SECTION D

PLANS AND SPECIFICATIONS

R 299.9504 (2) and (3) and 40 CFR 270.15 and 270.16

PLANS AND SPECIFICATIONS
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TABLES

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APPENDICES

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PART D-1

TREATMENT IN TANKS

40 CFR 270.14(d), 270.16, 270.24, 270.27, Part 264 Subpart J and 40 CFR Part 60, Appendix A

R 299.9615, R 299.4505 Pursuant to the Provisions of the Michigan Fire Protection Act, PA 207

FACILITY SPECIFIC INFORMATION: TANK SYSTEMS

This license application section addresses requirements for tank systems at the EQD Facility in Detroit, Michigan. This section includes assessments of existing tank systems, secondary containment systems and release detection; controls and practices to prevent spills and overfills; inspections; response to leaks or spills and disposition of leaking or unfit for use tank systems; closure and post closure requirements; and requirements for storing or treating ignitable, reactive or incompatible wastes.

D-1 ASSESSMENT OF EXISTING TANK SYSTEM

(R 299.9615(1) and 40 CFR 264 Subpart J)

All tanks on the EQD facility site have secondary containment that meets the requirements of 40 CFR 264.193. **Tables B-3 and D-1** and **Sheets A-2 and R-2** include a description of these tanks by Permit Number.

EQ has completed a written assessment of each of these tanks and has determined that each tank system is adequately designed and has sufficient structural strength and compatibility with the waste(s) to be stored or treated, to ensure that it will not collapse, rupture or fail. EQD has verified that all tank systems were designed, constructed operated and maintained in compliance with the requirements of R 29.4101 to R 29.4505, pursuant to the provisions of Act 207. This assessment has been reviewed and certified by an independent, qualified, registered, professional engineer. The written assessment of each tank is on file at the EQD facility. Tank certificates are found in **Appendix D-1**

D-1a Design Standards

(R 299.9615(1) and 40 CFR 264.191(b)(1))

Waste incompatible with the materials of construction of a tank/vault are not placed in tanks/vaults by EQD. Compatibility is determined as outlined in the WAP. Tank linings, where applicable are described in the Tank Specifications paragraph of this section.

All of EQD's Waste Treatment Plant tanks/vaults are constructed of mild steel of the proper steel thickness verified by test results. Rectangular tanks have been designed using good engineering standards, taking into consideration height, weight, width, materials of construction and specific gravity of waste to be placed into the tanks. Engineering drawings and specifications are included with this application. Also included is appropriate foundation and structural support information used in the construction of the tanks.

The inspection of the tanks are conducted on a daily basis to detect any damage, leaks, cracks, corrosion or erosion of the tank construction materials that may occur. EQD does not store waste in a tank that would be incompatible with the construction material of that tank. In the event there is a waste that may enhance corrosion or erosion, that waste will be stored in a tank lined with materials compatible with corrosive waste.

A tank numbering diagram is found on **Sheet A-2.**

D-1b Dimensions and Capacity of Each Tank

(R 299.9615(1) and 40 CFR 264.191(b)(1))

Tank dimensions, capacities and shell thickness are listed separately for each tank in this section on the following pages.

D-1b(i) Description of Tanks/Vaults and Materials of Construction

Tank Specifications

Tank # 201- Cylindrical Vertical Tank

Dimensions:	14’ Diameter X 20’ High
Shell Thickness:	¼” Steel Plate
Liner:	None
Overfilling:	High level alarm
Use:	Hazardous Waste/Waste Water Treatment
Capacity:	20,000 gal

Tank # 202- Cylindrical Vertical Tank

Dimensions:	14’ Diameter X 20’ High
Shell Thickness:	¼” Steel Plate
Liner:	None
Overfilling:	High level alarm
Use:	Hazardous Waste/Waste Water Treatment
Capacity:	20,000 gal

Tank # 203- Cylindrical Vertical Tank

Dimensions:	14’ Diameter X 20’ High
Shell Thickness:	¼” Steel Plate
Liner:	None
Overfilling:	High level alarm
Use:	Hazardous Waste/Waste Water Treatment
Capacity:	20,000 gal

Tank # 204- Cylindrical Vertical Tank

Dimensions:	13’ Diameter X 18’ 4” High
Shell Thickness:	¼” Steel Plate
Liner:	None
Overfilling:	High level alarm
Use:	Hazardous Waste/Sludge Thickener
Capacity:	17,000 gal

Tank # 205- Cylindrical Vertical Tank

Dimensions:	13’ Diameter X 18’ 4’’ High
Shell Thickness:	Fiberglass
Liner:	None
Overfilling:	High level alarm
Use:	Hazardous Waste/Sludge Thickener
Capacity:	17,000 gal

Tank #206 - Cylindrical Vertical Tank

Dimensions:	13’ Diameter X 18’ 4’’ High
Shell Thickness:	¼” Steel Plate
Liner:	None
Overfilling:	High level alarm
Use:	Hazardous Waste/Sludge Thickener
Capacity:	17,000 gal

Tank #207 – Filtrate Surge Tank

Dimensions:	6’ L X 6’ W X 4.75’ H
Shell Thickness:	¼” Steel Plate
Liner:	None
Overfilling:	High level alarm
Use:	Hazardous Filtrate/Surge Tank
Capacity:	1,200 gal

Tank #208 – Sludge Holding Tank

Dimensions:	13’ Diameter X 18’ 4” High
Shell Thickness:	¼” Steel Plate
Liner:	None
Overfilling:	High level alarm
Use:	Hazardous wastewater/Sludge Holding
Capacity:	17,000 gal

Tank #301 Steel Rectangular Vertical Tank

Dimensions:	9.9’ L X 9.9’ W X 12’ H
Shell Thickness:	¼” Steel Plate
Liner:	Fiberglass lining
Overfilling:	High level alarm
Use:	Hazardous Waste/Acid Neutralization
Capacity:	8,000 gal

Tank #302 Rectangular Vertical Tank

Dimensions:	9.9’ L X 9.9’ W X 12’ H
Shell Thickness	¼” Steel Plate
Liner:	Fiberglass lining
Overfilling	High level alarm
Use:	Hazardous Waste/Acid Neutralization
Capacity	8,000 gal

Tank #303 – Vertical Tank

Dimensions:	10’ Diameter X 10.3’ High
Shell Thickness:	Polyethylene
Liner:	None
Overfilling	High level alarm
Use:	Hazardous Waste/Acid Storage
Capacity	6,500 gal

Tank #304 – Vertical Tank

Dimensions:	10’ Diameter X 10.3’ High
Shell Thickness:	Polyethylene
Liner:	None
Overfilling	High level alarm
Use:	Hazardous Waste/Acid Storage
Capacity	6,500 gal

Tank # 305- Cylindrical Vertical Tank

Dimensions:	12’ Diameter X 15.5’ High
Shell Thickness:	¼” Steel Plate
Liner:	Fiberglass Lining
Overfilling:	None
Use:	Hazardous Wastewater/Chemical Precipitation
Capacity:	15,000 gal

Tank # 306- Cylindrical Vertical Tank

Dimensions:	14’ Diameter X 19’ High
Shell Thickness:	Fiberglass
Liner:	None
Overfilling:	None
Use:	Hazardous Waste/Chemical Precipitation
Capacity:	20,000

Vault Specifications

Vault # 701- Steel Rectangular Vault

Dimensions:	21’ L X 26’ W X 10’ H
Shell Thickness:	1” Steel Plate
Liner:	None. The tank is designed as a steel tank within a concrete containment structure. The concrete provides secondary containment
Venting:	Tank is enclosed in a building ventilated by a dust Pollution Control System
Overfilling:	All loading operations are manually inspected by EQD Treatment Plant personnel.
Use:	Wastes to be stabilized
Capacity:	210 cubic yards

Vault # 702- Steel Rectangular Vault

Dimensions:	50.3’ L X 26’ W X 10’ H
Shell Thickness	¾” to 1” Steel Plate
Liner:	None. The tank is designed as a steel tank within a concrete containment structure. The concrete provides secondary containment
Venting:	Tank is enclosed in a building ventilated by a dust Pollution Control System
Overfilling	All loading operations are manually inspected by EQD Treatment Plant personnel.
Use:	Wastes to be stabilized
Capacity	490 cubic yards

Vault # 703- Steel Rectangular Vault

Dimensions:	50.3’ L X 26’ W X 10’ H
Shell Thickness:	¾” Steel Plate
Liner:	None. The tank is designed as a steel tank within a concrete containment structure. The concrete provides secondary containment
Venting:	Tank is enclosed in a building ventilated by a dust Pollution Control System
Overfilling:	All loading operations are manually inspected by EQD Treatment Plant personnel.
Use:	Wastes to be stabilized
Capacity:	490 cubic yards

Vault # 704- Steel Rectangular Vault

Dimensions:	65.3’ L X 21’ W X 10’ H
Shell Thickness:	¾” to 1” Steel Plate
Liner:	None. The tank is designed as a steel tank within a concrete containment structure. The concrete provides secondary containment
Venting:	Tank is enclosed in a building ventilated by a dust Pollution Control System
Overfilling:	All loading operations are manually inspected by EQD Treatment Plant personnel.
Use:	Wastes to be stabilized
Capacity:	510 cubic yards

Vault # 705- Steel Rectangular Vault

Dimensions:	36.3’ L X 21’ W X 10’ H
Shell Thickness:	¾” to 1” Steel Plate
Liner:	None. The tank is designed as a steel tank within a concrete containment structure. The concrete provides secondary containment
Venting:	Tank is enclosed in a building ventilated by a dust Pollution Control System
Overfilling:	All loading operations are manually inspected by EQD Treatment Plant personnel.
Use:	Wastes to be stabilized
Capacity	290 cubic yards

Vault # 706- Steel Rectangular Vault

Dimensions:	21' L X 21' W X 10' H
Shell Thickness:	¾" to 1" Steel Plate
Liner:	None. The tank is designed as a steel tank within a concrete containment structure. The concrete provides secondary containment
Venting:	Tank is enclosed in a building ventilated by a dust Pollution Control System
Overfilling:	All loading operations are manually inspected by EQD Treatment Plant personnel.
Use:	Wastes to be stabilized
Capacity:	170 cubic yards

Vault # 901 (T-026) - Rectangular Vault

Dimensions:	69' L X 26' W X 10' H
Shell Thickness:	¾" Steel Plate
Liner:	None. The tank is designed as a steel tank within a concrete containment structure. The concrete provides secondary containment
Overfilling:	All loading operations are manually inspected by EQD Treatment Plant personnel.
Use:	Hazardous Waste Sludge for storage
Capacity:	140,000 gal

Silo Specifications

Silo H-1

Overfilling:	Level indicator, flashing light, audible alarm
Use:	Wastes to be stabilized
Capacity:	204 tons

Silo H-2

Overfilling:	Level indicator, flashing light, audible alarm
Use:	Wastes to be stabilized
Capacity:	204 tons

D-1b(ii) Description of Tank/Vault Systems and Operation

Dust Silos S-1, S-2, S-3, H-1 and H-2

Silos H-1 and H-2 are designed to receive hazardous dust for treatment and waste stabilization. Dusts are transported in bulk pneumatic tankers and unloaded through a dedicated line. Any fugitive dusts are captured though a baghouse and discharged back into the silo.

Silos S-1 through S-3 receive the stabilizing reagents used for chemical fixation. Each silo is constructed identically with dedicated fill and discharge line and separate baghouses. The blower is connected to the pneumatic trailer fluffing and conveying dust to the silo.

Dust is then fed from the bottom of each silo through a variable speed vane feeder into a screw conveyor feeding the pugmill. Feed rates are varied to obtain proper treatment ratios for different types of wastes. Dust may be fed from one or all silos simultaneously.

Dust silos are equipped with multiple high level indicators. The first are level indicator lighting on the silos themselves. Secondly when a silo level approaches ¾ capacity, a flashing light turns on. An audible alarm will sound when any silo has reached >95% capacity.

Treatment Vaults 701, 702, 703, 704, 705, and 706

Treatment vaults are steel constructed rectangular in shape vaults built within a concrete containment structure. The outer concrete serves as secondary containment and is sloped to a central low point. An inspection pipe located at the low point is designed to detect any free liquids accumulating in the interstitial space and may be used to remove such liquid.

Vaults 701 through 706 receive liquid and solid wastes from the pugmill, auger, bulk tankers and containers. Mixing within the vaults, if required, is accomplished by the use of an excavator bucket. After treatment waste is removed from the vaults with the excavator and placed into a vessel for transport to the final disposal facility. Post treatment testing as described in Method of Treatment section of the WAP may be performed before wastes are transported to the final disposal facility.

Pugmill

The pugmill receives dusts from silos S-1, S-2, S-3, H-1 and H-2 as well as liquids and sludges from tank 901 or directly from a bulk tanker discharging into vaults 701 through 706.

The pugmill is a flow through device. Wastes are fed and enter in the pugmill on one end. The waste is mixed by paddles mounted on counter-rotating shafts running the length of the unit. Waste is discharged from the pugmill on the opposite end into a screw conveyor beneath the pugmill mixer. The screw conveyer carries the treated waste to the treatment vaults.

An operator first starts the pugmill then initiates dust feed from the silos followed immediately by liquid feed from tank 901. Variable speed adjustments for all feed are present at a control panel adjacent to the pugmill. Feed are adjusted to predetermined levels and processing of waste begins. The treatment operation is shut down in the reverse order described above.

Chemical Precipitation Tanks 201, 202, 203, 204, 205, 206, 208, 305 and 306

Tanks 201 through 206 are located in the main treatment building. Wastes are fed into tanks 201 through 206 directly from tankers, drums or other processing units (corrosive treatment) to remove heavy metal by chemical precipitation. Supernatant is pumped to holding tanks, or pumped to other process tanks. Tank 208 is a sludge

thickening/conditioning tank receiving waste from chemical precipitation or corrosive treatment. Sludge is then pumped through the plate and frame filter presses for dewatering then into the filtrate surge tank, Tank 207. Tank 305 is a cylindrical steel, fiberglass lined tank, 306 is a cylindrical fiberglass tank; these tanks are used for hazardous waste treatment.

The effluent is analyzed as necessary with respect to discharge standards. The filter cake is placed into roll-off boxes for disposal or further treatment at a licensed facility.

Corrosive Treatment Tanks 301, 302, 303, and 304

Tanks 301 and 302 are located in the Main Building. These are steel tanks specially lined with corrosive resistant vinyl ester FRP lining. Wastes are fed into tanks directly from tankers, containers or storage tanks. Tank 303 and 304 are cylindrical polyethylene tanks primarily used to treat and/or store concentrated wastes

D-1b(iii) Secondary Containment Systems

EQD maintains secondary containment for all tanks utilized in the processing of hazardous and non-hazardous waste. The containment system was engineered for compliance with 40 CFR 264.183 and R299.9615.

Secondary containment is provided for vaults 701 through 706 by an outer concrete structure. The concrete is sloped to a central low point where an inspection pipe is located. The inspection pipe is designed to detect free liquids that have accumulated in the interstitial space and will be utilized to remove any such liquids.

Secondary containment for the 200 and 300 series tanks are epoxy coated and/or Xypex impregnated concrete, either as part of the building structure or separate stand alone units.

EQD's secondary containment systems are separated into various zones as shown in drawing **Sheets C-10 through C-17**. Secondary containment systems for the double-walled tanks associated with the Chemical Fixation Building are depicted on **Sheet C-10**.

Epoxy coatings and/or Xypex impregnated concrete of the Secondary Containment systems are as noted in **Sheets C-10 through C-18.** Manufacturer's data sheets for the epoxy and Xypex are found in **Appendix D-2.**

Liquid collected in the secondary containment is considered contaminated rain or washwater and is transferred to the wastewater treatment plant for treatment prior to discharge to GLWA. Liquid is transferred by tanker truck, vacuum truck or by direct pipeline to the plant. The wastewater pretreatment plant is operated under a GLWA Industrial Wastewater Discharge Permit Number 923-91964-IU.

If a spill has occurred into the secondary containment the accumulated liquid is considered a hazardous waste with a waste type identical to waste present in the leaking tank or spilled material.

Liquid accumulated in the secondary containment structure is removed within 24 hours, or in as timely manner as is possible. Structures are inspected daily and inspection findings noted on the Daily Inspection Log.

D-1c Descriptions of Feed systems, Safety cutoff, Bypass System and Pressure Controls

(R 299.9615(1) and 40 CFR 270.16(c))

The information provided in this section pertains to equipment associated with the transfer of waste into the tank and the venting of vapors from the tank.

D-1c(i) Feed Systems

(R 299.9615(1) and 40 CFR 270.16(c))

Tanks 201, 202, 203, 204, 205, 206, 208, and 305

Overfilling control: Loading and unloading operations are constantly monitored by EQD plant personnel to ensure against overfilling and the maintenance of adequate freeboard. The Operator also maintains a written Tank Log of all materials received to a specific treatment tank and can keep a running total of waste volumes received to each tank. Each entry on the tank log is initialed by the operator to affirm the material was properly received to the identified treatment tank and that no spill or release occurred. If the equipment operator observes a condition which does not provide sufficient freeboard to allow proper treatment within the treatment tank, the operator will cease mixing. Also, all tanks are constantly monitored by digital controller and alarms at 90% and 95% full.

Tank 207

Tank 207 is the receiving surge tank for the filter press which pumps directly in effluent holding tanks. Also, all tanks are constantly monitored by digital controller and alarms at 90% and 95% full.

Tanks 301 and 302

Overfilling control: Loading and unloading operations are constantly monitored by EQD plant personnel to ensure against overfilling and the maintenance of adequate freeboard. The Operator also maintains a written Tank Log of all materials received to a specific treatment tank and can keep a running total of waste volumes received to each tank. Each entry on the tank log is initialed by the operator to affirm the material was properly received to the identified treatment tank and that no spill or release occurred. If the equipment operator observes a condition which does not provide sufficient freeboard to allow proper treatment within the treatment tank, the operator will cease mixing. Also, all tanks are constantly monitored by digital controller and alarms at 90% and 95% full.

Tanks 303 and 304

Overfilling control: Loading and unloading operations are constantly monitored by EQD plant personnel to ensure against overfilling and the maintenance of adequate freeboard. The Operator also maintains a written Tank Log of all materials received to a

specific treatment tank and can keep a running total of waste volumes received to each tank. Each entry on the tank log is initialed by the operator to affirm the material was properly received to the identified treatment tank and that no spill or release occurred. The operator will evaluate the freeboard space to ensure it is adequate to allow proper treatment within the treatment tank. Also, all tanks are constantly monitored by digital controller and alarms at 90% and 95% full.

Treatment Vaults 701, 702, 703, 704, 705, and 706

Overfilling control: Loading and unloading operations are constantly monitored by EQD plant personnel to ensure against overfilling and the maintenance of adequate freeboard. EQD personnel also maintain a written Vault Log of all materials received to a specific treatment vault and can keep a running total of waste volumes received to each vault. Each entry on the vault log is initialed by the EQD personnel to affirm the material was properly received to the identified treatment vault and that no spill or release occurred. If the equipment personnel observe a condition which does not provide sufficient freeboard to allow proper treatment within the treatment vault, the operator will cease mixing.

Silo S-1, S-2, S-3, H-1, and H-2

The dust storage tanks are equipped with electronic level indicators which allow the operator sufficient time to shut down the blower units, preventing overfilling. These units are equipped with Stevens SV-380 (or equivalent) dust collectors for venting and pollution control.

Dust silos are equipped with multiple high level indicators. The first are level indicator lighting on the silos themselves. Secondly, when a silo level approaches ¾ capacity, a flashing light turns on. An audible alarm will sound when any silo has reached >95% capacity and an auto shut-off will activate to prevent overfilling.

D-1c(ii) Safety Cutoff or Bypass System

(R 299.9615(1) and 40 CFR 270.16(c)

Safety Cutoff or Bypass System for EQD Tanks is found in **Table D-2**

D-1c(iii) Pressure Controls

(R 299.9615(1) and 40 CFR 270.16(c)

Pressure Controls information for EQD Tanks is found in **Table D-3**

D-1d Diagram of Piping, Instrumentation and Process Flow

(R 299.9615(1) and 40 CFR 270.16(c)

Diagrams of EQD tank system piping, instrumentation and process flow with all relevant tank system components are found in **Sheets P-2 through P-6**.

SECTION D-2
TREATMENT PROCEDURES

D-2 TREATMENT PROCEDURES

(R 299.9615(1) and 40 CFR 270.16(b)(2))

EQD treats and stores hazardous and non-hazardous liquids and solids. Refer to the WAP for additional discussion. **Table C-4,** Waste Codes Table includes the list of all the hazardous waste codes that can be accepted at EQD.

D-2a Waste Treatment Technologies

D-2a(i) Chemical Fixation/Stabilization

EQD treats wastes that require treatment to comply with 40 CFR Part 268, Land Disposal Restriction (LDR) treatment standards, through chemical stabilization using a pozzolanic-type process incorporating cement kiln dust (CKD), lime and other selective reagents and through chemical oxidation using various oxidants. A treatment train (a stepwise progression of treatments using different reagents) is sometimes required to treat the different constituents of concern. These treatment steps may include neutralization, deactivation, chemical oxidation and or chemical reduction. Lime or oxidizing or reducing agents may be used to destroy or convert selected waste constituents into a physical or chemical form that is less soluble, less hazardous and/or more suitable for subsequent stabilization.

Wastes requiring neutralization, deactivation chemical oxidation and/or stabilization are treated in batch operations. Each batch may contain multiple United States Environmental Protection Agency (USEPA) hazardous waste numbers and treatment standards.

D-2a(ii) Chemical Oxidation

Hazardous waste containing organic constituents above the LDR levels are chemically oxidized at EQD. The chemical oxidation process is described below and detailed in **Figure C-2**. Chemical oxidation is also discussed as one of the Best Demonstrated Available Technologies (BDAT) for managing organic contaminated waste in 40 CFR 268.42 and Appendix VI.

See WAP **Section C-3i** for a detailed discussion of the EQD Chemical Oxidation treatment.

D-2a(iii) Chemical Reduction

Chemical reduction is a listed BDAT and is included as part of the oxidation step. Refer to WAP **Section C-3i**

D-2a(iv) Chemical Precipitation

The wastes that require this treatment are transported in bulk or containerized via tank trucks, rail or other portable containers. Refer to the WAP **Section C-3i** for a detailed discussion of chemical precipitation

D-2a(v) Corrosive Acid/Base Treatment

Refer to the WAP **Section C-3i** for a detailed discussion of Corrosive Acid/Base Treatment.

D-2a(vi) Deactivation

See WAP **Section C-3i** for a detailed discussion of Deactivation.

D-2a(vii) Oil Treatment Process

Only non-hazardous waste is treated in the Oil Treatment Process.

D-2a(viii) 40 CFR subpart CC

See WAP **Section C-3i** for a detailed discussion of subpart CC management.

D-2b Treatability Studies

See WAP **Section C-3b** for a detailed discussion of Treatability Studies.

D-2c Mixing, Blending and Commingling of Wastes for Treatment

Refer to WAP **Section C-3f** for a detailed discussion of Mixing, Blending and Commingling of Wastes for Treatment

D-2d Procedures for Ignitable, Reactive and Incompatible Wastes

See **Section C-3h** of the WAP for a detailed discussion of Procedures for Ignitable, Reactive and Incompatible Wastes

D-2e Treatment Methods

Pugmill Treatment

Pugmill mixers are the treatment units used in the EQD process for liquids and high water content waste slurries and sludges. Liquid sludges and slurried wastes are pumped from the waste storage tanks to the pugmill. Stabilization agents and oxidants are conveyed from the storage silos and storage tanks respectively and fed into the pugmill at the same point as the liquid waste(s). After mixing in the pugmills, the waste is discharged to a stacking conveyor for distribution to the waste holding tanks. Upon completion of treatment of all materials in the treatment tank, the waste is sampled an analyzed to demonstrate and document effective treatment.

The pugmill is used for the treatment of non-hazardous and hazardous waste identified in 40 CFR Part 261, Subparts C and D and included in the WAP. Standard treatment involves mixing the waste with the stabilization agents(s) in a ratio determined by the laboratory.

This is accomplished by setting the pugmill feed rates on the rotary vane feeders at the base of silos S-1, S-2 or S-3 in proportion to the liquid feed rate on the screw conveyor or pump coming from tank 901. After treatment in the pugmill mixer, treatment residues are discharged using conveyors to Vaults 701, 702, 705 and 706.

In-Vault Treatment

Waste streams not treated in the pugmill mixer, due to physical constraints such as particle size, physical state or available space, the material will be treated in the treatment vaults. The mixing of waste is performed in the treatment vault using the bucket of an excavator. The treatment agents may be added to the tank from the pugmill mixer or placed directly into the tank. The excavator is used to thoroughly mix the materials into a homogeneous mass. Following stabilization, the treated waste solidifies. The effectiveness of treatment is confirmed through post-treatment analysis of the residue as described in the WAP **Section C-4d**.

In-Tank Treatment

Chemical precipitation treatment tanks are used for the treatment of non-hazardous and hazardous waste identified in 40 CFR Part 261, Subparts C and D and the WAP. Standard treatment involves mixing the wastes with lime and precipitating agents to effectively separate the reacted cations/anions.

Filtrate from dewatering is transferred to a storage tank for further processing using chemical precipitation; or is discharged if the wastewater meets wastewater discharge standards.

Corrosives are segregated and treated separately in dedicated tanks, containers or vaults especially designed for corrosive wastes.

Oil bearing wastewaters are heated by steam for de-emulsification. If necessary, acid may be added to enhance the oil-water separation. Treated oil is stored in a tank prior to off-site transport. Wastewater generated through this process is transferred to a chemical precipitation tank for additional treatment.

Sludge generated during these processes is pumped to sludge conditioning tanks for processing which may include addition of conditioning reagents; or may be solidified by chemical stabilization. Subsequent treatment involves dewatering the sludge.

D-2f Waste Specific Treatment

The waste treatment processes used by EQD, described in **Section D-2e** above and the WAP are effective for a broad range of wastes containing inorganic and organic constituents. The treatment operations may combine several wastes or shipments from various generators to facilitate operational efficiency and utilization of available processing capacity. Batch treatment of multiple wastes and/or shipments will be based on chemical compatibility, USEPA hazardous waste code numbers and treatment requirements.

A general treatment process logic for EQD regarding target constituents, typical waste codes, “treatment trains” and post-treatment parameters is provided in the WAP. Descriptions of the treatment technologies utilized for various applicable waste types and basic operating parameters and principles are present in **Figure C-1** and **Table C-2** of the WAP.

D-2f(i) Characteristic Waste

Refer to WAP **Section C-3j** “Characteristic Waste” LDR

D-2f(ii)) Listed Wastes

Refer to WAP **Section C-3j** “Listed Waste” LDR

D-2f(iii) Hazardous Debris

See **Section C-3j** of the WAP “Hazardous Debris” LDR

D-2f(iv)) Macroencapsulation

Refer to WAP **Section C-3k** for a detailed description of the macroencapsulation process and unit.

D-2f(v) Post Treatment Analysis

See WAP **Section C3i** for a description of the Post Treatment Analysis.

D-2f(vi) Treatment Residue Disposal

Refer to **Section C-3j** of the WAP

D-2g Existing Corrosion Protection Measures

(R 299.9615(1) and 40 CFR 264.191(b)(3))

All metal components of tank systems are located above grade or are isolated from contact with soil or groundwater, a corrosion assessment by a corrosion expert is not required to determine the corrosion potential of the soil environment surrounding the system.

D-2h Documented Age of Tank Systems

(R 299.9615(1) and 40 CFR 264.191(b)(4))

The documented age of EQD tank systems is found in **Table D-4**

D-2i Leak Tests, Inspections and Other Examinations

(R 299.9615(1) and 40 CFR 264.191(b)(5)(i))

EQD facility hazardous waste tanks/vaults will be inspected daily and an inspection log will be maintained. Daily inspections include inspection of aboveground portions of tanks for corrosion or release of wastes, leak detection equipment or ports and secondary containment systems. Tank/vault assessment certification is found in **Appendix D-1**.

D-1m(i) Non-enterable Underground Tanks

(R 299.9615(1) and 40 CFR 264.191(b)(5)(i))

There are no underground tanks at the EQD facility

D-1m(ii) Other than Non-enterable Underground Tanks and for Ancillary Equipment

(R 299.9615(1) and 40 CFR 264.191(b)(5)(ii))

There are no underground tanks at the EQD facility

D-2j Ancillary Equipment Assessment

(R 299.9615(1) and 40 CFR 264.191(b)(5)(ii))

All piping and ancillary equipment at EQD has secondary containment.

D-2k Leaking or Unfit-for-Use Tank Systems

(R 299.9615(1) and 40 CFR 264.191(b)(5)(ii))

EQD has no leaking or unfit for use tank systems.

D-2l Tank Labels

(R 299.9615(5))

All tanks at EQD have been labeled in accordance with the provisions of National Fire Protection Association (NFPA) Standard No. 704

PART D-3

CONTAINER STORAGE

R 299.9614, R 299.4101 TO R 299.4505 AND 40 CFR 270.14(d), 270.15, and Part 264 Subpart I

D-3 Use and Management of Containers

D-3a Description of Containers

(R 299.9614 and 40 CFR 264.171 which is ABR in 299.11103)

EQD has eight distinct areas for containerized storage with a total capacity for all eight areas of 614,050 gallons that can be stored on site. **Table D-5** provides detail on the capacity of the storage area in gallons. The table also includes references to the applicable facility drawings for each of the storage areas.

D-3b Condition of Containers

(R 299.9614 and 40 CFR 264.171 which is ABR in R 299.11103)

Containers are visually inspected to ensure that they are in good condition and not leaking. Containers may not be placed or stored in standing water.

D-3c Compatibility of Waste with Containers

(R 299.9614 and 40 CFR 264.172 which is ABR in R 299.11103)

Before containerized waste is placed in a storage area, a determination of the compatibility of the waste with the container material of construction will be made. The evaluation is based upon vendor/engineering data, materials of construction and knowledge of the waste and its characteristics. If the data is not known or available, compatibility testing will be performed prior to storage.

D-3d Management of Containers

(R 299.9614 and 40 CFR 264.173 which is ABR in R 299.11103)

D-3d(i) Staging and Acceptance of Containerized Waste

Trucks transporting containerized waste entering the facility are checked to ensure that they have arrived at the correct facility, the manifest has been completed in a compliant manner, and that all manifests have an active approval number. The driver is directed to the staging area located within the containment structure of the North Containment Area (parking lot adjacent to Waste Acceptance).

Upon review and acceptance of all load paperwork, the driver is routed back to the drum warehouse for off-loading. Containers are off-loaded using fork-trucks or other container handling equipment. Containers are visually inspected to ensure that they are in good condition and not leaking and placed in rows within the staging area. These staging area rows are approximately 4-feet wide and separated by approximately 2-foot wide aisle spaces. Each container is matched to the appropriate line item of the manifest to verify piece count. Each container is bar-coded with a unique inventory tracking number. This bar-code also identifies the applicable waste codes assigned to that container, date of receipt, manifest number and other EQD specific operating information. Each container is QC'd and or sampled per **Section C,** the Waste Analysis

Plan (WAP). Each sample jar is labeled with the same unique inventory bar-code as the sampled container.

The sample and the completed operation paperwork are turned into the laboratory for review and acceptance testing. The analysis required for acceptance of the waste is performed and the waste is either deemed acceptable or rejected in accordance with the procedures and criteria specified in the WAP.

Off-specification material and rejected loads are managed following the procedures specified in Part 111. Rejected containers may be loaded back onto the waiting truck or other transportation arrangements are made. The driver is provided with the appropriate documents and allowed to leave the facility.

If wastes are acceptable, Operations assigns a treatment or storage designation. After vehicles have been unloaded, drivers are directed to the Waste Acceptance building. Drivers return the completed facility documents to the trained personnel. Manifest information is completed using the computer system. Electronic manifests are completed and returned electronically to the generator. Hard-copy manifests are signed, dated, and drivers are given the Transporter copy.

D-3d(ii) Storage of Containerized Wastes

Containers are moved from the staging area and placed in rows in one of the storage areas. The storage units are constructed of materials that are compatible with the wastes to be managed within them. Stored containerized wastes are segregated with respect to the DOT segregation requirements.

The rows are maintained with aisle space sufficient to meet the requirements of 40 CFR 264.35. Containers are placed into the storage area on pallets or directly onto the concrete slab using a fork-truck or other container/drum handling equipment.

The container storage building(s) and trench(s) and containment areas are inspected at least once per day. Containers are stored in a manner that will contain potential leaks/spills within the containment area. Accumulated liquids observed in the containment structure are removed within 24 hours, or in as timely a manner as is possible to prevent harm to human health and the environment. Liquids may be removed by vacuum truck or suitable pumps. Removed liquids are managed through the wastewater plant.

Containers less than 55 gallons that are attached to a pallet can be double stacked. Containers 55-gallon or greater may be double stacked.

Container Staging Building

The Container staging building (**Sheet C-12**) is located northeast of the Main Treatment Building. The Area is designed to hold 54,340 gallons of liquid waste in containers of varying capacity. Once containers are accepted by the facility, they are generally moved to either the Container storage building, the Corrosive (Acid/Base) Container Pad, or other container storage buildings appropriate for the waste.

Container Storage Building

The Container Storage Building is located north and east of the Main Treatment Building and is enclosed. The Container Storage Building is designed to hold a maximum of 100,430 gallons of containerized waste in containers of varying capacity. The waste is stored in rows running east and west approximately 4-feet wide separated by approximately 2-foot wide aisles. Drums are placed in the NDSA on pallets or directly onto the coated concrete slab using a fork-truck or other container/drum handling equipment. The Container storage building is covered to minimize precipitation into the work area. Containers are stored in a manner that will contain potential leaks/spills within the curbed area. The Container storage building is divided into three separate areas that drain to isolated sumps. Incompatible wastes stored in the NDSA are segregated from other waste as shown on **Sheet R-4** in order to minimize the potential for fire, explosion or other adverse reaction.

North Container Storage Pad (NCSP)

The NCSP is located north of the Chemical Fixation Building. This storage area (**Sheet C-10**) is designed to hold a maximum of 80,800 gallons of containerized waste. Container types and sizes will vary; EQD will maintain containerized storage volumes at or below the 80,800 gallon volume. Drums are placed on the NCSP on pallets or directly on the coated concrete slab using a fork-truck or other container/drum handling equipment. Portable waste containers are stored on pallets. The waste is stored in rows approximately 4-feet wide separated by approximately 2-foot wide aisles. Containers are stored in a manner that will contain potential leaks/spills within the curbed area. Only compatible waste types are stored on the NCSP.

Corrosive Container Pad (CCP)

The Corrosive Container Pad lies directly northwest of the Administrative Building, and is enclosed. The area is designed to hold a maximum of 6,600 gallons of containerized waste. The waste is stored in rows running east to west in row approximately 4-foot wide separated by approximately 2-foot aisles. Containers are stored in a manner that will contain potential leaks or spills within the curbed area as shown on **Sheet C-18**.

Generally only acid, caustic and chrome wastes are stored in containers in the Corrosive Container Pad. Although other waste may be occasionally stored in this area, no incompatible waste is stored in this area.

Containers are placed into the storage area on pallets or directly onto the concrete slab using a fork-lift or other container/drum handling equipment. The area is completely covered which prevents precipitation from entering.

Chemical Precipitation Container Pad (CPCP)

The CPCP is located in the northwest area of the Main Treatment Building as shown in **Sheet C-18** and stores 6,600 gallons of containerized waste, in containers of varying capacity. Incompatible wastes are not stored contemporaneously in this storage area. If incompatible waste has previously been stored in this area, as determined by the container and tank storage logs, such waste will be removed and the Secondary Containment Systems cleaned as necessary prior to storage of other waste in this area.

Chemical Fixation Container storage building (CFCSA)

The CFCSA stores a maximum of 149,480 gallons of containerized waste; container size and volume will vary. Drums are placed into the storage area (**Sheet C-10)** on pallets or directly onto the concrete slab using a fork-lift or other container/drum handling equipment. The area is completely covered which prevents precipitation from entering.

Incompatible wastes are not stored together in this area.

LabPack/DePack Area (LPA)

The LPA is located North and East of the Chemical Fixation Building. The LPA can store a maximum of 160 containers, double stacked, or 8,800 gallons of waste as described in **Sheet C-14.**

Drums are placed into the storage area on pallets or directly onto the concrete slab using a fork-lift or other container/drum handling equipment. The area is completely covered which prevents precipitation from entering.

Rail Container Storage Area (RCSA)

Railcars received at the facility are located on the west side of the facility. This area can store approximately nine railcars or 207,000 gallons of waste. The largest volume that could be accepted in a railcar is 26,000 gallons.

Incompatible wastes are not stored together in this area.

D-3d(iii) Removing Waste from Containers

Removing Liquid Waste from Containers Using a Vacuum Truck or Pump

A pump or vacuum truck may be used to remove liquids from containers. The vacuum truck or pump is staged next to or within the Container storage building and the container is tipped to allow complete removal of the liquid. The bung (or the entire container lid if a bung is not present) is removed from each container in a row. The operator inserts the wand into the liquid waste, and transfers the liquid to the waste tank. As each container is emptied, the operator moves to the next container of the same waste stream, or compatible waste type and continues until the specified containers have been emptied. At no time are open drums containing waste left unattended. If the operator must leave for any reason, the tops or bungs will be replaced on the containers that have not been emptied.

Removing Waste from Containers Using a Fork-Lift Truck

If a vacuum truck or pump is not used, a fork-lift truck is used to pick up the container(s) and transport them to the appropriate waste storage/treatment tank. The operator removes the bung or the entire lid or top of the container and the drum grappler inverts the drum over the sludge receiving tank or vault, decanting the contents. After the operator empties the contents of the container, the container is also placed in the tank for treatment/disposal.

Removing Waste from Large Containers

Large containers such as roll-off boxes or dump trailers are emptied while still attached to the transport vehicle. To empty, the tailgate of the roll-off boxes or dump trailer will be opened; the unit is then raised to allow the waste to slide out into the treatment vault.

Transfer from Container to Container

EQD will accept waste that may not be treated at EQD but transferred to another permitted off-site treatment and/or disposal facility. The transfer of waste may be shipped in its original container or transferred from one container to another for ease of shipment or compliance with Department of Transportation (DOT) regulations.

D-3d(iv) Disposal of Empty Containers

Once a container has been emptied, the container will be visually inspected to ensure it is RCRA empty. Small containers such as drums, pails etc. are crushed or shredded prior to disposal.

Larger containers such as roll-offs or dump trailers are also inspected to ensure they are RCRA empty. Any remaining waste residue will be removed by scraping, rinsing or power washing until the container is RCRA empty. Non-RCRA empty bulk containers (roll-off and dump trailers) whose waste residue cannot be removed by practical means can only be released when the necessary corrections to the manifest volume has been changed and noted in the appropriate section.

D-3d(v) Containerized Waste Bulking/Consolidation

EQD receives waste in a variety of container sizes, for example small glass or plastic bottles, pails, drums, totes, boxes and cubic yard sacks. EQD may elect to consolidate these containers as a means to more efficiently manage these wastes for further processing or preparation for shipment to a permitted off-site treatment/disposal facility.

Bulking/Consolidation may include the transfer of the smaller containers (e.g. one-gallon jugs) into larger containers such as drums or totes. Drums may be pumped using a vacuum truck/tanker. Solid waste like cubic yard sacks may be dumped directly into a roll-off/dump trailer for processing or shipment to an off-site treatment/disposal facility.

Bulked and consolidated containerized wastes are subject to the same compatibility and waste code evaluation as applied to wastes that are mixed into treatment tanks as defined in the WAP.

Bulking and consolidation of waste can only occur once the combining wastes have been properly sampled and tested for compatibility prior to mixing. Containers of waste that are the same or similar in nature, process or characteristics (e.g. same Approval Number) will first be composited using the sampling methodology outlined in **Section C-3i** of the WAP. And monitored for any adverse reaction (e.g. uncontrolled splashing, foaming or others signs of violent reactions denoting incompatibility) during the composite sampling.

D-3e Inspections

(R 299.9614 and 40 CFR 264.174 which is ABR in R 299.11103)

Drums, roll-off containers and any other containers will be inspected daily for leaks, signs of corrosion, pitting, deterioration or bulging; as well as a check to ensure each container is securely closed. Also ensure rows are approximately 4-foot wide separated by approximately 2-foot aisles between containers to allow for a thorough inspection of each container in storage. During these inspections, each container aisle will be visually observed and inspected. The secondary containment system consisting of floor surfaces, containment berms and containment sumps will be visually inspected for evidence of spills or leaks of hazardous waste and for structural defects (cracks, erosion, pitting, etc.) The results of each inspection will be entered onto a form as equivalent to **Table O-1** and any required actions will be performed. Potential types of problems that may be encountered in the container storage building are provided on the inspection form to help ensure a thorough inspection.

The results of these inspections will be entered into the Facility Inspection Logs on forms equivalent to those provided in **Table O-1.** Each entry shall include the date and time of the inspection, the name of the Inspector, ad description of the equipment or structures being inspected, a notation of the observations made, and an indication as to whether or not the Corrective Action Plan should be initiated. A revised or improved version of an Inspection Report form may be implemented upon proper administrative change notification to Michigan Department of Environmental Quality (MDEQ) Waste Management Division. Each inspection record will be kept on file in an Inspection Log for a minimum of three years from the date of the inspection.

D-3f Containment

(R 299.9614 and 40 CFR 264.175 which is ABR in R 299.11103 and 40 CFR 270.15)

D-3f(i) Secondary Containment System Design and Operation for Containers with Free Liquids

(R299.9614 and 40 CFR 264.175(a), which is ABR in R 299.11003 and 40 CFR 270.15(a), which is ABR in R 299.9504(2))

Rail Container Storage Area

Railcars received at the facility are located on the west side of the facility. This area can store approximately nine railcars or 207,000 gallons. The largest railcar that can be accepted would be 26,000 gallons. The soils directly under the rail tracks were excavated and the excavation lined with an 80-mil polyvinylchloride (PVC) liner, backfilled with stone ballast and a series of metal collection pans installed to capture any leakage.

The collection pans are sloped to cross drains, which slope to collection under-drain system which then drains into the lined spill containment structure. The secondary containment for this area is shown in **Sheet C-17.**

Container Storage Building

The Container storage building is located north of the Main Treatment Building and is enclosed. The Container storage building is designed to hold a maximum 100,430 gallons of containerized waste. The Container storage building is covered to minimize precipitation into the work area. Containers are stored in a manner that will contain potential leaks/spills within the curbed area. The Container storage building is divided into three separate areas that drain to isolated sumps as depicted in **Sheet C-12.**

Container Staging Building

The Container staging building is designed to hold 988 fifty-five gallon drums or 54,340 gallons of liquid waste. Containers are stored in a manner that will control potential spills/leaks within the storage/staging area. Accumulated liquids collected in the trench containment structure are removed as required by the rule. The secondary containment for this area is shown in **Sheet C-12.**

Corrosive Container Pad

The Corrosive Container Pad lies directly west of the administrative building and is enclosed. The area is designed to hold a maximum of 6,600 gallons of containerized waste. The area is completely covered which prevents precipitation from entering the container storage building. The Pad is sloped towards trenches which serve as a collection point for liquid in the event of spills or leaks in the storage area as shown in **Sheet C-18.** Containers are stored in a manner that will contain potential leaks/spills within the curbed area.

Chemical Precipitation Container Pad

The Chemical Precipitation Container Pad is located in the Main Treatment Building and stores 6,600 gallons of containerized liquid waste. The area is completely covered which prevents precipitation from entering the storage area. All drained is sloped to floor area drains as shown in **Sheet C-18.** Containers are stored in a manner that will contain potential leaks/spills within the curbed area.

North Container Storage Pad

The NCSD is located north of the Chemical Fixation Building. This drum storage area is designed to store 80,800 gallons of containerized waste. The containment area is sloped to a blind sump, containment system design is shown in **Sheet C-10.**

Chemical Fixation Container Storage Building

The Chemical Fixation Container Storage Building is located inside the Chemical Fixation Building and is designed to hold up to 108,340 gallons of containerized waste. The Secondary Containment System Design is shown on **Sheet C-10.**

LabPack/DePack Area

The LabPack/DePack Area is within a totally enclosed building at the Northeast corner of the site. The drum storage area is designed to store 8,800 gallons of containerized waste. The containment design for this area is shown on **Sheet C-14.**

D-3f(ii) Requirement for Base or Liner

(R299.9614 and 40 CFR 264.175(b), which is ABR in R 299.11003 and 40 CFR 270.15(a)(1) which is ABR in R 299.9504(2))

Rail Container Storage Area

The railroad car spur was designed and installed to provide secondary containment for possible leaks that may occur during the rail cars loading/unloading process. The soils directly under the rail tracks were excavated and the excavation lined with an 80-mil polyvinylchloride (PVC) liner, backfilled with stone ballast and a series of metal collection pans installed to capture any leakage. **Sheet C-17** illustrates secondary containment in the Rail Container Storage Area.

Container Storage Building

Epoxy Coating of Secondary Containment systems for the Container storage buildings are found in **Sheet C-12;** manufacturer data for coatings is included in **Appendix D-2.**

Container Staging Building

Epoxy coating of Secondary Containment systems for the Container staging building are as noted in **Sheet C-12** and manufacturer data are provided in **Appendix D-2.**

Corrosive Container Pad

The Corrosive Container Pad containment area dimensions are 56’ in length x 36.6’ in width and .63’ high. The concrete in this area is lined with an epoxy coating, which is shown on **Sheet C-18;** manufacturer data is provided in **Appendix D-2.**

Chemical Precipitation Container Pad

The secondary containment of the Chemical Precipitation Container Pad Secondary Containment system is lined with epoxy which is shown on **Sheet C-18.** Manufacturer data for the epoxy coatings is found in **Appendix D-2.**

North Container Storage Pad

The NCSP concrete containment is impregnated with Xypex in the areas shown in **Sheet C-10.** Manufacturer data for Xypex is found in **Appendix D-2.**

LabPack/DePack Storage Area

The Lab Pack DePack Area is lined with epoxy which is shown on **Sheet C-14;** manufacturer data is provided in **Appendix D-2.**

D-3f(iii) Containment System Drainage

(R299.9614 and 40 CFR 264.175(a), which is ABR in R 299.11003 and 40 CFR 270.15(a) which is ABR in R 299.9504(2))

The Container staging building is constructed of lined concrete which slopes towards an area trench. Accumulated liquids collected in this area drain to the trench containment structure. The Container storage building is divided into three separate areas that drain to isolated sumps as depicted in **Sheet C-12.** The North Container Storage Pad drains to a blind sump which is pumped to remove accumulated liquids. All Drainage in the

Chemical Precipitation Container Pad is sloped to floor area drains as shown in **Sheet C-18.** Corrosive Container Storage Pad is sloped towards trenches which serve as a collection point for liquid in the event of spills or leaks in the storage area as shown in **Sheet C-18.** Chemical Fixation Storage Area drainage is shown in **Sheet C-10**. LabPack/DePack Storage Area drainage is through the center floor (**Sheet C-14)**. Drainage for the Rail Car Container storage building is found in **Sheet C-17**.

D-3f(iv) Containment System Capacity

(R299.9614 and 40 CFR 264.175(b)(3), which is ABR in R 299.11003 and 40 CFR 270.15(a)(3) which is ABR in R 299.9504(2))

The containment capacity in the Container staging building is 14,677 gallons. The total capacity of the Container storage building containment is 23,418 gallons. The total volume of containment for the Corrosive Container Pad is 8,200 gallons. All drainage for the Chemical Precipitation area is sloped to the floor area drains; total containment volume for this storage area is 21,235 gallons. Chemical Fixation Building has a containment capacity of 23,418 gallons. Rail Container storage building capacity is designed to contain 14,227 gallons. North Container Storage Pad contains 14,869 gallons and the LabPack/DePack area containment volume is 3,315 gallons**.**

D-3f(v) Control of Run-on

(R299.9614 and 40 CFR 264.175(b)(4), which is ABR in R 299.11003 and 40 CFR 270.15(a)(4) which is ABR in R 299.9504(2))

Run-on for most of the liquid Container storage buildings is controlled by enclosure inside a building or enclosed storage structure. The storage areas which are located outside and exposed to run-off are inspected daily and pumped out as necessary.

D-3f(vi) Removal of Liquids from Containment System

(R299.9614 and 40 CFR 264.175(b)(5), which is ABR in R 299.11003 and 40 CFR 270.15(a)(5) which is ABR in R 299.9504(2))

Subsequent to inspections or at any other time, if liquids are observed to have accumulated in any the containment areas, the accumulated liquids will be removed as soon as possible to preclude any possibility of overflow. The presence of accumulated precipitation in containment areas will be pumped out of sumps or other collection areas. Liquids may be removed by a vacuum truck or by pumping to the vertical tanks. Removed liquids are managed either through the waste treatment plant, through the on-site wastewater pre-treatment plant or off-site.

D-3g Secondary Containment System Design and Operation for Containers with No Free Liquids

(R 299.9614 and 40 CFR 264.175, which is ABR in R 299.11003 and 40 CFR 270.15(b)(1) which is ABR in R 299.9504(2))

The Chemical Fixation Storage Area and the North Container Storage Pad (NCSP) can store twenty cubic yard portable containers with no free liquids. The Chemical Fixation Storage Area can accommodate up to 37 of the twenty cubic yard containers; the NCSP

can store no more than 20 twenty cubic yard portable containers. The Rail Container storage building can accommodate up to nine Rail Cars. The Secondary Containment for these three containerized storage areas is identical to that described in Section D-3f above.

D-3g(i) Containment System Drainage

(R 299.9614 and 40 CFR 264.175, which is ABR in R 299.11003 and 40 CFR 270.15(b)(2) which is ABR in R 299.9504(2))

The Secondary Containment for Containers with No Free Liquids is described in section D-3f above.

D-3g(ii) Container Management

(R 299.9614 and 40 CFR 264.175, which is ABR in R 299.11003 and 40 CFR 270.15(b)(2) which is ABR in R 299.9504(2))

The portable containers with no Free Liquids stored within the Chemical Fixation Container storage building and the North Container Storage Pad are placed on pallets to elevate the container above any accumulated liquid. The Chemical Fixation Storage is contained within the building and would not accumulate precipitation or run-on. The containment area for the North Container Storage Pad is sloped to drain accumulated liquid away from containerized waste stored on the pad.

D-3h Special Requirements for Ignitable or Reactive Waste

(R 299.9614 and 40 CFR 264.176, which is ABR in R 299.11003 and 40 CFR 270.15(b)(2) which is ABR in R 299.9504(2))

Precautions taken in the container storage buildings to prevent accidental fire and explosion include the proper storage of containers (e.g. stacking, aisle space, and labeling and sealing of containers), the design of the containment areas with sumps to collect any spilled materials, and the posting of appropriate warning signs. In addition, fire-suppression systems have been installed in the Chemical Fixation Building, Bulking Area; Container Storage, Container Staging and the LabPack/DePack storage area. Fire-control and spill-control equipment is available in all storage areas. Enclosed storage areas are protected by an overhead sprinkler system.

A minimum of 10-12 feet is maintained in the center aisle of the Container storage building to allow access for a forklift without risk of damaging containers by scraping or puncturing. Container storage buildings used to store ignitable waste are located at least 50 feet from the closest property line.

Combustible and flammable wastes received in containers will be staged and stored in an area with similar compatible materials. Containers will remain closed during storage.

Waste Acceptance personnel will identify ignitable, reactive and incompatible waste using EQD computer files that contain waste-specific information and identify incompatible waste and other special precautions to be taken with respect to the storage of the waste. Waste Acceptance staff also conducts a screening analysis on each incoming waste shipment that includes analysis for ignitability, reactivity and

incompatibility with other wastes. Waste Acceptance will provide this information to the container storage building operator .The container storage building operator will review this information as well as the information contained in the manifest and information noted on the container to identify containers holding ignitable, reactive or incompatible waste. Based on this information, the operator segregates the containerized wasted into designated storage areas that are separated from other storage areas by flooring sloped to segregated sumps. The following precautions are taken to protect the containerized waste from sources of ignition or reaction:

1. Vehicles: all vehicles will be shutoff in the event of a release of an ignitable waste in the area.
2. Open Flame: there is no source of open flames in the container storage buildings.
3. Smoking: Smoking is not permitted in the container storage buildings. "**No Smoking"** signs are conspicuously placed in the container storage buildings.
4. Cutting and Welding: Prior to cutting or welding, a Hot Work Permit must be issued by EQ Management. Such permit will specify that all ignitable waste must be removed from the area.
5. Hot Surfaces: There are no hot surfaces in the container storage buildings.
6. Frictional Heat: there is no frictional heat generated in the container storage buildings.
7. Sparks (static, electrical or mechanical): There is no source of electrical or mechanical sparks in the container storage buildings. Containers of ignitable waste will be grounded when transferring waste into a process or other tank.
8. Radiant Heat: There is no source of radiant heat in the container storage buildings.

D-3i Special Requirements for Incompatible Wastes

(R 299.9614 and 40 CFR 264.175(c)(4), which is ABR in R 299.11003 and 40 CFR 270.15(b)(2) which is ABR in R 299.9504(2))

Facility management evaluates the compatibility of the waste with the storage unit materials of construction and with the wastes already stored in the storage area. The evaluation is based upon vendor or engineering data, materials of construction and knowledge of the waste and its characteristics from the Generator Waste Profile Form. Stored containerized wastes are segregated with respect to ignitability, corrosivity, reactivity and compatibility as described in **Table C-1**.

D-3j Closure

(R 299.9614 and 40 CFR 264.178, which is ABR in R 299.11003)

At closure, all hazardous waste and hazardous waste residues will be removed from the containment system. Remaining containers, liners, bases and soil containing or contaminated with hazardous waste or hazardous waste residues must be decontaminated or removed.

The specific closure procedure for the Container Storage/Staging Area/Unloading Areas is found in **Section I** of this Permit Application.

D-4 Engineering Plans and Specifications

Engineering drawings as listed below are found in the Drawings Tab of this application

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C-5	Chemical Fixation Building	Foundation Details & Schedules
C-6	Chemical Fixation Building	Standard Foundation Details
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C-12	Chemical Fixation Building	Container Storage, Staging & Bulking Containment
C-14	T&P Building	Lab Pack & T&P Building Containment
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C-20	Chemical Fixation Building	Miscellaneous Civil Details -1
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S-4	Chemical Fixation Building	APCS & Silo Structural Plan
S-5	Chemical Fixation Building	Building Structural Detail - North View
S-6	Chemical Fixation Building	Building Structural Detail - East View
S-7	Chemical Fixation Building	Building Structural Detail - South View
S-8	Chemical Fixation Building	Building Structural Detail - West View
S-9	Chemical Fixation Building	APCS Duct Support Structural Plan
S-10	Chemical Fixation Building	Building Structural Details
S-11	Chemical Fixation Building	Silo & Tank 901 Structural Sections & Details
S-12	Chemical Fixation Building	Screw Conveyor Structural Details
S-13	Chemical Fixation Building	Miscellaneous Column Base Details
	Regulatory Drawings	
R-1		Emergency Preparedness Plan
R-2		Existing Site Plan - Tank Hazard Classification
R-3		Ambient Air Monitoring Station
R-4	Container Storage/Staging Area	Tank Hazard Classification

Table D-1: Tank Use

Table D-2 Safety Cutoff/Bypass System

Table D-3: Pressure Controls

Table D-4: Tank Age

Table D-5: Container Storage

Appendix D-1: Tank Certification

Appendix D-2: Manufacturer's Specification