation of the Randwick to Rahui pipeline. Drawings of the deviation have been prepared. A pipe fitting will be installed beneath a new culvert by Hutt City Council's contractor. Greater Wellington's Distribution Section staff will make the connections to the existing pipe. This work will require Petone residents to be supplied with chlorinated and fluoridated water for up to three months.

- Johnsonville Pumping Station Switchboard and Pumpsets

The two new Johnsonville pumpsets and switchboard have been commissioned, and are operating satisfactorily. A positive pressure ventilation system has been designed to prevent road dust entering the building.

- Warwick Street Pumping Station

A Contract has been prepared for the replacement of the switchboard. This work is being carried out in association with the replacement of the Wellington City Council pumpsets and switchboard.

- Karori Pumping Station

A report on the condition of the Karori Pumping Station switchboard and pumpsets was completed. The switchboard and the pumpsets should be replaced.

An assessment has been made of the performance of the pumping station structure in a major seismic event. The Wellington Fault is within 12 m of the pumping station and passes through the lower dam. Options for the relocation of this pumping station are being considered.

- Point Howard Pumping Station

Relocating the Point Howard pumps from the underground pumping station at Hutt Park is being investigated. A site alongside Seaview Road is being considered.

- Minor Seismic Projects

A number of minor seismic protection projects are being attended to. These include:

- Support brackets have been installed on the switchboard at Kaiwharawhara Pumping Station.
- Bracing for the rear wall of the Johnsonville Pumping Station is being designed.
- Assessment of the performance of the Mangaroa and Black Creek Bridges is being arranged.
- The non-return function of service reservoir inlet control valves is being checked.

Engineering Consultancy Group

November 2002 to February 2003

Engineering Consultancy Group

Review of Operations for the Period Ended 28 February 2003

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 under way are detailed in the following sections.

3.2 Wakefield Street, Stage 2

This project is to replace a water main in Wakefield and Victoria Streets from Cuba Street to Hunter Street. The design is virtually complete but the programme for construction is dependent upon Wellington City Council drainage projects.

3.3 Franklyn Road, Wakefield Terrace and Kereru Bend, Tawa

Designs have been completed, Tenders invited and analysed, and a recommendation made. The Contractor is due to start work on-site shortly.

3.4 Webb Street

A commission has been received for the replacement of a water main in Webb Street from Taranaki to Willis Street. This will be a challenging project because of the high traffic flows and narrow carriageway.

3.5 Aramoana Reservoir, Miramar

There is a storage deficit of 10 ML in the Low Level Zone of Wellington City. Of this storage, approximately 6.5 ML is required in the Eastern Suburbs (Miramar) and 3.5 ML in the Southern Suburbs (Island Bay). The resource consent for siting the reservoir in Carter Park has been received. Design and Specification preparation is well under way. Engineering

Consultancy Group staff are carrying out the pipework and electrical design works.

3.6 **Southern Suburbs Reservoir**

This 3.5 ML reservoir will be sited in Mount Albert Park. Consultants have been appointed and detailed site analysis work completed. Because the reservoir is on Town Belt, all consent issues will need to be worked through thoroughly.

3.7 **Kelburn Reservoir**

The replacement reservoir was commissioned on Wednesday, 19 February. Remaining work relates to backfilling, landscaping and construction of the access road.

3.8 **Onslow Reservoir**

There are two reservoirs on the Onslow site. The proposal is that the rectangular western reservoir be demolished and replaced with a larger reservoir, so that the water storage deficiency in the zone can be rectified. The construction Contract has been awarded and the Contractor will take possession of the Site on 17 March. The Contract for alteration of the inlet and outlet pipework is complete, apart from the physical disconnection of the existing reservoir. This will be carried out immediately prior to the Contractor moving onto the Site.

3.9 **Warwick Street Pumping Station**

This pumping station includes pumpsets for both Wellington City Council and Greater Wellington Water, supplied by a common electrical and controls panel. The Engineering Consultancy Group has been commissioned by Wellington City Council to arrange for the replacement of the two Wellington City Council pumps that deliver to Wadestown Reservoir and the installation of a separate electrical control panel.

Pump quotations were invited and analysed and an order has been placed. Quotations have been invited for the supply and installation of the two separate electrical panels as the Greater Wellington Water panel also requires replacing. These two projects are being run together, to gain efficiencies of scale.

4. **Miscellaneous Projects**

Emergency Water Supply

Following detailed discussions with water supply and emergency management staff of the five councils, the consultant prepared a draft report incorporating their comments.

Greater Wellington Regional Council staff members provided technical input to the project. The report is now being reviewed by the project team members, prior to a meeting at the end of March.

Laboratory Services

November 2002 to February 2003

Laboratory Services Department

Review of Operations for the Period Ended 28 February 2003

1. Items of Note

- Summer time was typically busy for the laboratory, particularly across the Christmas/New Year weeks. Personnel costs reflected the additional cost of working the statutory holidays but finances for the period showed good returns nevertheless.
- Resource Investigations Freshwater Contact Recreation Water Quality programmes again commenced in November to continue across summer.
- Testing for the Porirua City beaches water quality programme started and then wound down as duties were handed back to Porirua City Council Environmental Health Laboratory. Our involvement was reduced to regular monthly quality assurance checks.
- Our quotation was submitted to Resource Investigations for their freshwater and groundwater monitoring programmes. We expressed our keen interest in all components and aspects of the comprehensive programme, which also included the Wairarapa Division programme. We will be supplying further information confirming our confidence in achieving the specifications described in the document.
- Relocation of the laboratory and services from the Mabey Road Depot to 44 Oxford Terrace actually happened on the weekend of 24, 25 and 26 January 2003. The transition appeared seamless with no disruption to the service delivery (despite the inner turmoil).
- The new total organic carbon/total nitrogen analyser was installed and commissioned during the week of 10 February. Production is expected in about a month.
- A new Dionex 325 ion chromatograph analyser was ordered in December for delivery late February (actual installation date was 3 March). This instrument replaces the obsolete model with better analytical specifications and far greater efficiencies.

2. Business Summary

2.1 Quality

There were no requests for retesting samples. Good results were recorded with all interlaboratory proficiency tests.

2.2 **Health and Safety**

There were two minor incidents for the period, with no time lost to injury.

Plantation Forestry

November 2002 to February 2003

Plantation Forestry Department

Review of Operations for the Period Ended 28 February 2003

1. Log Harvest Contract

Volumes have been maintained at a high level because of the longer days and improved weather. Two crews have been operating since December, with the ground based crew road lining in Reservoir Ridge in preparation for winter and the hauler continuing with the harvest of Harris South. Results could have been even better had it not been for the Christmas break and the shortage of truck capacity that occurred prior to Christmas and has recurred on a couple of occasions since. Although the trucks can overcome the stockpile by scheduling additional trips, production on the skid is reduced because of the lack of room and the time taken to load the trucks when they do arrive. The Contractor estimates that their production falls by around 30 percent when the carriers fail to clear the skids on a regular basis. Since work recommenced for the New Year, the trucking contractor has "imported" an additional six trucks from the South Island to cope with the business offering.

Rayonier is passing procurement of transport from all their harvest operations to an entity called "Asset". Asset will subcontract trucks from numerous sources and in theory offer a more reliable service ex the harvest skid. To date our current Contractor will not pass the despatch of their vehicles to Asset, so they do not yet have the control they seek.

Production has been as follows:	Tonnes	\$ Net
November	3,755	143,785
December	4,735	125,400
January	4,696	99,979
February	5,750	156,331

The lower average return since December reflects the lower grades of logs harvested at reservoir ridge. Output by grade for Puketiro and Reservoir Ridge are on page 35.

2. Silviculture Contracts

Currently the silvicultural contractors have completed 102 hectares out of a total of 153. The 40 hectare block, which includes the safety template for the Deerstalkers' Rifle Range at Kaitoke, will not be pruned until May. This will allow sufficient time for the club to advise members of the closure and will avoid a number of preplanned events. Sections of the stands to the west of the Rail Trail have had to have their silviculture deferred until they are taller.

Puketiro

Grade	December 2002		January 2003		February 2003	
	Tonnes	%	Tonnes	%	Tonnes	%
Pruned Domestic	702.07	25.08	303.01	11.02	720.77	25.29
Pruned Export	0	0	0	0	0	0
Partial Pruned	97.56	3.48	92.12	3.35	30.63	1.07
S/A Grade	30.8	1.1	93.80	3.41	169.23	5.94
L Grade	160.56	5.73	130.60	4.75	88.76	3.11
R Grade	117.32	4.19	132.07	4.80	111.04	3.90
K Sawlog	69.89	2.49	396.36	14.41	89.50	3.14
K Rough	853.53	30.49	991.86	36.06	899.88	31.57
Pulp	402.09	14.36	367.51	13.36	396.42	13.91
O/S Pulp	366.02	13.07	242.95	8.83	343.98	12.07
Xport Pulp	0	0	0	0	0	0
	2,799.77		2,750.28		2,850.21	

Reservoir Ridge

Grade	December 2002		January 2003		February 2003	
	Tonnes	%	Tonnes	%	Tonnes	%
Pruned Domestic	0	0	0	0	0	0
Pruned Export	0	0	0	0	0	0
Partial Pruned	525.49	27.16	89.08	4.58	62.81	27.16
S/A Grade	29.62	1.53	404.38	20.79	757.50	26.39
L Grade	218.88	11.31	91.24	4.69	212.74	7.41
R Grade	152.84	7.9	156.89	8.06	220.56	7.68
K Sawlog	112.58	5.82	205.30	10.55	431.48	15.03
Roundwood					27.35	0.95
K Rough	1758.5	23.7	590.86	30.37	653.76	22.78
Pulp	288.91	14.93	331.19	17.02	411.45	14.34
O/S Pulp	30.73	1.59	45.72	2.35	92.53	3.22
Xport Pulp	117.32	6.06	30.78	1.58		
	1,934.87		1,945.44		2,870.18	

3. **Plantation Forestry Operations**

Planning continues for the harvest of the Blow Fly, Kaika Mako and Reservoir Ridge blocks.

Although the weather appears to have been, dry there has been sufficient rain in the blocks to maintain growth and on each occasion when the Fire Weather Index has increased to the point where it became of concern we have received sufficient rain to reduce it within acceptable levels.

Fifty hectares in Pakuratahi West were treated with fertiliser pellets in November.

Some time was spent with Murray Kennedy assessing the suitability of some of the unplanted hilltops within the Puketiro Forest as potential wind generation sites. Although more work is required, it appears on first inspection that there may be sufficient height and windrun to warrant further consideration.

4. **Forest Access**

There is still no acceptable access to Maungakotukutuku Forest.

There have not been any roading or access issues over the period. Staff have completed the laying of millings to suppress dust at Totara Park and adjacent to houses on the route to Puketiro. This is the second application of millings and it is hoped that the latest application will serve to suppress dust through next summer as well.

The Silverwood harvest operation above Whitby trialled a wood pulp based spray on dust suppressant with a “design” life of three months. Unfortunately it lasted less than three weeks on a flat straight piece of road. The Contractor now has a new product that adds a polymer to the mix, which we may trial for future use as it is much easier to apply than millings. This product is said to be in regular use in Canada in similar situations.

Road construction into Blow Fly and Kaika Mako has commenced so that the road may “rest” prior to sustained use by trucks.

5. **Market Trends**

Export markets are improving but the gains are being absorbed by the increasing value of the dollar. The exporters do not see much change in the short-term but are expressing confidence over the medium-term future. It is interesting that the China market has again emerged as a growing destination, with more confidence that it will remain an option into the future.

Domestic prices have fallen back in response to ample supply and the reduced returns in New Zealand dollars from exports. No change is

anticipated until the weather closes down some of the more marginal harvest operations and supply tightens. Both JNL and Eurocell have been taking pruned logs but suspensions of purchases when the mills get full and at month end to reduce inventory are occurring on a regular basis.

We may have found a market for some of our larger diameter nigra in the remnant stands around Maymorn. JNL are planning to produce 9 ply sheet and will use the nigra for the inner plys.