MEMORANDUM

MONTGOMERY WATSON

Post-it® Fax Note 7671		Date 5-25	# of pages ▶ 16
To Stephanie Kruse		From Diane Dwire	
Co./Dept. NMED		Co. MW	
Phone #		Phone # 970-879-6260	
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Hard copy to follow via Mail DD

Date: 5/25/00

To: Stephanie Kruse

From: Diane Dwire

Subject: Response to NMED/Techlaw Comments on Triassic Park Engineering Report

Stephanie,

Enclosed, please find our responses to the comments on the engineering design portions of the Triassic Park Part B Permit Application provided by NMED in a letter dated May 12, 2000. We have summarized our responses to each comment in table format. Pages of the permit application that have been updated based on these review comments are provided with redlined edits. We expect that these changes adequately satisfy NMED's requirements and that the engineering design portions of the permit application are now complete. Please contact me if you have any questions or comments.

Sincerely,

cc: Pat Corser - MW
Dale Gandy - GMI
Ken Schultz - GMI

- ◊ Assess the source and amount of liquid from each source collected in the sump.
- ◊ Conduct a hazardous constituent analysis of the liquid collected in the sump and use the results to help identify the source(s) of the liquid and possible location of any leaks as well as the potential hazard associated with the liquid and its mobility.
- ◊ Assess the seriousness of any leaks in terms of potential for escaping into the environment.

~~- notify NMED within seven days that the ALR has been exceeded;~~

~~- determine whether the leak can be attributed to some operational disturbance such as an equipment or power failure;~~

~~- verify that the sump pump is working as designed;~~

~~- increase the pump rate on the leachate collection system pump;~~

~~- for the landfill only: remove all standing water, if any, from the surface of the landfill;~~

~~- assess operations to determine if waste receipt should be temporary curtailed or waste should be removed for liner inspection, repair or controls;~~

~~- determine if the flow rate varies with precipitation;~~

~~- for the landfill only: repair any damage to the exposed portion of the liner;~~

~~- document any damage and repairs in the Facility operating record;~~

~~- for the landfill only: verify that the waste surface is sloping away from the landfill side slopes;~~

~~- for the landfill only: if necessary, regrade waste or place soil to achieve a minimum 1 % slope away from the landfill side;~~

~~- investigate alternative sources of liquids;~~

~~- have a third party assessment conducted by an independent New Mexico registered professional engineer;~~

~~- review the analysis of the leachate collected from the leachate collection system, attempting to match fingerprint, generator analyses and waste placement records to help determine the source of the leaks;~~

~~- for the landfill only: inspect all exposed liner surfaces for damage. This will be accomplished by walking these areas and observing the liner surface for evidence of damage and water inflow. Additionally, the protective soil cover on the side slopes will~~

- verify that the sump pump is working as designed;
- increase the pump rate on the leachate collection system pump;
- for the landfill only: remove all standing water, if any, from the surface of the landfill;
- assess operations to determine if waste receipt should be temporarily curtailed or waste should be removed for inspection, repair, or controls;
- determine if the flow rate varies with precipitation;
- for the landfill only: repair any damage to the exposed portion of the liner in a manner which conforms to original design specifications and by qualified technicians in accordance with the CQA Plan (see Volume IV);
- document any damage and repairs in the Facility operating record; and,
- investigate alternative sources of liquids.

Leak Detected Above Action Leakage Rate

If a leak is detected above the ALR, the following actions will be implemented in response:

- Notify the NMED in writing of the exceedance within 7 days of the determination;
- Submit a preliminary written assessment to NMED within 14 days of the exceedance determination, as to the amounts of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned.
- Determine, to the extent practicable, the location, size, and cause of any leak;
- Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;
- Determine any other short-term and long-term actions to be taken to mitigate or stop any leaks;
- Within 30 days after the notification that the action leakage rate has been exceeded, submit to NMED the results of the determinations described above, the results of the actions taken, a description of the actions planned;
- Monthly, as long as the action leakage rate continues to be exceeded, submit a report to NMED summarizing the results of any remedial actions taken and planned; and
- In making the determinations described in this section, either conduct the following investigation or document why such an investigation is not needed:

Montgomery Watson * P.O. Box 774018, Steamboat Springs, Colorado 80477 * (970) 879-6260

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Containers, except those that are very small such as ampules, will be 90 percent full when placed in the landfill. Containers less than 90 percent full will be crushed, shredded, or otherwise reduced in volume to the maximum extent possible prior to placement in the landfill.

2.5.3.8 Action Leakage Rate

The ALR proposed for the landfill is 900 gallons per acre per day (gpad). This proposed ALR was selected based on a discussion in the preamble to the January 29, 1992, final rule for Liners and Leak Detection Systems for Hazardous Waste Land Disposal Units (57 FR 3462). A discussion of the proposed ALR and supporting calculations are presented in the engineering report in Volumes III and VI.

The average daily flow rate in the LDRS sump will be calculated in accordance with the Action Leakage Rate and ~~r~~Response ~~a~~Action ~~p~~Plan~~, discussed in the following section.~~which is also presented in the engineering report.

2.5.3.9 Response Action Plan

The elements of the response action plan for the landfill and evaporation pond include (1) reducing the head on the liner to the maximum extent possible to aid in the prevention of leaks, (2) determine the failure mechanism of any leaks, and establish procedures to minimize the potential for reoccurrence of this failure mechanism, and (3) responding immediately and appropriately to a leak exceeding the ALR. Each of these elements is described below. The response action plan will apply to both the landfill and the evaporation pond. Activities that apply to the landfill only are specified

Reducing the Head on the Landfill Liner

The head on the liner will be reduced by:

- monitoring the leachate collection system sumps weekly and after all significant precipitation events; and,
- removing pumpable liquids from the sump when monitoring indicates the presence of liquid. A reasonable effort will be made to remove as much liquid as possible. As previously described, it is standard landfill design practice to locate a low point or sump box in the base of the landfill sump. The pump for the sump is located at this low point, and it is from here that pumpable liquids are removed to the maximum extent possible.
- Vacuum trucks to remove as much of this water as possible before it can seep into the waste.
- Utilizing if during a heavy rain event, water ponds on the surface of the daily cover.

Leak Detected Below the Action Leakage Rate

Flow rates less than the ALR are expected under normal operation conditions. However, the following actions will be taken in response to a leak below the ALR:

- determine whether the leak can be attributed to some operational disturbance such as an equipment or power failure;

transducers will be extracted from the sump and placed in the solution of known depth to determine if the transducer is functioning properly.

~~N~~M. If either the pumping system or transducer fail to function as designed, then the failing piece of equipment will either be replaced or fixed.

~~O~~N. Determination if the Action Leakage Rate (ALR) has been exceeded in the landfill will be conducted in accordance with 40 CFR 264.302(b). This is discussed in further detail in the Action Leakage Rate and Response Action Plan report included in the engineering report.

~~P~~O. The average daily flow in the LDRS sump will be calculated ~~The ALR will be calculated~~ as follows:

- Determine volume from cummulative flows ~~at start and end of~~ for the week
- Determine landfill area based area of landfill in service (horizontal protected area)
- Calculate ~~ALR~~ average daily flow by calculating total gallons for the week/seven/area of landfill in service.

The Response Action Plan will be implemented if leaks are detected.

~~Q~~P. Trucks will be inspected to prevent tracking of waste out of the landfill on vehicles tires or bodies.

~~R~~Q. Wind speed will be monitored using a hand-held wind meter to determine if wind speed exceeds 35 mph. Waste placement operations will be ~~hault~~ed when wind speed exceeds 35 mph.

3.5 EVAPORATION POND OPERATION

3.5.1 Records

A. Results of waste analyses will be maintained in an operating record kept in the administration building.

B. The Facility will maintain complete records of the wastes disposed of in the evaporation pond.

C. Inspection records will be maintained in the inspection log for the evaporation pond. This log will be kept in the administration building.

D. Preventative maintenance information will be documented and kept in an operating record in the administration building.

E. Maintenance performed on the structures and equipment part of the evaporation pond will be documented in the operating record kept in the administration building.

F. The average daily flow rate to the sump system will be calculated and recorded weekly during the active life of the evaporation pond to ensure that ALR for the evaporation pond (1,000 gpd) is not exceeded.

3.5.2 Procedures for Ignitable/Reactive Wastes

A. Wastes that are ignitable, reactive, and/or incompatible will not be placed in the evaporation pond at the same time.

3.4.5 Inspection and Monitoring

A. Inspections will be performed according to the schedule matrix indicated in Table 5.1.

B. The schedule matrix will be expanded, as necessary, to reflect new equipment or changes to existing equipment inspection frequencies.

C. The landfill and associated equipment will be inspected weekly and after storms.

D. The LCRS, LDRS and vadose sumps will be checked daily for the presence of liquid. Pressured transducers will be used to measure the presence of liquids in the sump. The elevation of the transducer will be determined during installation. The transducer elevation combined with the fluid pressure on the transducer will allow calculation of the fluid elevation at any time.

~~E. The average daily flow in the LDRS sump will be calculated in accordance with the Response Action Plan (Section 7.5.3.9). The Response Action Plan will be implemented if leaks are detected.~~

~~F.~~E. The leachate collection tank will be inspected according to the procedures indicated in Section 5.2.5.

~~G.~~F. Ancillary equipment will be inspected according to the manufacturer recommended programs.

~~H.~~G. Surveys of the active landfill surface area and the riser pipes with an OVM or comparable device will be performed quarterly to detect the presence of organic compounds.

~~I.~~H. The landfill will be inspected by properly-trained personnel for items such as spills, leaks, odors, wind-blown particulate matter, deterioration of the landfill itself, malfunction or improper operation of the run-on/run-off control systems.

~~J.~~I. Inspections will be documented in inspection checklists that will be kept for at least 3 years.

~~K.~~J. If deterioration or any other abnormalities are noted, the inspector's supervisor will be notified and will determine the appropriate course of action for correction. If the supervisor is not available, the EC will be summoned to make the determination.

~~L.~~K. The stormwater and contaminated water basin will be inspected to ensure that liquid has not accumulated. The collection systems will be emptied as quickly as possible to ensure that the design capacity of the system is not exceeded. Vacuum trucks will be used to empty the basins. Contaminated water that meets applicable LDR requirements will be placed in the evaporation pond. Contaminated water that does not meet applicable LDR requirements will be treated before landfilling.

~~M.~~L. The sump pumping and instrumentation system will be checked annually to ensure that it is functioning properly. The pumping system will be turned on to check if the system works. If the system is not functioning properly the systems will be repaired in accordance with the manufacturers recommendations or will be replaced. If there is adequate leachate in the sump, visual observation of flow into the storage tanks will be used to determine if the system is functioning properly. If there is insufficient leachate, then audible indications that the pump has engaged will be used to determine if the pump is functioning. The pressure

4.0 MAINTENANCE

4.1 LANDFILL

A. The landfill structure will be maintained through a routine preventative maintenance program which will be fully defined in the final operations plan.

B. Preventative maintenance will involve regular visual inspections of the landfill liner where feasible and review of leachate collection and analysis results.

C. Defects detected in the liner systems will be repaired according to the procedures indicated in the Construction Specifications: Sections 02710, 02775 and 02780. Soil surfaces that need to be repaired will be removed and placed according to the Construction Specifications: Sections 02226 and 02119.

D. The LCRS and LDRS ~~E~~equipment, such as pumps, generators, electrical lighting, and warning systems, will be subject to manufacturer's or standard preventative ~~recommended~~ maintenance procedures~~grams~~.

E. Preventive maintenance information will be documented and any deviation from normal conditions will be closely tracked and corrected as necessary.

F. Landfill run-on/runoff control systems will be maintained/repaired after regular inspections (as described in Table 5.1) determine that the design criteria are not met. Once a deficiency in the run-on/runoff control system is noted, it will be repaired in a timely manner to a state such that it meets or exceeds design criteria.

4.2 EVAPORATION POND

A. If a section of the evaporation pond must be removed from service, flow of waste to that section will be stopped by draining the pond to below the level of the leak, surface leakage will be contained, and all necessary steps will be taken to repair the liner system and prevent future failure.

B. Preventative maintenance will involve regular visual inspections of the evaporation pond liner where feasible and review of leachate collection analysis results.

C. Defects detected in the liner systems will be repaired according to the procedures indicated in the Construction Specifications:. Soil surfaces that need to be repaired will be removed and placed according to the Construction Specifications:

D. The LDRS ~~E~~equipment, such as pumps, generators, electrical lighting, and warning systems, will be subject to manufacturer's or standard preventative ~~recommended~~ procedures~~grams~~.

E. Landfill run-on/runoff control systems will be maintained/repaired after regular inspections (as described in Table 5.1) determine that the design criteria are not met. Once a deficiency in the run-on/runoff control system is noted, it will be repaired in a timely manner to a state such that it meets or exceeds design criteria.

4.3 LIQUID WASTE STORAGE

A. Off site and on site waste will be analyzed according to the Waste Analysis Plan to ensure that the waste acceptance criteria specified in the RCRA permit are met and to identify any safety precautions that must be taken to properly manage the waste. Hazardous waste which may be placed in the evaporation pond includes all wastes listed in Part A of the application (Volume I), provided that LDR treatment standards are met prior to placement of the wastes.

B. Approved off site waste and on site leachate tanker trucks will transport the waste to the tanker discharge pad at the evaporation pond.

C. Tanker trucks will be unloaded directly into the evaporation pond through a series of hoses, valves and pipes.

D. The pond is separated in two independent sections be a separator berm. In the event that a leak should occur in one section of the pond, liquids could be pumped into the other section until repairs are completed.

E. Two feet of freeboard will be maintained in the evaporation pond at all times.

F. Sludge will be removed by vacuum trucks and treated in the stabilization unit. Sludge will be removed on a routine basis to maintain the level of waste in the pond below the maximum operational level.

G. The vacuum trucks will park on the concrete pad during sludge removal. Sludge will be removed by means of pumps and flexible hosing.

H. Run-off in the pond will be pumped out within 24-hours of a storm event with vacuum trucks, which have a capacity ranging from 2,000 to 3,000 gallons. Contaminated water will be disposed of in compliance with appropriate regulations.

I. Site personnel will be present during all fluid discharge and transfer operations to ensure that pond overtopping does not occur in the event of equipment malfunction or other human error.

3.5.4 Operation of Leachate Detection and Vadose Zone Monitoring Systems

A. Pumps located in the LDRS pipe and vadose zone sump will be used to remove leachate accumulating in the leachate collection systems. When leachate accumulates it will be pumped to a tanker truck and either returned to the evaporation pond, stabilized in the onsite treatment unit, or stored in one of the liquid waste storage tanks. Any time liquids are detected at a specified level, the sump pump will be activated and the liquid will be removed. The pump activation level will be related to the pump selected.

B. All pumpable liquids in the sumps will be removed in a timely manner to maintain the head on the bottom liner below 12 inches above the floor liner. The depression in the sump will be used to provide sufficient head to activate the pumps.

C. The volume of liquids removed from the sumps will be recorded in cumulating flow meters. Total liquids pumped will be recorded after each pumping event.

3.5.5 Inspection and Monitoring

A. Inspections will be performed according to the schedule matrix indicated in Table 5.1.

E. Bulk and containerized wastes will not be placed in the landfill unless they meet the requirements in 40 CFR 264.314.

F. Containers less than 90% full will be crushed, shredded, or otherwise reduced in volume to the maximum extent possible prior to placement in the landfill.

G. Wind dispersal will be controlled with a daily cover consisting of soil spread on top of the waste with a minimum thickness of 0.5 feet.

H. Dust generation will be reduced by applying small amounts of water spray to moisten the soil surfaces. The water will be applied with a water truck equipped with a pump, piping and an array of nozzles that spray very small water droplets. The frequency of the water application will depend on the climate and traffic. Sufficient moisture will be applied to all soil surfaces on an as needed basis to prevent wind erosion. However, the application of water will be limited so that ponding in the landfill does not occur.

I. Waste placement operations will be halted when wind speed exceeds 35 mph.

3.4.4 Operation of Leachate Collection and Detection Systems

A. Pumpable liquid in the LCRS, LDRS and vadose sump will be removed in a timely manner to prevent the head on the respective liners from exceeding 12 inches above the floor liner system. The depression in the sump will be used to provide sufficient head to activate the pumps.

B. The leachate collected from the sumps will be temporarily stored in tanks.

C. Overfilling of the tanks will be controlled with high-level control switches which will automatically shut down the sump pumps. An alarm will be activated that will notify personnel that the system requires maintenance. Volume of leachate pumped will be monitored by means of cumulating flow meters. Total liquids pumped will be recorded daily.

D. The leachate collection tanks will be used as 90-day storage units and managed accordingly.

E. Once the leachate levels in the riser crest pad tanks exceed 50 percent of the holding capacity the liquids will be removed by tanker truck to the main liquid waste storage tanks.

F. A fluid level pressure transducer will be installed in the LCRS, LDRS, and vadose sump. The pressure transducer will be wired to a digital readout box located at the crest riser pad. The readout box will show the depth of leachate in the sump. The readout box will be checked during the routine inspections which are presented in Table 5.1. When the leachate level is 12 inches or greater then the pump will be activated to remove leachate from the sump. The pump will be turned off when the leachate inflow rate becomes too small for the pump to stay activated. Volumes of leachate will be recorded as previously stated in paragraph C of this section.

G. In the event of large rain storms both the side slope riser pipe pumps and the vertical riser pipe pumps will be used to minimize head. Liner systems facility staff will be available to address large rain storm events by utilizing vacuum trucks or portable pumps to remove excess leachate and contaminated runoff, if required. Vacuum trucks typically have a capacity range of 2,000 to 3,000 gallons. Portable pumps with a pumping rate in the range of 10 to 25 gpm may also be used, if needed.

B. The freeboard level will be ~~routinely~~ inspected daily to ensure that approved or acceptable freeboard levels are maintained and that overtopping does not occur. Liquid elevations will be checked by visual observation against the staff-gauges. The staff gauges will consist of a rod made of relatively inert material which will be labeled in feet and marked every tenth of a foot. In order to prevent overtopping, the maximum liquid level allowed to maintain the minimum freeboard level will be marked on the staff-gauge or noted on the inspection checklists. The bottom of the staff gauge will be fixed to a heavy base that will sit on the pond bottom. It is not anticipated that the staff gauge will require maintenance or repair, the pond level could be lowered or a boat could be used to access the staff gauge. The data will be recorded on standard forms and filed with the operating records.

C. Elevation rods, survey monuments, staff gauges, flow meters and fluid level transducers will be used to measure and record liquid handling volumes.

~~D. Liquid elevations will be checked periodically by visual observation against the staff gauges. The staff gauges will consist of a rod made of relatively inert material which will be labeled in feet and marked every tenth of a foot. The bottom of the staff gauge will be fixed to a heavy base that will sit on the pond bottom. It is not anticipated that the staff gauge will require maintenance or repair, the pond level could be lowered or a boat could be used to access the staff gauge. The data will be recorded on standard forms and filed with the operating records.~~

~~E.~~D. Flow meters will be used to record volumes of liquids discharged into the pond and removed from the sumps. Transducers located in the sumps will provide a liquid level reading in the sumps. The elevation of the transducers will be determined during installation. The transducer elevation combined with the fluid pressure above the transducer will allow calculation of the fluid elevation at any time.

~~F.~~E. Inspections will occur on a weekly basis and after storms to detect evidence of deterioration, malfunction, improper operation of overtopping control systems (portable pump) or sudden drops in liquid levels in the pond.

~~F~~E1.—The overtopping control system (portable pump) will be started during the course of routine inspection. If the pump does not function as designed, the pump will be replaced or fixed. Pump operation inspection will be completed by visual inspection.

~~F~~E2.—Sudden drops in liquid levels will be determined using a staff gauge system discussed in paragraph ~~D~~B in conjunction with criteria outlined in paragraph ~~G~~F of this section. The liquid level will be compared to the previous liquid level reading and adjusted for estimated evaporation loss and documented liquid addition and removal to determine whether an unexplained drop in the liquid level has occurred.

~~G.~~F. If liquid losses exceed daily evaporation losses and no other reasonable explanation is found, then that section of the pond will be shut down and authorities at the NMED will be notified immediately.

~~H.~~G. Weekly visual inspections will be conducted to verify the integrity of the liners and associated systems. Visible portions of the leachate collection pipes and pump will be visually inspected for deterioration.

~~I.~~H. The concrete pad for tanker discharge will be visually inspected weekly for accumulation of liquids.

7.0 RESPONSE ACTIONS

In accordance with 40 CFR 264.223 and 40 CFR 264.304, if the ALR is exceeded for the ~~landfill~~ LDRS sump in either the landfill or evaporation pond, the Triassic Park facility will:

- Notify the NMED in writing of the exceedance within 7 days of the determination;
- Submit a preliminary written assessment to NMED within 14 days of the exceedance determination, as to the amounts of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned.
- Determine, to the extent practicable, the location, size, and cause of any leak;
- Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;
- Determine any other short-term and long-term actions to be taken to mitigate or stop any leaks;
- Within 30 days after the notification that the action leakage rate has been exceeded, submit to NMED the results of the determinations described above, the results of the actions taken, a description of the actions planned;
- Monthly, as long as the action leakage rate continues to be exceeded, submit a report to NMED summarizing the results of any remedial actions taken and planned; and
- In making the determinations described in this section, either conduct the following investigation or document why such an investigation is not needed:
    - ◊ Assess the source and amount of liquid from each source collected in the sump.
    - ◊ Conduct a hazardous constituent analysis of the liquid collected in the sump and use the results to help identify the source(s) of the liquid and possible location of any leaks as well as the potential hazard associated with the liquid and its mobility.
    - ◊ Assess the seriousness of any leaks in terms of potential for escaping into the environment.
    - ◊ Closure of the pond per 40 CFR 264.223(b)(4).

distance of at least 10 feet unless separated by a berm, catch pan, or other physical barrier. Incompatible wastes will not be placed in the same container.

2.2.13 Aisle Space

Aisle spacing will be maintained to assure inspectability and accessibility for operational and emergency equipment to containers. The spacing will allow for the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment in the event of an emergency, as required by 40 CFR 264.35.

A minimum 2.5 foot aisle space will be maintained in the drum handling unit between rows of containers side by side. Containers will be stored in single rows only if they are against a wall or other barrier that prohibits inspection from all sides. Roll-off containers will be spaced 4 feet apart ~~end-to-end~~ side to side and 4 feet from the edge of the berm.

2.2.14 Record Keeping

The results of all container storage waste analyses, trial tests, waste compatibility analyses, and ignitable and reactive waste handling documentation pertaining to compliance will be maintained in the Facility operating record. Inspection records will be maintained in the inspection log for each unit.

2.3 STORAGE IN TANKS

The liquid waste receiving and storage unit is shown in Volume III, Drawing 40. It will house four aboveground tanks for the storage of regulated bulk liquid hazardous wastes prior to stabilization. The unit will not be covered by a roof or enclosed by walls.

Each tank will have a capacity of approximately 9,000 gallons. The tanks will be double-walled and constructed of high density polyethylene materials that are compatible with the wastes to be placed in the tanks. Compatibility of the tanks with different types of waste has been provided by the manufacturer and is indicated in Volume III, Appendix E-34. Facility procedures for waste acceptance and the associated criteria and waste acceptance plan will ensure that wastes incompatible with the tank material are not placed in the storage tanks. These compatibilities are assessed in the design specifications and engineering report (see Volume III). The tanks will be elevated above an imperviously coated reinforced concrete pad. All piping systems within the facility will comply with API Publication 1615 (November 1979) or ANSI Standard B31.2 and ANSI Standard B31.4. Waste will be transferred from the tanks to the stabilization unit by pumping into transfer tankers.

Each of the storage tanks will be clearly marked with a description of the contents and records will be kept documenting the quantity of waste received, and the date each period of accumulation begins. This information will be documented in the Facility operating record.

2.3.1 Containment and Detection of Releases

The outer tank of the double walled poly tank system will provide secondary containment of sufficient strength and thickness to prevent failure due to pressure gradients, physical contact with waste, climatic conditions, or the stress of daily operations. The tank system will be placed on a concrete base capable of supporting the system, providing resistance to pressure gradients below the system, and preventing failure due to settlement, compression, or uplift. The secondary tank is designed to contain 100 percent of the tank contents.

2.2.2 Roll-Off Storage Area

Roll-off containers will be stored on an open pad, as shown in Drawings 41 through 43 presented in Volume III. This unit will not be covered or enclosed by walls. The pad will be divided into two sections... One section will hold tarped, U.S. Department of Transportation (DOT) approved, lined, roll-off containers with non-stabilized waste awaiting treatment at the stabilization unit. The other section of the pad is intended as a staging area for roll-off containers containing stabilized waste awaiting Toxicity Characteristic Leaching Procedure (TCLP) test results and landfill-disposal approval.

Waste will be characterized and screened as part of the waste acceptance procedures. This procedure will prevent incompatible waste from being stored in the same roll-off containers that are delivered to the site. After the materials have been stabilized, material from a single stabilization batch will not be mixed with material from a different batch, therefore eliminating the potential for incompatible waste to be stored in the same roll-off bin. The individual steel roll-off bins will be stored in the HDPE-lined areas of the roll-off storage unit~~Individual bins will be~~ and physically separated from each other ~~in the storage area~~ by 4 feet side ~~by~~to side~~,~~ and 2.5 feet end to end. ~~and will be stored inside the covered steel roll-off bins and the HDPE bin covers.~~ In addition, containers will not be placed within the limits inundated by the 25 year, 24 hour storm or within 4 feet of the edge of the berm.

Landfill operational staff will visually observe trucks leaving the area for excessive accumulation of waste on the tires and/or truck body. If excessive accumulation is noted, the truck will be routed to the truck wash for cleaning.

This area is restricted to wastes that do not contain free liquids. Prior to exiting the stabilization unit, stabilized waste loads will be tested for free liquids using the paint filter test. Stabilized waste loads that do not pass the paint filter test will be reprocessed using a modified treatment mixture and re-tested before being allowed to exit the stabilization unit. Roll-off containers which hold stabilized wastes that pass the paint filter test will be covered before exiting the stabilization unit and will remain covered while they are staged in the roll-off storage area.

Roll-off containers will be inspected for free liquids prior to acceptance at the unit. Containers which are received for disposal, but are found to contain free liquids upon inspection will be managed in accordance with stabilization procedures described in Section 2.4. If the waste generator will not allow the Facility to prioritize handling of the load to eliminate free liquid, the load will not be admitted to the Facility. Otherwise, free liquids will be removed with a vacuum truck, characterized, and managed in accordance with stabilization procedures described in Section 2.4. The volume of free liquids in the roll-off containers is expected to be minimal. Following the removal of free liquids, the waste (in the roll-off container) will either be managed through the stabilization process or landfilled, whichever is appropriate. Section 2.2.12 describes the methods that will be used to separate incompatible wastes. The area will be equipped with fire extinguishers, a telephone, alarm systems, spill control, and first aid kits.

Waste in the roll-off containers that meet the requirements for free liquids (or lack thereof) will be placed in the landfill. Other wastes in roll-off containers that do not pass the appropriate acceptance testing (i.e. paint filler test) will be transferred to the stabilization area for treatment. Upon completion of the stabilization process, the waste will once again be tested to ensure that it meets the landfill criteria.

rolloff stormwater elevation-capacity calculation.xls

PROJECT NAME: Triassic Park/Waste Disposal Facility
ELEVATION-CAPACITY DATA
USE WITH AUTOCAD FILE: rolloff rainwater volume.dwg

Storage Volume Calculation for Truck Roll Off Unit

Objective: Determine the area of the truck roll-off area where roll-off units cannot be stored, due to water ponding based on the 25-yr, 24-hour storm event.

Analysis The volume of run off within the truck roll off area is assumed to be 100 percent of the 25-yr, 24-hour rainfall. The 25-yr, 24-hour rain is 4.3 inches. The area of the roll cell is 55,935 sf. This results in a storage volume of 20,043 cf.

The area that will be covered with ponded water as a result of this rainfall event is calculated below. The water volume stored on the surface is based on the difference between the total water volume (20,043 cf.) and the storage volume in the void space of the sump gravel, subbase and roadbase. We have assumed a void ratio of 0.3 for the materials placed between the subgrade and surface.

The storage volume between the subgrade and the surface has been calculated based on the design drawings 41 and 42. These drawings indicate the subgrade contours and the surface contours for the truck roll off area.

Storage Volume Based on Subgrade Contours

Elev. (ft)	Roll-Off Area (sq. ft)	Average Roll-Off Area (sq ft)	Roll-Off Slice Height (ft)	Roll-Off Slice Volume (cu. ft)	Roll-Off Cumulative Volume (cu. ft)
4127.400	17			0	0
4128.000	82	50	0.600	30	30
4130.000	607	345	2.000	689	719
4132.000	14,723	7,665	2.000	15,330	16,049
4133.000	24,703	19,713	1.000	19,713	35,762
4133.556	24,703	24,703	0.556	13,742	49,504
	(use same area as 4133 - conservative assumption)				

Storage Volume Based on Surface Contours

Elev. (ft)	Roll-Off Area (sq. ft)	Average Roll-Off Area (sq ft)	Roll-Off Slice Height (ft)	Roll-Off Slice Volume (cu. ft)	Roll-Off Cumulative Volume (cu. ft)
4129.400	13			0	0
4130.000	70	42	0.600	25	25
4132.000	572	321	2.000	642	667
4133.000	6,120	3,346	1.000	3,346	4,013
4133.556	6,120	6,120	0.556	3,405	7,417
	(use same area as 4133 - conservative assumption)				

Summary of Storage Volume

Volume between subgrade and surface contours	42,087
Assumed porosity of materials	0.3
Storage Volume in materials	12,626
Storage Volume on surface	7,417
Net Volume in cubic feet	20,043

D-4j(3)	O&M Plan Section 3.5.5, Paragraph D has been updated and moved to be included in paragraph B to address methods to prevent overtopping. Paragraph E.2 has been edited to expand on methods to identify a sudden drop in liquid level. See attached updated text sections.
D-6	
D-6d	Accepted
D-6d(4)(b)	Accepted
D-6e(1)(a)	Accepted
D-6e(1)(b)	Accepted
D-6f(1)	Accepted
D-6f(3)	Accepted
D-6f(4)	Details regarding the capacity of vacuum trucks and portable pumps that may be used to manage large volumes of precipitation in the LCRS have been included in Sections 3.4.4(G) and 3.5.3(H) of the O&M Plan. Vacuum truck capacity ranges from 2000 to 3000 gallons, and portable trash pumps have a pumping rate ranging from 10 to 25 gpm.
D-6g(1)(b)	Accepted
D-6g(2)	Accepted
D-6g(3)	Accepted
D-6g(4)	The wording of Sections 4.1(D) and 4.2(D) of the O&M Plan has been edited to specifically address LCRS and LDRS equipment.
D-6h	The discrepancies in the O&M Plan, the ALR and RAP report, and Sections 2.5.3.8 and 2.5.3.9 relating to the ALR and LDRS average daily flow have been resolved as follows: Section 3.4.5(E) of the O&M Plan has been removed. Section 3.4.5(O) has been edited to reference that the ALR and RAP report is located within the engineering report. Section 3.4.5(P) has been corrected to present the average daily flow calculation. Section 2.5.3.8 has been edited to reference the ALR and RAP report, rather than the following section. Section 2.5.3.9 regarding leaks exceeding the ALR has been modified to match Section 7.0 of the ALR and RAP report, which is strictly based on 264.223 and 264.304.
D-6h(2)	Accepted
D-6j	Accepted
D-6j(5)	Accepted
D-6k	A wind speed limitation was addressed in Section 3.4.5(R) of the O&M Plan. Monitoring of wind speed with a wind meter has been added to this section, and the wind speed limitation has also been added to Section 3.4.3 (Waste Placement).

COMMENT NUMBER	RESPONSE
D.	Accepted
D-1a(3)	We believe that our calculation adequately determines the available storage volume, including the available storage volume in the sump, subbase and roadbase materials. We believe that the review calculations did not account for the storage volume in the void space of these materials. The attached calculations should provide adequate justification for the storage volume that is shown in the drawing. The text in Section 2.2.2 has been clarified as attached. The roll-off spacing should be 4 feet side to side and 2.5 feet end to end. The text in Section 2.2.2, Section 2.2.13 (attached) and the O&M Plan are now consistent.
D-1a(3)(c)	Accepted
D-1a(3)(e)	Accepted
D-2	Accepted
D-2a	Accepted
D-2a(1)	Accepted
D-2a(2)	Accepted
D-2a(4)	Accepted
D-2c(1)	A tank certification statement has been provided by MW for NMED review. NMED has indicated that the tank certification must be made by an independent engineer that was not involved with the tank design. Mr. Corser designed the tank configuration but has not designed the tank containment system. Rather these have been specified based on standard tank design for double walled tanks used to contain hazardous waste. The manufacture has indicated the design standard that they are designed to meet. We believe that Mr. Corser's engineer certification meets the requirements of the regulations.
D-2d(1)	Accepted
D-4	Accepted
D-4e(2)	Accepted
D-4e(2)a	Accepted
D-4e(2)b	Accepted
D-4f(1)	Accepted
D-4g	
D-4g(3)	Accepted. Lower Dockum permeability data is presented on core samples but not recompacted samples. Recompacted permeability tests were only conducted on Upper Dockum samples as this will be the material that is used for the recompacted clay liner.
D-4i	The same set of Response Actions applies to both the landfill and evaporation pond LDRS sumps. The first sentence of Section 7.0 of Appendix G has been changed to reference 40 CFR 264.223 and the evaporation pond LDRS sump (see attached).

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