DIRECTOR OF PUBLIC HEALTH

George River Water Quality
(St Helens Drinking Water)

18 March, 2010

Is tap water safe to drink in St Helens?

At the request of the Director of Public Health, Ben Lomond Water has added another step to the water treatment process to provide additional certainty about the safety of the drinking water.

This is a temporary precaution. It involves addition of carbon powder to the water before filtration to remove unknown harmful substances in the water not already being removed by the normal treatment process. The Tasmanian Government has funded this precaution as an interim measure.

Was the water safe to drink before the special treatment process was put in place?

We believe so. There is currently no scientific evidence to show the drinking water was unsafe for humans before the extra treatment process was put in place.

A single test on a sample of *untreated* river water (shown on *Australian Story*, ABC television, 15 and 22 February 2010) showed the sample was toxic to a particular human cell type when fully immersed in the water for some time.

Test results described by another scientist showed that removal of particles from the water and foam reduces toxicity. The drinking water is fully treated, and that includes removal of particles.

There is also no evidence that people in the Break O'Day area (including St Helens) have more cancer than elsewhere in Tasmania. Reports from the Tasmanian Cancer Registry show 194 cancers were seen in the area from 2002 to 2006, less than the 203.9 that were expected given the local population age distribution. Preliminary data from 2007 show no indication of rising cancer rates. (See separate question and answer below for more information about the cancer rates in Break O'Day.)

Is untreated George River water safe to drink?

The scientists who appeared on *Australian Story* say they don't know whether the untreated water is a health risk to humans. They say a lot more work is needed before that conclusion could be made.

In tests, cells fully immersed in the river water would come into contact with far greater amounts of any toxin than people would from drinking the same water, because of our body size. The amount of any toxin taken in by our cells would be very much lower than that taken in by cells fully immersed in a test tube of the water.

Also, after drinking the water, the human body's digestive system can further reduce the amount of toxin in the water before it reaches our body's cells.

What are the concerns about?

In mid-February 2010 concerns were raised on *Australian Story* about toxic substances found in samples from the George River, which supplies the drinking water for the Break O'Day area (including St Helens). It was suggested that the substances may have came from plantation gum leaves (selectively bred Eucalyptus *Nitens*) in the area.

One scientist showed a single *untreated* water sample taken from near the town water intake point was toxic to a particular human cell type after the cells were left exposed to the water for some time. Much more work is needed to know whether this means anything to human health.

Another scientist tested untreated and treated water samples and surface foam, and showed the water was not toxic, but the foam was toxic to blue mussel larvae and a freshwater test organism.

How is the river water cleaned so it's suitable for drinking?

Treating the water is likely to greatly reduce any toxins or particles present.

River water is pumped to the water treatment plant where the treatment processes remove a wide range of particles from the water, including any foam, scum or debris. This is followed by filtration through many layers of different materials including sand, and chlorination. We expect that leaf compounds would be removed during this process.

Recently, an extra treatment step was added as a temporary precaution to provide residents with a greater sense of certainty about the safety of their drinking water while concerns are investigated. The extra step involves activated carbon powder being added to the water before filtration, to remove unknown harmful substances in the water not already being removed by the normal treatment process. The Tasmanian Government has funded this precaution as an interim measure. The need for this will be reviewed as more information becomes available.

No scientific evidence has been presented to confirm the drinking water in St Helens was unsafe for human health before this precaution was taken.

Have more water samples been taken?

In recent weeks, the Public and Environmental Health Service has arranged tests on more water samples, as distinct from surface scum and foam. Chemical analysis for common substances from eucalyptus trees came back negative for several samples from the George River, including near the intake point and also at Crystal Creek.

However, a sample from the Douglas River within a native forest showed a very small amount of a eucalyptus substance. This test was very sensitive – it can trace tiny amounts of substances (as little as 0.2 micrograms per litre).

So far the test results do not prove there is a problem or not, however they are helpful.

Toxicity testing using a type of water flea has been completed on untreated George River water and water from a river within a native forest. Results show the water samples were not toxic to the water fleas.

How are the concerns about the George River being investigated?

A panel of eminent independent scientists will examine the science behind the concerns.

The George River Water Quality Panel was formed by the chair of the Board of the Environment Protection Authority. Members include independent experts in water quality, public health, aquaculture and the chemistry of eucalypts and environmental toxicology. The Panel will examine evidence, write a report and provide this to the Tasmanian Premier. Material submitted to the report will be published on the Internet at www.georgeriverwater.org.au.

The science involved is very complex, and it may take months for the investigation to be completed. An interim report will be provided to the Tasmanian Government by 31 May 2010.

Who are the members of the George River Water Quality Panel?

Members of the George River Water Quality Panel are:

- Graeme Batley, Chief Research Scientist, CSIRO
- Dr John McNeil, head of the Monash University School of Public Health and Preventative Medicine
- Christine Crawford, Program Leader for Natural Resource Management at the Tasmanian Aquaculture and Fisheries Institute
- Distinguished Professor Jim Reid, University of Tasmania School of Plant Science
- Professor Michael Moore, chair Water Quality Research Australia, past Director National Research Centre for Environmental Toxicology
- Dr Lois Koehnken, coordinating scientist and consultant to the panel.

Is cancer more common in St Helens than elsewhere?

Data from the Tasmanian Cancer Registry[1] shows people living in the Break O'Day area (including St Helens) do not have more cancer than people living elsewhere in Tasmania.

Cancer data are generally only published down to Local Government area, because small population sizes at the town level mean that data are statistically unreliable.

The concern about cancer rates was investigated when this issue was first raised in 2004. The Cancer Registry looked closely at cancers diagnosed in the area from 1998 to 2002 and found nothing unusual in either the rate or pattern of cancer types in the area.

Data from 2002 to 2006 again showed no evidence that people in the Break O'Day area have cancer at higher rates than people elsewhere in Tasmania. Overall, 194 cancer cases were seen in Break O'Day during this five year period. This was less than the 203.9 cases that were expected, based on the Tasmanian average and taking into account the local population age distribution.

Preliminary cancer data for 2007 (the latest available) again show no indication of rising cancer rates in the area.

It was claimed on ABC's *Australian Story* that there were only 18 cases of Waldenstrom's Anaemia (macroglobulinaemia) in Australia, with two cases in the St Helens area. However, Cancer Registry data shows 45 cases have been diagnosed in Tasmania over the past 20 years (including two from the Break O'Day area) – and the incidence rate for 2002 to 2006 is very similar to mainland Australia.

[1] The Cancer Registry is managed by the Menzies Research Institute, part of the University of Tasmania. For more information about cancer rates in local government areas go to www.menzies.utas.edu.au/cancer_reg.html.

Why do Tasmanians have more chronic disease than other Australians?

We know a lot about the health of Tasmanians. After adjusting for age differences, the main reasons for health differences between groups in our population and between Tasmania and other parts of Australia are socio-economic factors like income, education, occupation and lifestyle.

There is no evidence that an environmental problem like river water toxicity is having a significant impact on our population's health. For more information, see the *State of Public Health Report 2008*, and *Health Indicators Tasmania*, at www.dhhs.tas.gov.au.

Is it safe to have Eucalyptus *Nitens* in my garden or in our community?

Trees that are genetically very similar to the Eucalyptus *Nitens* grown in the George River area grow in forests near Melbourne's water reservoirs and other river catchments in Victoria, New South Wales and Tasmania. No problems have been reported from any of these other catchments.

At this stage it is not clear whether any toxins come only from Eucalyptus *Nitens*.

Are shellfish from the Break O'Day (including St Helens) area safe to eat?

Yes, shellfish from the Break O'Day area are safe to eat.

In Tasmania, the quality of shellfish for human health is closely monitored by the Tasmanian Shellfish Quality Assurance Program within the Department of Health and Human Services. There have been no known human toxins or pesticides found in oysters from the St Helens area and heavy metal levels are well below maximum values allowed in the FSANZ Food Standards Code.

Major oyster producers in the area advise that productivity and oyster quality in the area is excellent. For example:

- Moulting Bay (St Helens) is possibly the most productive shellfish growing area in Tasmania
- an oyster hatchery based at the mouth of the George River in St Helens produces oyster 'seed' that is ranked as among the best in Tasmania
- oyster farming at the mouth of the George River has excellent productivity; shellfish there are always submerged (under the water) and feed constantly.

This is significant because oysters are generally very sensitive to a wide range of toxins.

More information about the Tasmanian Shellfish Quality Assurance Program including results of shellfish testing from Moulting Bay is available at: www.dhhs.tas.gov.au – health and wellbeing – public and environmental health – related topics – Tasmanian Shellfish Quality Assurance Program.

How can I get involved, have a say, or find out more

The George River Water Quality Panel is setting up a register of interested individuals and groups, and will provide them with information. Registrations of interest from the community should be lodged through the Panel's online feedback form at www.georgeriverwater.org.au.

You can also contact the George River Water Quality Panel by regular mail to:

George River Water Quality Panel
C/- PO Box 404
SANDY BAY, TASMANIA 7006

More information about the health aspects of this matter is available from the Public and Environmental Health Service at www.dhhs.tas.gov.au, phone 1800 671 738 or email public.health@dhhs.tas.gov.au.