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EMPLOYEE RELATIONS DEPARTMENT

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POLYMER PRODUCTS DEPARTMENT
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ASBESTOS CEMENT (AC) PIPE FOR WATER LINES

This confirms our recent telephone conversation in which I indicated that the Safety and Occupational Health Division recommends that no new AC pipe be installed for potable water.

Some pertinent information which we recognize in making this recommendation is:

- Municipal water systems already contain a lot of AC pipe. A 1981 American City and County water main pipe survey reported that the proportion of AC pipe in place was 13.9 percent in 1980. It was estimated that 40 percent of pipe installed in 1980 was AC.

- The American Water Works Association standard permits the use of AC pipe except for water which is highly corrosive toward AC. Corrosivity is measured by a "aggressivity index" which is a function of pH, total alkalinity and calcium hardness. However, some studies have indicated that the AI is not appropriate for predicting fiber release from AC pipe because other factors, e.g., iron, silica, manganese and zinc may contribute some protection against corrosion.

- Deteriorated AC pipe has been found in some municipal water mains. In at least one case, a scraping procedure used to clean the pipe interior

greatly increased the fiber count of water transmitted through the pipes.

- Drilling and tapping AC pipe can introduce asbestos-containing debris into a pipe unless fragments are flushed out under pressure. Flushing water mains containing AC debris can cause unusually high fiber counts. Eventual dismantlement of deteriorated AC pipe will require special handling precautions.

- Peer reviewed animal studies do not at this time support an association between ingested asbestos and gastrointestinal cancer. Epidemiologic studies are equivocal. For example, the National Academy of Sciences (NAS, 1983) in the draft report entitled, "Nonoccupational Health Risks of Asbestos Fibers" stated:

> Because of limitations inherent in the size of exposed populations, the duration of exposure and the lack of individual exposure data, it has not been possible to determine whether or not there is an association between gastrointestinal cancers in humans and the presence of asbestiform fibers in drinking water.

However, the Royal Commission on Matters of Health and Safety Arising From the Use of Asbestos in Ontario (1984) stated:

> After reviewing all the available medical evidence, the commission concludes that eating or drinking asbestos in the concentration currently found in drinking water, beverages, or food in North American is not associated with any significant increase in disease. Many studies have looked for a relationship between oral ingestion and disease, but so far the results are negative.

- EPA recommends that AC pipe not be used for potable water mains and has sent a draft regulation prohibiting this to the Office of Management and Budget for approval.

- Good substitute materials are available. Depending on circumstances, Engineering Department personnel recommend reinforced concrete, concrete-lined steel or PVC pipe.

Even though AC pipe for potable water lines has not been proven to be detrimental to health, we recommend that it not be used in new installations because of the employee relations, public relations and eventual handling problems involved.

SAFETY AND OCCUPATIONAL HEALTH DIVISION

Bob

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