

## TECHLAW MEMORANDUM

To: J. Dreith  
From: G. Starkebaum  
Subject: Triassic Park Meeting  
Date: October 29, 1999

I met with Jorge Trancoso at the Montgomery Watson offices in Lakewood this afternoon to discuss the final revisions in the Triassic Park permit application. Pat Corser is in Bulgaria working on a project there.

Mr. Trancoso showed me most of the revised drawings, application text and engineering report. He indicated that they contain all of the new or revised information as specified in the July, 1999 Response to Comments document. The documents are not quite final- they are still being proof-read and corrected. The Closure Plan and drawings are still being edited by Trey Greenwood, so were not available to review.

The Closure Plan for the Phase 1 area- apparently still the maximum limit of the landfill to be permitted, initially- has been revised to provide for completely refilling the 100-foot deep hole next to the Phase 1 wastes, i.e., with previously excavated soil. This modification is a definite improvement over the previous plan. Of course, Gandy-Marley do not really intend to stop operating at the end of Phase 1, but the closure will be appropriate if that does occur.

We discussed the questionable permeability of the on-site clay proposed for use in the impoundment liners. There has been no further sampling or testing of the clay. MW are confident that the test fill and large-diameter permeability testing will show that the clay is acceptable.

All waste tanks and impoundments have been provided with large concrete aprons where trucks will be parked during waste transfers. The aprons will drain into the tank secondary containment areas... This is an improvement insofar as containment of possible spills from hoses or valves is concerned. (Mr. Corser and I discussed this potential problem at our last meeting.) However, there could be a problem due to the additional precipitation "run-on" entering containment areas.

In addition, Mr. Trancoso was not sure about the truck wash building. Although we agreed that there is no problem treating it as an un-permitted hazardous waste generation and accumulation area (as indicated by NMED), he did not know if the transfer point at the truck wash has yet been provided with a similar apron. I pointed out that the wastewater and sludge that will be generated and/or collected there must be managed as hazardous waste, and that any releases of hazardous waste constituents to the soil as a result of leaking transfer hoses, etc., will be just as big a problem there as at the permitted tanks.

We discussed a few other comments and responses, and exchanged business cards. Mr. Trancoso

will call if other questions come up during final editing.

August 2, 1999

Mr. James P. Bearzi  
State of New Mexico Environment Department  
Hazardous and Radioactive Materials Bureau  
P.O. Box 26110  
2044 Galisteo  
Santa Fe, NM 87502

Reference: Work Assignment Y513; State of New Mexico Environment Department, Santa Fe, NM; General Permit Support Contract; Triassic Park Engineering Design Review; Review of Facility's July 1999 Responses (Section D); Draft Deliverable

Dear Mr. Bearzi:

We have reviewed the engineering design portions of the July 1999 Response to Request for Supplemental Information Triassic Park Permit Application, assigned to TechLaw by the HRMB. The Response was checked for changes since the May 1999 Draft Response document, which was reviewed in the TechLaw deliverable dated June 23, 1999.

The attached deliverable addresses seven responses, which were the only items identified as not adequate (or "no response" in the cases of the two closure comments) in the June 23, 1999 TechLaw deliverable. The new or additional responses to these comments were the only changes identified in the July 1999 responses to the RSI: Engineering Design Issues.

If the application is revised in accordance with the commitments made in these responses, these sections of the application should be complete and technically adequate, except the Closure Plan, as noted in comment I-1a.

Mr. James P. Bearzi  
August 2, 1999  
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Enclosed is a hard copy and a file of the deliverable on a 3.5-inch diskette in WordPerfect 6.1. In addition, the file was e-mailed to Ms. Stephanie Kruse in your office.

Please call me or Mr. Greg Starkebaum at (303) 763-7188, you have any further questions.

Sincerely,

June K. Dreith  
Project Manager

enclosure

cc. S. Kruse  
C. Amindye  
R. Dinwiddie  
W. Jordan  
G. Starkebaum  
D. Romero (file)

**TRIASSIC PARK HAZARDOUS WASTE LANDFILL  
ENGINEERED DESIGN REVIEW SUBMITTAL**

**Submitted by:**

**TechLaw, Inc.  
300 Union Boulevard, Suite 600  
Lakewood, CO 80228**

**Submitted to:**

**Mr. James P. Bearzi  
State of New Mexico  
Environment Department  
Hazardous and Radioactive Material Bureau  
P.O. Box 26110  
2044 Galistes  
Santa Fe, NM 87502**

**In response to:**

**Work Assignment No. Y513**

**August 2, 1999**

**REVIEW OF JULY 1999 RESPONSES TO  
REQUEST FOR SUPPLEMENTARY INFORMATION  
TRIASSIC PARK WASTE DISPOSAL FACILITY  
TATUM, NEW MEXICO**

The July 1999 Montgomery Watson Final Responses were reviewed to evaluate several revised responses which were determined to be not adequate in the May 1999 Draft Responses.

**D-1a(3)(c) Containment System Capacity and Control of Run-on: 270.15(a)(3) and (4), 264.175(b)(3) and (4)**

The response is adequate. A commitment is provided to remove all liquids from any rolloff container, if any are found during inspection at the entrance gate, before the rolloff is placed in the "incoming" section of the rolloff container storage area.

**D-1a(3)(e) Removal of Liquids from Containment System: 270.15(a)(5), 264.175(b)(5)**

The response is adequate. A commitment is provided to revise application to demonstrate compliance with 264.175(b)(5).

**D-1b(4) Container Storage Area Drainage: 270.15(b)(2), 264.175(c)**

The response is adequate. A commitment is provided to modify the design drawing to indicate the restricted area for placement of rolloff containers.

**D-6c(3) Loads on Liner System: 270.21(b)(1), 264.301(a)(1)(I)**

The response is adequate. A commitment is provided to modify the "permit text" to indicate that protective soil cover ("operations layer") will be placed over the entire liner system during construction (not incrementally during operation).

**D-6g(2)(d) Leachate Collection and Leak Detection Systems: 270.21(b)(1), 264.301(a) and (c)**

The response is adequate. Although some differences of opinion exist regarding the level of detail in the design necessary to demonstrate compliance with the regulations, the responses to comments D and D-6g(3) suggest that additional design and construction information will be provided in the revised application.

**I-1a Closure Performance Standard: 270.14(b)(13), 264.111**

No response.

**I-1e(2)      Disposal or Decontamination of Equipment, Structures and Soils:  
264.112(b)(4), 264.114**

The response is adequate. A commitment is provided to revise the closure plan to include the type of commitment specified in 264.112(b)(4).

## TECHLAW MEMORANDUM

To: J. Dreith, Triassic Park file

From: G. Starkebaum

Subject: Fourth meeting with TP Consultant

Date: May 5, 1999

I met with Mr. Corser yesterday to try to finalize resolution of the NOD comments that we discussed in previous meetings (April 15, 19 and 20). Mr. Corser has still not completed his writeup of draft comment resolutions, but has managed to get through the majority of them. He will finish the writeup by Friday (5/7) if possible, then e-mail the file to me to review. I reminded him that the document will become part of the administrative record for the permit, and that it will eventually be available to the public. (It is currently a very rough draft.)

We discussed the (previously missing) Upper Dockum clay permeability data from the last (1997) round of site investigation and clay characterization (Shelby tube samples), and the methods to be used to develop final construction specifications (via test fill construction, taking "Benson-type" large area compacted clay samples [about 12x12 inches] for permeability testing). The last (3) permeability test results were all slightly above the maximum of  $10^{-7}$  cm/sec, which may be why they were "inadvertently" left out of the application. I explained again (this was the fourth or fifth iteration of this discussion) that the lab tests probably underestimate the actual large-scale permeability of the material, so the test fill results (using larger-area samples) may quite possibly show that the clay is not acceptable for constructing the evaporation pond liner system. Bentonite amendment or some other specially selected material may be necessary. (Suitable clay may be present in certain limited strata at the site- but it has not been identified yet.) Mr. Corser is confident that with greater compactive effort and increased water content, the permeabilities can be reduced to below the maximum limit.

We discussed the proposed CQA Plan again, particularly the centralization of responsibility (and potential liability) in the combined Design Engineer (Corser), CQA Engineer (someone else from TerraMatrix-Montgomery Watson), AND the CQC staff AND the QC laboratory (for earthwork). As proposed, all of these people may be from one firm. Corser insisted that the CQA/CQC contract has not been prepared or signed yet, so it may end up that a different engineering firm will do the CQA/CQC, but this appears to me to be unlikely. I again pointed out that this approach is not in agreement with EPA guidance, and Mr. Corser again insisted that the guidance seems to suggest that it may be possible to do it this way. To resolve the issue, I focused on the strongly recommended separation of design and CQA responsibilities, very explicit in the "Waste Containment Facilities" CQA/CQC guidance favored by Mr. Corser (page 25). He agreed to provide for very clear separation of the design and CQA functions in his revised CQA Plan, giving the two positions equal authority and having them report to the Owner separately. (The NMED is to be included at the top of the construction organization chart, as well.)

## MEMORANDUM

To: J. Dreith, Triassic Park file

From: G. Starkebaum

Subject: Meetings with TP Consultant

Date: April 27, 1999

I met with Pat Corser again on Monday and Tuesday, April 19 and 20, to attempt to resolve the remaining technical issues in the NOD comments on the 1998 application. We met at the TechLaw office on Monday and at the Montgomery Watson office at 165 S. Union in Lakewood on Tuesday.

I will only summarize the discussions, since Mr. Corser is planning to provide detailed proposed resolutions for each comment. (The detailed draft comment resolution matrix was intended to be completed by Friday the 23<sup>rd</sup>, but has not been provided to me yet.)

We were able to come to agreements on most of the comments. Either Mr. Corser agreed that additional information or design details (and an Operations Plan) should or will be provided, or I agreed (in a few cases) that the requested information (or part of it) was actually present in the 11/98 application. For example (comment D-4e), the permeability tests performed on "additional" Upper Dockum soil samples apparently "should have" been included in the application, and Mr. Corser agreed to provide these (and the permeability data from original application).

We did not come to agreement on how to resolve the main CQA comments (D-4g(3) and D-6g(3); regarding overall CQA organization and definitions), or the run-on and run-off system comments (D-6j):

We agreed to address the CQA questions in a later telephone conference. (I have since obtained the CQA plan and other data from the current permit for the Highway 36 (Safety-Kleen) disposal facility in Colorado, since Mr. Corser said that he used that as the model for the proposed Triassic Park application. It appears to support the original TechLaw criticism of the unusual CQA organization proposed for TP.)

After a brief discussion Mr. Corser referred the runoff control comments to another member of his staff for response. I explained that the large number of drainage comments [3 pages] resulted because we could not determine (from the existing plans and calculations) exactly what upstream areas contribute runoff to the ditches which transport flow around, through or past the hazardous waste units (impoundment, landfill and container storage areas), and whether the ditches are in fact designed to handle at least the 25-year storm runoff. If the existing plans and calculations can be adequately clarified,

there may be little or no need for changes in the design.

The question of how the Truck Wash should be handled was discussed in some detail. (The unit was mentioned at the 4/14 meeting at the NMED office, and Mr. Gandy agreed that it would be addressed as a permitted unit, but the specific unit(s) to be permitted was (were) not defined.) Mr. Corser and I agreed that the final decision on how the unit should be defined and described in the application will be left to NMED. We considered the possibility of defining a surface impoundment or sump unit, or one or two storage tanks with extensive appurtenances (all of which would be required to have secondary containment). We seemed to be in agreement that the most straightforward way to define the truck wash for permitting is to consider the wash water tank as the only actual permitted unit, with the concrete sump, clarifier, pumps and piping as ancillary equipment. This would include the entire building, which is proposed to be underlain by a geomembrane for secondary containment. The clarifier has not been designed yet, but Mr. Corser indicated that it is not expected to be a double-shell tank like the wash water and other hazardous waste storage tanks. It may be a simple two- or three-cell reinforced concrete box, sitting directly on the floor.

One item of concern not addressed in previous comments or meetings is the need for secondary containment under the wash water, leachate and (other) liquid hazardous waste tank transfer pipe connections. This concern arose initially because the truck wash water pipe connection (to the hose from a tank truck) is not shown within the secondary containment that extends under the rest of the truck wash. During this discussion, Mr. Corser noted that the TP design team has apparently decided that none of the storage tanks and stabilization bins will be interconnected by hard-piping, i.e., all intra-site transfers of liquid wastes will be done by tank truck. We therefore spent some time discussing the need for secondary containment at all transfer points. I am not sure if Mr. Corser decided to go ahead and include such containment, but I strongly recommended to him that it should be, to demonstrate compliance with 40 CFR 264.193(b).

The closure design for Phase IA was discussed in some detail. Since only Phase IA will be included in the permit, I asked how the (new) liner system and cover are proposed to be designed. Mr. Corser explained that he intends to propose no new liner sections, only placement of a final cover on the exposed (interim soil-covered) waste fill surface. This would result in a strangely shaped final fill, with a long, steep slope (about 250 feet, at 25%) down to the bottom of the 80- to 90-foot deep pit. I objected to this approach, pointing out the probable erosion problems and occasional ponding of large volumes of water which will result if the hole is not filled in. Mr. Corser pointed out the high cost of backfilling the pit, and says that he can not justify that cost, since the potential problems can be dealt with in other ways (e.g., two or three benches on the steep slope(s) to limit erosion). He is confident that the high evaporation rate in the area will ensure that any water that collects at the bottom of the pit will be rapidly removed without the need for any pumping. I think this is questionable, since the pond at the bottom of the pit is only about 1.5 acres in size- perhaps expandable after closure to 2 or 3 acres; but the runoff area- the entire area to be excavated for Phase IA- is more than 30 acres. This will clearly be an issue of concern in future negotiations.

## MEMORANDUM

To: J. Dreith, Triassic Park File

From: G. Starkebaum

Subject: Meeting with TP Consultant

Date: April 15, 1999

I met with Pat Corser of Montgomery Watson from approximately 9:00 to 12:00 this morning to discuss resolution of the TechLaw comments on the November, 1998 Part B Permit Application for the proposed Triassic Park facility. We did not address the comments prepared by NMED.

Prior to beginning the discussion, I provided to Mr. Corser a copy of the October 5, 1984 EPA HQ Memorandum concerning the use of Compliance Schedules in a permit (RCRA Permit Policy Compendium document number 9524.1984(01)). (Copies of this document were previously provided to and discussed with N. Persampieri and S. Pullen.) Mr. Corser stated that he was not familiar with this basic policy statement, but will take it back to his office and review it in preparation for further discussions (next Monday). I also briefly repeated my summary of the basis for many of the landfill design review comments, quoting 270.21(b). Mr. Corser insisted that his "Proposed Design Process for Permitting and Construction Documents" (handed out at yesterday's meeting with NMED) would not involve a "Compliance Schedule." I explained that my understanding of the proposal was that a permit condition(s) would require submittal of final "Bidding and Construction" plans which would provide the details identified as missing in many of the current design review comments, prior to construction, and that this would therefore be in appearance and function a Compliance Schedule. The proposed approach seems to me to violate both the regulation and the 1984 policy statement.

Mr. Corser then explained that none of the proposed submittals (drawings and specifications "For Construction") would change the waste management unit designs in the existing application, nor would they be necessary to demonstrate compliance with 270.14, 270.21, etc. He will draft additional language to be included in Volume 1 of the application to explain how this is to be accomplished, including a proposed "Class 1 modification" to make these final drawings and specs part of the permit. He stated that this procedure has been adopted by the State of Colorado in dealing with new landfill designs at the Highway 36 (Safety-Kleen) facility, which he claims are much less detailed than the plans in the 11/99 application. He has been in charge of revised landfill designs included in the renewed permit for that facility, for about the last 3 years. (The original permit for that facility was issued in 1986.) I will contact the Colorado permit coordinator (Tanell Roberts) to see how this procedure is viewed. I explained my opinion that if the "final design" details are provided in a revised application (as required by the regulations) before draft permit issuance, and if the "for construction" drawings do not modify those designs, there would not appear to be a need for a permit modification (those plans could be considered

simply as required submittals, in the same category as the "as-built" drawings to be submitted after construction is complete).

D. Process Information: Mr. Corser agreed (after much discussion) to include a brief expanded explanation of the meaning of the "Not For Construction" notes on most of the current drawings, in the text of Volume 1, to supplement Note 3 on page 2 of the drawings attached to the Engineering Report.

Mr. Corser questioned the need to produce a Final Operations Plan for the facility (as stated in section 2.5.3.2 of the application, and requested in this and other comments to be provided- prior to permit issuance), because each section of the engineering report discusses planned operations. I explained that the existing discussions are not adequate because they provide little or no detail on how the units will be operated and maintained (as discussed at length in the 4/14 meeting). I quoted the 40 CFR 270 regulations again (270.14(b), 270.15(b)(2) and 270.21(b), etc.) to emphasize the need for additional information explaining how the facility will be operated. Mr. Corser explained that the level of detail was intentionally limited because they do not want to "lock-in" the future operating procedures, that it is difficult to predict exactly how containers and tanks will be operated, wastes and treatment processes will change, etc. He wishes to preserve as much flexibility in future operating procedures as possible, and to avoid or minimize the need for future permit modifications (most of which would be Class 2 or 3). I agreed that this could be a hindrance to future operations, but reiterated the explicit and specific requirements in the above (and other) regulations to provide operating procedures/ plans/ practices for each permitted unit, in the application, and strongly recommended that more rather than less detail is the better solution to this potential problem. I suggested including (where appropriate) a range of possible operating procedures, to provide both the required detail and flexibility to deal with different wastes, weather conditions, types of containers, etc. I am not sure how Mr. Corser will respond to this suggestion.

D-1. Containers: We agreed that the stabilized waste rolloff storage area is to be included with the incoming rolloff area as one permitted unit. Mr. Corser proposed that a geomembrane liner is not necessary under the stabilized waste storage area because there will always be a plastic liner in each rolloff which will be the "primary container," and the steel rolloff itself will therefore provide "secondary containment," and no further containment should be necessary. He stated that this reasoning was approved for a facility in California. After considerable discussion of the definition of "container" in 260.10, I suggested that a more appropriate approach to avoiding the requirement for secondary containment would be to provide (in the Final Operations Plan) for documenting the absence of free liquids in wastes to be placed in the stabilized waste area. This is explicitly allowed in 270.15(b) and 264.175(c).

D-1a(3): Trench stability and the adequacy of the foundation for the drum storage unit will be addressed in a revised discussion and new calculations, in the application. Select Subbase material is included in the specifications (section 02229)- the third paragraph in this comment is in error. The application will be revised to address storage of incompatible wastes (separate containment sump areas in the drum storage unit; no tank trucks (liquids) to be stored in the incoming rolloff area. The inconsistency between the sump pipe dimension in Appendix E-32

and Drawing 43 will be explained. The last paragraph in this comment section is in error- Drawing 41 is a scale drawing and includes a scale bar (no response necessary).

D-1a(3)(a): Structural adequacy of the lined rolloff storage area will be addressed in the application (comparing loading stresses due to wastes and truck traffic to foundation and road base material bearing capacity, and liner strength). The third bullet of the comment is in error- the surface (road base) material is not intended to be impervious but is relatively inert material (sand and gravel) so compatibility with wastes is not of major concern. The underlying geomembrane's compatibility with wastes will be addressed in detail in the revised application (see landfill/impoundment comments). Additional explanation of the operation and maintenance plans for the rolloff unit will be provided in the revised application (e.g., regrading of rutting, other repairs, inspection and removal of liquids from sump, etc.). The third and fourth full paragraphs of this comment section are in error; the road base surface is not required to provide a working surface equivalent to concrete, although additional info on structural adequacy is necessary.

D-1a(3)(c): Minor calculations will be adequate to demonstrate that the incoming rolloff area has the required containment (10% of waste plus 25 year precipitation).

D-1a(3)(e): Operational details (sump monitoring and liquid removal) will be provided.

D-1b: Stabilized waste area will be included.

D-1b(1): Comment is partly in error- section 2.2.2 of the application does mention that stabilized wastes will be tested for free liquids. This will be expanded as part of the new operations plan.

D-1b(2): Mr. Corser is unwilling to specify a certain maximum number of containers or a comprehensive list of types, because there are many possible different sizes and types, and he can't predict which might be present in the future. I again suggested simply explaining this, listing the common types, with the maximum (Part A) waste volume as the only actual limit, and with references as appropriate to container marking and inspections. Another series of items which should be in the Final Operation Plan.

D-1b(4): Drainage and liquid removal- More discussion of information which is explicitly required by regulation to be provided in the application, but which Mr. Corser thinks is "obvious" or would be too restrictive if written down, or which will be specified in a Standard Operating Procedure to be written sometime after the final permit is issued. But some explanation will be provided for how liquid will be removed from the sump and where it will be taken to (evap pond or stabilization basin or tank).

D-2. Tanks: The comment should not have requested "construction drawings." Additional verbiage will be included in the application to explain Not For Construction notes, shop drawing and as-built drawing procedure. The Truck Wash will be included in the permit.

NOTE: We briefly discussed the additional info that will be needed to include the sump

and (contaminated) wash water tank and the clarifier as permitted unit(s). The three structures appear to be separate "tanks" (EPA has issued guidance on treating sumps which are not strictly secondary containment as tanks). We agreed that the overall structure and sump should provide more than adequate containment for the wash water tank and clarifier. Mr. Corser has not designed the clarifier yet- it may be steel or concrete, and must be strong enough to withstand frequent cleaning to remove mud. (With a vac truck or back hoe?) I told him that I need to consult further w/NMED about the preferred approach to permitting. Should the truck wash be treated as 3 tanks? Can the clarifier be excused from permitting if it is cleaned out (dry) at the end of every working day?

D-2a: The drawing (33) was correct- a north arrow will be added, section 6.1.2 will be corrected.



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From: GREG STAKEBAUM

Date: 11/29/99

Subject: TRIASSIC PARK

Number of pages including this page: 13

If any problems receiving this transmission

Contact: \_\_\_\_\_ at (303) 763-7188

Comments: \_\_\_\_\_

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