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## **Report 01.686**

29 August 2001

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Report to the Utility Services Committee  
from Murray Kennedy, Strategy and Asset Manager

### **Manufacture of Fluoridation Products**

#### **1. Purpose**

To provide advice on the manufacture of fluoridation products.

#### **2. Background**

In July, the Council considered Report 01.524 – Water Fluoridation Petition. The petition claimed that sodium silicofluoride added to our drinking water is an industrial waste. Councillors requested information on the fluoride manufacturing processes.

Two different types of fluoride are added to raise the natural fluoride level in the drinking water;

- Sodium fluorosilicate, a powder which is added at Te Marua and Waterloo water treatment plants,
- Hydrofluorosilicic acid, a liquid which is added at the Gear Island water treatment plant.

Advice has now been received from FERNZ Chemicals, the supplier of both products, as to how they are manufactured.

#### **3. Manufacture of Sodium Silicofluoride**

FERNZ Chemicals source this product from Mitsui Chemicals in Japan. Mitsui use the following process to manufacture it.

- (i) React natural phosphoric ore (which contains a fluoride compound) with sulphuric acid. One of the products of this reaction is hydrofluosilicic acid.
- (ii) Concentrate the hydrofluosilicic acid.

- (iii) Add sodium hydroxide (caustic soda) to hydrofluosilicic acid to obtain sodium silicofluoride.

4. **Manufacture of Hydrofluosilicic Acid**

FERNZ Chemicals manufacture hydrofluosilicic acid at Mt Maunganui. The process is the same as 3(i) and 3 (ii) above.

5. **Comment**

The recent petition was organised under the banner of the Pure Water Association, as part of its campaign to have fluoridation stopped. The association has been persistent in the view that the fluoride additive was an industrial waste. Following Council consideration of the petition, three letters about fluoridation were published by the Evening Post on 28 July, Attachment 1. It is alleged the Council is using toxic industrial waste. This is incorrect. The two fluoridation products used by the Council are made through standard chemical processes. Both use naturally occurring phosphate rock.

6. **Recommendations**

- (1) *That the report is received and its contents noted.*
- (2) *That the Pure Water Association is advised how the fluoride used by the Council is manufactured.*

Report prepared by:

Approved for submission:

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**Attachments**

Attachment 1