RECD SEP 02 1987 #9

WASTE-TECH
SERVICES, INC.®

September 1, 1987

Mr. Gary D. Martin, P.E.
Manager, Technical Branch
Hazardous Waste Division
State of Arkansas
Department of Pollution Control and Ecology
8001 National Drive
Little Rock, AR 72209

RE: Your August 25, 1987 Letter, Vertac Chemical Company-Jacksonville, Arkansas - Proposal for Drum Waste Disposal

Dear Mr. Martin:

Waste-Tech Services, Inc. is pleased to provide five copies of additional information on our proposal for incineration of Vertac Chemical Company waste in response to your above referenced letter. The team of Waste-Tech Services, Inc. and Bechtel Environmental, Inc. has the experience and expertise to work with the community and perform the cleanup in a timely and cost effective manner.

We would appreciate the opportunity to address your working group to better inform you of our approach to this project and to answer any questions you may have. We will contact you shortly to discuss arrangements for such a presentation. In the meantime, please do not hesitate to contact me if you have any further questions regarding our proposal.

Sincerely,

George P Rasmussen

George P. Rasmussen
Vice President - Engineering

GPR/bjs

Enclosure

cc: J.F. Wurster

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ADDENDUM TO PROPOSAL NO. 851-47

VERTAC CHEMICAL COMPANY ON-SITE WASTE INCINERATION

JACKSONVILLE, ARKANSAS

The following are answers to questions raised with respect to our proposal in Mr. Gary Martin's August 25, 1987 letter:

## 1.0 DRUM SHREDDING FUGITIVE EMISSIONS

Waste-Tech Services, Inc. (WTS) proposes to utilize a state-of-the-art, totally automated and enclosed barrel handling system. The system is constructed primarily out of stainless steel to minimize corrosion with the chlorinated materials which will be handled. Fugitive emissions from the unit are eliminated by use of an airlock through which drums and boxed wastes enter the unit and a vent system which directs vapors to the incinerator for combustion. The airlock through which the containerized wastes enter the unit is purged prior to opening the outer door with a vacuum pump. Discharge gases from the vacuum pump are piped to the incinerator where the gases are incinerated and scrubbed. A waste container is then automatically placed within the airlock, the outer door closed, and the lock is charged with inert gas. Gases from this purge are also sent to the incinerator. When the purge cycle is complete, the inner door opens and the container is automatically conveyed to the piercing station.

The potential for fugitive emission resulting from sudden overpressure of drums during piercing and draining is eliminated due to the inert atmosphere surrounding the drum during this operation. A spark source cannot ignite volatile vapors within a drum. Piercing, draining, and shredding of drums before feeding into the incinerator also serves to minimize combustible material surges into the kiln such as would occur by feeding whole drums. Our metered feed of wastes to the kiln assures that adequate combustion air is available for complete destruction of the hazardous components of the waste.

Please be aware that the entire container sizing system is controlled remotely with TV camera observation of the process by an operator located in an adjacent control trailer.

This system results in the elimination of fugitive emissions from the waste processing and feed system.



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## 2.0 SYSTEM TESTING/MONITORING

Waste-Tech Services is aware of and has worked with public concerns associated with on-site incineration of sites around the country. The primary concern usually is associated with stack emissions. Waste-Tech Services has studied the availability of on-line stack monitors suitable for speciated monitoring at great depth and has not found any equipment available today that can reliably and continuously monitor individual species of emission gases. Our evaluation included conversations with the U.S. EPA research center. The EPA has tried a van-mounted GCMS. This unit was unable to work for durations over about one hour.

Waste-Tech Services is evaluating the use of a total hydrocarbon monitor which will activate an automatic stack sampling system in the event high stack hydrocarbons are registered. The idea is to evaluate any resulting stack samples for PIC's. This system is still experimental and results as to reliability or usefulness will not be available for six to eight months.

Waste-Tech's Rosemount System 3™ control system is a distributive type system that monitors all incoming signals every 300 milliseconds. This assures that all existing stack monitors and controls sensors are monitored many times per second and that the system can react very quickly.

## 3.0 RESIDUAL ASH

Our best estimate of the ash remaining following incineration of all wastes and containers specified in our proposal is 2,900,000 pounds. This includes shredded drums, inert parts of the plant trash from boxes and other inert wastes. At a bulk density of 90 lbs./cubic foot, this ash will have a volume of approximately 1,200 cubic yards. Achieving delisting of this waste is contingent upon passing TCLP. Waste-Tech Services has proposed a counter flow kiln design to achieve ash burnout temperatures 200°F higher than the usual co-current kiln. This will provide for better burnout of organics in the ash. Achieval of ash leachable metal limits below TCLP and drinking water standards is a function of the waste metals contents. At this time, we do not have reliable data on listed metals concentrations in these wastes, however, we have no reason to believe the wastes have high listed metals content.

Waste-Tech is knowledgeable and has prepared delisting petitions. The cost for WTS to prepare and submit a delisting petition for the ash generated is included in our proposal (reference Section 3.0, Task 8,, Ash Delisting, page 11). Our price to prepare this petition, including analysis of small quantities of the ash actually produced, is $58,000.



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## 4.0 WASTEWATER

Wastewater produced by the scrubber blowdown contains salts in addition to a small amount of solids. Liquids of this nature have an application in the recovery of oil and may be suitable for recovery and reuse off-site.

Using a Hydrosonics wet scrubbing system, we will produce scrubber blowdown at a rate of 2,500 gallons per hour. During the course of the cleanup, the total amount produced shall be approximately 28 MM gallons. With clarification, this water will have approximately 5% dissolved solids and suspended 20 mg/liter solids.

An in-stream concentration of 250 mg/l chloride and less than 500 mg/l TDS can be achieved by operating with a once through water flow of 6,620 gpm. This is an extremely high rate which would result in a cost adder for purchase of the additional quantity of water from the City of Jacksonville at today's rates is $7.7 MM.

Waste-Tech Services has worked with manufacturing of dry off-gas scrubbing equipment, however, to date, no dry scrubbing systems have been installed to scrub gases having the high concentration of chlorides present when burning these wastes. The impact of using a dry scrubbing system would be an increase in supplemental fuel consumption and an increase in ash quantities requiring disposal. This option would be more economical than the use of large quantities of water to reduce the chloride concentration associated with wet scrubbing. If selected by the Arkansas Department of Pollution Control and Ecology as a finalist for this project, WTS shall be pleased to modify our proposal to permit evaluation of a dry scrubbing system.

Waters generated by decontamination of equipment and personnel shall be handled in accordance with Section 6.6, Wastewater, page 23 of our proposal. We propose to discharge such liquids which have the potential of being lightly contaminated to the existing site activated carbon water treatment system.

## 5.0 SITE DEMOBILIZATION

Following completion of the incineration portion of the contract, Waste-Tech Services shall disassemble and remove all its equipment from the site. In accordance with Section 3.0, Scope of Work, Task 9, Site Demobilization, page 11 of our proposal, we propose the following:

- "Upon completion of waste processing operations, the transportable rotary kiln will be dismantled and

removed from the site along with the site trailers. The following facilities will remain on-site in their current locations:

- The two are houses previously used to store drums containing liquids and sludges. Note: one of the warehouses will be converted to an ash containment facility.
- All emptied tanks and railroad cars.
- The concrete block enclosure and two tanks previously used to store contaminated spent carbon.
- The ash containment facility, regardless of the outcome of the delisting proceedings.
- The incinerator foundations, pads, and access roads.
- Utility connections as routed to remediation facilities."

Waste-Tech will be pleased to provide for removal of foundations and utility connections if desired by ADPC&E at an additional cost. Our proposal leaves these items in place based upon the possible reuse of these site improvements for later ongoing site cleanup activities.

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## 6.0 PRICE SUMMARY

Waste-Tech Services' price estimate is based on the quantities of waste having the composition as identified on Table 3-1 of our proposal (page 10).

TABLE 3-1

Waste Basis

| | Waste Stream | Lbs. Liquids/ Sludges | Lbs. Solids |
|---|---|---|---|
| 1. | Drummed 2,4 Dichlorophenoxy Acetic Acid | 7,900,000 | 2,000,000(1) |
| 2. | Drummed 2,4 Trichlorophenoxy Acetic Acid | 3,200,000 | 1,000,000 |
| 3. | Assorted Tank Residues | 9,000,000 | -0- |
| 4. | Spent Carbon | -0- | 120,000(2) |
| 5. | Boxed Trash | -0- | 1,100,000 |
| 6. | Railroad Car Liquids | 180,000 | -0- |
| 7. | Sodium Salts of Delapon | 120,000 | -0- |
| 8. | Contaminated Pallets | -0- | 385,000(3) |
| 9. | Orphaned Wastes | 25,000 | -0- |
| 10. | Steel Drums | -0- | 845,000 |
| 11. | Overpak Polyethylene | | |
| | TOTAL | 20,425,000 | 5,706,000 |

Average Composition

| | Liquids/Sludges | Solids |
|---|---|---|
| C wt. % | 41.0 | 32.0 |
| H wt. % | 2.7 | 4.0 |
| O wt. % | 16.7 | 2.5 |
| N wt. % | -- | -- |
| S wt. % | -- | 1.0 |
| Cl wt. % | 31.9 | 8.0 |
| $H_2O$ wt. % | 5.0 | 11.0 |
| Ash wt. % | 2.7 | 41.5 |
| HHV BTU/lb. | 6,115 | 6,000 |

(1) Excludes the weight of drums and overpaks which are included in waste streams 10 and 11 respectively.

(2) 80,000 lbs. dry weight. Assumes moisture present.

(3) Includes pallets currently storing drums and boxes.

The volume of this 26,131,000 pounds (13,065 tons) is estimated to be 19,800 cubic yards. Our estimated summary price to accomplish the entire scope of work associated with destruction of this quantity of waste is $1,071.56 per ton exclusive of any sales and use taxes or waste disposal taxes, if any. We believe this price can be reduced when granted access to the site to obtain better information on such items as soil loading, utility interfaces, etc.



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A lump sum cost for all activities required prior to initiation of treatment of stored wastes (site installation ofthe incinerator) is $540,000 This price is included in our above summary price per ton.

## 7.0 WASTE PRETREATMENT

Waste chemical pretreatment shall consist of pH adjustment using caustic/acid addition. One waste source in particular, sodium salts of delapon, shall require pH adjustment in our blend tank prior to injection to the incinerator. pH adjustment shall be undertaken under carefully controlled conditions to assure the safe handling of these wastes.

## 8.0 INCINERATOR STATUS

Waste-Tech Services has several incinerators. However, because of the unknown schedule for this project and commitments relative to other on-site cleanups, we have assumed that the incinerator unit to be used on the Vertac Chemical Site shall be of new manufacture.

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