SECTION D

PROCESS INFORMATION

Table of Contents

Section **Description** **Page Number**

D-1 CONTAINERS.... 5
D-1a Container Management.... 5
D-1b Containers with Free Liquids.... 8
D-1b(1) Basic Design Parameters, Dimensions and Materials of Construction of the Containment System.... 9
D-1b(2) Description of How Design Promotes Drainage or How Containers Are Kept from Contact with Standing Liquids in Containment System.... 10
40 CFR 264.175.... 10
D-1b(3) Capacity of the Containment System Relative to the Number and Volume of Containers to Be Stored.... 10
D-1b(4) Provisions For Preventing or Managing Run-on.... 11
D-1b(5) How Accumulated Liquids Can Be Analyzed And Removed to Prevent Overflow…… 11
40 CFR 264.175.... 11
D-1c Containers Without Free Liquids.... 11
D-1d Requirements For Ignitable or Reactive Wastes and Incompatible Wastes.... 11
D-2 TANK SYSTEMS.... 13
D-2a Existing System.... 14
D-2a(1) Assessment of Existing Tank Systems' Integrity.... 14
D-2b New Tank Systems.... 15
D-2a(2) and D-2b(2) Tank Corrosion and Erosion.... 23
D-2b(3) Description of Tank System Installation and Testing Plans and Procedures.... 24
D-2c Dimensions and Capacity of Each Tank.... 25
D-2d Description of Feed Systems, Safety Cutoff, Bypass Systems and Pressure Controls.... 25
D-2e Diagram of Piping, Instrumentation, and Process Flow.... 26
D-2f Containment and Detection of Releases.... 26
D-2f(1) Plans and Description of the Design, Construction, and Operation of the Secondary Containment System.... 27
D-2f(2) Requirements for External Liner, Vault, Double-Walled Tank or Equivalent Device…….. 28
D-2f(3) Secondary Containment and Leak Detection Requirements for Ancillary Equipment…… 28
40 CFR 264.193.... 28
D-2f(4) Requirements for Existing Tank Systems Until Secondary Containment is Implemented 40 CFR 264.193.... 28
D-2f(5) Variance from Secondary Containment.... 28
D-2g Controls and Practices to Prevent Spills and Overflows.... 29
D-2h Special Requirements for Hazardous Wastes F020, F021, F022, F023, F026, and F027 in Existing Tanks.... 29
D-3 WASTE PILES…… 29

D-4 SURFACE IMPOUNDMENTS 29
D-5 INCINERATORS 29
D-6 LANDFILL DESIGN 30
D-7 LAND TREATMENT 30
D-8 MISCELLANEOUS UNITS 30

List of Tables

Table	Description	Page Number
D-2.2	SOLVENT TANK TK-052004A	17
D-2.3	SLURRY TANKS TK-052009A AND TK-052009B	18
D-2.4	SLURRY TANK TK-052010	20
D-2.5	HYDROPULPER HY-052020	23

List of Figures

Figures are located at the end of the section text or in Appendix D-3.

Figure	Description	Page Number
D-1.1	Hazardous Waste Label Example	D-31
D-1.2	Container Storage Pad Layout, B-64	D-32
D-1.3	Container Storage Pad Layout, B-65	D-33
D-1.4	Pad B-64	D-34
D-1.5	Pad B-65	D-35
D-2.1a	Hazardous Waste Unit Location Map	D-36
D-2.1b	Hazardous Waste Unit Location Map – Detail	D-37
D-2.3	TK-052004 A & B Containment	D-38
D-2.4	TK-052009 A & B and TK-052010 Containment	D-39

Note: PMC revised the equipment numbering system. The current system uses six digits while the older system used only four digits. To convert from the older system to the new system, a zero is added in the first and fourth digit. For example, the hydropulper HY-5220 becomes HY-052020. The text generally uses the newer numbering system; some drawings and figures retain the old numbering system

List of Appendices

Appendix	Description
D-1	Pads B-64 and B-65 Containment Capacity Calculations
D-2	Containment Calculations for Permitted Tanks
D-3	Process and Instrumentation Diagrams for Permitted Equipment
D-4	"New" Tank Assessments
D-5	Certification For Coating of Secondary Containment Within Hazardous Waste Storage System

List of Acronyms

KDEP	Kentucky Department of Environmental Protection
TRS	Tin Recovery System

SECTION D PROCESS INFORMATION

D-1 CONTAINERS

40 CFR 264.170-179 and 40 CFR 270.15

Precipitation, washwater, and spill management:

After precipitation events, (i.e.: rain or snowfall), visual examination are performed to look for signs of a release of hazardous waste (e.g. sheen, color, clarity). If there are no signs of hazardous waste release, the precipitation is sent to the wastewater treatment facility. If hazardous waste appears to have been released, then the precipitation is segregated and managed as hazardous waste. Accumulated precipitation is to be removed in a timely manner to prevent an overflow of the containment system.

Spilled hazardous materials in secondary containment areas are pumped to compatible containers and/or tanks with compatible wastes. Absorbents also can be used to soak up the liquid and, the resultant mixture is recovered and placed in compatible containers. The containment area, sumps, pumps, and piping are cleaned with water, or other cleaning agents, as appropriate. Water rinsate is sent to our wastewater treatment system. Other cleaning agents, if appropriate, will be collected for incineration or off-site disposal.

All spills and leaks are recorded in the operating log as to estimate volumes of spilled material, estimate volume of total material (spilled material plus other media), and its hazardous characteristics.

Removal of the accumulated liquids is accomplished using air-operated sump pumps or equivalent. The capacity of the removal system is greater than 5 gpm. If additional capacity is needed to quickly remove large quantities of liquids, other pumps are used. Pipes are constructed of carbon steel to be compatible with most spills. Spills of acids and other materials not compatible with carbon steel are cleaned up using compatible portable pump systems, absorbent material or equivalent, and residuals flushed with water and neutralized as appropriate.

If the spilled material is pumped into a container, operating personnel are present to control against overfilling. As an added precaution, the container is located in a storage area or container truck unloading area during filling, which provides secondary containment.

If the spilled material is pumped to a hazardous waste storage tank, the existing tank controls will protect against overfilling or spill incidents.

D-1a Container Management

40 CFR 264.170-179

Types of containers typically used at the plant are 55-gallon steel drums and 330-gallon tote bins but can also include the following containers:

- Polyethylene drums of various sizes;
- Over packing drums of various sizes;
- 85 gallon steel drums;
- Pails of various sizes;
- Fiber cartons, tubes, and drums of various sizes;
- Woven polypropylene bags up to 50-cubic feet capacity; and
- Ash bins of a 26-cubic feet capacity.
- Tank Trucks (6,500 gal.)

The maximum number of containers is related to the capacity of the storage pads. The number of containers varies depending on the volume of the container. Fifty-five gallon drums are the most common type of container and therefore used to determine the maximum number of containers.

All hazardous waste containers either entering or leaving the PMC Organometallix Inc. (PMC) plant are DOT approved. All containers are covered and closed during transport and storage except when adding or removing waste. All wastes are placed in containers that are compatible with the container/liner material.

In addition, the Carrollton plant may receive waste in bulk, transported in DOT approved tank trailers to the plant. The plant is equipped to route solvents from tank trailers directly to tankTK-052004A, to containers, or directly to the incinerator.

Container Handling/Stacking Practices

The plant manages the area by safe, effective use of forklift trucks and by storing the wastes according to strict compatibility requirements (see Section D-1d).

Both off-site and on-site generated wastes that are stored in containers are placed on container storage pads. On-site wastes can be initially accumulated in designated satellite areas and then transferred to one of several less than 90-day container storage areas. The satellite accumulation areas and the less than 90-day container storage areas are not permitted. Within 90 days, containerized on-site waste is transferred to either the permitted B-64 or B-65 storage pads. Containerized off-site wastes are brought directly to the container truck unloading area in storage pad B-65 (See Figure D-2.1b), unloaded onto a segregated area on pad B-65 directly adjacent to the unloading area, and/or put into compartments with compatible wastes after analyses and inspections are performed. This segregated area is used only for containers from one shipment; PMC considers all containers from one shipment to be compatible. The manifest and plant records will be checked for obvious exceptions to this assumption. Tank trailer containers are parked on the tank truck unloading ramp when received from off-site. After analyses and inspections are performed, the contents may remain on the ramp for up to a year but, typically, the contents are emptied into tank TK- 052004A, into containers which are placed on storage pad B-64 or B-65, or directly to the incinerator.

All containers are labeled for easy tracking of wastes through the system, for grouping of compatible wastes, and for ensuring proper blending specifications as described in the protocol provided in Section C.

Figure D-1.1 shows an example label. The containerized wastes are properly labeled as follows:

- Hazardous waste content;
- Hazardous class (i.e. flammable, ignitable, reactive, etc.);
- EPA waste code;
- Information as to where waste was generated; and
- Accumulation start date.

Each permitted container storage pad is inspected weekly, when it is storing waste, for the presence of leaking or deteriorating containers and to assess the condition of the containment system. Identified spills or leaks are sampled and then disposed of properly. Deterioration of the containment system is documented and a work order is started for prompt repair.

All containers are placed on pallets or have external feet suitable for transport and stacking. The pallets and external feet serve to provide ease of handling with forklifts and provide an approximate 4-inch elevation from the base of the pad to prevent contact with collected rainwater or spilled liquids. Pallets are generally made of wood with alternating slats to allow drainage. Containers are placed on pallets either manually or with a drum handling device. The drum handling device is forklift adaptable, allowing ease in mobility of containers while significantly reducing the potential for handling errors that could result in ruptures and leaks.

Containers on pallets or with external feet are stacked up to two high with a minimum of 2-feet of aisle space for inspection purposes. Entry and exit to the pads are by forklift truck ramps. Containment at the unloading ramp at Pad B-65 is controlled by trenches and curbs. The unloading ramp is bordered along its length by a 6-inch curb, approximately 24-feet on each side. A 2-foot 7-inch wide trench exists outside the 6-inch curb along the side and narrows to a 1-foot trench at the loading end of the ramp. The curb outside the trench on the east side is constant at top elevation of 102.5 feet, with the bottom elevation varying from 101.33 to 100 feet. The curb outside the trench on the west side is constant at an elevation of 102 feet, with the bottom elevation varying from 101.33 to 100 feet. The trenches drain toward the unloading end of the ramp, where a 2-feet × 4-feet x 2-feet sump is located on the west, adjacent to the ramp, and within the trench.

Figures D-1.2 and D-1.3 show the floor layout plan for pads B-64 and B-65. The figures were developed assuming:

- The maximum number of containers shown is for 55- gallon steel drums, 4 drums to a pallet, stacked 2 pallets high;
- A minimum of 2-feet clearance is maintained from all walls/berms and from the next row of containers;

- All containers are positioned on the pallets so that their labels can be easily read from an aisle space; and
- Only containers containing compatible wastes are stored in each compartment [see Section 1-D(c)].

The plant personnel will place the appropriate waste ID code onto the container based on generator knowledge or after sampling and analysis has been completed. The information on the label is used by the operator for proper storage location and mixing information.

A minimum clearance of 8-feet is maintained to provide a safe turning radius for a loaded forklift truck during the movement of containers and pallets. For example, in order to retrieve a pallet in compartment A of pad B-64, the containers stored in the same row prior to the desired one must be moved and restacked in the same or other compatible compartment. The removal of the 4-feet wide pallets plus the 2-feet space on each side gives the forklift operator sufficient room to safely maneuver directly in and out of the aisles without turning.

The number of totes per compartment varies according to the containment capacity of that particular compartment. The number of bags is estimated at one bag being equivalent to a stack of drums two-high. The maximum number of pails, cartons, and tubes are estimated to be equivalent by stacking practices to the maximum number of drums.

Each of the pad compartments can be used for the storage of ignitable, reactive or incompatible wastes. However, only one group of wastes or a combination of compatible groups is stored in any one compartment at any one time.

Handling System for Containers

The solids (slurry) handling system for containers involves the transfer of slurry waste material from the containers to the hydropulper (HY-052020). A forklift transports the containers on a pallet to the hydropulper. The waste is then discharged from the containers into the hydropulper, where it is mixed into a slurry and pumped to one of the slurry holding tanks: TK-052009A, TK-052009B, or TK-052010 for analysis prior to incineration. Flammable solids may be added to the hydropulper.

Pumping operations occur in the tank loading area, which has a secondary containment system for spills and leaks. Pumping operations also can occur in the hydropulper secondary containment area. Sumps and drains are located in these areas so that any spills are prevented from reaching the groundwater or storm sewers. Grounding wire is used when opening drums to prevent sparking. All workers are required to wear protective clothing when handling hazardous waste containers.

D-1b Containers with Free Liquids

40 CFR 264.175

All containerized hazardous wastes are managed as if they contain free liquid.

D-1b(1) Basic Design Parameters, Dimensions and Materials of Construction of the Containment System
40 CFR 264.175

This section addresses the storage pad areas B-64 and B-65 design, operations for draining remaining accumulated liquid, and precautions to minimize drums contacting standing liquids.

Figure D-1.4 depicts the basic design of B-64. Figure D-1.5 shows the design for B-65 and the tank truck unloading ramp.

Pad B-64

Pad B-64, which is a reinforced concrete pad, measures 90 feet 9 inches by 40 feet 1 inch and is divided into two separate containment compartments, 9S01 and 9S02. The basic design of pads 9S01 and 9S02 are to provide a slope to a collection sump, thereby draining spills, leaks, or precipitation away from containers. Run-on prevention from outside the pads is provided by outside walls from which the surrounding area is graded to slope away from the pad. The surface of the pad is concrete with an applied epoxy coating. See Appendix D-5 for additional details of the applied coatings and the associated Professional Engineer certification. The coated concrete pad is sufficiently impervious to leaks, spills, and accumulated precipitation until the collected material is detected and removed. The base of the pad will be maintained so that it is free of cracks or. Both compartments are designed to contain 10 percent of the maximum volume of stored free liquids, plus the accumulation of rain from a 25-year, 24-hour storm event. Pad B-64 is constructed of 3000 psi concrete and is 8 inches thick. Curb heights around the inside perimeter of the pad are variable, and are shown on Figure D-1.4.

Pad B-65 and Tank Truck Unloading Ramp

Pad B-65 is a reinforced concrete “L” shaped pad 55 feet wide with one leg 200 feet long and the other leg 230 feet long. Pad B-65 is divided into 8 separate compartments, 9S10-9S80. The surface of the pad is concrete and sufficiently impervious to all leaks and collected precipitation. Pad B-65 is constructed of a minimum 4500-psi or greater concrete and is 8 inches thick. The 8 compartments are designed to contain 10 percent of the maximum volume of stored free liquids plus rainfall. The base of the pad is also free of cracks or gaps that would compromise the integrity of the secondary containment. Curb heights around the inside perimeter of the pad are variable, and are shown on Figure D-1.5.

The tank truck unloading ramp is constructed similarly, and is 44 feet long and 11.5 feet wide, as shown on Figure D-1.5. The ramp is designed to contain spills and leaks from unloading operations. Containment of the full capacity of a tank truck plus rainfall is provided because the ramp containment area drains to sump SU-052020 as shown in Figure D-1.5. The base of the pad is also free of cracks or gaps that would compromise the integrity of the secondary containment.

D-1b(2) Description of How Design Promotes Drainage or How Containers Are Kept from Contact with Standing Liquids in Containment System
40 CFR 264.175

The designs of both pads and the tank truck unload ramp promote drainage by having a sloped reinforced concrete surface with dikes, drainage sumps, and sump pumps. Each compartment has its own sump and similarly designed precipitation removal system.

Containers are either placed on pallets or have their own external feet suitable for stacking and transport by forklift truck. Containers, except for bags and ash bins, on both pads can be stacked up to 2 pallets high, or for containers with external feet, up to 2 containers high. Containers are placed in orderly rows on the storage pads. The pallets and containers with external feet allow for transport by forklift trucks. There are aisles at least 2 feet wide between rows of containers and between rows and all walls and berms to facilitate visual inspections. Since containers are stored either on pallets or external container feet, and the pads are sloped to drain liquids, the containers should not normally come in contact with standing liquids.

Pad B-64 Sumps

The two sumps are equipped with air-operated diaphragm pumps or equivalent for removal of accumulated liquids. The grade (slope) of the pad is approximately one percent from the un-sloped edge of the pad toward the sumps.

Pad B-65 and Tank Truck Unloading Ramp Sumps

The eight separate compartment sumps and tank truck unloading ramp sump are designed to use an air-operated diaphragm pump in each section or equivalent to remove the accumulated liquids. The grade of the pad is approximately one percent from the closest edge of the forklift truck ramp toward the sumps.

D-1b(3) Capacity of the Containment System Relative to the Number and Volume of Containers to Be Stored
40 CFR 264.175

The containers used to store waste are typically DOT approved 55-gallon steel drums. The largest container with free liquids is a tote bin of approximately 400-gallon capacity. The total storage volumes of the pad are as follows:

- B-64 680 drums (55 gal. equivalents)
- B-65 2598 drums (55 gal. equivalents)
- Tank Truck Unloading Ramp 1 tank truck (6,500 gal.)

The containment capacities of each compartment of the pads and the tank truck unloading ramp are calculated and shown in Appendix D-1. Both pads and the unloading ramp were designed with

sufficient capacity to contain run-off from a 25-year, 24-hour storm of 5.1 inches and the contents of 10 percent of the maximum volume of drums stored or the volume of a tank truck, in the case of the unloading ramp. The rainfall data is from the *Rainfall Frequency Atlas of the United States for Duration from 30 minutes to 24 Hours and Return Periods from 1 to 100 Years*, U.S. Weather Bureau Technical Paper 40, May 1961.

D-1b(4) Provisions For Preventing or Managing Run-on
40 CFR 264.175

As shown in Section D-1b(3), each storage pad compartment in B-64 and B-65 and the tank truck unloading ramp has the capacity to store rainfall from the total area of the pad, including berms and walls. The design of both pads B-64 and B-65 and the unloading ramp prevents run-on storm water outside the pads in three ways:

1. The ground outside of the pad slopes away from the outside wall of each pad.

2. The top of the outside wall is at least 6 inches above the surrounding ground level.

3. The ramps for the forklifts and tank trucks are designed with a high point that is at least 6 inches higher than the outside roadways and are sloped away from the pads toward the road.

D-1b(5) How Accumulated Liquids Can Be Analyzed And Removed to Prevent Overflow
40 CFR 264.175

Each container storage pad is also inspected weekly for leaking or deteriorated containers and to assess the condition of the containment area. Spilled or leaked waste is cleaned up immediately upon discovery, repacked into a compatible container or pumped into a tank with compatible wastes, and handled as a hazardous waste. Spilled waste on the B64 pad is typically containerized (not pumped to a tank).

D-1c Containers Without Free Liquids

40 CFR 264.175

All containerized hazardous wastes are managed as if they contain free liquid. Therefore, this section does not apply.

D-1d Requirements For Ignitable or Reactive Wastes and Incompatible Wastes

40 CFR 264.176 and 40 CFR 264.177

Container storage pads are designated and operated to safely store ignitable, reactive and incompatible wastes. All containers are labeled and compatibility is determined during initial characterization. As discussed in D-1b(1), the pads are divided into separate containment compartments (with a curb between compartments) to segregate incompatible wastes.

Precautions for Ignitable Wastes

Both hazardous waste container storage pads (B-64 and B-65) and the tank truck unloading ramp are located greater than 50 feet from the plant's property line. The distance from the property line allows a buffer for fire hazards. Containers are stored only two high to prevent excessive structural stress and pressures that might cause a fire.

The entire permitted area, including the two storage pads and the tank truck unloading ramp, is a fire-watch area with smoking prohibitions, welding restrictions, and a general "no flame" rule. Also, all drums and other containers are grounded during transfer of contents to prevent sparking from static electricity. All storage pads are far enough away from and shielded by the B-52 building to avoid any problem with radiant heat from the incinerator. Weekly inspections of the storage pads are conducted to quickly identify bulging drums, leaks, spills, and deterioration of the containers.

Mixing Waste Requirements

The Carrollton plant does not mix different wastes in containers. Potentially, two or more containers of the same waste (i.e., identical waste profile) could be consolidated into one container but no other comingling of wastes occurs in containers.

Container Washing

Containers are washed in either the bermed tank truck unloading area where solvent is unloaded, an unused compartment of the B64 or B65 pads, or to the Hydropulper HY-052020. The containers are first emptied to the extent possible. The containers are then rinsed with water. If the container held a "P" listed waste, the container is triple rinsed using a solvent capable of removing the compound stored in the container or cleaned using another method that achieves equivalent removal as shown in the scientific literature or determined by PMC.

The rinsate from the drum washing activities are collected and sent to the onsite KPDES permitted wastewater treatment facility or routed to the hydropulper for disposal within the incinerator.

Precautions for Reactive Wastes

In addition to the precautions used for ignitable and incompatible wastes, reactive wastes are treated as follows:

- No mixing or blending of reactive wastes is performed on the container pads.
- Spills of reactive wastes are only put into clean containers or tanks.
- All mixing is performed by the specific protocol described in Section C for the reactive waste and the mixture.

By these steps, toxic mists, dust, or gases are minimized and/or controlled as not to endanger health, cause risk of fire, or explosion.

D-2 TANK SYSTEMS
40 CFR 264 Subpart J and 40 CFR 270.16

The following is an overview of the storage and blending tanks and other treatment units. All hazardous waste equipment associated with tank systems are aboveground. An underground line was formerly present which connected B64 to the tank system. The underground line was replaced with an aboveground line as a result of permit modification #23, approved on April 25, 2014.

The location of tanks and other hazardous waste units are shown in Figures D-2.1a and D-2.1b.

The hazardous waste tanks and equipment are listed below:

Hazardous Waste Tank Treatment (T01): Hydropulper (HY-052020) a high speed mixer tank that is used to homogenize and blend both hazardous and non-hazardous waste slurries.

Hazardous Waste Storage Tanks (S02, T01)

1. Slurry Feed Tanks (TK-052009A, TK-052009 B, and TK-052010) a multiple tank fill and draw system; one tank is used to blend the slurry to the correct proportions while the other tanks are used to feed the slurry in a batch mode to the incinerator.

2. Solvent Feed Tank (TK-5204 A) is used to blend the solvent to the correct proportions and feed the solvent in a batch mode to the incinerator.

Ancillary Equipment

Pumps

TK-052004A includes centrifugal pumps PU-052004A, PU-052004B, and PU-052002C; and pumps PU-052003A and PU-052003B.

TK-052009A, TK-052009 B, and TK-052010 include centrifugal pumps PU-052009A, PU-052009C, and PU- 052010A; PU-052010B, and pumps PU-052012C and PU-052012D.

HY-052020 includes pumps PU-052020A, PU-052020B, PU-052020D and PU-052020E.

Hazardous wastes enter the above listed equipment from all of the following sources, as shown in the process flow diagrams in Appendix D-3:

- Waste Solvents - from containers, tanks, and tanker trucks into the solvent tank;
- Other Wastes - from containers, tanks, wastewater treatment plant equipment (sludges), and secondary containment sumps into one of the slurry tanks directly or via the hydropulper; and
- Direct Transfer from tanker trucks.

The remaining components of the process are used to mix and blend the waste to obtain burnable solvent and slurry waste streams. Typical analytical data for the waste streams are covered under the Clean Air Act Title V. Operating parameter limits are set during the Comprehensive Performance Test regulated under the 40 CFR 63 Subpart EEE HWC MACT. The waste streams are analyzed for the following criteria::

Feed Stream Operating Parameters
Maximum solvent waste viscosity
Maximum Mercury Feed Rate
Maximum SVM[1] Feed Rate
Maximum LVM[2] Feed Rate
Maximum Ash Feed Rate
Maximum Chlorine Feed Rate

[1]*SVM –Semi volatile metal*
[2]*LVM – Low volatile metal*

In addition, non-tin bearing waste may be blended with tin-bearing waste to optimize tin recovery, prevent slagging and plating.

D-2a Existing System

40 CFR 264 Subpart J

D-2a(1) Assessment of Existing Tank Systems' Integrity
40 CFR 264.191

The Hydropulper (HY-052020) is the only "existing" permitted hazardous waste tank at the plant, because it was constructed before 7/14/1986. The hydropulper tank system meets the requirements of 40 CFR 264.191 by having:

1. Accessibility for internal inspections;

2. Secondary containment of sufficient size to store 100% of the largest tank and the run-off from a 25-year 24-hour storm; and

3. Secondary containment structures which meet the secondary containment requirements for new tanks in 40 CFR 264.193.

A written assessment is not required because the tank system has secondary containment meeting the requirements of new tanks, specified at 40 CFR 264.193. The structural integrity of the hydropulper and its ancillary equipment is maintained and inspected as described in D-2a(2) and 2b(2) Tank Corrosion and Erosion, below.

D-2b New Tank Systems

40 CFR 264.192

The following is a list of "new" permitted tanks at the plant.

New Tanks (constructed after 7/14/86):

Tank No.	Contents	Capacity
TK-052004A	Solvent Feed Tank	12,000 gallons
TK-052009A	Slurry Feed Tank	19,471 gallons
TK-052009B	Slurry Feed Tank	19,471 gallons
TK-052010	Slurry Feed Tank	19,471 gallons

The new tank systems have been constructed in compliance with 40CFR 264.192 and documented with:

- A written assessment, reviewed and certified by a qualified professional engineer, of the structural integrity of the tanks, ancillary equipment and secondary containment structures, and
- A written statement that the tank systems have been installed and constructed correctly.

PMC keeps a file at the plant containing written statements from those persons who certified the design and supervised the construction and installation of the tank system installed after July 14, 1986. Appendix D-5 contains the tank assessments for the new tanks.

Existing and New Tanks

The following information describes both existing and new tanks as defined by 40 CFR 264 Subpart J. The permitted hazardous waste tanks shown shaded in Figure D-2.1b are located west of the B-52 building. All the tanks are above ground and have secondary containment.

The hydropulper (HY-052020) is a 750-gallon (working volume) stainless steel blender treatment tank for homogenizing and blending wastes prior to entering the slurry tanks. This unit has secondary containment and is located within the general hazardous waste containment area.

Appendix D-2 presents calculations of the secondary containment capacity for the permitted tank containment systems. All containment systems can hold 100% of the volume of the largest tank plus precipitation from a 25-year, 24-hour storm (from *Rainfall Frequency Atlas of the United States for Durations from 30 minutes to 24 hours and Return Periods from 1 to 100 years*, U.S. Weather Bureau Technical Paper 40, May 1961).

The following information is divided into separate sections for each of the tanks described above. Each section contains the following information where available:

- A general description
- A listing of the significant tank design parameters
- Design drawings
- Secondary containment calculations

P&IDs showing tank, piping, pumps, shut-off controls, and alarms and overfilling controls are given in Appendix D-3.

Solvent Tank TK-052004A

TK-052004A is a 12,000 gallon solvent storage, blending, and feed tank installed in 2007. This tank was installed under a permit modification approved by the KDEP on October 5, 2007 as "replacement in-kind". Table D-2.2 summarizes the significant design parameters of the tank.

Overfilling controls for the tank consist of high alarms and high and low level automatic shut-offs of all feeds. A nitrogen blanket (0.2 psi) is used to minimize emissions during loading, unloading, and blending operations. The tank has pressure relief devices and flame arrestor.

The feed system includes feeds from:

- The solvent recycle pump PU- 052004A (to recirculate tank contents)
- The solvent feed pumps PU-052004B and C (feed to and from incinerator)
- The solvent unloading pumps PU-052003A and B (from containers and tank trucks)
- The waste benzene tank TK- 017009 (a <90-day non-permitted tank).

The tank has a man way for use in inspections and maintenance procedures.

The secondary containment for TK-052004A is a concrete structure as shown in Figure D-2.3. Appendix D-2 presents the containment calculations for the system. The secondary containment for TK-052004A is more than sufficient to contain 100% of the volume of the tank plus run-off from a 25-year, 24-hour storm event.

TABLE D-2.2

SOLVENT TANK TK-052004A

Design: Identification Number: Design Code and Year: Year Installed: Dimensions: Length: Outside Diameter (O.D.):	 TK-052004A API 650, 2007 2007 15 feet 12 feet
Capacity:	12,000 gallons
Material of Construction:	Carbon Steel SA-516-70
Installed Shell Thickness: Corrosion Allowance: Minimum Thickness for Structural Integrity: Seams:	0.25" 0.125" 0.086" Welded
Operational: Material Stored: Specific Gravity: Pressure: Temperature: Maximum height of liquids:	 Solvents 0.72-1.2 0.2 psi Ambient 15 feet
Controls/Equipment: Pressure gauge Temperature gauge Nitrogen blanket Pressure relief vent and flame arrestor Overfilling shut-off Overfilling alarm Secondary containment Liner Internal inspection	 No No Yes Yes Yes Yes Yes No Yes

Slurry Tanks TK-052009A and TK-052009B

TK-052009A and TK-052009B are slurry storage and blending tanks that were installed in 2011. These two (2) tanks were installed under a permit modification approved by the KDEP on December 3, 2010 as "replacement in-kind". The capacity of each of these tanks is 19,471 gallons. Table D-2.3 summarizes the significant design parameters of the tanks.

TABLE D-2.3

SLURRY TANKS TK-052009A AND TK-052009B

Design:	
Identification Numbers:	Serial Numbers 9916700-01, 9916700-02
Design Code and Year:	API 650, 11th edition
Year Installed:	2011
Dimensions:	
Height	24 feet
Diameter, O.D.	12 feet
Capacity:	19,471 gallons each
Material of Construction:	Carbon Steel, A36 Modified (0.8% – 1.2% Manganese)
Installed Shell Thickness: Corrosion Allowance: Minimum Thickness for Structural Integrity:	0.25" 0.125" 0.063"
Seams:	Welded
Operational: Material stored: Specific gravity: Pressure: Temperature: Maximum height of liquids:	 Slurry 0.9-1.3 Atmospheric Ambient 23 feet
Controls/Equipment: Pressure gauge Temperature gauge Nitrogen blanket Pressure relief vent Overfilling shut-off Overfilling alarm Secondary containment Liner Internal inspection	 No No Yes Yes Yes Yes Yes No Yes

The overfilling controls consist of a high alarm and a high and low level automatic shut-off system on each tank.

The feed system includes feeds from:

- The hydropulper
- The wastewater treatment plant primary clarifier (aka, Lamella separator, via PU-052012E)
- The slurry feed/recycle pumps PU-052009A and C (feed to and from the incinerator, and to recirculate slurry between the three slurry tanks)
- The slurry unloading pumps PU-052012A and B (from containers)
- Benzene tank TK-017009 (<90 day non-permitted tank)
- Secondary containment sumps

There are no automatic bypass systems. The tanks operate at ambient temperature and pressure.

The secondary containment system consists of the general hazardous waste management drainage area and the hazardous waste sump and is shown in Figure D-2.4. Containment calculations are shown in Appendix D-2.

Hazardous Slurry Tank TK-052010

TK-052010 is a 19,471 gallon slurry storage and blending tank installed in 2017. This tank was installed under a permit modification approved by the KDEP on June 22, 2017 as "replacement in-kind". Table D-2.4 presents a summary of the design parameters for the tank.

The maximum allowable height of liquid in the tank is 23 feet. The overfilling controls for the tank consist of a high level alarm and a high and low level shut-off.

The feed system for the tank includes feeds from:

- The hydropulper
- The wastewater treatment plant primary clarifier (aka, Lamella separator, via PU-052012E)
- The slurry feed/recycle pumps PU-052010A and B (feed to and from the incinerator, and to recirculate slurry between the three slurry tanks)
- The slurry unloading pumps PU-052012A and B (from containers)
- Benzene tank TK-017009 (<90 day non-permitted tank)
- Secondary containment sumps.

A man way is provided for inspection and maintenance procedure.

Secondary containment (see Figure D-2.4) is provided by the general hazardous waste management drainage area and the hazardous waste sump (SU-5220). Containment calculations are the same as those presented for tanks TK-052009A and TK-052009B (See Appendix D-2).

TABLE D-2.4

SLURRY TANK TK-052010

Design: Identification Number: Design Code and Year: Install Year: Dimensions: Height: Outside Diameter (O.D.):	 TK-052010 API 650, 11th edition 2017 24 feet 12 feet
Capacity:	19,471 gallons
Material of Construction:	Stainless Steel SA-240-316LSS
Installed Shell Thickness: Corrosion Allowance: Minimum Thickness for Structural Integrity:	0.375" 0.125" 0.113"
Seams:	Welded
Operational: Material stored: Specific gravity: Pressure: Temperature: Maximum height of liquids:	 Slurry 0.9-1.3 Atmospheric Ambient 23 feet
Controls/Equipment: Pressure gauge Temperature gauge Nitrogen blanket Pressure relief vent Overfilling shut-off Overfilling alarm Secondary containment Liner Internal inspection	 No No Yes Yes Yes Yes Yes No Yes

Hydropulper HY-052020

The hydropulper (HY-052020) is a high speed mixing vessel that was installed in 1978. The mixing capacity of the hydropulper is 750 gallons even though its total volume is equivalent to about 1500 gallons. Table D-2.5 summarizes the design parameters of this treatment unit. The unit is a vessel with a lid that has a maximum height of liquids of 5ft. 7in. A cover and closed vent system were added in 2003 to control emissions from the hydropulper. This cover was installed under a permit modification approved by the KDEP on November 24, 2003. The hydropulper receives non-solvent wastes on a batch basis to be processed mechanically for tank treatment. The hydropulper is a treatment only tank and is not used for storage of wastes. The treatment process takes a few hours in which the operator is continuously present.

The pump feed system for the treatment tank includes feeds from:

- The wastewater treatment plant primary clarifier (aka, Lamella separator, via PU-052012E)
- TK067012 (wastewater treatment plant waste activated sludge)
- Filter press wastewater (via PU-052030C)
- The slurry unloading pumps PU-052012A and B (from containers)
- The unloading pumps at the tanker pad PU-052003A and B (from containers)
- Secondary containment sumps.

Containers are also mechanically hoisted and dumped into the hydropulper with a lift installed in 2003. These wastes can include, but are not limited to such items as, filter press solids from the wastewater treatment facility, recovery still pot bottoms, used filter papers, and miscellaneous solids. The feed operation is managed by the operator and can involve a mix of container "dumps" directly into the hydropulper and operator-controlled pump feeds from containers and tanks (e.g., permitted, <90 day, wastewater treatment plant) while the agitator at the bottom of the unit is blending the material into a homogeneous mixture. The hydropulper is filled to approximately ½ of its maximum liquid height. ~~to a point where 2 feet of freeboard remain. The agitator, which is in the bottom of the unit, is then initiated. This agitator blends the material into a homogeneous mixture.~~ This mixture is then pumped to a slurry tank for storage. Once the contents of the hydropulper are emptied, the sequence of manual filling the hydropulper, blending, and emptying is repeated. This process is continued until the slurry tank is almost filled. At this time the hydropulper is rinsed and the rinse water is pumped to the slurry tank.

The secondary containment for HY-052020 is provided by the hazardous waste containment area structure and sumps (SU-052020). Containment calculations are the same as those presented for tanks TK-052009A and TK-052009B (see Appendix D-2).

In 2003, the hydropulper was upgraded by adding a fixed cover with a hopper to enclose the top of the unit. The approximately seven foot diameter hopper is fitted with a 38 inch diameter slide gate valve that seals the hopper opening when waste is not being charged. The hydropulper is also

maintained under slight vacuum by an induced draft fan that pulls vapors from the hydropulper, through closed piping and an in-line knock-out pot, and ultimately to the IR-074001 Thermal Oxidizer. The upgrades also included high level alarms and interlocks to the hydropulper and an area-mounted lower explosion limit meter. A new stairway and platform were also added to improve personnel access and safety. There is no man way on the hydropulper.

For safety reasons, solvents are no longer charged to the hydropulper, though some materials charged to the hydropulper may contain a low percentage of a residual solvent. To prevent a buildup of an explosive vapor concentration in the hydropulper, two LEL meters with 100 ppm setpoints are also in place. If the 100 ppm threshold is detected, hydropulper feed and mixing is automatically cut off, and nitrogen automatically purges the headspace to the closed vent system and thermal oxidizer. Loading cannot resume due to these interlocks until the LEL meters measure less than 100 ppm.

The hydropulper knock-out pot (TK-052020A) is a 200-gallon vessel and is designed to collect entrained liquids or solids to protect the downstream blower and control equipment. Under the normal operating conditions of the hydropulper no liquid accumulates in the knockout pot. The vessel is considered ancillary equipment to the permitted hydropulper. If liquid accumulates in the knockout pot due to an upset condition, the liquid will be collected in a container and returned to the hydropulper. There is a man way on the knockout pot.

Section AA BB CC discusses the hydropulper vent control system used to comply with RCRA Subpart CC. The hydropulper, a Tank Control Level 1 vessel, is equipped with an integral lid system that collects vapors from process operations. Such emissions are routed to the thermal oxidizer, using the Tank Control Level 2 technology option for compliance with Tank Level 1 requirements.

TABLE D-2.5
HYDROPULPER HY-052020

Design: Identification Number: Design Code and Year: Install Year: Dimensions (inches) Height: Outside Diameter (O.D.):	 25EM552-1 None, 1978 1978 130" 84-3/8"
Capacity:	750 gallons (in mixing mode)
Material of Construction:	304 Stainless Steel
Installed Shell Thickness: Corrosion Allowance: Minimum Thickness for Structural Integrity: Seams:	0.25" 0.0625" 0.063" Welded
Operational: Material stored: Specific gravity: Pressure: Temperature: Maximum height of liquids: Feed System	 Slurry 0.9-1.3 Atmospheric, Operates under slight vacuum Ambient 5'7" *
Controls/Equipment: Pressure gauge Temperature gauge Nitrogen blanket Pressure relief vent Overfilling shut-off Overfilling alarm Secondary containment Liner Internal inspection Knock-out Pot	 No No Yes Yes Yes Yes Yes No Yes Yes (200 gallon)

*The hydropulper is used only for mixing and does not store any wastes.

D-2a(2) and D-2b(2) Tank Corrosion and Erosion

The tanks used for hazardous waste storage and/or treatment are inspected yearly.

The materials of construction are compatible with the wastes in the tanks based on operational experience with existing wastes and compatibility testing for each new waste type received. All of the storage and blending tanks are constructed of carbon steel or stainless steel as described aboce. These tanks are used to store and mix either organic solvents or slurries that are compatible with the material of construction. No liners or special treatments are used for corrosion protection on the steel tanks.

The design thickness and corrosion allowances for the tanks are summarized below:

Tank I.D. #	Installed Design Thickness (inches)	Corrosion Allowances (inches)	Minimum Thickness (inches)	Actual Thickness (inches)*
TK-052004A	0.25	0.125	0.086	0.242 – 0.385
TK-052009A	0.25	0.125	0.063	0.248 – 0.625
TK-052009B	0.25	0.125	0.063	0.249 – 0.628
TK-052010	0.375	0.125	0.113	0.369 – 0.502
HY-052020/TK-052020A	0.25 / 0.375	0.0625 / 0.0625	0.063 / 0.292	0.286 – 0.361 / 0.354 – 0.486

*Measurements represent the shell thickness of tanks when installed. Multiple measurements indicate shell thickness varies at different elevations of tank (metal courses).

The minimum thickness (API 650 Code) for steel tanks includes allowances for structural integrity and a safety factor. Corrosion/erosion will be monitored yearly and tanks will be taken out of service when they cannot meet design thickness specifications. If corrosion or erosion is detected, appropriate action will be taken to determine if it can be stopped or reduced. The overall criterion for the steel tanks is maintaining their minimum thickness for structural integrity, and is derived from calculations based on API 653 for all tanks except the knockout pot, which is based on API 510, applicable to pressure vessels. Tanks found to fail this criterion will be taken out of service in accordance with 40 CFR 264.15(c) and either repaired or replaced with an equivalent tank.

Under current procedures, ultrasonic testing of tank thickness is performed once per year on the permitted hazardous waste tanks. All of the tanks have entrances for internal inspections (the hydropulper slide gate is used to enter it). Ultrasonic testing on the bottom of the tanks can be done externally. Ultrasonic testing procedures are presented in Appendix F-3.

D-2b(3) Description of Tank System Installation and Testing Plans and Procedures
40 CFR 264.192

The PMC Carrollton plant is not installing any new tank systems for the storage or treatment of hazardous waste as part of this application. Any new tank systems that may be installed or an existing tank that may be replaced in the future would meet the design and installation requirements required by 40 CFR 264.192. The work will be inspected by an independent, qualified installation inspector or qualified Professional Engineer who will attest that the tank system was installed as designed, and there are no weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, or other structural damage or inadequate construction/installation. Appropriate inspections and testing will be performed on the tank systems before it is placed in use, as dictated by the standards to which the tanks were designed and required by 40 CFR 264.192.

Inspections and testing will meet these minimum requirements:

- Observation of the foundation;
- Inspect for weld breaks, punctures, cracks, corrosion or other structural damage or inadequate construction/installation;
- Tightness testing with a minimum 8-hour fill with water with inspection for leaks from the tank; and
- Tightness testing for the ancillary equipment, including piping, pumps, valves, etc., using techniques appropriate for that equipment.

Any discrepancies identified by the inspector will be remedied before the tank system is put in use.

D-2c Dimensions and Capacity of Each Tank

Dimensions and Capacity for each tank is given in Sections D-2a and 2b.

D-2d Description of Feed Systems, Safety Cutoff, Bypass Systems and Pressure Controls

The tanks have separate overfilling controls and alarms. Additionally, personnel present during filling of the hydropulper may notice and handle overfilling problems.

A summary of the overfilling controls, safety vents, and conservation vents on the tanks and other units follows.

Tanks	Overfilling Control	Safety Vents	Pressure Relief Opening (inches of water column)	Conservation Vent Set Points (inches of water column)
TK-052004A	High level alarm and High level shut-off	Yes	7	2
TK-052009A	High level alarm and High level shut-off	Yes	7	2
TK-052009B	High level alarm and High level shut-off	Yes	7	2
TK-052010	High level alarm and high level shut-off	Yes	7	2
HY-052020	High level alarm and high level shut-off	Yes	16	6

Secondary containment serves as a backup containment for the tanks. The containment areas are more than sufficient to contain the volume of overflow. Operators are present during tank filling operations to manually shut-off the supply line.

All waste storage and blending tanks are covered. The hydropulper (HY-0052020) is a lidded, blend tank operated by an area operator. The hydropulper must be manually fed which minimizes the potential for overfilling the unit. The feed operation is managed by the operator and can involve a mix of container "dumps" directly into the hydropulper and operator-controlled pump feeds from containers and tanks (e.g., permitted, <90 day, wastewater treatment plant). The hydropulper has a minimum of 24 inches of freeboard from the top of its splash protection collar. LEL and high level alarms also automatically shutdown the hydropulper feed pumps.

A tank truck unloading ramp is used for all tank trucks, including tank trucks unloaded directly to the incinerator. The ramp is a sloped concrete containment structure with a sump. The tank truck unloading area also serves as the location where containers from B-64 or B-65 are emptied into the hydropulper or storage tanks, using the tank truck unloading pumps. The location of the tank truck unloading area is shown on Figure D-2.1b

D-2e Diagram of Piping, Instrumentation, and Process Flow

Complete process and instrumentation diagrams (P&IDs) are presented in Appendix D-3.

D-2f Containment and Detection of Releases

40 CFR 264.193

Containment of releases is initially accomplished through a system of overfilling controls, daily inspections and sufficient secondary containment capacity. Following detection of a release, containment is further accomplished through measures such as removal from service and repair.

Tank Containment System

Tank TK-052004A has its own an independent secondary containment system. However, sump SU-052020 and associated trenching provided secondary containment for tanks TK-052009A, TK-052009B, TK-052010, and hydropulper HY-052020. Appendix D-2 presents calculations of the tank containment systems and their excess capacities. All containment systems have more than sufficient capacity to store 100% of the volume of the largest tank plus run-off from a 25-year, 24-hour storm.

The tanks and containment systems are inspected daily and therefore, the presence of a release or accumulated liquid from a rainfall or snowfall event is detected within 24 hours. Upon discovery, tank releases must be acted upon immediately and completely removed from secondary containment consistent with the provisions of 40 CFR 264.15(c), 40 CFR 264.193(c)(4) and 40 CFR 264.196(b)(2). Rainwater and snowmelt which accumulates in secondary containment is handled in the same manner as described below.

The sump also collects general area housekeeping wash downs, which are sent to the wastewater treatment facility. However, spills of hazardous wastes in the processing area are cleaned up and

managed as hazardous waste. The area is hosed down, and wash water is collected in the sump. This wash will be removed from the sump.

The daily inspection of the tanks, secondary containment areas and sumps, and the general knowledge of rainwater events serve as the system for detecting releases. Upon visual detection, the leaking tank will be taken out of service and inspected immediately. If required in accordance with regulations, the wastes will be removed from the leaking tank and all visible releases contained and cleaned up.

Clean-up, notification, and reporting activities are described in Part G, Contingency Plan. Leaking tanks will be taken out of service and inspected immediately upon detection of the problem. In accordance with regulations, the wastes will be removed from the leaking tank if required. Cessation of use, removal of wastes from damaged tanks, and repair or closure will be in accordance with 40 CFR 264.196.

D-2f(1) Plans and Description of the Design, Construction, and Operation of the Secondary Containment System

The ages of the tanks can be calculated from the information given in Sections D-2a and D-2b.

In order to prevent the release of hazardous waste to the environment, the hazardous waste tanks and equipment have been provided with secondary containment systems. These containment systems are designed, constructed, and operated in a manner to prevent migration of waste or accumulated liquid out of the tank system during the operational life of the tank system. This containment system is capable of collecting releases and accumulated liquids. These secondary containment systems consist of reinforced concrete walls and floor surrounding the tank with an applied epoxy coating. See Appendix D-5 for additional details of the applied coatings and the associated Professional Engineer certification. The tanks sit on reinforced concrete piers/saddles above the floor. The floor is sloped to a sump to collect accumulated liquids from releases or storm water until they are removed. The tanks and containment systems are inspected daily and therefore, the presence of release or accumulated liquid from a rainfall or snowfall event is detected within 24 hours.

The reinforced concrete walls have been designed to prevent failure due to pressure gradients, potential physical contact with the waste stored, climatic conditions, and the stress from daily operation. The foundations for the secondary containment structure and the tank piers (placed below the floor of the containment structure) were designed and constructed to provide adequate support for anticipated loadings and to prevent failure due to pressure gradients, settlement, compression, or uplift. All joints have “water stops” to prevent leakage through the joint.

The materials of construction and applied coating are compatible with the wastes in the tank system. No waste shall be placed in the hazardous waste tanks until it has been evaluated (refer to the Waste Analysis Plan in Part C).

D-2f(2) Requirements for External Liner, Vault, Double-Walled Tank or Equivalent Device
40 CFR 264.193

The hazardous waste tanks and equipment have a secondary containment system that is free of cracks or gaps that would compromise the integrity of the secondary containment. The coated concrete serves as an external liner system to prevent potential releases to the environment. Calculations which show containment capacity, including precipitation from a 25-year, 24 hour rainfall, are given in Appendix D-2. The secondary containment encompasses the hazardous waste tanks and equipment to provide adequate containment and to minimize the likelihood of wastes coming in contact with the surrounding soil.

D-2f(3) Secondary Containment and Leak Detection Requirements for Ancillary Equipment
40 CFR 264.193

With the exception of piping from B64, B65, TK1709, and process area B55 leading to the hydropulper secondary containment area, ancillary equipment is provided with secondary containment. As such, the containment systems prevent the migration of waste or accumulated liquid to the environment, are inspected daily to ensure that leaks or accumulated liquids are detected within 24 hours, and are designed to prevent failure due to pressure gradients, potential physical contact with the waste stored, climatic conditions, and the stress from daily operation. The foundations for the secondary containment structures were designed and constructed to provide adequate support for anticipated loadings and to prevent failure due to pressure gradients, settlement, compression, or uplift. All joints have “water stops” to prevent any leakage through the joint. The materials of construction with applied coating are compatible with the wastes in the ancillary equipment as it is the same as in the tank system.

Regarding the exceptions noted above, the ancillary equipment is welded, has welded flanges and is inspected daily. Therefore it is exempt from secondary containment requirements per 40 CFR 264.193 (f)(1) and (2). The daily inspections ensure that leaks or accumulated liquids are detected within 24 hours.

D-2f(4) Requirements for Existing Tank Systems Until Secondary Containment is Implemented
40 CFR 264.193

All hazardous waste management units have adequate secondary containment; therefore, this section is not applicable.

D-2f(5) Variance from Secondary Containment
40 CFR 264.193

All hazardous waste management units have adequate secondary containment; therefore, this section is not applicable.

D-2g Controls and Practices to Prevent Spills and Overflows
40 CFR 264.194 and 40 CFR 264.195

This information provided in D-2d. Information concerning schedule and procedures for inspection of the tank system is provided in Section F-2b(2).

D-2h Special Requirements for Hazardous Wastes F020, F021, F022, F023, F026, and F027 in Existing Tanks

Hazardous wastes F020, F021, F022, F023, F026, and F027 are not stored at the PMC plant. Therefore, this section is not applicable.

D-3 WASTE PILES
40 CFR 264 Subpart L

There are no hazardous waste piles at the PMC Carrollton plant.

D-4 SURFACE IMPOUNDMENTS
40 CFR 264 Subpart K and 40 CFR 270.17

There are no hazardous waste surface impoundments at the PMC Carrollton plant.

D-5 INCINERATORS
40 CFR 264.340 and 40 CFR 270.19

PMC (while under Arkema ownership) submitted a Trial Burn Plan for the incinerator with an earlier permit application. Arkema worked with KDEP and EPA Region 4 to revise that Trial Burn Plan during the period 2000-2004. Arkema received approval of the plan from the agencies in 2004, performed the Trial Burn later that year, and submitted the final report for that test to KDEP and EPA Region 4 in January 2005. Arkema also performed multi-pathway human health and ecological risk assessments for the incinerator using the results of the Trial Burn. Arkema submitted the risk assessment reports to KDEP and EPA Region 4 in September, 2007 with revisions through the end of 2009.

Arkema performed additional testing of the incinerator in 2008. The 2008 testing, combined with the 2004 Trial Burn, allowed Arkema to demonstrate that the incinerator complies with the HWC MACT Standards. PMC has performed additional testing of the incinerator most recently in 2014 to demonstrate that the incinerator complies with the HWC MACT Standards. PMC submitted a notification of Compliance for the HWC MACT Standards in July, 2014. Approximately every 5 years retesting is conducted to demonstrate compliance with the HWC MACT Standards. Per 40 CFR 264.340(b)(1) Except as provided by paragraphs (b)(2) through (b)(4) of this section, the standards of this part do not apply to a new hazardous waste incineration unit that becomes subject to RCRA permit requirements after October 12, 2005; or no longer apply when an owner or operator of an existing hazardous waste incineration unit demonstrates compliance with the

maximum achievable control technology (MACT) requirements of part 63, subpart EEE, of this chapter by conducting a comprehensive performance test and submitting to the Administrator a Notification of Compliance under 63.1207(j) and 63.1210(d) of this chapter documenting compliance with the requirements of part 63, subpart EEE, of this chapter. Therefore, the incinerator is no longer subject to the operating requirements of 40 CFR 264, Subpart O. The incinerator also complies with the HWC MACT standards during periods of start-up and shutdown; therefore there is no need for the RCRA permit to include incinerator limits for those periods. PMC chooses to address start up, shut down, and malfunction under the Air Quality program. However, some 40 CFR 264 Subpart O requirements remain in effect. Examples of these remaining standards include security, closure, and organic air, per 40 CFR 264.340(b)(2).

Because the incinerator is now regulated by the HWC MACT Standards, there is no longer the need for the Trial Burn Plan and results have been removed from this permit renewal application. The documentation relevant to the Trial Burn, risk assessments, testing, and HWC MACT compliance is voluminous and is therefore not provided herein. The final risk assessments were submitted to KDEP in December 2009. This information demonstrates that no additional risk-based requirements are needed in association with the incinerator.

D-6 LANDFILL DESIGN

40 CFR 264 Subpart N and 40 CFR 270.21

Landfills are not actively used at the PMC plant for the treatment or storage of hazardous waste.

D-7 LAND TREATMENT

40 CFR 264 Subpart M and 40 CFR 270.20

Land treatment units are not used at the PMC plant for the treatment or storage of hazardous waste.

D-8 MISCELLANEOUS UNITS

40 CFR 270.23 and 40 CFR 264 Subpart K

PMC does not use any miscellaneous units for the treatment or storage of hazardous waste, therefore, this section is not applicable.

Figure D-1.1
Hazardous Waste Label Example

Figure D-1.2
Container Storage Pad Layout, B-64

Figure D-1.3
Container Storage Pad Layout, B-65

Figure D-1.4
Pad B-64

Figure D-1.5
Pad B-65 and Tank Truck Unloading Ramp

Figure D-2.1a
Hazardous Waste Unit Location Map

Figure D-2.1b
Hazardous Waste Unit Location Map – Detail

Figure D-2.3
TK-052004 A Containment

Figure D-2.4
TK-052009 A & B and TK-052010 Containment

Appendix D-1

Pads B-64 and B-65 Containment Capacity Calculations

Appendix D-2

Containment Calculations for Permitted Tanks

Appendix D-3

Process and Instrumentation Diagrams for Permitted Equipment

Figure	**Title**
052000-1-014	Process Overview
052003-1-014	TRS Solvent Pumps PU-052003 A&B
052004-1-014	Generic TK052004
052005-1-014	Generic TK052005
052009-1-014	TRS Slurry System TK-5209A TK-5209B
052010-1-014	Generic TK052010
052017-1-014	Baghouse System Process Flow DU-5217B
052020-1-014	TRS Slurry System TK052020
052021-1-014	TRS Boiler System (*Note: includes solvent feed)*
052022-1-014	Slurry Feeds IR052022
052023-1-014	TRS Waste Heat Boiler System
052040-1-014	Scrubber System CO052040
075000-1-001	Standard Symbols Cover Sheet 1 of 2
075000-1-002	Standard Symbols Cover Sheet 2 of 2

Appendix D-4

"New" Tank Assessments

Appendix D-5

Certification For Coating of Secondary Containment
Within Hazardous Waste Storage System