



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION I  
JOHN F. KENNEDY FEDERAL BUILDING  
ONE CONGRESS STREET  
BOSTON, MASSACHUSETTS 02203-2211

May 10, 1995

Mr. David Nash  
Waste Enforcement and Engineering Division  
Waste Management Bureau  
Department of Environmental Protection  
79 Elm Street  
P.O. Box 5066  
Hartford, Connecticut 06102-5066

EPA I.D. No. CTD001147495

Re: Pfizer Request for Release of Treated Tank Vault Soils from  
RCRA Subtitle C Management Requirements.

Dear Mr. Nash:

We have received a request from Pfizer Incorporated to release from RCRA Subtitle C management requirements certain soils contaminated by listed hazardous wastes from above ground tank vaults and subsequently treated on-site using vacuum extraction (these soils are hereafter referred to as the "tank vault soils"). Pfizer has requested that we apply the "contained-in" policy to make this release.

We have determined that although the tank vault soils no longer "contain" hazardous wastes at levels that pose unacceptable risks to human health and the environment, the presence of other non-hazardous waste derived contaminants necessitate specific management controls. The purpose of this letter is to provide our recommendation for applying the current "contained in" policy to the Pfizer situation and to inform you of our views for the proper management of the treated tank vault soils. Specifically, this letter: (1) discusses our interpretation of the "contained-in" policy as it pertains to Pfizer's situation, (2) compares the hazardous constituents present in the treated tank vault soils to acceptable risk levels, (3) provides considerations for management options, and (4) expresses our views on Pfizer's proposed management control option for the treated tank vault soils.

#### "Contained-In" Policy

The contained in policy involves a determination as to whether media contaminated with listed hazardous wastes, and subsequently treated to remove such wastes, no longer exhibit concentration levels which would warrant continued management under RCRA Subtitle C. Media can be contaminated by hazardous constituents that are: (1) derived from solid wastes which are also listed or



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characteristic hazardous wastes, (2) derived from solid wastes which are neither listed nor characteristic hazardous wastes, (3) derived from materials which are not solid wastes, or (4) a combination of any of the above.

The management options available for media that contain constituents derived from hazardous wastes within their media matrix at levels above those deemed protective of human health and the environment is limited to those within the scope of the RCRA Subtitle C base program<sup>1</sup>. A broader range of management options is available for soils that contain only hazardous constituents that are not derived from hazardous wastes; that is, a situation which does not implicate the contained in policy because the media does not contain a hazardous waste. The decision for managing media in the latter example can be made on a case-by-case basis (e.g., under a RCRA Corrective Action authority) so long as human health and the environment are protected. Unrestricted use of media may be allowed upon a finding that the media would not pose unacceptable risks to human or ecological receptors.

#### Comparison to Acceptable Risk Levels

A report characterizing the contaminant concentrations in the treated tank vault soil was prepared by Recra Environmental Inc. and submitted to our office in June 1993. Supplementary soil characterization information has been provided by Pfizer since that time. A list of possible hazardous constituents that could have been released into the tank vault soils was provided to us on March 31, 1995.

The analytical data submitted indicates that highest post-treatment VOC concentrations in the tank vault soils were below 20 ppb. A concentration of 0.019 ppm total xylenes was the highest reported for the seven VOC constituents detected, with approximately 27 grab samples collected per constituent. Highest post-treatment metals concentrations included 3.0 ppm Arsenic, 64.8 ppm Lead, 15.8 ppm Nickel, 13.3 ppm Chromium, 1.2 ppm Cadmium, and 45.5 ppm Copper. Maximum post-treatment semi-volatile concentrations included 14 ppm (estimated) Benzo(a)anthracene, 12 ppm (estimated) Benzo(b)fluoranthene, 9.9 ppm (estimated) Benzo(a)pyrene, 5.0 ppm Indeno(1,2,3)pyrene, and 1.1 ppm Dibenz(a,h)anthracene.

The concentrations of hazardous waste-derived constituents were compared to human health risk-based concentrations. Hazardous waste derived constituents were not compared to ecological risk-

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<sup>1</sup> "Base program" as used here means the regulations promulgated pursuant to the RCRA statutes prior to the Hazardous and Solid Waste Amendments of 1984.

based concentrations because information is not available to assess all of the potential ecosystems and pathways corresponding to locations at which the soils could eventually be placed. The primary hazardous waste-derived constituents of concern in the Pfizer treated tank vault soils are VOCs in general, with xylene being the VOC constituent of greatest concern. The post-treatment concentration of xylene is less than the human health concentration of concern for a default residential scenario.<sup>2</sup> As a result, the treated tank vault soils are determined not to "contain" hazardous wastes at concentrations that pose unacceptable risks and are therefore exempt from management under the RCRA base program.

Each of the maximum semi-volatile concentrations cited above exceed the  $10^{-6}$  carcinogenic risk level point of departure for a residential scenario, some by over an order of magnitude. Our review also indicates that the maximum reported concentrations for arsenic and the semi-volatiles are in exceedance of the  $10^{-6}$  risk-based concentrations for human industrial exposures, although generally by less than an order of magnitude<sup>3</sup>. In summary, our review of Pfizer's analytical data indicates that these soils contain constituent levels which exceed acceptable human health exposure concentrations for residential soil. Therefore, we conclude that these soils should not be granted unrestricted management status. Again, ecological impacts were not considered as the analysis would be site-specific.

#### Considerations for Developing Management Options

Although it is our opinion that the treated tank vault soils do not fall under the jurisdiction of the RCRA base program, the presence of hazardous constituents above human health-based levels necessitates consideration of the relevant and appropriate aspects of the RCRA base program and the applicable aspects of the RCRA Corrective Action program when management options are being considered. Human health pathways and routes, fate and transport, and ecological pathways should be considered in the management option analysis.

An industrial exposure scenario for incidental human exposures would be considered an appropriate approach to assessing human pathways and routes. If incidental ingestion were not an operable pathway, then there would be some discretion in determining that these soils were acceptable for some management option consistent with unlikely ingestion exposure. The likely management option for non-liquid, contaminated media would be management in a

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<sup>2</sup> Risk-Based Concentration Table, Third Quarter 1994 , Roy L. Smith, Ph.D., U.S. EPA - Region III).

<sup>3</sup> Id.

landfill or other managed disposal facility. The drinking water pathway should also be considered in this situation if deemed appropriate (e.g., actual or potential downgradient wells).

Site-specific contaminant fate and transport could consider by analogy the Land Disposal Restrictions Universal Treatment Standards (UTS).<sup>4</sup> The UTS are maximum concentrations for any single grab sample of waste that must be met prior to any land disposal of such waste. The UTS are mandated to reflect standards which minimize short-term and long-term threats to human health and the environment from the waste<sup>5</sup>. The only exception to this land disposal prohibition for wastes with one or more grab sample concentrations in excess of a UTS is the disposal of the waste in a facility with an approved "No Migration" demonstration. A comparison of Pfizer's analytical data with the UTS indicate that all of the semi-volatile constituents identified above, with the exception of Dibenz(a,h,)anthracene, are in exceedence of the applicable UTS. Therefore, if this material were a hazardous waste, it would be prohibited from any land disposal, except in a No-Migration unit, without further treatment to meet the UTS. The Agency recognizes, however, that media such as soil is not always amenable to treatment technologies suitable for waste materials.<sup>6</sup>

The operative ecological pathways would depend on whether the materials were incorporated as fill or used as cover material. If used as cover material, consideration of exposure to burrowing animals, or to grazing animals through consumption of vegetative cover and subsequent food-chain transfers would seem appropriate. These pathways would not likely be operative if the material was incorporated as fill rather than used as cover material. Subsequent leaching of the constituents of concern into groundwater and/or surface waters and the resulting potential ecological exposures/impacts should also be considered.

#### Pfizer's Proposed Management Control Option

Pfizer recently submitted a possible on-site alternative for disposition of the treated tank vault soils. This alternative is outlined in the attached correspondence from Richard M. Davis, Pfizer to David Guest, EPA-New England, dated March 22, 1995. Briefly, the alternative involves using the treated tank vault

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<sup>4</sup> Land Disposal Restrictions Phase II: Final Rule (59 FR 47982, Sept. 19, 1994)

<sup>5</sup> 42 U.S.C. § 6924(m)(1)

<sup>6</sup> 59 FR at 47986

soils as subgrade for a proposed parking area which will be paved with asphalt.

We encourage the beneficial reuse of such materials in a way not posing any adverse risk to human health or the environment. We believe that this alternative would be acceptable given that the asphalt surface will likely eliminate any incidental ingestion pathway and significantly reduce leaching of the residual constituents. Therefore, potential human or ecological exposures would likely be minimal. Note that the surrounding area is served by town water.

We strongly recommend conditioning the use of the treated tank vault soil as parking lot subgrade material upon Pfizer identifying this area as a Solid Waste Management Unit (SWMU) subject to RCRA Corrective Action. This SWMU designation will allow for a more site-specific review of the propriety of this disposition when any future Corrective Action activities occur at the facility.

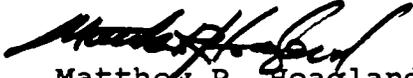
### Conclusion

In our opinion the treated tank vault soils contain hazardous constituents derived from both hazardous wastes and non-hazardous solid wastes. The concentrations of hazardous waste-derived constituents when considered alone are determined to be at levels that do not pose an unacceptable risk to human health and the environment. This fact relieves Pfizer from the requirement of managing the tank vault soils only in accordance with RCRA base program. However, the concentrations of remaining non-hazardous waste-derived constituents that remain in the treated tank vault soils necessitates consideration of relevant and appropriate RCRA base program requirements and the applicable RCRA Corrective Action requirements when considering management options.

Pfizer's proposed beneficial reuse of the treated tank vault soils beneath an asphalt surface is viewed as an acceptable short-term alternative so long as the area of tank vault soil depositional area is designated as a Solid Waste Management Unit. The final decision regarding the disposition of these soils should be a component of a Corrective Action final remedy decision and comply with State laws.

Should you have any questions regarding this matter, please feel free to contact me at 617/573-5791.

Sincerely,



Matthew R. Hoagland, Chief,  
Corrective Action Section

ATTACHMENT

cc: Richard M. Davis, Pfizer