PPC 9551.1991(08)

NO-MIGRATION PETITION FOR TEXACO, WA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

MAY 29 1991

Mr. Glenn A. Weiss
Refinery Manager
Texaco USA
Puget Sound Plant
P.O. Box 622
Anacortes, Washington 98221

Re: No-Migration Petition submitted for Texaco's Anacortes, Washington Land Treatment Facility (F-91-NTAP-FFFFF)

Dear Mr. Weiss:

I am writing in regard to your May 18, 1990 "no-migration" petition, which requests a variance under 40 CFR §268.6 to allow Texaco to continue the land treatment of restricted wastes at its Anacortes, Washington land treatment facility (LTF). After a careful review of your petition, we have identified three ma)or technical problems. These are:

- Evidence of releases from the LTF in excess of health-based levels;

- Inadequate ground-water monitoring system for purposes of no-migration; and,

- Apparent non-compliance with other regulatory requirements.

Based on these technical deficiencies, we have concluded that the Texaco facility does not meet the standard set by the statute for a no-migration variance. We will, therefore, recommend to the Assistant Administrator for Solid Waste and Emergency Response that a no-migration variance for Texaco be denied.

Each of the major technical deficiencies identified from our evaluation of your petition is discussed in detail below. Any questions concerning any of our technical analyses and findings may be submitted in writing to James

Michael of my staff.

Presence of Hazardous Constituents Below the Treatment Zone

Our review of Texaco's 1988 soil-pore monitoring data for the LTF indicate that chromium, benzene and nickel have already migrated beyond the unit boundary above their respective healthbased levels (HBLs). See Table 1.

Furthermore, the analysis of soil core monitoring data collected in 1989 indicates that benzo(a)-anthracene, benzo(a)pyrene, and benzo(b)fluoranthene were detected below the treatment unit in excess of their respective HBLs. See Table 2. In addition, chrysene, fluoranthene, naphthalene, 1-methyl-naphthalene, phenanthrene, and pyrene were detected in the soil cores at statistically significant concentrations. Although the concentrations detected do not exceed HBLs, statistically significant concentrations below the treatment zone indicate that these constituents are migrating and further add to our concern (see Attachment 1).

Another indication of the migration of hazardous waste constituents is the increase in the concentration of total organic carbon (TOC) at the base of the treatment zone. Attachment 2 shows the concentrations of TOC in samples collected from the 1988 lysimeter monitoring events. The average concentration of the background lysimeter samples in plot BG-SE is 13 mg/l. A significant increase in TOC concentration is considered to be the average background value plus two standard deviations, or 27 mg/l. As can be seen from Attachment 2, the average concentration of TOC detected from the 1988 lysimeter system exceeds the significance level of 27 mg/l. These data indicate to us that the LTF is not successfully degrading or immobilizing all wastes and further support our conclusion that the migration of hazardous constituents is occurring.

In the petition (Section 1, page 5), Texaco attributes the detection of constituents at the base of the treatment zone in the West LTF (WLTF) plot #8 to wastes buried during the terracing of the plot. There is no explanation in the petition of how this could occur. Lacking this explanatory information, we cannot evaluate your statement, particularly since the plot is situated in a relatively flat area, only portions of the surface layer were modified, and buried wastes are located 7.5 feet below the surface of the plot (i.e., plot #8 would have required very little cut and fill). Furthermore, Texaco's petition did not explain the presence of hazardous constituents detected in the other plots, such as plot #9, also in the WLTF (see Attachment 2).

Detecting Releases at the Earliest Practicable Time

In its petition, Texaco has not demonstrated that the ground-water system at the land treatment facility (LTF) is capable of detecting releases at the earliest practicable time, as is required by 40 CFR §268.6(a)(4).

According to the petition, the depth to ground water is too great to deem it an important factor in determining subsurface contaminant migration (Volume 1, Table Exec-1). Texaco based this conclusion on the historic absence of contaminants in ground-water monitoring samples. Consequently, Texaco does not recommend monitoring of the primary aquifer. The petition indicated elsewhere, however, that perched water tables are present at the facility and that saturated conditions are present through most of the geologic units. Based on this facility description, we consider ground-water monitoring to be important for the purposes of a no-migration variance for the LTF.

Based on our evaluation of some of the features of Texaco's ground-water monitoring system, we believe this system is inadequate for early detection of migration because of well screen location. Attachment 3 illustrates well-screen position for twenty monitoring wells at the East and West LTFs, nine of which are down-gradient wells. Of those nine, six are screened between six and twenty one feet below the top of the water table making it possible for a shallow plume to be missed by monitoring. In addition, as illustrated in Attachment 3, two monitoring wells have been screened over an interval that does not intercept ground water, and well 17 is screened above the ground-water depth.

Maintaining Minimum Separation

Federal regulations require that the depth-to-ground water at land treatment facilities should be at least three feet from the bottom of the treatment zone to the seasonal high water table (see 40 CFR §264.271 (c)(2)). We believe that Texaco has failed to demonstrate that either the West or East Field of Texaco's LTF has successfully maintained this minimum separation.

Unfortunately, the petition did not present a comprehensive data set showing depths to the water table. Attachment 4, however, displays that a sufficient amount of data was compiled from the no-migration petition to indicate that a water table exists within three feet of the treatment zone in the East LTF (ELTF). If an accumulated waste layer is assumed, we estimate the minimum acceptable depth to the seasonal high water table to be 9.5 to 11.5 feet below the soil surface (depending on waste accumulation). Attachment 4 shows that at the ELTF, a separation in that range occurs infrequently in any piezometer or monitoring well.

Texaco indicates that the observed "perched" water table is seasonal and confined to a shallow surface soil layer (App. I, Vol.5, pages XIX-27 and XIX-32). Texaco, therefore, does not consider this to be a perched water table, but rather a temporary condition of excessive soil wetness. Texaco further associates high water table readings with leakage around the piezometer casing allowing surface water to enter the piezometers (App. I, Vol.5, page XIX-38). Only two of the five piezometers tested, however, showed any immediate response to a rainfall event. The data shown in Attachment 4 indicate that this condition persists throughout the year with slight fluctuations in level. The hydrology section of Texaco's permit application also indicates that saturated conditions appear continuous through zone E (App.I, Vol.3, page XV-20) and are not restricted to a shallow surface layer. We, therefore, do not believe that the data support a zone of restricted downward flow. Instead, we conclude that the data support the existence of a perched water table and that continuous saturated conditions exist throughout the treatment zone, particularly at the ELTF.

Data supplied with the petition does not indicate that sufficient depth to the water table exists under the West LTF (WLTF). In fact, mottling, indicating saturated soil conditions, was reported in the WLTF soil descriptions in all profiles and within 9 to 34 inches from the soil surface (Sec.4, page 8). Saturated conditions in the WLTF surface layer is also reported in the hydrology section of the permit application (App.I, Vol.3, page XV-35). In light of this information, Texaco did not provide sufficient piezometric data for the WLTF to substantiate that depth to the seasonal high water table meets the requirements. Therefore, in regard to both the ELTF and WLTF, the minimum separation required by 40 CFR 264.271(c) is not being maintained. This is a deficiency that precludes granting a no-migration variance to the facility.

Incomplete Petition

Finally, our review indicates that the petition is incomplete and that information and clarification in areas beyond those highlighted above would be needed to complete the petition. However, because of the technical nature of the problems discussed above, we believe a technical basis already exists that is sufficient to support a denial of your petition.

It is our policy to give petitioners the option of withdrawing their petitions to avoid a negative publication in the Federal Register. If you prefer this option, please send us a letter withdrawing your petition and acknowledging that the petitioned wastes are still considered to be restricted wastes subject to the Third Third Land Disposal prohibitions. This letter should be forwarded to the following address within two weeks of

the date of receipt of today's correspondence:

Elizabeth Cotsworth, Chief
Assistance Branch (OS-343)
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

If you choose not to withdraw your petition, we will recommend that a proposed denial decision be published in the Federal Register.

Sincerely,

Jeffery D. Denit, Deputy Director
Office of Solid Waste