GROUNDWATER TECHNOLOGY

Groundwater Technology, Inc.
19033 W. Valley Highway, Suite D-104, Kent, WA 98032

December 11, 1992

Mr. D. Mark Wells
Texaco Environmental Services
3400 188th Street SW, Suite 630
Lynnwood, WA 98037

RE: **Riverside Project Activity Update**
SR 522 and NE 180th Street

Dear Mark:

This letter presents a Riverside project update covering the construction and first two weeks operation of the bioremediation cell. The excavation was backfilled and the bioremediation cell was constructed from October 6 through October 23, 1992. The compound equipment, consisting of three 1.5 horsepower vacuum blowers, water knock-out drums and associated piping, was installed on November 5, 1992. Puget Power installed a temporary site electrical line with meter on November 17, 1992. The blowers were started on November 20, 1992.

Effluent airstream monitoring and sampling on November 23, 1992 showed that precarbon-treatment emissions of volatile compounds were approximately two pounds of total petroleum hydrocarbons (TPH)-as-gasoline per day. The post-carbon effluent (the airstream actually emitted to the atmosphere) concentrations of benzene and TPH-as-gasoline were non-detectable.

Monitoring of the bioremediation activity in the cell during the first two weeks of operation showed the soil temperature to be dropping below 50°F and that this was effecting the calculated degradation rates. In order to maintain cell temperatures above 50°F, the plumbing to blower B1, which draws air through the upper tier of piping in the pile, was modified to allow the addition of 70°F fresh air into the pile. This was completed on December 8, 1992. Also completed was a respirometry test, which is an evaluation of the cell's oxygen usage. The respirometry test analysis indicated that approximately 40 to 50 pounds of hydrocarbon/organic carbon was biologically degraded per day.

The bioremediation cell is currently active. The preventative actions completed this week to address future temperature variations should allow degradation rates to increase.

Please contact me if you have any questions.

Sincerely,
GROUNDWATER TECHNOLOGY, INC.

Stan Haskins
Staff Geologist

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