PERMIT ATTACHMENT A

GENERAL FACILITY DESCRIPTION AND INFORMATION
Modified from the Permit Application, Volume I, Sections 1.0 through 1.4.3, 2.0, 8.8.3, and 9.0

1.0 GENERAL FACILITY STANDARDS

This section provides a general description of the Triassic Park Waste Disposal Facility (Facility), including waste management practices, site environment and climate, location information, emergency management, and traffic patterns.

1.1 GENERAL DESCRIPTION

The Facility will be a full-service Resource Conservation and Recovery Act (RCRA) Subtitle C waste treatment, storage, and disposal operation. The Facility will be located in Southeastern New Mexico on approximately 480 acres of privately owned land in Chaves County, New Mexico (see Figure 1-1 at the end of this section). By road, this location is approximately 43 miles east of Roswell and 36 miles west of Tatum, as shown on Figure 1-2.

All waste placed in the Facility will meet Land Disposal Restrictions (LDR) prior to disposal. The Facility will accept polychlorinated biphenyl (PCB) wastes at concentrations of less than 50 parts per million (ppm) in liquids and in soils, and bulk PCB-contaminated remediation waste. The Facility will offer the following RCRA-regulated services, which are described in this permit application.

1.1.1 Treatment

Two treatment processes will be used at the Facility, including an evaporation pond for managing wastewaters that meet LDR standards and a stabilization process for treating liquids, sludges, and solids to ensure that no free liquids are present and that LDR standards are met prior to placing wastes in the landfill. Dilution of restricted waste will not be used as a substitute for adequate treatment. All stabilized wastes will be tested, as a final step in the stabilization process, to ensure that no free liquids are present. The Paint Filter Liquids Test, U.S. Environmental Protection Agency (EPA) Method 9095, will be used to make this evaluation. Prior to treating wastes in the stabilization unit, waste characteristics will be analyzed to ensure that proper measures can be taken to safely manage ignitable, reactive, and incompatible wastes. Procedures for properly identifying and verifying ignitable, reactive, and incompatible wastes are described in Section 4.5 of the Waste Analysis Plan. Once these wastes are identified, they will be managed in accordance with applicable regulatory requirements and permit conditions (see Permit Attachment B, *Procedures to Prevent Hazards*, Section 5.5).

1.1.2 Solid Waste Storage

Two container storage areas (roll-off storage area and drum handling unit) will be used to stage waste at the Facility for treatment or disposal. These units will ensure that waste is stored in compliance with RCRA requirements for permitted storage. Neither of the units will be used for long-term storage of waste. All containers being stored will be clearly marked with hazardous waste labels which identify the contents of each container as well as the date of receipt (accumulation date). All labels will be clearly visible while containers are being stored. All containers will remain closed during storage, except when waste is removed or added.

Further, container storage and handling procedures will be developed to ensure that containers are not opened, handled, or stored in a manner that may cause them to rupture or leak.

1.1.3 Liquid Waste Storage

Four aboveground storage tanks will be utilized to accumulate regulated bulk liquid hazardous wastes prior to stabilization. Handling of reactive materials, tank corrosion, tank assessments, tank inspection and tightness testing, and repair and certification of tank systems is discussed in Section 5.0. Description of contents, quantity of hazardous waste received, and the date each period of accumulation begins will be documented in the facility records and will be included on labels for each storage tank. Design, dimensions, capacity, and other tank specifications are included in Permit Attachments L, *Engineering Report*; L1, Engineering Drawings; L2, *Specifications for the Landfill, Surface Impoundment and Associated Liner and Cover Systems Construction*; and M *Construction Quality Assurance Plan.*

1.1.4 Land Disposal

A landfill will be utilized for the disposal of waste that meets LDR standards. Support units and structures include a chemical laboratory, administration building, weigh scale area, maintenance shop, truck wash unit, clay processing area, clay liner material stockpiles, daily cover stockpiles, and a stormwater retention basin.

Because the Facility has not yet been constructed or operated, there are no solid waste management units (SWMUs) requiring corrective action at this time. Satellite and/or 90-day accumulation areas may possibly be located at the chemical laboratory, the truck wash unit, and the maintenance shop. Other areas at the Facility that may be designated as SWMUs include the untarping, sampling, and weigh scales area, the truck staging area, and the stormwater retention basin. Detailed information on location, unit type and dimensions, and a structural description of these units is provided in the design of the Facility contained in Permit Attachment L; L1; L2; M; and Volumes IV through VI of the permit application.

The future debris encapsulation area and the future waste processing area identified in the Facility layout 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.

1.1.5 Facility Name

Gandy Marley, Inc. (GMI) owns the Facility. The waste disposal operations covered by this permit will operate under the name of the Triassic Park Waste Disposal Facility.

1.1.6 Facility Contact

Larry Gandy, Vice President
Gandy Marley, Inc.
Tatum, New Mexico
505/398-4960

1.1.7 Facility Address

1109 East Broadway
P. O. Box 827
Tatum, New Mexico 88267

1.1.8 Purpose of Facility

The purpose of the Facility will be the treatment and permanent disposal of hazardous wastes in a manner protective of human health and the environment. Wastes that do not meet LDR standards will not be accepted for placement into the landfill or evaporation pond until appropriate treatment is performed. Infectious wastes and radioactive wastes will be prohibited at this Facility. The Waste Analysis Plan contains more details regarding wastes that can be accepted at the Facility and wastes that are prohibited.

1.1.9 Facility Location

The Facility will be located in Southeastern New Mexico on approximately 480 acres of privately owned land in Chaves County, New Mexico, Sections 17 and 18 of R31E, T11S (see Figure 1-1). By road, this location is approximately 43 miles east of Roswell and 36 miles west of Tatum, as shown on Figure 1-2. The only major road in the vicinity is U.S. Highway 380, which runs east and west approximately 4 miles north of the proposed site. State Highway 172, which runs north and south, is approximately 4 miles east of the proposed site. State Highway 172 is not a major thoroughfare and does not provide access to the proposed site.

1.1.10 Hazardous Waste Generation

Some hazardous waste will be generated as a result of normal Facility operations. Various treatment and handling processes, support operations and collected leachate will likely generate such wastes. Examples of typical hazardous waste forms likely to be generated during normal Facility operations include solvents, oils, acids and bases, laboratory chemicals and equipment, paint and paint strippers, sludges, solvent contaminated solids, and personal protective equipment. Non-recyclable hazardous wastes will be disposed of onsite in accordance with the requirements outlined in Permit Attachment F, *Waste Analysis Plan*, Section 4.5.6.

1.1.11 Sanitary Waste Generation

Sanitary liquid wastes will be generated in most Facility buildings. This waste form consists primarily of shower water, janitorial wastes, rest room wastes, and liquid wastes generated from cleaning operations. Non-hazardous liquid wastes will be managed as sewage and disposed of offsite.

1.1.12 Non-hazardous Refuse Generation

Non-hazardous municipal solid waste (MSW) and construction and demolition (C&D) waste will be generated during building and normal operations at the Facility. These wastes will include such things as cardboard packing containers, garbage, paper refuse, and construction debris. Collection, transportation, and disposal of non-recyclable waste will be contracted to a MSW and C&D waste disposal company. Recyclable wastes, such as office paper, will be sent off site for usable materials recovery. The disposal of non-routine waste materials will be administratively controlled on a case-by-case basis in accordance with applicable regulatory requirements.

1.2 SITE ENVIRONMENT AND CLIMATE

The selected site for the Facility is on the western edge of a geological bench known locally as the Caprock. The Caprock is characterized by rocky terrain which runs north and south. Detailed information about the geologic characteristics of the site is contained in Section 3.0 of the permit application.

The site is approximately 4,150 feet above sea level. Climatic conditions of the area are typical of semi-arid regions and are characterized by dry, warm winters with minimal snow cover and hot, somewhat more moist summers. The frost-free season averages from 190 to 215 days per year. The mean annual soil temperature

ranges from 59 to 65 degrees Fahrenheit. The average annual precipitation ranges from 10 to 13 inches. Winter precipitation usually consists of occasional snowfall from November through April. Snowfall typically melts within a short period of time. Most precipitation (approximately 80 percent of the annual total) occurs between June and September.

Normally, two-thirds of the summer days reach temperatures in excess of 90°F with maximum temperatures commonly 100°F or higher. Night temperatures during the winter months commonly fall below freezing, occasionally reaching below 0°F. The average annual temperature is 62°F.

The prevailing wind is from the south. Winds of up to 40 miles per hour are common during the spring and in association with summer thunderstorms.

Area vegetation consists primarily of Tobosa, Buffalo Grass, Vine-Mesquite, Mesquite, Cactus, Sand Dropseed, Little Bluestem, Sand Bluestem, Sandbur, Three-Awn, Shinnery Oak, Yucca, and Sand Sagebrush. According to the New Mexico Forestry and Resources Conservation Division of the State Department of Energy, Minerals, and Natural Resources, there are no rare or endangered plant species located in either Section 17 or 18.

According to the Bureau of Land Management (BLM) - Roswell Resource Area, there are 54 bird species, 33 species of mammals, and 36 species of reptiles and amphibians in what is designated as the Caprock Wildlife Habitat Area. The Facility location is within that wildlife habitat designation.

One bird species, the ferruginous hawk (*Buteo regalis*), is classified as a "Category 2" candidate for listing as threatened or endangered by the United States Fish and Wildlife Service of the U.S. Department of Interior. Currently, it is not listed. The Prairie Chicken is a state-listed species and is a candidate for federal listing under the category of Warranted but precluded. No other documented species in the area of the proposed Facility site are federally protected or candidates for federal protection.

The sand dune sagebrush lizard (*Scelopurus graciosus arenicolous*) is currently listed as a threatened species by the State of New Mexico. Population and habitat studies are ongoing for use by the state in determining whether to give the species protected status. The sand dune sagebrush lizard is not classified for federal protection.
GMI will continue to monitor the existence of threatened or endangered species in the area. Should any threatened or endangered species be identified within the Facility area, GMI will take measures to ensure that these species are protected. GMI will implement protective measures for the wildlife population in the area. These measures include the use of restrictive fencing around the operational portions of the Facility and the use of protective netting over the evaporation pond.

1.3 LOCATION INFORMATION

A topographic map of the site has been developed from a 1997 aerial photograph and U.S. Geological Survey (USGS) 7.5 minute series map (Mescalero Point, New Mexico, 1973) and is presented in Permit Attachment L1, *Engineering Drawings*, Drawing 3. The Facility layout is presented at Drawing 4 in Permit Attachment L1. This drawing illustrates Facility boundaries, access roads, access control locations, internal roads, and site fences.

The site is located in eastern Chaves County, in an area that has historically been utilized primarily as range land for livestock grazing and for limited oil and gas activities. The residence nearest the site is owned by Marley Ranches, Ltd. and is located approximately 2.9 miles to the east-southeast. Land ownership for a 4-mile radius around the site is shown in Figure 1-2. All of the residences within a ten-mile radius of the site are listed in Figure 1-3.

The site will encompass 480 acres and will be enclosed by a 6-foot chain link fence. Gates to the same height as the perimeter fence will be constructed. The area will be secured and monitored so that only authorized personnel or personnel being accompanied and supervised by authorized personnel are allowed onsite. Employees responsible for site security will be present at all times to prevent unauthorized entry and to report unusual events and/or emergencies. Site security personnel will be responsible for conducting regular inspections and routine maintenance of the perimeter area (see Permit Attachment D, *Inspection Procedures*).

Land use plans and/or zoning maps have not been developed for Chaves County. All areas within the county, except those within municipal boundaries, are designated as Zone A (agricultural). The eastern half of the county is further designated as Area 1 and the western half as Area 2. Area 1 and Area 2 are zoning Land Use Areas, whose boundaries have been determined by a joint-powers agreement between the Board of Chaves County Commissioners and the Roswell City Council. Existing uses in Area 1 are livestock grazing, mineral exploration and production, wildlife habitat, and extensive recreation. Single-family dwellings require permits in Area 1. Area 2 covers an important part of the recharge area of the Roswell Artesian Basin. Existing uses in Area 2 are livestock grazing, mineral exploration and production, extensive recreation, wildlife habitat, and flood control structures and floodways. Any new parcels created in the area must be five acres or larger.

Approximately 2 miles northwest of the Facility location, the Mescalero Sands recreational "complex" has been established for use by off-road vehicles. The South Dunes area of Mescalero Sands has been designated as an "Outstanding Natural Area" (ONA) and is utilized by the public primarily for wildlife observation activities.

The land in the area of the Facility is used predominantly for grazing cattle and to a much lesser extent for oil and gas exploration activities. The nearest production well is 3 miles from the site. Additional information about the drilling activities in the area is contained in Section 3.0 of the permit application.

All abandoned wells in the area have been plugged in accordance with New Mexico Oil Conservation Division (OCD) regulations. These regulations require the use of mud-laden fluids, cement and plugs in the well "in a way to confine crude petroleum oil, natural gas, or water in the strata in which it is found and to prevent it from escaping into other strata." Surface reclamation of abandoned wells prevents surface water from entering and contaminating subsurface strata.

1.3.1 Flood Plain Information

Sections 17 and 18, T11S, R31E are included on Federal Insurance Rate Map #350125. This map has not been printed because the National Flood Insurance Program has determined that this is an area of minimal flood hazards. This information was provided to GMI by the Director of Planning and Environmental Services, Chaves County, New Mexico.

Additionally, rainfall run-off calculations were performed to determine whether the site falls within the flood plain of a 100-year, 24-hour storm event. Based on information in the Precipitation Frequency Atlas published by the National Oceanic and Atmospheric Association, a rainfall amount of 5.3 inches was used in the calculations. The nearest drainage to the site was determined from the USGS 7.5-minute series topographic map of the Mescalero Point Quadrangle (see Section 3.0 of the permit application). This drainage flows westerly from Mescalero Point, which is approximately three-quarters of a mile south of the site.

Storm run-off flows were calculated for the area using the Rational Method (see Appendix F-3 in Volume VI of the permit application). A run-off coefficient of 0.3 was used in the calculations. It was determined that the maximum flow could be accommodated in a triangular section occupying a width of 76 feet. It may be concluded from this comparison that a flood plain does not exist for the drainage and that there are no flood

plains within 1 mile of the site. It may be further concluded that flood plain regulations are not applicable to this Facility.

1.3.2 Fire Control and Emergency Response

Fire control and emergency response will be the responsibility of the Emergency Coordinator (EC) who is on call or duty at the time of an incident. Each EC will be trained to handle emergencies and to notify appropriate authorities (see Permit Attachment C, *Contingency Plan*). Each EC will have the authority to commit resources necessary to implement the site Contingency Plan described in Permit Attachment C.

In addition to onsite emergency response capabilities, cooperative agreements will be established with local emergency response organizations in surrounding communities to respond to and assist in any emergencies that arise at the Facility (see Permit Attachment C).

1.4 TRAFFIC PATTERNS

The flow of traffic within the Facility boundary will not be significant except during shift changes. The number of employee vehicles will not be substantial enough to require elaborate signage or other traffic control systems. All personnel will be given written instructions that will caution them to be alert to other vehicles and pedestrians. Each vehicle must enter and exit through the security gate at the northeast corner of the perimeter of the Facility boundary. The arrival and departure of trucks transporting waste will not be scheduled during peak traffic times. Drawing 26, Sheet 2 in Permit Attachment L1 illustrates traffic flow patterns for the operations and waste processing area, traffic control signage and truck staging areas.

1.4.1 Traffic Control

Access to the Facility will be gained through the security gate at the northeast corner of the perimeter fence (see Drawing 26, Sheet 2 in Permit Attachment L1). Authorization to enter the Facility will be verified for each vehicle.

Visitors will be required to sign in at the guard shack and will be escorted while onsite unless other arrangements are made with the Facility. Only authorized persons will be allowed past the security gate guard shack.

1.4.2 Onsite Transportation of Wastes

All trucks transporting wastes will be stopped at the security gate prior to entering the Facility. Security personnel will record the license number, transportation company, arrival time, and other pertinent information with regard to the vehicle and driver.

After being granted access to the Facility through the security gate entrance, waste transport vehicles will be directed to the untarping/sampling area. Here, a sample of the waste will be collected for fingerprint testing, along with the shipment manifest and other pertinent documentation. While the sample is being analyzed at the chemical laboratory, the truck will be directed to the weigh scales and finally to the truck staging area. The truck will remain at the staging area until laboratory analysis verifies that the waste meets acceptance criteria and the waste characteristics are consistent with profile information from the shipment manifest.

Following determination that waste acceptance criteria have been met, the truck will be directed either to the landfill, in cases where wastes can be directly landfilled (for instance, when all LDR treatment standards are met), or to another station for staging/storage or further processing.

1.4.3 Routes

Transporters must use U.S. Highway 380 to reach the Facility. U.S. Highway 380 runs east and west between Roswell and Tatum, New Mexico as shown in Figure 1-2.

2.0 TREATMENT, STORAGE, AND DISPOSAL

This section provides a general description of the storage, treatment, and disposal processes and units for the Facility. For each of the operational units described in this section, detailed design drawings and associated engineering reports are contained in Permit Attachments L, *Engineering Report*, and L1, *Engineering Drawings*. The drawings and specifications contained in Permit Attachment L2 present final designs for the RCRA permitted facilities. Details on the non-RCRA components of the facilities will be supplemented during the bidding and construction phase. Gandy Marley will supply the additional details on the non-RCRA components of the design to NMED for review and approval prior to the start of construction.

2.1 FACILITY OVERVIEW

An overview of the Facility layout is provided in Permit Attachment L1, Drawing 4. This drawing shows the units used for the five general categories of waste disposal activities at the Facility. These five waste disposal operations are: (1) waste acceptance, (2) waste receiving, (3) waste staging/storage (4) waste treatment, and (5) waste disposal. Each activity is described below.

2.1.1 Facility Waste Acceptance

Prior to initiation of a shipment of waste to the Facility, the generator of the waste must provide a full characterization of its waste and receive approval from the Facility to ship the waste. This process is more completely described in Permit Attachment F, *Waste Analysis Plan*. The Facility will use the waste characterization data to perform the following activities:

- ensure that the waste can be accepted in accordance with the RCRA permit;
- verify that the Facility has the capability to properly treat and/or dispose of the waste;
- identify any safety precautions that must be taken to properly manage the waste;
- use the physical characteristics and chemical composition of the waste to determine the most effective treatment and disposal methods for the waste;
- select parameters to be tested to determine the formula for stabilization of appropriate wastes;
- select parameters to be tested upon arrival at the Facility to verify that the waste accepted is the waste characterized; and,
- develop a cost estimate for treatment and disposal.

2.1.2 Waste Receiving

Once approved for acceptance at the Facility, the waste can be shipped. The Facility can be accessed only from New Mexico State Highway 380, as shown in Figure 2-1. When a shipment arrives at the Facility,

Facility representative will verify that the shipment was scheduled. If unscheduled shipments arrive at the Facility, the Facility manager will be consulted to determine if the appropriate paperwork has been received and the shipment can be accepted.

The shipment and shipping papers will be inspected to ensure that the correct inventory has been received, that the hazardous waste manifest is properly completed, and that a LDR certification is attached. Any discrepancies will be resolved prior to acceptance of the shipment. If discrepancies cannot be resolved, the shipment will be rejected. Representative samples of the waste will be taken and fingerprint testing will be conducted. Fingerprint testing is described in Section 4.5 of the Waste Analysis Plan. If the fingerprint test results are inconsistent with the generator's information, several actions can be taken (see Section 4.5). Waste will be processed only if fingerprint tests are consistent with information provided by the waste generator. Containers and drums will be inspected for visible cracks, holes or gaps.

2.1.3 Waste Staging/Storage

Containerized wastes will be moved to the drum handling unit or the roll-off storage area. The objectives of these container storage areas are to provide safe storage of waste prior to its introduction into the treatment or disposal system; to ensure that adequate accumulation space is available during intervals when the treatment or disposal system is temporarily unavailable; and to facilitate repackaging as necessary.

Solid waste will be transferred directly to the landfill for disposal if all applicable LDR requirements are met and, in the case of containerized material, if the container is at least 90 percent full.

Restricted waste at the Facility will be stored solely for the purpose of accumulating sufficient quantities to facilitate proper treatment, or disposal. Procedures will be in place at the Facility so that only that waste will be accepted that either (1) meets LDR treatment standards; or (2) is amenable to treatment using existing and available treatment capabilities at the Facility, such that restricted wastes will not be stored for longer than one year.

2.1.4 Waste Treatment

There are two treatment processes: stabilization and evaporation. Low concentration wastewater from off site generators and leachate from the landfill that meet LDR standards will be placed in the evaporation pond. Pond sludge, contaminated leachate from the landfill that does not meet LDR standards, and various wastes from generators will be treated in the stabilization process. Stabilized waste that meets LDR treatment standards and other operational criteria will be placed in the landfill.

Wastes that carry more than one characteristic or listed waste code must be treated to the most stringent treatment requirements for each hazardous waste constituent of concern. When wastes with different treatment standards are combined solely for treatment, the most stringent treatments standard specified will be met.

2.1.5 Waste Disposal

In general, wastes arriving at the Facility that meet LDR requirements and contain no free liquids will be directly landfilled. When wastes are unable to be directly landfilled, such as during landfill equipment maintenance periods or extreme weather conditions, the waste will be stored in the waste storage area. Wastes stabilized at the Facility that meet LDR requirements will be transferred to the landfill from the treatment or storage areas as necessary.

An access ramp will be constructed from the top of the landfill to the bottom of the active portion of the landfill (see Drawings 8 and 14 in Permit Attachment L1). Bulk hazardous wastes will be placed and

compacted on the bottom of the landfill in 5-foot to 10-foot layers or lifts. Containers (drums) will be placed upright in the cell using a forklift or barrel snatcher. Sufficient space will be left around the containers for the placement and compaction of compatible bulk hazardous waste.

Materials in roll-off containers will be dumped with the bedliners at preselected locations. Containers or bulk waste can be placed adjacent to the roll-off material. A layer of cover soil sufficient to prevent wind dispersal of waste will be placed over the bulk hazardous wastes and containers following emplacement or before the end of each working day (see Section 2.5.1.7). The soil cover will be deposited on top of the waste placement face and then spread and compacted with a tracked bulldozer. The minimum cover thickness will be 0.5 feet. The landfill will be laid out in an engineered grid system consisting of blocks that are 50 feet wide, 50 feet in length, and 10 feet in depth. Grid stakes will be established by survey. A two-dimensional grid system along with lift elevation designation will provide a three-dimensional record of the location of all wastes placed in the landfill. Records of the location, date of placement, waste source, manifest, and profile numbers will be maintained at the Facility.

2.2 CONTAINER STORAGE AREAS

The site will employ two container storage areas: a drum handling unit and roll-off storage area. Descriptions and conditions specific to these areas are presented in Section 2.2.1 and Section 2.2.2 for the drum handling unit and roll-off storage area, respectively. Sections 2.2.3 through 2.2.14 describe conditions common to both units. Wastes which are either suspected or known to contain free liquids will be managed accordingly. A description of how these wastes will be managed is included in the following sections. More detailed information on the management of wastes containing free liquids can also be found in the Waste Analysis Plan presented in Section 4.0. Both the drum handling unit and the roll-off storage area will be constructed to meet the minimum requirements identified in the detailed design and associated engineering report (Permit Attachments L and L1).

2.2.1 Drum Handling Unit

Drawings 37, 38, and 39 presented in Permit Attachment L1 show the detailed design for the drum handling unit. The open sided unit will be roofed to prevent run-on from precipitation. The roof of the building is designed to extend over the unloading dock area to ensure that precipitation does not enter the building or impact unloading operations.

The building will be equipped with fire extinguishers, a sprinkler system, telephones, fire alarm system, public address system, eye washes, safety showers, spill control equipment, and first aid equipment. An office for storing record-keeping information and for administrative functions within the drum handling unit will be located in the building.

The base of the drum handling unit will consist of a compacted subgrade of non-swelling soils placed at a moisture content and density capable of supporting projected loads comprised of the building's structural components, stored waste, and mobile equipment traffic inside the building. A 60-mil geomembrane liner, cushion geotextile, and 1 foot of foundation sand will overlie the subgrade. The steel reinforced concrete floor will be constructed on the prepared subgrade. Design details and the associated specifications are presented in Permit Attachments L1 and L2.

2.2.1.1 Containment and Detection of Releases

Wastes stored in the drum handling unit will be placed in individual storage cells segregated by waste type and compatibility. Individual storage cells are defined as groupings of drums as shown on Drawing 37 of Permit Attachment L1. The specific areas to be used for storage will depend on the volume and type of waste being processed at the site. Labels will be added to each section of the drum storage unit to identify the type of

waste to be stored. The labels may change depending on the volume and type of waste being received. A chemically resistant epoxy coating (or an equivalent) will be applied to the concrete floor. Chemical resistant water stops and caulking will be installed in all joints. The floor is designed and will be maintained to be free of cracks and gaps and will be inspected regularly to determine if any cracks or gaps have developed or if the epoxy coating has been damaged. Should cracks or gaps develop in the concrete, repairs will be scheduled immediately. The nature of the repair will depend on the extent of the cracking and could range from the application of chemically resistant epoxy fillers or coatings to the replacement of portions of the concrete floor.

Each storage cell will have a concrete floor that slopes toward a trench covered by steel grating. Each trench will lead to a separate secondary containment sump for that cell where any spilled liquids will be accumulated. The trench and sump system design incorporates a double high-density polyethylene (HDPE) geomembrane liner in the leak detection and removal system (LDRS) and leachate collection removal system (LCRS). Both the LDRS and LCRS sumps incorporate drainage material surrounding a perforated pipe. The LCRS sump has been sized to contain at least 10 percent of the volume of the containers stored in the cell. The LCRS and LDRS sumps in the drum handling unit will be checked regularly for the presence of liquid. If liquids are present, samples will be obtained and chemically analyzed to determine the nature and concentration of any waste constituents. An appropriate treatment or disposal method will be selected in accordance with the Waste Analysis Plan presented in Section 4.0. Pumpable quantities of liquids will be removed with a vacuum truck. Leaks and spills will be removed from the sump in as timely a manner as possible. Because the building is covered, precipitation and the consequent accumulation of liquid are not considered in the design or operation of the drum handling unit.

The cells that will contain PCB-contaminated waste will be surrounded by a 6-inch concrete berm, in addition to the floor trench and sump.

2.2.1.2 Dimensions

The drum handling unit is 418 feet long by 118 feet wide (see Drawing 37 in Permit Attachment L1). The building floor and loading dock will be 5 feet above ground level to facilitate the loading and unloading of trucks and prevent run-on from precipitation. An adjustable hydraulic loading platform will align the truck beds with the building floor to allow for the smooth transition of forklifts in and out of the trucks from the floor. An overhang on the front of the building will prevent precipitation from getting on the drums and into the front area.

2.2.1.3 Storage Limits

The drum handling unit will contain seven separate containment areas, each 52 by 63 feet as shown on Drawings 37 and 38 in Permit Attachment L1. Each of the seven areas will have its own floor drain and containment sump, allowing incompatible wastes to be placed in separate cells. Two of the cells will be designed to accommodate only PCB wastes. Aprons on the ends of the cells that store PCB-contaminated waste will be tapered to allow for forklift access over the concrete berms. The total capacity of the drum handling unit will be 1,120 drums (160 drums per containment cell). The drain and sump for each drum cell is dimensioned such that the storage capacity will be a minimum of 118 cubic feet, 10% of the capacity of the drums in each cell. A typical drum layout is shown in Drawing 37 of Permit Attachment L1.

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 Permit Attachment L1. 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 roll-off storage unit and physically separated from each other by 4 feet side to side and 2.5 feet end to end. In addition, containers will not be placed within the limits of the roll-off storage area inundated by the rainfall that accumulates for the 25 year, 24 hour storm (see Appendix E-38 in Volume VI of the permit application) or within 4 feet of the edge of the berm.

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.

2.2.2.1. Containment and Detection of Releases

The roll-off storage area is designed to store non-stabilized and stabilized waste. Secondary containment of the roll-off storage area is shown in Drawing 41 through 43 in Permit Attachment L1.

The floor and slopes of the lined cell will consist of, from bottom to top, a prepared subgrade; a geomembrane liner that will be composed of a component material compatible with the anticipated waste; a geocomposite drainage layer; a structural-fill; and a roadbase surface. A sump will be incorporated into the drainage layer. To accommodate this installation, the floor will be sloped to a sump located in the corner of the storage area. Any liquids would collect in the containment sump, which is designed to have the pumping capacity to remove liquids resulting from the 25-year, 24-hour storm event.

The roll-off containment area is surrounded by a berm with a minimum height of 2.0 feet (Drawing 41 of Permit Attachment L1). This berm will divert run-on surface water around the perimeter of the truck roll-off area. Culverts will be placed under each of the access ramps to allow surface water flow to the west towards the run-off detension basin.

The containment sump is designed to collect precipitation falling inside the bermed area of the truck roll-off storage area. During heavy rain events, a portion of the water will drain along the roadbase surface to the sump area located in the corner of the cell. The remaining volume will percolate through the roadbase and structural fill and will be collected in the geocomposite drainage layer. Water collecting on the surface of the sump or in the sump drainage gravel will be removed by vacuum truck. Samples of sump liquids will be chemically analyzed to determine the presence and concentration of any waste constituent. After this determination, an appropriate method of treatment or disposal will be selected in accordance with the criteria prescribed in the Waste Acceptance Plan (see Section 4.0). Leaks, spills, and precipitation will be removed from the sump as soon as possible. The entire roll-off storage area will be surrounded by a berm which ranges in height from 4 feet to 8 feet.

The purpose of the drainage system below the storage area surface is to allow rainfall to be collected and removed from the contained area. This will reduce ponding and mud formation on the storage area surface and will allow the surface to support truck traffic almost immediately following a rainstorm. The presence of free liquids inside the roll-off container/bed liner system can occur if liquids are inadvertently loaded in the container, rainfall enters a hole in the roll-off container cover during transportation, or liquids separate from solids during transport. These free liquids will be identified when the roll-off container is visually inspected at the untarping station.

It is possible, but unlikely, that free liquids could be generated after inspection in the staged roll-off containers. For example, if a faulty roll-off container cover allows rainfall to enter the container and both the plastic and containment fail, a leak can occur on the surface of the roll-off storage area. A leak will appear as a drop or a stain on the storage area surface. In the case of a leak, the liquids in the roll-off container will be handled as described in Section 2.2.2 and the stained soil will be excavated and handled as a potential hazardous waste.

2.2.2.2 Dimensions

The entire roll-off storage area (including both halves) will measure approximately 410 feet by 330 feet from the outer edge of the berms. The berm height surrounding the area will range from 4 feet to 8 feet. The storage areas will be accessed by 35-foot-wide compacted soil ramps at the center of each storage area. The halves will measure approximately 180 feet by 310 feet inside the berms.

2.2.2.3 Storage Limits

The permitted capacity of the incoming waste cell will be 66 roll-off containers. The stabilized waste cell also will have a capacity of 66 roll-off containers, for a total storage capacity of 132 containers. The actual number of roll-off containers placed in the roll-off storage area may vary slightly depending on placement arrangements as determined by operations.

2.2.3 Warning Signs

Signs containing the legend "Danger - Unauthorized Personnel Keep Out" will be conspicuously posted on the outside and at entrances to the storage areas. In the areas where ignitable or reactive wastes will be stored, "No Smoking" signs will be posted. All signs will be in both English and Spanish.

2.2.4 Proper Waste Storage

Compatibility codes established during the initial receipt of waste will be assigned to ensure the proper storage of containers within the Facility (see Permit Attachment F1). Containers which are discovered upon receipt to have free liquids will not be accepted or will be handled at the stabilization unit as a priority load.

2.2.5 Ignitable/Reactive Wastes

Ignitable or reactive wastes will be protected from any sources of ignition or reaction. All containers storing ignitable or reactive waste will be stored at least 50 feet inside the fence around the Facility shown in Permit Attachment L1, Drawing 4. "No Smoking" rules will be enforced and open flames prohibited where ignitable or reactive waste is being handled.

2.2.6 Precautions to Prevent Reactions

Precautions to prevent reactions are described in Permit Attachment B, Procedures to Prevent Hazards.

2.2.7 Inspection Methods

As required in 40 CFR 164.174, all container storage areas will be visually inspected at least once a week for leaking containers and deterioration of the containers and containment area. Inspectors will enter the area and visually inspect the area and the containers. All inspection information will be recorded, and any problems noted during the inspection will be resolved in a timely manner (see Permit Attachment B). Workers will be instructed and trained on the procedures for identifying and reporting any signs of leaks or deterioration that appear between the weekly inspections. Any identified leaks will be resolved as described in Section 2.2.2.1. Containers with more than 500 ppmw volatile organic compounds will be inspected at least once a month for cracks, holes or gaps in the container, cover or closure devices. Defects detected will be repaired according to CFR 264.1086 (d)(4)(iii).

2.2.8 Types of Containers

Hazardous wastes will be stored in 10-gallon, 35-gallon, or 55-gallon drums, in 40 cubic yard or similar roll-off containers, or in other DOT approved containers. Overpack drums will be used as necessary.

2.2.9 Labels

All containers of hazardous waste in storage will be labeled with a hazardous waste label identifying the contents of the container. The label will also be clearly marked to indicate the date of accumulation or the date of receipt. The label will not be obstructed from view during storage.

2.2.10 Condition of Containers

All containers of hazardous waste will be managed by the following conditions:

- containers will be maintained in good condition. If a container is not in good condition (e.g. severe rust, apparent structural defects, or leaks), the hazardous waste will either be transferred to a container that is in good condition or be managed in some other way, such as direct placement in the landfill or stabilization unit;

- containers of hazardous waste stored at the drum handling unit will be closed during storage, except when it is necessary to add or remove waste;

- the container storage area will be inspected prior to placement of containers to ensure that no conditions exist which could damage the waste containers; and,

- all containers will be handled in a manner, and with equipment compatible to their design and construction, to minimize the potential for damage to the container.

The roll-off units to be placed in the roll-off area will be covered with a tarp. The covers will not be removed until the material is placed in the stabilization unit. Roll-off units used to store stabilized material will also be placed on the roll-off unit with covers. It is not expected that the tarps will be removed during storage except for re-sampling of the material, if required.

2.2.11 Compatibility with the Container

All hazardous waste will be compatible with the container or liner as defined by the following conditions:

- all containers used to store hazardous waste will be made of, or lined with, material that will not react with, or otherwise be incompatible with, the waste being stored so that the ability of the container to hold waste is not impaired; and,
- hazardous waste will not be placed in an unwashed container that has previously held incompatible waste or material.

2.2.12 Compatibility with Other Waste

Incompatible liquid hazardous wastes stored within the units will be separated by a berm, catch pan, or other physical barrier which adequately prevents commingling of incompatible wastes. Incompatible solid hazardous wastes stored within the container storage areas will be separated by a 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, 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 Permit Attachment L1, 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 presented in Volume VI, Appendix H3, of the permit application. Facility procedures for waste acceptance and the associated criteria in the waste acceptance plan will ensure that wastes incompatible with the tank material are not placed in the storage tanks. The tanks will be placed on 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.
Each tank will be surrounded by a concrete area which will be sloped to provide drainage to a sump. The floor and berm of the concrete area will be maintained in good condition and free of cracks and gaps, as described in Section 2.2.1.1, in order to protect the effectiveness of the containment.

All ancillary equipment will be provided with secondary containment except aboveground piping (exclusive of flanges, joints, valves, and other connections), welded flanges, welded joints, and welded connections that are visually inspected for leaks each operating day. Secondary containment will be provided by the concrete pad.

Daily visual inspection will be used to detect releases to the secondary containment. Response to releases from tank systems will be initiated immediately upon discovery, and regulations specified in 20 NMAC 4.1 Subpart V, 40 CFR 264.196(d) or 40 CFR 264.56 will be followed as appropriate (see Section 5.0), including notification of the Hazardous Materials Bureau (HMB) of the New Mexico Environment Department (NMED) and National Response Center (NRC). The secondary containment tank will be emptied by pumping fluids from the drainage port located near the base of the tank or by the use of a vacuum truck.

2.3.2 Management of Incompatible Wastes

Only the waste types approved for a tank system will be placed in the tank. No new waste types will be placed into an existing tank system unless: (1) the compatibility of the new waste type with the prior contents of the tank is determined by testing or documentation; or (2) the existing tank system is cleaned or flushed to the extent necessary to ensure compatibility with the new waste type.

2.3.3 Spill and Overfill Prevention

Appropriate controls and practices will be used to prevent spills from and overfills of the tank or containment systems.

Spill prevention is primarily maintained by hard-plumbed piping. When transfer lines are not hard plumbed or when open-ended lines are used, one or more of the following spill prevention controls or an equivalent device will be used:

- *Dry Disconnect Couplings* - a pipe connection designed to cap the flow of liquids as soon as the fitting is disconnected;
- *Direct Monitoring* - the transfer is monitored continuously to prevent spills; and/or,
- *Overfill Prevention* - one or more of the following spill prevention controls or an equivalent device will be used:
    - ◊ *Automatic Feed Cutoff* - a device used to stop flow into a tank when it is filled to operating capacity or another predetermined level;
    - ◊ *High-Level Alarm* - a device used to detect the level in a tank, sounding an audible alarm or displaying a visual alarm when the operating capacity level or another predetermined level is reached;
    - ◊ *Level Indicator* - a device used to visually display the level of material in a tank; if a level indicator is used for overfill prevention, the indicator must be monitored during liquid transfers or checked prior to transfers to ensure that sufficient capacity exists in the receiving tank. Level indicators may include sight gauges, level meters, or graduations placed directly on opaque poly tanks; and/or,
    - ◊ *Bypass* - a device or plumbing arrangement used to divert flow from the tank being filled to a second tank of sufficient capacity after the operating or predetermined level has been reached.

2.3.4 Feed Mechanism, Pressure Controls, and Temperature Controls

The tanks will be operated at ambient pressure and temperature when storing liquids. One of the following feed mechanisms for tank systems or an equivalent transfer mechanism will be used:

- *Pump Transfer* - liquids will be pumped into or out of the tank through permanent or temporary transfer lines; or,
- *Gravity Drain* - liquids will be allowed to drain by gravity through permanent or temporary transfer lines.

2.3.5 Management of Ignitable or Reactive Wastes

Ignitable or reactive wastes will not be placed into any tank system unless the tank system is protected from sources of ignition by measures including, but not limited to, the following: signs prohibiting smoking, open flames or welding; an inert atmosphere blanket; enclosed vents isolated from sources of ignition.

2.3.6 Inspections

A visual inspection of tank systems will be conducted each operating day. Each tank system will be visually inspected, including, but not limited to, the tanks and ancillary equipment, monitoring and leak detection systems, and the construction materials and area immediately surrounding the tank system. The results of each inspection will be documented in the daily operating record. Inspections are further described in Permit Attachment D.

2.3.7 Corrosion Protection

All liquid hazardous waste materials will be stored in double walled poly tanks. Corrosion protection is not required for double walled poly tanks that do not come into contact with soil or water.

2.3.8 Tank Assessments

The tank system proposed has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste. The assessment has been prepared by the engineer of record and is based on the tank design drawings (see Permit Attachment L3, *Tank Integrity Assessment Certification*). After construction of the tank, its integrity will be assessed by an independent New Mexico registered professional engineer in accordance with 20 NMAC 4.1.500 (incorporating 40 CFR 264.192(a)). The engineering report presented with the tank design drawings in Permit Attachments L and L1 includes a list of wastes to be excluded from storage in poly tanks due to their excessive corrosive effects.

2.3.9 Ancillary Equipment

All ancillary equipment will be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction, according to API Publication 1615 (November 1979) or ANSI Standard B31.2 and ANSI Standard B31.4.

Hazardous waste will be transferred from the tanks to the tankers through a limited piping system, as shown in Drawing 40 and discussed in Permit Attachment L, Section 8.2.2. This piping system will be considered part of the tanks and will be drained and dismantled as part of the tank closure.

2.3.10 Installation and Tightness Testing

Proper handling procedures will be developed and followed to prevent damage to the system during installation. A qualified installation inspector will inspect the installed system to ensure adequate construction/installation. Any discrepancies will be resolved before the system is placed in service.

The tanks and ancillary equipment will be tested for water tightness, and any necessary repairs will be performed prior to the system being placed in service.

Written statements by those who certify the design and supervise installation will be maintained in the operating record.

2.3.11 Repair and Certification of Tank Systems

If a release occurs from the primary tank system, the tank will be removed from service immediately. Wastes in the tank will be removed within 24 hours to the extent necessary to prevent further release and allow inspection and repair of the tank system. All released materials will be removed from the secondary containment as soon as possible and within 24 hours of detection.

The tank system will be repaired or replaced prior to returning it to service. An independent New Mexico registered professional engineer will certify major repairs. The certification will be submitted to the NMED within seven days after the tank system is returned to service. Major repairs include repair of a ruptured primary containment vessel and replacement of secondary containment.

2.3.12 Transfer of Liquids from Liquid Waste Storage to the Stabilization Unit and to the Evaporation Pond

Transfer of liquids from the liquid waste storage tanks to the stabilization unit will be accomplished by tanker trucks approved for liquid waste transfer. Approved tanker trucks, such as vacuum trucks or DOT approved tankers, will be used to transfer liquids from the storage tanks to the evaporation pond. Tanker trucks will be cleaned following a transfer operation to ensure that subsequent transfers do not result in mixing of incompatible or reactive wastes.

Personnel performing liquid waste transfer operations will comply with all personal protective equipment (PPE) requirements and transfer operation procedures, including spill cleanup. Impervious concrete coatings will be applied to the liquid waste storage tank containment area and the evaporation pond discharge station. Hose and pipe connections will be inside the concrete containment area boundaries.

2.4 STABILIZATION

Drawings 33 through 36 presented in Permit Attachment L1 show the stabilization building floor plan, a typical bin, and vault sections. The stabilization process will use four in-ground double lined stabilization bins, two dry reagent silos, two liquid reagent tanks, and a water tank. Trucks and other vehicles will access the unit via the gravel aprons. Additionally, there will be a control room from which operations will be directed and coordinated.

Bulk liquids, semi-solids, sludges, and solids that do not meet LDR treatment standards, as well as solids that may contain free liquids, will be treated in the stabilization unit. Dilution of restricted wastes will never be used as a substitute for adequate treatment. If toxic characteristic wastes and listed wastes are amenable to the same type of treatment and aggregation is a part of treatment, the aggregation step does not constitute impermissible dilution.

As discussed in the Waste Analysis Plan in Permit Attachment F, wastes will be tested prior to stabilization to determine the appropriate reagent formula. Both dry and liquid reagents may be used in the stabilization process. Waste may be offloaded directly from trucks into the stabilization bins or transferred from the drum handling unit or roll-off storage area. The bins will be covered while dry reagents are being added to control particulate air emissions. The cover will be removed and a backhoe positioned adjacent to the bin will mix the waste and reagents.

Wastes that are treated on site in the solidification unit will be tested after treatment and before disposal to verify that LDR standards have been met. The stabilized waste will be either transferred to the roll-off area for testing or taken directly to the landfill if testing has been completed. The stabilized waste will be stored temporarily at the roll-off unit while tests are conducted to determine how and if the material can be disposed of in the landfill.

The backhoe bucket and stabilization bin will be thoroughly cleaned before a load of waste which is not compatible with the waste previously stabilized in that bin is mixed. After the last bin load of a specific stabilization mixture has been loaded out, Facility personnel will use a high-pressure water hose located near the bins to rinse the backhoe bucket and the bin walls. This rinsing will cause residual clods of stabilized waste to fall to the bottom of the bin along with the rinse water. Reagents will then be added to the bin at the

same mixture proportions and the remaining waste and rinse water will be stabilized, tested for free liquids, and loaded out before a different waste stabilization mixture is processed in that bin.

The nominal dimensions of the bins are 25 feet long by 10 feet wide by 10 feet deep, resulting in an approximate volume of 2,500 cubic feet. The volume of waste to be treated in each batch will be variable but less than 2,500 cubic feet, depending on the addition of stabilization materials. The overall process volume is based on four bins. However, the actual process design will be dependent on the characteristics of the incoming waste (time to mix each batch) and the volume of stabilization materials required. Assuming that 15 batches per bin are processed per day with 4 bins, a total of 150,000 cubic feet of waste are treated per day. The ends of the bins have been shaped to conform to the reach profile of the backhoe selected for mixing in the stabilization unit. The bins will be contained in a concrete vault, which will also provide support. All mixing bins will be equipped with ventilation and air pollution control systems to remove any air pollutants generated during the mixing process. Potential contaminants may include particulates, low concentration volatile organic compounds, or acid fumes.

2.4.1 Contaminant and Detection of Releases

The bins will be of steel construction. Waste which is incompatible with the steel used in construction will not be stabilized in the bins. An assessment of the compatibilities of the bin materials and waste, is contained in the engineering report (Permit Attachment L). The design requirements and limitations will be incorporated into Facility procedures. The waste acceptance plan and associated criteria will ensure that waste which is incompatible with the bin construction material will not be introduced into the bins.

The bins will be double-walled steel tanks with the space between the walls serving as the LDRS. Shock absorbing coiled wire rope isolators will maintain separation between the bins.

The tank secondary containment (the outer shell) will be of sufficient volume to contain the contents of the inner tank, because the inner tank will be completely enclosed within the outer shell. The vault will not be used as secondary containment; therefore, it does not have to be lined or meet other requirements for secondary containment. Its purpose will be to isolate the tank system from the surrounding soil, provide a monitoring and collection point if leakage were to occur from both the primary and secondary systems, and means to inspect and repair the secondary containment.

Releases into the LDRS will be detected within 24 hours by liquid sensing instruments (e.g. a magnehelic gauge) or inspection. Accumulated liquids will be removed within 24 hours of detection. The secondary containment will be emptied by pumping accumulated liquids into a temporary storage tank or into another stabilization bin. Releases to the LDRS could occur if a breach occurred in the primary steel liner. In such a case, the bin will be removed from service and repaired.

All ancillary equipment will be provided with secondary containment unless it is aboveground piping (exclusive of flanges, joints, valves, and other connections), welded flanges, welded joints, and welded connections that can be visually inspected for leaks each operating day. Secondary containment will be provided by a concrete pad.

2.4.2 Management of Incompatible Wastes

New waste will not be placed in the bins unless (1) the compatibility of the new waste type with the prior contents of the bin is determined by testing or process knowledge documented in the operating record or (2) the existing tank system is cleaned or flushed to the extent necessary to ensure compatibility with the new waste type using procedures specified in Section 2.4.

2.4.3 Spill and Overfill Prevention

Spill and overfill prevention will be accomplished by continuous direct monitoring of transfer operations. Additionally, the delivery system will be computerized and will be designed to ensure that the mixture used for stabilization prevents overfilling.

2.4.4 Feed Mechanism, Pressure Controls, and Temperature Controls

The stabilization bins will be operated at ambient temperature and pressure. Reagents will either be pumped from reagent tanks or manually fed. Liquid hazardous wastes will be pumped from the liquid waste receiving and storage unit or from vacuum trucks or tanker trucks. Other wastes may be manually transferred directly from the incoming waste hauler truck or from the container storage areas.

2.4.5 Management of Ignitable or Reactive Waste

The stabilization bins will be protected from sources of ignition through the use of signs and procedures prohibiting smoking, open flames, or welding. If ignitable or reactive wastes are placed in the bins, they will be immediately mixed with sufficient quantities of fly ash and/or cement to render them non-ignitable or non-reactive.

2.4.6 Inspections

Each stabilization bin will be visually inspected once each operating day as described in Permit Attachment D, Inspection Procedures. At least once per month, the daily visual inspection will be conducted on empty bins to ensure the integrity of the bin and welds. An annual sonic test will be conducted to ensure that the thickness of the inner tank and outer shell is maintained.

2.4.7 Corrosion Protection

Corrosion is not anticipated to be a significant problem for the stabilization bins because of low humidity and the fact that the units are located indoors. No corrosion protection will be provided other than cathodic grounding. The thickness of the inner tank and outer shell compensates for the abrasion and impact forces of the backhoe bucket during waste stabilization mixing. The structural steel design of the bins is presented in the engineering report (Permit Attachment L).

Inspection of the bins is discussed in Sections 2.4.6 and 5.2.6. Visual inspection of the empty bins will be accomplished monthly, and sonic testing will be conducted annually. The system has been designed so that the inner tank and outer shell can be easily removed and replaced, if necessary.

2.4.8 Tank Assessments

The stabilization bins proposed have sufficient structural integrity and are acceptable for the storing and treating of hazardous waste. The assessment has been prepared by the engineer of record and is based on the design drawings (see Permit Attachment L3). After construction of the tank, it's its integrity will be assessed by an independent New Mexico registered professional engineer in accordance with 20 NMAC 4.1.500 (incorporating 40 CFR 264.192(a)). The engineering report presented with the tank design drawings in Permit Attachment L includes a discussion of wastes to be excluded from treatment in the bins due to their excessive corrosive effects. The engineering report presented with the tank design drawings in Permit

Attachments L and L1 include a discussion of wastes to be excluded from storage or treatment in steel tanks due to their excessive corrosive effects.

2.4.9 Ancillary Equipment

All ancillary equipment will be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction; according to API Publication 1615 (November 1979) or ANSI Standard B31.2 and ANSI Standard B31.4.

2.4.10 Installation Inspection and Tightness Testing

Proper handling procedures will be developed and followed to prevent damage to the system during installation. A qualified installation inspector will inspect the installed system to ensure adequate construction/installation. Any discrepancies will be resolved before the system is placed in service. The bins and ancillary equipment will be tested for water tightness, and any necessary repairs will be performed prior to the system being placed in service. Written statements by those who certify the design and supervise installation will be maintained in the operating record.

2.4.11 Repair and Certification of Tank Systems

If a release occurs from a primary tank system, the tank will be removed from service and all materials will be removed from the tank or secondary containment within 24 hours or as soon as reasonably possible. The tank system will be repaired prior to return to service. Major repairs will be certified by an independent New Mexico registered professional engineer. The certification will be submitted to the NMED within seven days after the tank system is returned to service.

2.5 LANDFILL

This section describes the design, construction, and operation of the landfill. As with the Facility units discussed previously in this section, the detailed design for the landfill is contained in Permit Attachment L. The overall landfill will be constructed in phases, as shown on Drawing 4. The first phase to be considered will be Phase 1A. This permit application refers only to Phase 1A. However, potential expansions of the landfill in future phases have been included in the general layout drawing for completeness. Detailed design drawings are only submitted for Phase 1A. The landfill design is presented on Drawings 6 through 27 in Permit Attachment L1, and a list of these drawings is provided on Drawing 1, Sheet 2 (Permit Attachment L1).

2.5.1 Design of Landfill

The landfill design specifies a double-lined landfill with a LCRS above the primary liner and a LDRS between the primary and secondary liners. The detailed design presented in Permit Attachment L specifically describes the relationship between the existing site topography and the landfill subgrade.

2.5.1.1 Nature and Quantity of Waste

As specified in the Waste Analysis Plan in Permit Attachment F, the Facility will accept RCRA hazardous waste and PCB waste, excluding selected waste. The excluded waste is listed in the Waste Analysis Plan (Permit Attachment F).

The wastes which will be accepted for placement in the landfill include all wastes listed in Part A of the application (presented in Permit Attachment K, *Permit Application - Part A*). All waste to be placed in the

landfill must meet LDR treatment standards. Additional details on wastes to be accepted at the Facility can be found in Permit Attachment F1, Section 4.1.1, Waste Analysis Plan.

The total landfill will have an area of approximately 100 acres and a capacity of approximately 10 million cubic yards of waste. The Phase 1A area will include approximately 35 acres (estimated final cover area) and have a capacity of approximately 553,200 cubic yards.

2.5.1.2 Liner Systems

The liner system will be installed to cover all surrounding earth that may come in contact with waste or leachate (see Drawings 9 and 11 in Permit Attachment L1). The primary system will consist of, from top to bottom, a 2-foot layer of protective soil, a geocomposite drainage layer, and a HDPE geomembrane liner.

The secondary system will consist of a geocomposite drainage layer, HDPE geomembrane liner, geosynthetic clay layer (GCL), and 6 inches of prepared subgrade. Both the primary and secondary systems will extend over the floor and slope areas of the landfill.

The primary and secondary geomembrane liners will be constructed of HDPE as defined in the construction specifications presented in Permit Attachment L2. This material will have sufficient strength and thickness to prevent failure as a result of pressure gradients, physical contact with waste or leachate, climatic conditions, stress of installation, and stress of daily operations. The liner systems and geosynthetic drainage layers will rest upon a prepared subgrade capable of providing support to the geosynthetics and preventing failure due to settlement, compression, or uplifting.

The liner system will be installed in stages as the landfill expands both in the vertical direction up slope and in the horizontal direction by phase. The three horizontal phases of landfill expansion are shown in Drawings 4, 6 and 7 in Permit Attachment L1. The benching technique considered for expansion of the landfill vertically up slope is shown in Drawings 8 through 11 (Permit Attachment L1) for Phase IA. Geosynthetic liner component tie-ins for the vertical expansion will be made on the access ramps leading into the landfill.

Stresses to the liner system can result from consolidation settlement of the subgrade during waste filling and localized equipment loading during protective soil placement. The subgrade consists of the 6-inch thickness of prepared soil subgrade and the existing ground formations below the landfill (see Drawing 7, Permit Attachment L1). Because the existing ground formations have been prestressed by overburden forces prior to landfill excavation, additional consolidation settlement during waste filling will be minimal.

Consolidation settlement of the 6-inch prepared soil subgrade layer will also be minimal because it is limited by the thickness of this layer and because this material will be compacted during installation. Localized equipment loading to the liner during protective soil placement will be controlled by specifying maximum equipment ground pressures in the construction specifications and by monitoring the placement of this material. Monitoring can be performed by individuals operating the placement equipment or by grade checkers who will observe the material placement to assure that appropriate thicknesses have been installed.

2.5.1.3 Leachate Collection and Removal System (LCRS)

The LCRS will be located above the primary liner system. Drawing 12 in Permit Attachment L1 provides the design details of the LCRS. A filtered LCRS layer consisting of a geocomposite drainage material will be constructed. Within the floor area of the LCRS layer will be the primary leachate collection piping, which is used to remove leachate from the landfill during the active life and post-closure care period. The piping as shown in Drawing 12 (Permit Attachment L1) is nominally 8 inches in diameter.

As demonstrated in the engineering report (Permit Attachment L), the LCRS will be (1) constructed of materials that are chemically resistant to the waste managed in the landfill and the leachate expected to be generated; (2) of sufficient strength and thickness to prevent collapse under pressure exerted by overlying wastes, waste cover material, and equipment used in the landfill; and (3) designed and operated to minimize clogging during the active life and post-closure care period through selection of an appropriate geotextile for the filtration application (see Permit Attachment L, Section 3.1.3).

The LCRS is sloped so that any leachate above the primary liner will drain to one of three sumps. The sumps and liquid removal methods will be of sufficient size to collect and remove liquids from the sumps and prevent liquids from backing up into the drainage layer.

The sump will be lined with the same liner system components as elsewhere in the landfill except that the drainage layer will expand to include gravel and a compacted clay liner material beneath the primary and secondary geomembranes which will fill the sump area. Leachate that collects in the sumps will be pumped through a pipe to the surface of the landfill where it will be collected in temporary storage tanks.

The leachate storage tanks will be chemically resistant, double lined poly tanks anchored to a concrete crest pad as shown in Sheets 1 and 2 of Drawing 19 (Permit Attachment L1). To prevent overfilling of the tanks, an individual tank will be installed for each landfill phase, and each tank will be equipped with high-level control switches, which will automatically shut down the leachate collection or leak detection sump pumps. In addition, an alarm will be activated that will notify personnel that the system requires maintenance. Pumps will be hard piped to the leachate storage tanks, and flow meters will be installed to monitor leachate pumping from the landfill should a catastrophic tank or pipe failure occur. All piping will be located within the concrete tank pad. The pump control panel will be located inside the tank pad with electrical wiring enclosed in waterproof conduits.

Because leachate is generated by the landfill, the leachate collection tanks will be used as 90-day storage units and managed accordingly. They are not required to be permitted.

The sump system will provide a method for measuring and recording the volume of liquid removed. Drainage materials will meet the minimum drainage requirements per the specifications. Sump design, filter fabric selection, floor pipe design, pump design, disposal system design, and action leakage rate (ALR) calculations involving removal of leachate flow from a 1-mm^2 hole/acre are discussed in the engineering report (Permit Attachment L). All pumpable liquid in the sump will be removed in a timely manner to prevent the head on the primary liner from exceeding 12 inches.

2.5.1.4 Leak Detection and Removal System (LDRS)

The design of the LDRS is similar to the design of the LCRS. The LDRS will be capable of detecting, collecting, and removing leaks of hazardous constituents through areas of the primary liner during the active life and post-closure care period. A filtered LDRS layer consisting of a geocomposite will be constructed below the primary geomembrane. Within the LDRS layer will be the LDRS piping, which will be used to detect and remove liquid from between the primary and secondary liners. The piping arrangement is shown on Drawing 18 in Permit Attachment L1.

As demonstrated in the engineering report (Permit Attachment L), the LDRS will be (1) constructed with a bottom slope of one percent or more; (2) constructed of a geocomposite with a hydraulic conductivity that exceeds 1 x 10^{-2} cm/sec; (3) constructed of materials that are chemically resistant to the waste managed in the landfill and the leachate expected to be generated; (4) of sufficient strength and thickness to prevent collapse under pressure exerted by overlying wastes, waste cover material, and equipment used at the landfill; and (5) designed and operated to minimize clogging during the active life and post-closure care period.

In addition, the sump and liquid removal methods are designed to be of sufficient size to collect and remove liquid from the sump and prevent liquid from backing up into the drainage layer (see ALR calculations in Permit Attachment J, *Action Leakage Rate and Response Action Plan*). A method will be provided for measuring and recording the volume of liquid present in the sump and liquid removed. All pumpable liquid in the sump will be removed in a timely manner to maintain the head on the secondary liner at less than 12 inches. The pump for the LDRS sump is located at the sump's low point so that pumpable liquids can be removed to the maximum extent possible.

2.5.1.5 Vadose Zone Monitoring System

The vadose zone monitoring sump serves as a detection system for leaking in the secondary LDRS system. Located directly beneath the LDRS sump, leakage through the secondary liner system will flow into the vadose sump, allowing it to be detected and removed. The vadose pipe and gravel arrangement is similar to the LCRS and LDRS arrangements. Drawings 16 through 18 in Permit Attachment L1 show the vadose zone in the sump.

2.5.1.6 Run-On/Run-Off Control

The run-on/run-off system is designed to be constructed, operated and maintained to control at least the water volume resulting from a 24-hour, 25-year storm. The run-on/run-off control system design is provided in Permit Attachments L and L1 and Volume IV of the permit application. The purpose of the run-on/run-off control system is to prevent any contamination present onsite from migrating off site by minimizing the volume of liquid entering the landfill and therefore, limiting the potential to transport contaminants placed in the landfill.
Run-on/run-off will be collected in one of three different collection basins, depending on the source of the water. The collection basins are listed and discussed in detail below:

- The Facility Stormwater Detention Basin
- The Phase 1A Landfill Stormwater Collection Basin
- The Phase 1A Landfill Contaminated Water Basin

The Facility Stormwater Detention Basin is located northwest of the landfill area, as shown on Drawings 6 and 25 in Permit Attachment L1. Run-on originating from around the landfill will be directed away from the proposed landfill area using unlined landfill perimeter ditches (see Drawing 25, Permit Attachment L1). These ditches will prevent water from outside the landfill from entering the active portion of the landfill. Based on the topography of the site, the run-on is expected to move from the east/southeast to the west/northwest and be diverted to the Stormwater Detention Basin. The Stormwater Detention Basin is also intended to collect run-off from the rest of the Facility (not including the landfill) and will be lined with a single 60 mil HDPE liner as a precaution. The detention basin will be pumped after rainfall events that result in the accumulation of water in the basin.

The Phase 1A Landfill Stormwater Collection Basin is located at the toe of the inter-phase cut slope in the landfill, as shown on Drawings 10 and 13 in Permit Attachment L1. This basin will collect run-off from the inactive portion of the Phase 1A landfill. During the initial stages of the landfill operation, run-off from the landfill side slopes above the liner system will be channeled away from the waste by the slope drainage interceptor ditch. The water in the Stormwater Collection Basin will be handled as clean water because it will not come in contact with the landfill waste. The basin is lined with a single 60 mil HDPE liner.

The Phase 1A Landfill Contaminated Water Basin is located at the bottom of the Phase 1A landfill, as shown on Drawing 10 in Permit Attachment L1. This basin overlies the entire landfill liner system. Run-off from the active portion of the landfill, which does not infiltrate into the LCRS, will be collected in this basin and will be pumped out of the landfill within 24 hours of a storm event. The water pumped out of the basin will be collected using vacuum trucks and sampled and analyzed for hazardous constituents. Contaminated water will be treated either in the stabilization process or the evaporation pond, and treatment residuals will be disposed of in compliance with appropriate regulations. The contaminated water basin will be maintained to ensure that the adequate amount of protective cover soil (2 feet) is present over the liner system.

2.5.1.7 Wind Dispersal Control Procedures

Wind dispersal control will consist of a daily soil cover obtained from excavation. Typically, the daily cover will consist of soil spread on top of the waste placement area to a depth of approximately 0.5-feet.

Depending on the local wind conditions, traffic, and the number of fine particles in the soil cover, dust may be generated from the surface. Typically, this dust generation is reduced by restricting traffic to predetermined haul roads on the surface of the daily cover and applying small amounts of water spray to moisten the soil surface. 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 onto the soil cover.

The frequency of the water application depends on the climate and traffic. In areas on the daily cover surface where traffic is not present, an occasional water spray will cause a crust to form on the soil surface, inhibiting dust formation. Sufficient moisture will be applied to all soil surfaces, including roads, on an as needed basis to prevent wind erosion of the daily cover. However, the application of water will be limited so that ponding in the landfill does not occur. Because the water is a topical surface application, the majority of it will evaporate rather than seep into the waste to become leachate.

2.5.1.8 Gas Generation Management

The landfill will receive MSW or C&D waste and gas generated as a result of biological decomposition of organic wastes.. Hazardous organic wastes placed in the landfill will meet LDRs, which will limit the organic gas generation potential. The hazardous waste acceptance procedures at the Facility will be designed to limit receipt of wastes with potential for significant gas generation. The waste acceptance program is described in Section 4.3 and outlines the procedures that will be used to test for reactive cyanides and sulfides, other reactive chemical groups, waste compatibility, and biodegradability of sorbents.

During the operational phase of the landfill, periodic checks will be made within the landfill to detect the presence of hazardous gases and volatile organics. Surveys of the active landfill surface area and the riser pipes with an organic vapor meter (OVM) or comparable device will be performed quarterly to detect the presence of organic compounds. PPE levels and respiratory protection levels will be modified accordingly, if necessary. This testing will be conducted in addition to the fingerprint testing conducted on incoming waste. The data from both tests will be evaluated to determine what steps are necessary to reduce the generation and/or release of these gases to levels which meet prescribed regulatory air quality standards.

Prior to closure of the landfill, an assessment will be made of the landfill waste gas generating potential. This assessment will be based on review of fingerprint test data and data gathered in the landfill during operations. Based on this assessment, if it is concluded that gas generation may result in gas build-ups beneath the barrier layer of the cover or releases following closure exceeding regulatory air quality standards, then provisions will be made to collect and monitor gas generation and release during the post-closure period. If this occurs, the latest technology available will be implemented into the construction of the cover system, which may require a modification to the Permit.

2.5.1.9 Cover Design

The design of the final cover is described in Permit Attachment O, Closure and Post-Closure Care. Additional details of the final cover design are shown in Permit Attachments L and L1.

2.5.1.10 Landfill Location Description

The proposed site is in eastern Chaves County, New Mexico.

Geographic Location

The proposed site is located in a remote, unpopulated portion of New Mexico, 36 miles from the city of Tatum. The primary land use in the surrounding area is ranching, which will not be impacted by landfill operations.

Geologic Setting

The proposed site is to be developed within impermeable, geologically stable sediments of the Dockum Group of Triassic age (see Section 3.4 of the permit application). The base of the proposed landfill will be designed to rest on 600-foot thickness of unsaturated mudstone of the Lower Dockum. This thick sequence acts as a geologic barrier to potential vertical migration of contaminants. Potential lateral migration throughunsaturated Upper Dockum sediments will be retarded by the low permeability of the host sediments (siltstones and mudstones) and engineered barriers such as the liner systems.

2.5.2 Construction

Construction activities will consist of site preparation; excavation and preparation of landfill bottoms and subsurface sides; and construction of the liner, LCRS, and LDRS in accordance with the specifications and Permit Attachment M, *Construction Quality Assurance Plan.*

2.5.2.1 Site Preparation

Existing site drainage will be modified to route any run-on away from the landfill area. Additionally, drainage of the landfill area itself will be modified to route water away from the initial fill area. Access roads and weighing units will be constructed. A fence will also be installed around the Facility. These components and installations are shown in Drawing 4 presented in Permit Attachment L1.

2.5.2.2 Excavation and Preparation of Landfill Bottom and Subsurface Sides

The landfill will be constructed and excavated in sections to allow a smaller portion of the landfill surface to be exposed to precipitation at any one time. The initial working area of the landfill will be excavated to design depth. The excavated material will be stockpiled on unexcavated soil near the active area for use as cover material. The landfill bottom will be sloped toward the central axis of each phase to provide drainage of leachate to the sump. The EPA minimum required slope of 1 percent has been exceeded in all cases. The upper 6 inches of the subgrade will consist of a soil material which has been sized, moisture conditioned, compacted, and trimmed to provide a smooth stable surface for geosynthetic material placement.

2.5.2.3 Construction Quality Assurance Plan

Permit Attachment M contains the Construction Quality Assurance Plan. Implementation of CQA procedures will result in increased leachate collection efficiency and reduced leakage through the landfill and evaporation pond liners. Additionally, use of CQA will result in fewer costly repairs to the landfill after wastes have been received, fewer occasions of exceeding the ALR, and a decreasing need for corrective action.

The CQA Plan describes the CQA procedures for the installation of the soil and geosynthetic components for the hazardous waste landfill, evaporation pond, and other units requiring subsurface containment systems comprised of soils and geosynthetic components constructed at the Facility. These procedures apply to construction of the lining systems and final cover systems, including the LCRS and LDRS systems.
The objectives of the CQA program include the following:

- development of a clearly defined organizational structure within which the project can be planned and completed;
- assurance that the methods, techniques, and procedures used to collect, analyze, verify, and report data will produce sound, documented, and defensible results;
- assurance that equipment or instrumentation used in field or laboratory testing activities has been properly maintained and calibrated as required;
- assurance that the required documentation of quality performance is properly generated and that such documentation is adequate and complete for the activity;
- development of permanent project CQA document files identifiable and traceable to each activity;
- systematic control of items, equipment, materials, or activities not in conformity with established requirements or methods, and assurance of prompt and effective corrective action when nonconforming conditions are identified;
- regular evaluation of the adequacy of the CQA program by means of quality audits coupled with the effective action necessary to correct deficiencies and prevent recurrence;
- assurance that technical and CQA personnel are qualified and trained to perform the work activities to which they have been assigned; and,
- assurance that subcontractors and consultants used in assisting project activities have an acceptable CQA program or are participating in accordance with the Facility CQA program guidelines.

Upon completion of construction activities, the Facility will submit certification signed by the New Mexico registered professional engineer serving as the CQA certifying engineer, which states that the unit has been constructed in accordance with the design drawings, Construction Quality Assurance Plan, and Construction Specifications and meets the requirement of 40 CFR 264.19. Documentation supporting the certification will be maintained in the operating record and will be furnished to the NMED upon request. Wastes will not be accepted at the constructed portion of the landfill until the NMED either approves the certification or waives the approval requirement.

2.5.3 Operation

The landfill will be operated in a safe and proper manner, in accordance with the following requirements:

2.5.3.1 Inspections and Monitoring

Permit Attachment D contains information on inspections and monitoring.

2.5.3.2 Maintenance and Repairs

The landfill structure will be maintained through a routine preventive maintenance program which will be fully defined in the final site operations plan. Preventative maintenance will involve regular visual inspections of the landfill liner (where feasible) and review of leachate collection and analysis results. Equipment, such as pumps, generators, electrical lighting, and warning systems, will be subject to manufacturer recommended programs. Preventative maintenance information will be documented and any deviation from normal conditions will be closely tracked and corrected as necessary.

2.5.3.3 Warning Signs

Permit Attachment B contains information about warning signs.

2.5.3.4 Record Keeping

All documentation pertaining to the results of waste analyses, waste compatibility analyses and waste handling compliance will be maintained in the Facility operating record. The Facility will be capable of determining exactly where a waste has been placed within a three-dimensional grid system. Landfill inspection records will be maintained on file for at least 3 years, in accordance with 40 CFR 264.15(d) (see Section 5.2.2).

2.5.3.5 List of Hazardous Wastes to be Placed in Landfill

The wastes to be placed in the landfill are described in Permit Attachment F.

2.5.3.6 Specific Requirements for Ignitable/Reactive Wastes

Wastes that do not meet LDRs, as defined in Section 4.5 of Permit Attachment F, will not be placed in the landfill. Therefore, untreated ignitable and reactive waste (as defined in 20 NMAC 4.1) will not be placed in the landfill.

Procedures That Render Wastes Nonreactive

Reactive waste will be treated or mixed prior to placement in the landfill so that the resulting waste mixture no longer meets the definition of reactive waste.

Procedures for Preventing Reactions

Reactive waste will be separated from sources of reaction, including but not limited to open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks, spontaneous ignition, and radiant heat. When reactive waste is being handled, smoking and open flames will not be permitted. "No Smoking" signs written in English and Spanish will be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

Procedures that Render Wastes Nonignitable

Ignitable waste will be treated or mixed prior to placement in the landfill so that the resulting waste mixture no longer meets the definition of ignitable waste.

2.5.3.7 Procedures for Protecting Wastes

Procedures for the handling of incompatible wastes, lab packs, bulk and containerized liquids, and containers that are less than full are discussed below.

Procedures for Ensuring Safe Disposal of Incompatible Wastes

Procedures for identifying incompatible wastes are discussed in Permit Attachment F. At a minimum, incompatible wastes will be spaced a sufficient distance apart in the landfill to prevent commingling. The landfill placement operation will be based on a set of grids along the north end of the landfill and along both the east and west sides of the landfill. Incompatible waste will be placed with a minimum of one grid in between the loads. Grids are normally spaced at approximately 50 to 100 foot intervals. Therefore, the minimum spacing would be 50 feet.

Procedures for Identifying Contents and Ensuring Proper Landfilling of Incoming Lab Packs

Lab packs may be placed in the landfill only if they meet the requirements in 40 CFR 264.316. Containers must be non-leaking and appropriate to the waste being contained. Appropriate non-biodegradable sorbents will be used. The Waste Analysis Plan presented in Section 4.0 will ensure that lab packs meet all of the applicable requirements prior to disposal. As with all other waste, lab packs must be properly characterized prior to acceptance at the Facility and meet the LDR treatment criteria prior to disposal. Lab packs will not be accepted if incompatible wastes are placed within the same lab pack or if reactive wastes have not been treated to render them non-reactive. Lab packs will meet all applicable LDR (40 CFR 268) requirements.

Special Requirements for Bulk and Containerized Liquids

Bulk and containerized wastes will not be placed in the landfill unless they meet the requirements in 40 CFR 264.314. Containers holding free liquids will not be placed in the landfill unless all free liquid has been eliminated by absorption, decanting, solidification, or other method. Very small containers, such as ampules or containers designed to hold liquids for use other than storage, may be placed in the landfill (40 CFR 264.314[d]).

Special Requirements for Containers

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 Permit Attachment L and Volume VI of the permit application.

The average daily flow rate in the LDRS sump will be calculated in accordance with the Action Leakage Rate and Response Action Plan, which is also presented in Permit Attachment J.

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) determining 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;

- removing pumpable liquids from the sumps 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; and,

- if water ponds on the surface of the daily cover due to a heavy rain event, vacuum trucks will be utilized to remove as much of the standing water as possible before it can seep into the waste.

Leak Detected Below the Action Leakage Rate

Flow rates less than the ALR are expected under normal operating 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;

- verify that the sump pump is working as designed;

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

- 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 Permit Attachment M).;

- 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:
  - ◊ 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.

2.5.3.10 Closure

A description of landfill closure is provided in Permit Attachment O, *Closure Plan*.

2.6 TREATMENT IN EVAPORATION POND

Only waste that meets LDR treatment standards will be placed in the evaporation pond. Waste will be received from off site generators and from the leachate collection system associated with the landfill or other site units (i.e. waste storage areas). Evaporation will be the only treatment occurring in the evaporation pond.

2.6.1 Design of Evaporation Pond

The Facility is proposing design and operating practices for the evaporation pond in accordance with 40 CFR 264.221. The evaporation pond design is provided on Drawings 28 through 32 in Permit Attachment L1 and will have an approximate operating capacity of 5.2 million gallons over an approximate area of 78,600 square feet.

The evaporation pond has been designed as a double-lined unit with a LDRS between the primary and secondary liners. The unit is designed and will be constructed, maintained, and operated to prevent overtopping resulting from normal or abnormal operations; overfilling; wind and wave action; rainfall; run-on; malfunctions of level controllers, alarms, and other equipment; and human error.

2.6.1.1 Liner System

The liner system, shown in Drawings 29 and 32 of Permit Attachment L1, will include a primary (top) geomembrane liner above a geonet layer and a secondary (bottom) geomembrane liner, supported by 3 feet of compacted clay liner material with a hydraulic conductivity of no more than 1 x 10^{-7} cm/sec. Soil liner leachate compatibility tests (two stage permeability testing using ASTM D 5084) will be conducted prior to construction. In addition, a test fill will be constructed, as per the procedures outlined in the CQA Plan contained in Permit Attachment M. Soil liner compatibility is normally not a problem unless the leachate contains high concentrations of organics (Eklund, 1985; Peterson and Gee, 1985; Mitchell and Madsen, 1987; Finno and Schubert, 1986; Lo et al., 1994; Day, 1994; Shackel ford, 1994). Permit Attachment F1, the Waste Analysis Plan, does not allow the site to accept high concentrations of organics, therefore the soil and leachate compatibility is not expected to be a problem.

The compacted clay surface will provide a stable foundation for the liner and resistance to pressure gradients above and below the liner. The evaporation pond liner system will be located on top of the excavated subgrade which will be located approximately 15 feet below the existing ground surface. At this depth the basal portions of the evaporation pond will lie in either the Quaternary sand or Upper Dockum units. Settlement evaluations presented in the engineering report (see Appendix E in Volume V of the permit application) demonstrate that either of these units will adequately serve as a foundation for the evaporation pond. Near surface evaporation pond slope areas will be located on top of Quaternary soil materials. The engineering report also presents settlement evaluations for the evaporation pond subgrade within the Quaternary soil materials and stability evaluation of any load bearing embankments.

Design and operating practices, together with the geologic setting of the Facility, will prevent the migration of any hazardous constituent to adjacent subsurface soil, surface water, or groundwater. The top liner is designed to minimize the migration of hazardous constituents through the liner system during the active life and closure period of the evaporation pond. A 60-mil HDPE geomembrane material will be used for the primary liner component. HDPE liners have been shown to be chemically resistant to landfill leachates based on operational performance and on EPA 9090 compatibility tests conducted on actual landfill leachates and synthetically generated leachates. Calculations that define the stresses on the evaporation pond liner system due to thermal expansion and contraction are also provided in the engineering report (Appendix E, Volume VI of the permit application).

Drawing 32 in Permit Attachment L1 shows that the bottom liner will be a two-component system, including a geomembrane and a compacted clay liner. The lower component, the 3 feet of compacted clay, will minimize the migration of hazardous constituents if a breach through the upper components occurs.

Material for the evaporation pond compacted clay liner will be siltstone or mudstone obtained during landfill excavation within the Upper Dockum. During landfill excavation, appropriate siltstone and mudstone materials will be stockpiled and if necessary, conditioned such that compacted soil liner specifications are met.

The test results presented in Appendices D and E (Volumes V and VI of the permit application) indicate that the unprocessed material has an intact permeability close to 1 x 10^{-7} cm/sec. Therefore, with processing, the material can be placed and compacted to meet the permeability specification of 1 x 10^{-7} cm/sec or less.

Additional laboratory tests will be conducted on processed siltstone and mudstone samples during the test fill program to confirm their permeability characteristics.

The liners will be constructed of materials that will be chemically resistant to the waste managed in the evaporation pond and any liquid that has accumulated in the leak detection system. The liner system materials will have appropriate chemical properties and sufficient strength and thickness to prevent failure as a result of pressure gradients, physical contact with the waste or leaked liquid to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation.

Information pertaining to the chemical properties and physical strength of the liner system materials was supplied by the manufacturer and is included in the construction specifications presented in Volume IV of the permit application.

The geonet drainage system is capable of effectively minimizing the head developing on the secondary evaporation pond liner. Geonet clogging, which reduces the overall drainage capacity, has been incorporated into the design of the drainage system as a factor of safety. This safety factor has been applied in the ALR calculation presented in the engineering report (Permit Attachments L and J). This approach is suggested in EPA guidance for determining the ALR in the preamble to the January 29, 1992, final rule for Liners and Leak Detection System for Hazardous Waste Land Disposal Units (57 FR 3462).

Stresses on geosynthetics during installation are likely to be negligible. The evaporation pond slope lengths will be less than 40 feet, and the slope ratio is relatively shallow, causing little tensile stress to be exerted in the liner. Also, there will be no horizontal seams in the geosynthetic liner material. Traditional anchoring methods will be used. 60-mil HDPE material will be used, which, when properly installed and welded, is of sufficient tensile strength to withstand the stresses of installation.

2.6.1.2 Leak Detection and Removal System/Vadose Monitoring System

The LDRS consists of a geonet layer of cross-linked ribbed HDPE, a sump, and associated detection and liquid removal pipes. A pump located in the LDRS pipe 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.

The LDRS unit will have the following characteristics:

- be constructed with a bottom slope of 1% or more;
- be constructed of synthetic or geonet drainage materials with a minimum transmissivity of 5 x 10^{-3} m^2/sec;
- be constructed of materials that are chemically resistant to the waste managed in the evaporation pond and any leachate generated in the landfill;
- of sufficient strength and thickness to prevent collapse under pressure exerted by overlying wastes, and equipment used at the evaporation pond;

- designed and operated to minimize clogging during the active life and closure period of the evaporation pond; and,

- constructed with sump and liquid removal methods.

LDRS details are presented in Drawing 32 in Permit Attachment L1. The LDRS will be sloped so that any leachate below the primary liner will drain to the centrally located sump. The sump pit design is also shown in the drawing.

The collection system has been designed to be of sufficient size to collect and remove liquids from the sump and prevent liquid from backing up into the drainage layer. A sump pump and associated piping will be installed in the lower portion of the sump. The sump system will be covered with gravel to bring the area to the level of the evaporation pond floor. The gravel will serve as an expanded drainage layer providing space for the piping.

The sump system will be provided with a method for measuring and recording the volume of liquids present and the volume of liquid removed. All pumpable liquids in the sump will be removed in a timely manner to maintain the head on the bottom liner below 12 inches.

A pump operating level will be established to ensure that backup into the drainage layer does not occur, and the head in the sump is maintained at less than 12 inches.

Methods and equipment to be used to measure and record liquid handling volumes during evaporation pond operation will include survey monuments and elevation rods, flow meters, and fluid level transducers. Elevation rods will be placed in the evaporation pond following pond construction. The rods will be fixed to a ballasted base, which will rest on the primary geomembrane liner. The rods will have graduated markings from which pond liquid elevations and critical freeboard levels can be observed and pond volumes can be determined. Rod elevations will be checked periodically by survey. Flow meters will be used to record volumes of liquid discharged into the pond and removed from the LDRS drainage system sump. The transducers located in the LDRS sump will provide a reading for the liquid levels in the sump at any time during operation. The evaporation pond vadose monitoring sump serves as a detection system for leakage of the LDRS sump. Leakage through the secondary liner system will flow into the vadose sump. This will allow the leakage to be detected and moved. The vadose pipe and gravel arrangement is similar to the LDRS arrangement.

2.6.1.3 Separator Berm System

The evaporation pond design incorporates a separator berm between the two pond sections, Pond 1A and Pond 1B (see Drawing 28 in Permit Attachment L1). This pond design provides two independent treatment areas. Thus, 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. Two feet of freeboard will be maintained in the evaporation pond at all times. The evaporation pond design and ongoing proper maintenance of the unit will ensure sufficient structural integrity to prevent massive failure. The evaporation pond will be of sufficient volume and freeboard capacity to contain the 100-year 24-hour storm event. This design capacity, coupled with the management of surface water and routine inspections, will help prevent overtopping (see Section 2.6.4.3).

2.6.1.4 Run-On/Run-Off Control

The run-on/run-off system is designed to be constructed, operated and maintained to control at least the water volume resulting from a 24-hour, 25-year storm. Run-on originating off-site will be directed around the

proposed evaporation pond into the site wide surface diversion channels shown in Drawing 25 of Permit Attachment L1, using unlined ditches.

2.6.1.5 Evaporation Pond Location Description

As indicated in Drawing 4 presented in Permit Attachment L1, the evaporation pond, will be located in the northwest corner of the active portion of the Facility.

2.6.2 Construction

Construction activities will consist of site preparation; excavation, and preparation of the bottom and sides of the evaporation pond; construction of dikes; installation of the liners, LDRS and vadose system; and CQA.

2.6.2.1 Site Preparation

Existing site drainage will be modified to route any run-on away from the evaporation pond area. Access roads and a truck discharge station will be constructed. These engineered controls and components are shown on Drawings 4, 5, and 31 in Permit Attachment L1.

2.6.2.2 Excavation and Preparation of Evaporation Pond Bottom and Subsurface Sides

The evaporation pond will be constructed and excavated to a design depth of approximately 15 feet. The excavated material will be stockpiled for future use. The evaporation pond bottom will be constructed with a 2% (approximate) slope toward the central sump location.

2.6.2.3 Structural Fill Areas

Areas of the evaporation pond requiring structural fill will be constructed according to the specifications presented in Permit Application L2, Section 02110 Site Preparation and Earthwork.

2.6.2.4 Liner, LDRS, and Vadose System Installation

Three feet of clay will be installed directly on the excavated subgrade, forming the lower portion of the secondary liner. The clay will have a permeability of 1×10^{-7} cm/sec or less. A geomembrane liner will be placed over the entire clay liner, including the sump area and the separator berm. A geonet layer of cross-linked ribs, which will serve as the LDRS, will be installed next. The sump and associated piping will then be installed, and gravel will be placed in the depression to bring the surface level of the sump area to that of the evaporation pond floor. A filter geotextile will surround the gravel in the sump area to protect the geomembrane liner and to reduce the sediment clogging of the geonet.

The liners will be installed to cover all surrounding soils likely to be in contact with the waste or leachate.

The sump pump and pressure transducers (or other) liquid detection device will be installed next to the LDRS and vadose pipes during construction. These devices will be attached to a control panel. 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 is related to the sump design and pump type selected. The wastewater will be sampled, analyzed and handled in accordance with the Facility requirements.

2.6.2.5 Construction Quality Assurance Plan

Section 2.5.2.3 contains information detailing the CQA Plan. In addition, the CQA plan is contained in Permit Attachment M.

2.6.3 Nature of Waste

Hazardous wastes which may be placed in the evaporation pond include all wastes listed in Part A of the application (Permit Attachment K), provided that LDR treatment standards are met prior to placement of the wastes. Potential contaminants in the wastewater will include those found in wastes accepted at the landfill and in other wastes as specified in Permit Attachment F1. In general, these wastes include RCRA hazardous wastes and PCB wastes (less than 50 ppm), excluding the waste types listed in Section 2.5.1.1 and the wastes covered by 20 NMAC 4.1.500 (including 40 CFR 264, Subparts BB and CC).

2.6.4 Operation of the Evaporation Pond

Operation of the evaporation pond will involve three main activities: (1) waste acceptance and receiving; (2) placement of wastewater into the evaporation pond; and (3) inspection, monitoring, and repair of the unit. Each of these activities is described below.

2.6.4.1 Waste Acceptance and Receiving

Off site generators must provide a full characterization of their waste to the Facility prior to receiving approval to ship the waste to the Facility. After approval has been received, shipment of waste to the Facility will proceed as described in Section 2.1.2. Tanker trucks will then transport their waste to the tanker discharge pad at the evaporation pond.

Once the waste is received onsite, it will be sampled and fingerprint tested to verify that it is the same waste that was previously characterized. Landfill leachate waste must also be sampled and analyzed prior to being placed in the evaporation pond. Waste analysis and fingerprint testing are more fully described in Permit Attachment F1. This waste analysis and characterization data will be used 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.

Following a determination that the leachate from the landfill meets the acceptance criteria, the waste will be pumped from the leachate collection tank to a tanker truck. Approved leachate trucks and off site waste trucks will transport the waste to the tanker discharge pad at the evaporation pond.

Landfill leachate collection waste and off site waste that is determined not to meet LDR treatment standards will be treated in the stabilization unit or shipped to other appropriate treatment facilities.

2.6.4.2 Placement of Wastewater into the Evaporation Pond

Tanker trucks will be unloaded directly into the evaporation pond through a series of hoses, valves and pipes. The tanker discharge pad will be constructed of concrete and will be sloped toward the evaporation pond to drain any spills or leaks into the pond. Details of the tanker discharge pad are provided in Sheets 1 and 2 of Drawing 31 (Permit Attachment L1).

2.6.4.3 Inspections, Monitoring, and Repairs

The evaporation pond structure and dikes will be maintained through a routine inspection program. The volume of liquids in the ponds will be dependent on the waste market. Net evaporation (total evaporation minus rainfall) for the site is in the range of 80 inches per year. The freeboard level will be routinely

inspected to ensure that approved or acceptable freeboard levels are maintained and that overtopping does not occur. Pond overtopping will be controlled operationally by maintaining evaporation pond fluid levels below the freeboard elevation and by ensuring that any storm water run-on from surrounding areas is diverted around the evaporation pond. Sludge will be removed by vacuum trucks and treated in the stabilization bins. Sludge will be removed on a routine basis to maintain the operational level in the pond. The vacuum trucks will park on a concrete pad during sludge removal. Sludge will be removed by means of pumps and flexible hoses. Vacuum trucks will be washed thoroughly in the truck wash unit after sludge removal and transporation to the stabilization bins. Grading of the surrounding surface area has been

included as a part of the surface water management. Inspections will occur on a weekly basis and after storms to detect evidence of deterioration, malfunction, improper operation of overtopping control systems or sudden drops in the liquid level. The liner exposed above the operating pond level will be inspected to make sure that the liner is not damaged.

The engineering report includes a discussion of the evaporation pond LDRS ALR (see Section 4.0 in Permit Attachment L). LDRS drainage layer flow capacity, LDRS sump capacity, fluid head calculations, and flow rate conversions are included, as well as response actions for ALR exceedance.

The two evaporation pond sections allow for one section of the pond to be removed from service if the liquid level suddenly drops for an unknown reason. If liquid losses exceed daily evaporation losses and no other reasonable explanation is found, then that section of the evaporation pond will be shut down and authorities at the NMED will be notified immediately. If a section of the evaporation pond must be removed from service, flow of waste to that section will be stopped, leakage 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 a future failure. Responses to such situations, including NMED notification, are described in Permit Attachment E, Contingency Plan.

Additional inspection and monitoring information is provided in Permit Attachment B, Procedures to Prevent Hazards.

2.6.4.4 Specific Requirements for Ignitable, Reactive, and/or Incompatible Wastes

Wastes that are ignitable, reactive, and/or incompatible will not be placed in the evaporation pond at the same time. Waste acceptance procedures, described in Permit Attachment F1, Waste Analysis Plan, will ensure that such wastes are not inadvertently placed together in the evaporation pond.

2.6.4.5 Warning Signs

Permit Attachment B, Procedures to Prevent Hazards, contains information on warning signs.

2.6.4.6 Record Keeping

All documentation pertaining to the results of waste analyses or waste compatibility analyses will be maintained in the Facility operating record. Inspection records will be maintained in the inspection log for the evaporation pond.

2.6.4.7 Action Leakage Rate

The proposed ALR for the evaporation pond is 1,000 gpad. This ALR was selected based on a discussion in the preamble to the final rule for Liners and Leak Detection Systems for Hazardous Waste Land Disposal Units (57 FR 3462), in which the EPA indicates that an ALR below 1,000 gpad should not be required.

The average daily flow rate to the sump system will be calculated and recorded weekly during the active life and closure period of the evaporation pond to ensure that the ALR is not exceeded.

2.6.4.8 Response Action Plan

The response action plan is described in Section 2.5.3.9 and Permit Attachment J.

2.6.4.9 Closure

A description of how hazardous waste residues will be removed from the evaporation pond at closure is provided in Permit Attachment O, Closure.

2.7 OPERATIONS AND MAINTENANCE

All of the regulated facilities will be constructed in accordance with the Design Drawing, Specifications and Construction Quality Assurance Plan presented in Permit Attachments L1, L2, and M, respectively. The operations and maintenance of the units will be in accordance with the Operations and Maintenance Plan presented in Permit Attachment N. In general, all maintenance and repairs to the facilities will be completed to meet the requirements of the original Design Drawings and Specifications and will be monitored in compliance with the Construction Quality Assurance manual.

8.8.3 Liability Requirements

As stated in 40 CFR 264.147, an owner or operator of a hazardous waste treatment, storage, or disposal facility must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences which arise from the operation of the facility. This section of the regulations requires that the owner/operator of such a facility provide the administrator one of the following instruments at least 60 days prior to the initial receipt of waste;

1. Liability insurance
2. Financial test
3. Letter of credit
4. Surety bond
5. Trust fund
6. Combination of the above

GMI will submit required documentation demonstrating financial assurance to meet the liability requirements at least 60 days prior to receiving the first hazardous waste at the Facility. The financial assurance mechanism will comply with requirements in 40 CFR Part 264.147.

9.0 WASTE MANAGEMENT

The purpose of this section is to describe the Facility Waste Minimization (WM)/ Pollution Prevention (P2) Program, which will be an organized, comprehensive, and continuous effort to systematically reduce waste generation during the life of the Facility. As such, the program will be ever-changing and expanding to 40-44 incorporate new or more effective WM/P2 opportunities as they are developed. The level of detail in this description of the WM/P2 Program is commensurate with the level of detail currently available with respect to day-to-day operation of the Facility.

The Facility is committed to the prevention of all forms of pollution and the minimization of all wastes generated at its hazardous waste landfill. Source reduction of waste is the company's highest waste minimization priority, followed by recycling and reuse.

For an industrial facility, such as the Facility, a Waste Minimization Program is an important link to providing increased protection of public health, employee health, and the environment. As part of its WM/P2 Program, the Facility will develop a detailed WM/P2 Program Plan as soon as the intricate details of Facility operation are more clearly defined.

It is anticipated that only insignificant amounts of waste will be generated from site operations. Leachate and wastewater may be generated from the wastes placed in the landfill and from precipitation events. Other wastes that may be generated include waste oils and other maintenance wastes, office wastes, soil and debris from spills, personal protective equipment, excess chemicals, and freon. Not all of these wastes are expected to be hazardous. All site-generated waste will be stored, treated, recycled, reused, and/or disposed in accordance with applicable regulations. Waste minimization/pollution prevention efforts will be focused on all forms of waste, not just those wastes defined as hazardous in the New Mexico Hazardous Waste Management Regulations.

Waste minimization focuses on reducing the amounts and toxicity of waste materials generated from any process or other plant activity and on reusing, recycling, or reclaiming waste materials for future use and benefit. It should be noted that the terms waste minimization and pollution prevention will be used somewhat interchangeably throughout this section. However, the terms have distinctly different meanings, as defined below:

Waste Minimization

Waste minimization is the reduction, to the extent feasible, of the amounts and toxicity of waste materials after they are generated from any process or other activity. Primary waste minimization techniques include reuse, recycling, or reclamation of waste materials for future use and benefit.

Pollution Prevention

Pollution prevention is the use of any process, practice, or procedure to prevent the generation of waste. Examples of primary pollution prevention techniques include material substitutions (e.g., nonhazardous materials used in place of hazardous materials), process changes, and procedural improvements.

9.1 BRIEF HISTORY OF WM/P2 IN THE UNITED STATES

Current trends in environmental policy and regulation indicate a move from pollution control to pollution prevention and waste minimization in the private sector. Throughout the 1980s, the United States became increasingly aware of the environmental damage and restoration costs associated with past improper disposal of hazardous wastes. In the 1984 HSWA to RCRA, Congress declared that it is:

> *. . . the national policy of the United States that, wherever feasible, the generation of hazardous waste is to be reduced or eliminated as expeditiously as possible. Waste that is nevertheless generated, should be treated, stored, or disposed of so as to minimize present and future threat to human health and the environment. From HSWA, Congress clearly intended a hierarchy of actions for managing the nation's waste problems, with priority given to reduction or elimination of waste over treatment, storage, and disposal of waste after it has been generated.*

The Pollution Prevention Act of 1990 expanded this concept to include all forms of environmental pollution. This statute calls pollution prevention a "National Objective" and establishes a hierarchy of environmental protection priorities as national policy. The order of priority is summarized as follows:

1. Reduction or elimination of waste prior to generation (source reduction) is the best option.

2. Recycling and reuse of waste that is generated is the second best option in cases when pollution cannot be prevented.

3. Treatment (reclamation or toxicity reduction) of waste that is generated is the next best option in cases where feasible prevention and recycling opportunities are not available or possible.

4. Disposal of generated waste is the least desirable option.

9.2 PURPOSE AND OBJECTIVES OF THE FACILITY WASTE MINIMIZATION/POLLUTION PREVENTION PROGRAM

The purpose of this section is to describe the Facility WM/P2 Program. This Program will establish the strategic framework for integrating waste minimization and pollution prevention into all Facility activities. The objectives of the Program are the following:

- raising employee awareness about the reasons for and benefits of a WM/P2 Program and instilling a desire to minimize waste at the lowest organizational levels possible;

- describing planned initiatives that support and promote WM/P2 through various training opportunities, including recycling, reuse, and recovery programs, and good housekeeping practices;

- adapting and implementing existing technologies as rapidly as possible to reduce waste generation at the source and to recycle waste products; and,

- reducing all forms and categories of waste to the lowest extent practical.

9.3 BENEFITS OF THE FACILITY WASTE MINIMIZATION/POLLUTION

The Facility WM/P2 Program, like all effective waste minimization programs, will yield numerous benefits and advantages, which are either tangible or intangible. Some of these benefits are listed below:

- reduced waste management costs, including labor and disposal costs;

- reduced regulatory compliance costs, including inspection costs and possible fines;

- reduced raw material costs;

- reduced potential for releases of hazardous chemicals and wastes;
- increased worker safety; and,
- reduced civil and criminal liabilities under environmental laws.

9.4 ELEMENTS AND GOALS OF THE FACILITY WM/P2 PROGRAM

As previously mentioned, the Facility will continue to expand and refine its WM/P2 Program during the life of the Facility. The elements of the Program include those methods commonly used to form the baseline, or starting point, for effective WM/P2 Programs. The elements and goals of the Program are listed below as action-items to be completed during the initial phases of Facility operations. Such listings are standard practice in the industry since many of the elements, waste generation levels for example, cannot be determined until after the Facility begins operation. The personnel tasked with oversight of this program will also oversee the planning, development, and implementation of the WM/P2 reduction methods and activities outlined below.

- develop and establish a written policy statement that describes why the WM/P2 Program is being implemented, how it will be implemented, and who will implement it. The policy statement will be issued from the highest level of management. The policy will be provided to each employee at the start of employment and will be reviewed during RCRA training and annual refresher training;
- assign Facility personnel to oversee, plan, develop, and implement the elements of the WM/P2 Program;
- establish support for the program at all levels in the company;
- determine a waste generation baseline at the site and establish a tracking method and waste minimization goals;
- establish a procurement control program to ensure the purchase of environmentally friendly materials and products while preventing the procurement of prohibited items from the site; the Facility will endeavor to reduce or eliminate the use of hazardous materials from its operations;
- minimize the quantities of virgin products and raw materials allowed such as sorbents and other materials used in the stabilization process into the landfill. The Facility will endeavor to utilize other wastes (e.g., fly ash) in the stabilization process rather than virgin materials;
- establish reuse, recycling, recovery, and conservation programs to minimize the volume of generated waste requiring disposal or treatment; examples of such programs include paper, aluminum cans, cardboard, scrap metals, oil, batteries, and surplus materials and chemicals;
- establish good-housekeeping practices that promote WM/P2; an example of this type of practice is the requirement to remove packaging materials from chemicals, products, and equipment before they are introduced into the disposal area or contamination-control areas to avoid cross contamination;
- establish a WM/P2 awareness program and train employees, as appropriate;
- prepare a WM/P2 plan and update it annually or as appropriate;

- perform an assessment of waste minimization/pollution prevention opportunities; an example of this type of opportunity is: installation of air conditioning refrigerant reclamation systems; and,

- determine the feasibility of implementing the WM/P2 projects and proceed as appropriate with project implementation.

9.5 PROPOSED ELEMENTS OF THE FACILITY WM/P2 PROGRAM PLAN

The Facility will establish a WM/P2 Program Plan when operational details of the Facility, such as the chemical and equipment procurement processes and the actual level of waste generation, are determined. The WM/P2 plan will include the following elements, as appropriate:

- the written policy statement for WM/P2;

- a description of the roles and responsibilities of Facility personnel with respect to WM/P2 and a brief description of how Facility groups will work together to reduce waste generation and energy consumption;

- a plan or method for publicizing and gaining support for the program and communicating the successes and failures of waste minimization efforts (i.e., employee awareness program);

- a description of how employees will be informed about WM/P2 requirements and expectations (possibly within the context of other Facility training courses);

- a description of waste-generating processes, including a clear definition of the types and quantities of materials generated from each process;

- a description of recycling, reclamation, treatment, and disposal programs used by the Facility and the types of wastes and materials that are included in these programs;

- descriptions of other WM/P2 programs and initiatives;

- reporting requirements;

- a description of WM/P2 goals for the Facility;

- a description of the Facility's chemical and material procurement process;

- a review of the costs of waste management and disposal, both onsite and at other facilities;

- criteria for prioritizing candidate WM/P2 processes, activities, and waste streams for future implementation; and,

- an evaluation of the effectiveness of the WM/P2 Program and activities.