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KAISER ALUMINUM

CORPORATE ENVIRONMENTAL

July 22, 1999

Mr. John T. Buckley
United States
Nuclear Regulatory Commission
TWFN, 4F27
Washington, DC 20555

Dear Mr. Buckley:

My letter to you on March 30, 1999, discussed a planned report on the hydrology of the Kaiser Aluminum & Chemical Corporation (KACC) site in Tulsa, Oklahoma. The planned report, prepared by A&M Engineering and Environment Services, Inc. (A&M Engineering), is enclosed. In addition, I am enclosing a report prepared for KACC by Arend Meijer of GCX, Inc. concerning geochemical aspects of the Tulsa site.

The report prepared by A&M Engineering discusses:

- site geology, including both shallow bedrock and overlying unconsolidated deposits;
- site hydrogeology, including the direction and velocity of groundwater flow;
- surface water hydrology, including potential peak discharges;
- hydraulic interrelationships between the on-site surface water and groundwater water flow system;
- potential radionuclide migration pathways in ground and surface water;
- geotechnical properties of subsurface materials; and
- basic ion chemistry of groundwater.

The report prepared by GCX Inc. presents the results of geochemical studies of the Tulsa site, including:

- chemical and mineralogic characterization of dross from magnesium processing at the Tulsa site;
- chemical analyses of dross pore waters and selected ground waters; and
- measurement of thorium and radium concentrations in dross, dross pore waters and selected ground waters.

In addition, GCX Inc. measured thorium and radium concentrations in dross and clays above and below the dross/clay interface beneath the retention pond and sorption coefficients were determined for thorium and radium in several sediment samples from down gradient locations. The results of

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these measurements indicate that the geochemical environment results in transport rates for thorium and radium that are very low.

These two reports provide information that will be valuable during the examination of alternatives for remediation of the on-site concentrations of thorium at the Tulsa site.

If you have any questions about these reports, please do hesitate to call me.

Sincerely,

Jerry E. Boller

J.E. Boller
Project Manager

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