Department of Environmental Protection

Lawton Chiles
Governor

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2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

April 7, 1998

Mr. Geoffrey D. Smith
Blank, Rigsby and Meenan, P.A.
Post Office Box 11068
Tallahassee, Florida 32302-3068

Re: Request for Approval of Alternate Procedures
Rinker Materials Thermal Treatment Facility

Dear Mr. Smith:

The Division of Waste Management staff have reviewed your December 17, 1997 letter concerning a proposed alternate procedure for the Rinker soil thermal treatment facility. Your letter had responded to our earlier letter dated October 22, 1997 concerning a request to allow the thermal treatment of a number of types of materials that are not considered to be "petroleum contaminated soil" as defined by Rule 62-775.200(9), F.A.C. The Hazardous Waste Regulation Section and the Solid Waste Section of the Bureau of Solid and Hazardous Waste and the Technical Review Section in the Bureau of Waste Cleanup participated in the discussion which resulted in our determination on this matter. There are several issues yet to be resolved or clarifications made before we will consider the issuance of an Alternate Procedure Approval:

1.) One outstanding issue regarding this request concerns the need for TCLP testing of each source of material to be treated to determine whether it may be a characteristic hazardous waste. We have given further consideration to your request to allow discretion of the need for a TCLP test based on the generator's process knowledge of the waste materials. We have determined that this request may be reasonable with the following provisos.

a) It is the considered opinion of the staff members that evaluated this request that two of the categories of materials would have a high likelihood of containing benzene at a level that would fail a TCLP test if they were associated with gasoline contamination and we would expect that in all cases a TCLP test for benzene would be performed. These are the categories for "petroleum storage tank bottom residues" and "mineral type sorbent materials that have been

used for the cleanup of petroleum spills". If sludge from a gasoline tank bottom or absorbent material that has been used to clean up a gasoline spill will be thermally treated, we expect that Rinker will request evidence that a TCLP test for benzene had been performed.

b) Staff have concerns about the need for assurances of the adequacy and consistency of the "process knowledge" determinations. We request a clarification from Rinker as to how the quality of process knowledge judgment will be assured and documented. We suggest a form be created by Rinker that will be used in a consistent manner whenever these materials are accepted to document the generator's basis for process knowledge. The documentation will demonstrate that the materials accepted by Rinker are only contaminated by petroleum substances. In addition, when accepting petroleum contaminated materials, the justification will provide a rationale of why a TCLP for benzene is not necessary. The forms will have to be maintained by Rinker and made available upon request to Department staff at periodic facility inspections.

2.) The original proposal implied that all of the materials in the request would be associated with petroleum facilities only, but the brief description of the nature of facilities that would generate these waste materials was of a fairly generic nature and therefore of some concern. We request an additional assurance by providing more details of the nature of the facilities that will be sources of some of the materials. The detailed source information must be sufficient to provide assurance to the Department that the petroleum contaminated residues will not contain other non-petroleum or hazardous constituents not appropriate for treatment in soil thermal treatment facilities. In particular:

a) Oil water separator residues, french drain residues and soakage pit residues must be from facilities whose primary activities are petroleum related only. Please provide a more detailed explanation of the types of facilities or some typical examples of facilities which will have oil/water separators, french drains, or soakage pits that may be contaminated with petroleum but not other substances. It may be helpful if examples could be given of facilities for which

process knowledge will be sufficient and of ones for which additional analysis would be necessary. Some staff members are particularly concerned with how residues from service station floor drains would be considered. Many of the degreasers currently used at service stations contain chlorinated solvents which could conceivably be contained in residues from the drain along with petroleum product chemicals.

b) Please clarify that car wash reclaim water tank residues will come from car washes that are automobile and light truck only, not industrial or agricultural wash facilities.

3.) Staff have concerns that it is not uncommon for other oil spill containment materials/cleanup debris to be included in containers along with mineral type oil spill absorbent materials. Please clarify that only mineral-type, soil-like materials (e.g. - kitty litter) will be treated and not other materials not suitable for thermal treatment such as absorbent booms, sawdust, paper, or other plastic materials such as acrylic polymers.

4.) We are assuming that any high strength waste (e.g. - petroleum tank bottom residues) will always be blended with other petroleum contaminated soil prior to treatment to assure adequate thermal desorption and also to assure the facility will not operate in an unsafe manner. Please clarify.

If you have any questions, please call me at (850)488-3935.

Sincerely,

Thomas W. Conrardy

Thomas W. Conrardy, P.E.
PE Administrator
Bureau of Petroleum Storage Systems

cc: Mike Vardeman, Rinker Materials
John Ruddell
Satish Kastury, Hazardous Waste Regulation Section
William Neimes, Bureau of Waste Cleanup
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BLANK, RIGSBY & MEENAN, P.A.

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July 2, 1998

Thomas W. Conrardy , P.E.
Bureau of Petroleum Storage Systems
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Fl. 32399-1024

Re: Rinker Materials Thermal Treatment Facility; Request for Approval of Alternate Procedures

Dear Tom:

Thank you for your letter of April 7, 1998 regarding Ringer's pending Request for Approval of Alternate Procedures. Rinker has carefully reviewed your concerns, and offers the following responses to the specific items you raised in your letter. We trust these responses will serve as the basis for the Department to issue an approval of the Department Procedures Request.

RESPONSES TO ITEM 1.a.:

- We appreciate DEP's concern with ensuring that materials which are characteristically hazardous are not improperly disposed of. We would hope that DEP will also address these same concerns in regulating the landfill disposal of the same type materials.

- We agree that "sludge" from gasoline storage tanks and absorbents form gasoline spill cleanup has a high likelihood of containing benzene in excess of TCLP standards. For this reason, Rinker does not typically accept "sludge" from gasoline tanks. Prior to accepting any sludge from a gasoline tank source, Rinker agrees that a TCLP analysis will need to be performed. Rinker will not accept any sludge that is characteristically hazardous.

- In summary, Rinker agrees with DEP's suggestion that a generator would have to provide TCLP analysis in order to have these materials accepted by Rinker for thermal treatment. Likewise, the same TCLP analysis by the generator should be required by DEP for landfill disposal of these materials.

RESPONSE TO ITEM 1.b.:

- DEP's concern over the adequacy and consistency of "process knowledge" determinations seems to be a general criticism of RCRA regulations which specifically allow for a generator to make a process knowledge determination. See, 40 CFR Section 262.11. By shipping materials to Rinker on a non-hazardous manifest, the generator is certifying compliance with the requirements of 40 CFR 262.11.

- In response to your concerns, Rinker has developed the attached "Generator Certification" form. This form requires that the generator explain the basis of their "process knowledge" determination. Rinker will use this form when laboratory data, or other information, indicates that the materials contain contaminants which may be hazardous, either due to characteristic or listing. We believe that DEP should also require this type of form for landfill disposal of the same materials. Otherwise, there will be unjustified inconsistency in treatment and disposal options for these materials.

RESPONSE TO ITEM 2.a.:

- Rinker agrees that only petroleum contaminated media and debris from sources such as oil/water separators, french drains, or soakage pits will be accepted for thermal treatment. Rinker will require laboratory analysis of these materials to ensure that no hazardous wastes are accepted. Rinker agrees that, unless otherwise authorized by the Department, Rinker will not accept media and debris that is characteristically hazardous for any constituent or that is contaminated with chlorinated solvents, degreasers, or other non-petroleum contaminants in excess of the clean soil criteria in 62-775, F.A.C..

RESPONSE TO 2.b.:

- Car wash reclaim water tank residues will be only from auto, light truck, and other passenger vehicle washes. Rinker will not accept wash water residues from industrial or agricultural vehicle wash facilities.

RESPONSE TO 3.:

- Rinker agrees that only mineral type absorbents (e.g. kitty litter) will be thermally treated. Materials such as absorbent booms, paper, plastic materials or acrylic polymers will not be treated in the soil thermal treatment facility, and will be screened out and segregated for proper disposal before thermal treatment of oil spill containment materials or cleanup debris.

RESPONSE TO 4.:

- The media and debris to be treated under the Rinker Alternate Procedures Request would be blended with the petroleum contaminated soils for thermal treatment. In accordance with Chapter 62-775, F.A.C. blending would not be used to meet the definition of non-hazardous materials.

We believe that this information should fully address all of the Department's concerns. We look forward to the Department's approval of the Alternate Procedures Request.

Sincerely,

Geoffrey D. Smith

GDS/meh

Enclosure

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OCT 14 1994

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Dear Colleague,

This package contains your copies of a new document developed by the Office Of Underground Storage Tanks (OUST). *How To Evaluate Alternative Cleanup Technologies For Underground Storage Tank Sites: A Guide For Corrective Action Plan Reviewers* is designed to help staff review corrective action plans containing alternatives to traditional cleanup technologies.

OUST is distributing copies as follows:

- EPA's regional LUST programs each receive 6 copies.
- State LUST Managers each receive 25 copies.
- State Fund Managers each receive 5 copies.
- State field offices each receive 15 copies.

If we have sent you more copies of this Guide than you can use, please:

- Distribute the extra copies to your contractors or consultants.
- Send the extra copies to your region.
- Return the extras to us. (Send them to NCEPI, 11029 Kenwood Rd., Cincinnati, OH 45242.)
- Share the extras with appropriate staff in other agencies.

We do have a supply of free copies for EPA, state, or local governmental employees. If you need additional copies, please contact Amy Sonneman of OUST at 703-308-8883.

Consultants, contractors, and other private firms can obtain the Guide for $7.00 from the U.S. Government Printing Office (GPO) by writing to the Superintendent of Documents, P.O. Box 371945, Pittsburgh, PA 15250-7954 and ordering stock number 055-000-00479-0. GPO does not provide a binder, but any 2-inch binder will accommodate the document.

We developed this Guide in response to requests from the field and are eager for your comments and feedback. Please complete and return the evaluation form enclosed in the Guide. If you have questions, call the EPA/RCRA Hotline (800-424-9346) on Monday through Friday from 8:30 a.m. to 7:30 p.m. EST.

Sincerely,

Lisa Lund, Acting Director
Office Of Underground Storage Tanks

Enclosure

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Sincerely,

Lisa Lund, Acting Director
Office Of Underground Storage Tanks

Enclosure

fractions of toxic constituents (e.g., benzene). In fact, after moderate degradation or weathering, almost all of the lighter (more mobile and more toxic) compounds have been stripped away, leaving the residue enriched with the heavier, constituents that generally do not pose a significant threat to distant receptors.

With the exception of lead, inorganic chemicals are not typically of concern at sites with petroleum releases. Soils that are contaminated with older gasoline products may contain relatively high concentrations of lead, which can cause serious health and environmental effects. Many organic lead compounds are volatile and toxic. Lead may also be leached into the groundwater where it can be transported downgradient. The presence of lead in site soils may require active remediation to eliminate potential risk.

This section examines the most important factors that contribute to a constituent's partitioning into the soil (adsorbed), groundwater (dissolved), and air (gaseous) phases. The potential for natural attenuation to be effective and for constituent concentration reduction to occur as a result of chemical factors is shown in Exhibit IX-8. Each of these factors is discussed below in more detail.

Exhibit IX-8
Potential For Natural Attenuation: Chemical Constituent Factors

Factor	Description	Potential For Natural Attenuation
Solubility	The extent to which a constituent will dissolve in another substance (e.g., water).	The greater the constituent's solubility, the greater the dispersion in groundwater and the greater the migration in soil.
Vapor pressure	A measure of a constituent's tendency to evaporate.	The higher the vapor pressure, the more likely that the constituent will volatilize.
Henry's law constant	A measure of a constituent's tendency to partition between the aqueous phase and gaseous phase.	The higher the Henry's law constant, the greater the tendency to volatilize.
Boiling point	A measure of a constituent's tendency to volatilize.	The lower the boiling point, the greater the tendency for volatilization.
K_{oc}, K_d	The tendency of a constituent to adsorb onto organic matter in the soil.	The lower the K_{oc} and K_d, the less the adsorption potential.
Molecular weight	The mass of a chemical constituent.	In general, the lighter the constituent the more likely that it will solubilize.

Solubility

Solubility is the amount of a substance (e.g., hydrocarbon) that will dissolve in a given amount of another substance (e.g., water). Therefore, a constituent's solubility provides insight to its fate and transport in the aqueous phase. Constituents that are highly soluble have a tendency to dissolve into the groundwater and are not likely to remain in the

adsorbed phase. They are also less likely to volatilize from groundwater and are more easily biodegraded. Conversely, chemicals that have low water solubilities tend to remain in the adsorbed phase or are likely to volatilize more readily, but they are less likely to biodegrade. In general, lower molecular weight constituents tend to be more soluble and, therefore, migrate and disperse much more readily in groundwater or soil moisture than do heavier constituents.

In the field, aqueous concentrations rarely approach the solubility of a substance because dissolved concentrations tend to be reduced through processes such as biodegradation, dilution, and adsorption. Nevertheless, the mobility of a constituent is largely determined by its water solubility. Exhibit IX-9 lists the solubility of the BTEX constituents. Note that these values are for pure components and mixtures tend to result in lower aqueous concentrations for individual constituents. The higher the solubility, the more likely it is that the constituent will be transported with flowing groundwater. Less soluble components may also be transported, although the aqueous concentration will be lower. More soluble gasoline additives (e.g., MTBE) are transported farther and faster than hydrocarbons. Often these additives can be detected in distant wells long before hydrocarbons arrive.

Exhibit IX-9
Solubilities of BTEX Constituents

Petroleum Constituent	Typical Percentage in Gasoline	Pure Compound Solubility (mg/L) (20°C)	Solubility of Compound in Typical Gasoline (%)
Ethylbenzene	2 to 8	152	4 to 8
o-Xylene	5 to 20	175	10 to 20
Toluene	2 to 10	515	30 to 80
Benzene	1 to 4	1,780	30 to 60

As shown in the exhibit, benzene is relatively more soluble than the other BTEX constituents and will therefore preferentially dissolve into the aqueous phase. As a result, benzene is the most likely BTEX constituent to be mobile and disperse in the aqueous phase. Ethylbenzene has a much lower solubility, therefore its concentration in the aqueous phase will be lower than the concentration of benzene.

Vapor Pressure

The vapor pressure of a constituent is a measure of its tendency to evaporate. More precisely, it is the pressure that a vapor exerts when in equilibrium with its pure liquid or solid form. Constituents with higher

CORRECTION

Please substitute new page IX-19/IX-20 for the page with the same number in the shrink-wrapped package.