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August 26, 1996

Ms. Barbara Hoditschek  
Manager, RCRA Permits Management Program  
Hazardous and Radioactive Materials Bureau  
New Mexico Environment Department  
2044 Galisteo  
Santa Fe, New Mexico 87502



Subject: Response to Comments on Incomplete Closure Cost Estimates on the Triassic Park Hazardous Waste Disposal Facility

Dear Ms. Hoditschek:

Enclosed is a comment/response document addressing the issues raised in your letter dated August 20, 1996. No changes will be required to Tables 9-1 and 9-2 as a result of these comments; see our responses for more details.

The only revisions that may be needed to these tables in the future are possible decreases in closure and post-closure costs associated with groundwater monitoring for the landfill, since we are currently proposing vadose zone monitoring instead of groundwater monitoring. The overall costs for vadose zone monitoring are expected to be the same as or less than the costs for groundwater monitoring, as explained in the response to comment 6(a). The vadose zone monitoring system has not been designed yet, and the EPA guidance manual "Cost Estimates for Closure and Post-Closure Plans (Subparts G and H)" does not include cost estimates for vadose zone monitoring, so we request that the current cost estimates for groundwater monitoring be left in place until better estimates are available.

If you would like to discuss any of our responses, we would be happy to arrange a meeting or conference call.

Sincerely,

A handwritten signature in cursive script, appearing to read "Trey Greenwood".

Trey Greenwood  
S.M. Stoller Corporation

cc w/enc.: Benito Garcia, Chief, HRMB  
Cornelius Amindyas, HRMB  
Dale Gandy, Gandy Marley Inc.

**Comment/Response Document**  
**Closure Cost Estimates for the Triassic Park Hazardous Waste Disposal**  
**Facility**  
**EPA ID Number NM0001002484**

**Comments 1 and 2:**

After analysis of the Closure Cost Estimates and Closure-generated waste volumes presented in Tables 9-1 and 9-2 of Part B Permit Application pages 9-12 through 9-14, NMED found that the following portions of the Triassic Park Waste Disposal Facility were not included in the cost estimates:

- (1) General Structure Demolition and Removal of:
  - Scales
  - Truck Staging Area
  - Chemical laboratory
  - Maintenance shop
  - Truck wash facility
  - Guard Shack/Administration Trailer
  
- (2) Final Contours Total Area:
  - Storm Water Retention Basin
  - Dust Control/Clay Processing Water Basin
  - Total Facility, No Ponding cost estimates
  - Depth of ponding

**Response:**

Closure cost estimates are required only for hazardous waste management units subject to permitting requirements. 40 CFR 264.142(a) references applicable closure requirements for container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, and other types of regulated RCRA units. As verified by the EPA RCRA Hotline on 8/22/96, structures or other portions of a facility that are not included in any of these categories do not require RCRA closure plans or closure cost estimates. The units/areas listed in the comment are not permitted hazardous waste units. Some of the areas listed in (1) may be SWMUs or may contain SWMUs in the future, as discussed in the NOD response to Comment 2. For example, satellite and/or 90-day accumulation areas may possibly be located at the chemical laboratory, the truck wash facility, and the maintenance shop. Closure plans and closure cost estimates are not required for SWMUs, satellite areas, or 90-day accumulation areas.[40CFR 262.34(a) and (c) and 264.90(a)(2)]

**Comment 3:**

Future Debris Encapsulation Facility. No estimate was made on this portion.

**Response:**

The facility is not seeking a RCRA permit at this time for the future debris encapsulation area or the future waste processing area identified in Figure G-2 of the draft permit (Figure 2-1 of the Part B Permit Application). These areas are possible future RCRA treatment units envisioned for the facility that are not being designed at this time. Prior to construction of these units, a RCRA permit modification request will be submitted to NMED that will include a closure plan and closure cost estimate.

**Comment 4(a):**

The following areas or items were not included in the cost estimates of Table 9-1:

Container storage area, Line 2: Disposal of remaining drums, was the estimate made per drum or a flat fee was used?

**Response:**

Disposal costs were based on the total cubic yards of waste requiring disposal in the landfill. Costs for disposal of all closure-generated wastes were included in line 2 of the Landfill section of Table 9-1. For purposes of the closure cost estimate, it was assumed that all wastes in the container storage area would require stabilization at the on-site treatment unit prior to disposal in the landfill. The costs in line 1 of the Container Storage Area section of Table 9-1 include the costs for stabilization of the wastes, and the costs in line 2 include only removing and crushing the empty drums that held the waste prior to stabilization. The disposal costs for the solidified waste itself are listed in the Landfill section, line 2.

**Comment 4(b):**

Container storage Area: Line 3: was the decontamination cost of equipment obtained considering the use of a bulldozer?

**Response:**

The equipment assumed to require decontamination after closure of the Container Storage Area includes 2 fork lifts and a flatbed truck for the operational part of the unit, and includes a front end loader and a backhoe for the pad removal part.

**Comment 4(c):**

Container Storage Area: Line 4: What was the area in square feet of the concrete and secondary containment?

**Response:**

As described in section 2.2.1.2 and shown in Figure 2-2 of the Part B Permit Application, the container storage area concrete and secondary containment area will measure approximately 275 feet by 113 feet, for an area of approximately 31,075 square feet. The entire drum storage facility, including the building, gravel truck aprons, and office area, will cover approximately 60,000 square feet.

**Comment 4(d):**

Container Storage Area: Line 5: How many samples of the concrete floor will be taken after its demolition?

**Response:**

As described in section 9.2.1.3 of the Part B Permit Application, the concrete floor will be broken up and disposed of in the landfill as hazardous debris. No sampling of the concrete is proposed. The soil under the container storage area will be sampled after the structure is removed. Seven soil samples will be collected from locations that correspond to the floor drain sumps.

**Comment 5(a):**

Storage Tank Area, Line 3: What is the area of the concrete containment area?

**Response:**

As shown in Figure G-7 of the draft permit (Figure 2-4 of the Part B Permit Application), the concrete pad beneath all four storage tanks will measure approximately 53 feet by 53 feet, or 2,809 square feet. The pad will be approximately one foot thick, for a total volume of 2,809 cubic feet (104 cubic yards). The concrete walls surrounding the tanks are approximately four feet high and one foot thick, for a total volume of approximately 46 cubic yards.

**Comment 5(b):**

Storage Tank Area, Line 5: How many samples will be taken after the demolition of concrete containment?

**Response:**

As described in section 9.2.3.3 of the Part B Permit Application, four soil samples will be collected from locations that correspond to the containment sumps for the four tanks after demolition of the concrete containment. No sampling of the concrete is proposed. The concrete will be broken up and disposed of in the landfill as hazardous debris

**Comment 6(a):**

Landfill, Line 4: Provide the number of groundwater monitoring wells, number of samples, and frequency of sampling.

**Response:**

Closure costs were based on the monitoring of one upgradient and three downgradient groundwater monitoring wells. The wells would be sampled quarterly or semi-annually for one year during closure (and semi-annually for another 30 years during post-closure, included in Table 9-2). However, vadose zone monitoring is currently proposed in place of groundwater monitoring at the facility because the nearest expected groundwater is over one-half mile downgradient of the facility. Vadose zone monitoring costs are not provided in the EPA guidance manual, "Cost Estimates for Closure and Post-Closure Plans (Subparts G and H)", but it is assumed that the groundwater monitoring costs currently included in the post-closure cost estimate would be more than adequate to cover the costs of vadose zone monitoring.

The major cost elements used in deriving the groundwater monitoring cost estimates for closure and post-closure are (1) labor costs for sample collection and preparation as well as transportation to and from the site, (2) analytical laboratory costs for sample analysis, and (3) monitoring well maintenance and replacement costs. The labor time requirements are expected to be similar for vadose zone monitoring; the analytical costs are expected to be the same or lower because there may not be any water to collect samples of; and the equipment maintenance costs are expected to be lower based on the lower initial costs of system installation. Therefore, the overall costs for vadose zone monitoring are expected to be less than the costs for groundwater monitoring. More accurate cost estimates for vadose zone monitoring could be provided after the final design of the system is completed and approved.

**Comment 6(b):**

Landfill, Line 5: Provide the number of soil samples around the landfill, and frequency of sampling.

**Response:**

As described in section 9.2.6 of the Part B Permit Application, after the landfill cap is completed, ten soil samples will be collected from outside the perimeter of the landfill cap to determine if any soil contamination is present. The sampling locations will primarily correspond to the transportation corridor used by waste hauling trucks during the active life of the landfill. The frequency will be one time.

**Comment 6(c):**

Landfill, Line 8: Provide the area of the cover clay layer, and the capacity in cubic yards of the landfill cover, and the cost per square yard of the final cover.

**Response:**

As described in section 9.2.6 of the Part B Permit Application, the final cover will consist of 2 feet of foundation soil, an HDPE flexible membrane liner overlaid by a geotextile/geonet composite, and an upper 2 foot vegetative cover. The closure costs were based on the following unit costs for these layers:

<u>Unit Costs (\$/square foot)</u>	
foundation soil	0.252
HDPE liner	0.434
textile/net composite	0.462
vegetative cover	<u>0.210</u>
Total \$/SF	1.358

The total cover surface area is 4,365,487 square feet, for a total cover cost of \$5,928,300.

**Comment 7(a):**

Table 9-2, Page 14, Annual Post-Closure Costs: Line 1: Provide information on the number of times facility inspection will be conducted during the post-closure care period.

**Response:**

Facility inspections will be conducted at the frequencies specified on the post-closure inspection checklists, but in general will be conducted monthly for 30 years.

**Comment 7(b):**

Table 9-2, Page 14, Annual Post-Closure Costs: Line 6: How many ground water monitoring wells will be installed? How many ground water samples will be taken, and at what frequency?

**Response:**

See response to Comment 6(a).

**Comment 8:**

If any dirt or clay needs to be hauled in what will be the cost to haul? Are there royalty hauling costs?

**Response:**

Dirt or clay is expected to be available on-site. Closure costs were based on typical unit costs of \$5.77 per cubic yard for excavation, placement/spreading, and compaction per the EPA guidance manual, "Cost Estimates for Closure and Post-Closure Plans (Subparts G and H), Volume III - Unit Costs", Section 7.2. The guidance manual was published in 1986, so the final costs were adjusted for inflation to 1994 dollars in the application.