Attachment 8
Tank Systems

TANK SYSTEMS

R 299.9615 and R 299.9627 of the administrative rules promulgated pursuant to Part 111, Hazardous Waste Management, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); R 29.4101 to R 29.4505 promulgated pursuant to the provisions of the Michigan Fire Protection Act, PA 207, as amended (Act 207); and Title 40 of the Code of Federal Regulations (CFR) §§270.14(d), 270.16, 270.24, and 270.27 (Part 264, Subpart J and Part 60, Appendix A) establish requirements for tank systems. All references to 40 CFR citations specified herein are adopted by reference in R 299.11003.

This license application template addresses requirements for tank systems at the Petro-Chem facility in Detroit Michigan. This template includes assessments of new and existing tank systems; installation of new tank systems; secondary containment systems and release detection; variances for secondary containment; 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 postclosure requirements; requirements for storing or treating ignitable, reactive, or incompatible wastes

This template is organized as follows:

[X] Existing Tank System

[X] New Tank System

TANK MANAGEMENT UNITS

Drawing Process 2 identifies the locations of the current Tank Management Units at the PCPG site. The areas included in the Tank Management Unit are:

- Tank System 1 (Formerly PCPG West Tank Farm) (16 – 30)
- Tank System 2 (Formerly SBS Tank Farm) (35 – 40)
- Tank System 3 (SDG Waste Storage Tank Farm) (61 – 72)
- CMB Tanks TK001, TK002
- all associated piping and containment devices.

Appendix 1 of this template provides a listing of all tanks located at the site, including all regulated tanks and non-regulated tanks. All tanks and piping used by PCPG are located above ground. All tanks used for blending, and inbound are constructed of carbon steel or stainless steel. All tanks are grounded to prevent accumulation of static electricity generated during material transfers and carbon steel tanks are painted to reduce the potential for corrosion. The pH of the materials to be placed into each tank is determined and controlled as necessary to prevent corrosion. Materials used for construction of the tank systems are compatible with the materials accepted at the PCPG site. Tanks are placarded to comply with the requirements of NFPA 704, Identification of the Fire Hazards of Materials, 1990 Edition.

Inspection of all tanks at the PCPG site is carried out in accordance with 40 CFR 264.15 and includes tanks, containment units, and ancillary equipment. A copy of

the inspection log is outlined in detail in the Inspection Section of this application. PCPG inspects all the tank systems daily to detect corrosion or the release of waste, as well as areas immediately surrounding the externally accessible portion of the tank system, including secondary containment, to detect any release of hazardous wastes. Notations of the observations made are recorded along with the date, time, and name of the inspector. Spilled materials discovered during this inspection are cleaned up by pumping or absorption, and the area decontaminated using detergents and/or high pressure water spray. Collected spillage is treated onsite in the same method as the original material. Any deficiencies identified during the inspection are so noted in the inspection log along with the date and nature of the corrective action taken.

A tank farm inventory is taken daily and analysis performed on each tank as required (Inspection Plan, Tank Farm Reports)

A. Locations, Capacities and Details

The Tank Management Units subject to this application include the Tank System 1 (PCPG West Tank Farm); Tank System 2 (SBS Tank Farm), Tank System 3 (SDG Waste Storage Tank Farm) and CMB Tanks TK001 & TK002.

B. Sequence of Bulk Handling Activities

1. Liquids

Bulk tankers entering the Petro-Chem site are directed to a sampling and staging area. The manifest is inspected, contents of the tankers sampled, and sample analysis performed in accordance with the Waste Analysis Plan prior to the tanker being unloaded.

After any required analysis is complete and the shipment accepted as described in the Waste Analysis Plan, the driver is directed to one of the unloading areas.

At the unloading area, operations personnel connect discharge hoses and the vapor balance hose to the tanker and unload the tanker to the assigned storage or blending tank.

The operations personnel then secure the valves and disconnect the tank wagon's liquid and vapor return hoses that were used. The open ends of the lines are capped. Tank wagons will then be inspected and/or weighed at a truck scale to verify that the tank is empty. If significant amounts of the manifested quantity of the waste cannot be removed and remains inside the tank wagon, the generator is contacted and the discrepancy is handled using the procedures outlined in the Waste Analysis Plan.

2. Solids

Bulk solids received onsite in roll off containers may be directed to the staging and sampling area at the Site. Samples are obtained from the waste as described in the Waste Analysis Plan Section of this Application. Upon approval, the roll off container may be transferred to the unloading bay in the SBS Building.

Liquid waste suspension from the SBS, West & CMB Tank Farms are transferred to tankers for transportation to offsite licensed Hazardous Waste Boilers or Industrial Furnaces. Loading activities are conducted in the West PCPG and SBS LoadinglUnloading Pad using procedures identical to those described for liquid wastes.

C. Bulk Liquid LoadingIUnloading Areas

The PCPG site currently includes five loadinglunloading areas for receiving and shipping bulk liquid waste feed stocks, liquid and hazardous waste fuels,

The PCPG West & SBS LoadinglUnloading Pads for receipt and shipment of waste related materials. Each can accommodate up to 3 bulk tankers concurrently.

All loading/unloading areas at the PCPG site are designed with reinforced concrete pads and integral curbing to prevent run-off and to identify, contain, collect materials by pumping or absorption, and allow decontamination by use of detergents and/or high pressure water spray of any accidental release that may occur during loading/unloading operation. Each loadinglunloading area is sufficiently impervious to prevent migration of contaminants to the surroundings.

1. The West LoadinglUnloading Pad (associated with the PCPG West Tank Farm) includes a double sloped lined concrete pad with a center collection sump. All piping and ancillary equipment, including filters, are included within the concrete containment. This pad also has a canopy to reduce entry of precipitation.

2. The SBS Loading Pad is located adjoining the SBS Tank Farm to the south. Containment is provided by a monolithically poured microsilicate concrete, with a central collection trough. Additional containment volume is provided by channels into the SBS Tank Farm. Up to two Tank Wagons can use this area at one time. A canopy covers the top and the west side of this area to minimize infiltration of precipitation. Precipitation and spillage is collected by portable pump or by vacuum loading truck as described below.

Explosion-proof pumps are used for transferring materials from bulk tankers in all areas. Bottom loadinglunloading of bulk tankers is normally utilized to minimize the threat of fire or explosion, and to facilitate the use of a vapor balance system. The vapor balance system associated with the East and West LoadingIUnloading Pad is employed for control of vapors from bulk loadinglunloading activities and is described later in the tank farm discussion. A static grounding system is also utilized within all areas to minimize the potential for fire.

Any materials or precipitation that accumulates on the pads are removed using portable pumps or a vacuum truck, or absorbed onto mops or absorbent. These collected run-on materials are currently either blended with the liquids in the fuels program or stored in the wastewater storage

tank and sent off-site for treatment and/or disposal. Any remaining residues are then manually removed using high pressure water and/or detergents as deemed necessary.

Fire extinguishers and blankets, eyewash/showers and spill equipment are available for each loading/unloading pad (see Preparedness and Prevention Section). In addition, spill equipment may be located in the Operating Department for use in nonemergency spills. Bonding lines connected to the grounding system are installed at each station to dissipate static electricity that may be generated by material transfer operations.

D. Tank Farms

1 PCPG West Tank Farm (Tank System 1)

The PCPG West Tank Farm includes tanks 16-30 for storage and blending of inbound bulk and containerized waste. The tank system is designed with agitators to maintain the homogeneity of the blend and to prevent settling of solids, emergency pressure/vacuum relief valves, flame arrestors, self closing fire valves, a high level alarm and a vapor balance system to the Tank Truck transfer pad.

The secondary containment) was designed in accordance with 40 CFR 264.193 and Michigan Administrative Rule R299.9615. Infiltration or released material within the secondary containment area is collected and removed using a vacuum truck or pump. Collected materials are returned to the fuels program, or stored in the wastewater tank prior to transfer off-site for treatment and/or disposal. The surfaces of the containment area that have come in contact with the released materials are decontaminated with detergents and/or high pressure water spray as necessary to remove any remaining residues.

2. SBS Tank Farm (Tank System 2)

The SBS Tank Farm located in the northwest section of the site includes 6 tanks, numbered 35 to 40. The tanks are located within a containment device, designed to comply with 40 CFR 264.193 (b) - (f) and Michigan Administrative Rule R299.9615, and are equipped with external shields on the tank sides to prevent squirting of the contents past the dikes, High Level cutoffs to prevent overfilling, self closing fire valves below liquid levels, and emergency pressure/vacuum relief vents. Water from precipitation infiltration is accumulated and removed from the tank containment device by pump or vacuum tank and handled as described for other containment units.

3. SDG Waste Storage Tanks (Tank System 3)

This tank farm includes 12 inbound waste storage tanks (S61 – S72) located within a containment device, designed to comply with 40 CFR 264.193 (b) - (f) and Michigan Administrative Rule R299.9615. Tanks S 61 – S68 are utilized for the receipt, storage and transfer of liquid industrial wastes and S69 – S72 are utilized for the receipt, storage, blending and transfer of hazardous wastes. These tanks are also equipped with emergency vacuum/pressure relief valves, self-closing fire valves, a vapor balance system to the transfer pad, and flame arrestors.

4. CMB Tanks

The CMB Tank Farm consists of two stainless steel tanks (TK001 & TK002) that are designed to receive the pumped fuel type material from non-bulk containers in the pump room. The tanks are located within a containment device, designed to comply with 40 CFR 264.193 (b) - (f) and Michigan Administrative Rule R299.9615. The tanks are equipped with high level cutoffs to prevent overfilling, self closing fire valves below liquid levels, and emergency pressure/vacuum relief vents. Water from precipitation infiltration is accumulated and removed from the tank containment device by pump or vacuum tank and handled as described for other containment units.

E. Piping and Yard Area Ancillary Equipment

Piping and associated equipment in hazardous waste service at the PCPG site is located above ground and provided with secondary containment. Yard (overhead transfer) piping is situated in a welded steel trough that drains to the containment areas. If a pipe, flange or valve leaks, it would be easily identified, contained, collected using pumps, vacuum trucks, or absorbent, and decontaminated using detergents and/or high pressure water spray, avoiding any risk to the environment while repairs are undertaken. Accumulated waste would be returned to the process or transported offsite for treatment based upon the treatment requirements for the Waste Codes. The ancillary equipment (flanges, valves, pumps, etc.) is regularly inspected and monitored as necessary for leaks, further reducing the potential for releases from the equipment.

Flex hosing is used in loading/unloading areas and where unacceptable cross contamination of product may occur. Hard plumbing is provided elsewhere throughout the site.

IV. AIR EMISSION CONTROL SYSTEMS

The PCPG West, SBS, SDG Waste Storage & CMB Tank Farms are vented to emission control systems to control emission of volatile organic compounds.

A. Vapor Balance Systems:

Vapor Balance Systems are primarily used at the transfer pads. These systems include a piping system that is connected to the tank conservation vents on one end and to the tank truck or second tank at the other end. When liquid materials are transferred between the tank and the second unit, vapor laden gas displaced by the filling of the receiving unit is used to replace the volume of the transferred material in the sending unit.

B. Wet Oxidation Scrubber:

The CMB Tank Farm and pumping room emissions are vented to a permanganate scrubber that oxidizes organic contaminants from the captured emissions.

C. Obsolete Air Systems:

The Master Vapor Recovery System was an add-on emission control device that was installed and approved by Wayne County at the time of the 1999 License issuance by MDEQ. This device condensed all point source emissions from the Petro-Chem and Solvent Distillers activities. In 2004 a PTI was issued for the installation and operation of a regenerative thermal oxidizer (RTO) to effectively destroy the captured emissions generated from the Facility which was identified as a major source of hazardous air pollutants (HAPs). The MVRS was utilized as the back-up emission control device for the RTO. In August 2006, a fire event destroyed the major processing areas of the Facility (PTI which enclosed the Container Processing System (CPS) and Aerosol Depressurization Unit (ADU). The Facility also discontinued its distillation activities (thin film evaporation and fractionation). These discontinued processing activities resulted in a significant reduction in air emissions to the extent that the Facility (Petro-Chem Processing Group and Solvent Distillers Group) was no longer a major source of HAPs. In 2008, EPA terminated the 2003 Consent Order which required the installation and operation of the RTO.

PCPG TANK SUMMARY

TANK NO.	CAPACITY (GALS.)	CONST. METHOD	TANK MATERIAL	HT. (FT.)	DIA. (FT.)	ORIENTATION	MATERIAL	RCRA/ACT 451 STATUS	INSTALL DATE	DECOM. DATE
Tank System 1										
16	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	May-86	In Service
17	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	May-86	In Service
18	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	May-86	In Service
19	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	May-86	In Service
20	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	May-86	In Service
21	30,060	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	May-86	In Service
22	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	Jun-86	In Service
23	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	Jun-86	In Service
24	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	Jun-86	In Service
25	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	Jun-86	In Service
26	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	Jun-86	In Service
27	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	Jul-86	In Service
28	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	Jul-86	In Service
29	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	Jul-86	In Service

PCPG TANK SUMMARY

TANK NO.	CAPACITY (GALS.)	CONST. METHOD	TANK MATERIAL	HT. (FT.)	DIA. (FT.)	ORIENTATION	MATERIAL	RCRA/ACT 451 STATUS	INSTALL DATE	DECOM. DATE
30	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	Jul-86	In Service
Tank System 2										
35	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	1993	In Service
36	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	1993	In Service
37	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	1993	In Service
38	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	1993	In Service
39	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	1993	In Service
40	30,000	Welded	Carbon Steel	26	14	Vertical	WDF	Regulated	1993	In Service
SDG Process Tanks - (Tanks in this Section are Not Subject to Regulation Under 40 CFR Part 264)										
R1	2,400	Welded	316 S.S.	8.5	7	Vertical	Product	Exempt		Decommissioned 06/07
R2	7,000	Welded	316 S.S.	12	10	Vertical	Product	Exempt		Decommissioned 06/07
R3	7,000	Welded	316 S.S.	12	10	Vertical	Product	Exempt		Decommissioned 06/07
R4	3,000	Welded	304 S.S.	10.5	8	Vertical	Product	Exempt		Decommissioned 06/07
R5	3,000	Welded	304 S.S.	10.5	8	Vertical	Product	Exempt		Decommissioned 06/07
R6	5,000	Welded	304 S.S.	14.5	8	Vertical	Product	Exempt		Decommissioned 06/07

PCPG TANK SUMMARY

TANK NO.	CAPACITY (GALS.)	CONST. METHOD	TANK MATERIAL	HT. (FT.)	DIA. (FT.)	ORIENTATION	MATERIAL	RCRA/ACT 451 STATUS	INSTALL DATE	DECOM. DATE
R7	5,000	Welded	304 S.S.	14.5	8	Vertical	Product	Exempt		Decommissioned 06/07
R8	6,000	Welded	304 S.S.	12	10	Vertical	Product	Exempt		Decommissioned 06/07
Tanks System 3										
S12	5,000	Welded	Carbon Steel	11	8.5	Vertical	Generated Waste	Exempt		Decommissioned 06/07
S13	5,000	Welded	Carbon Steel	11	8.5	Vertical	Generated Waste	Exempt		Decommissioned 06/07
S61	8,000	Welded	Carbon Steel	24.8	8	Vertical	, Oil/Oily Water	Unregulated	Mar-92	In Service
S62	8,000	Welded	Carbon Steel	24.8	8	Vertical	, Oil/Oily Water	Unregulated	Mar-92	In Service
S63	8,000	Welded	Carbon Steel	24.8	8	Vertical	, Oil/Oily Water	Unregulated	Mar-92	In Service
S64	8,000	Welded	Carbon Steel	24.8	8	Vertical	, Oil/Oily Water	Unregulated	Mar-92	In Service
S65	8,000	Welded	Carbon Steel	24.8	8	Vertical	, Oil/Oily Water	Unregulated	Mar-92	In Service
S66	8,000	Welded	Carbon Steel	24.8	8	Vertical	, Oil/Oily Water	Unregulated	Mar-92	In Service
S67	8,000	Welded	Carbon Steel	24.8	8	Vertical	, Oil/Oily Water	Unregulated	Mar-92	In Service
S68	8,000	Welded	Carbon Steel	24.8	8	Vertical	, Oil/Oily Water	Unregulated	Mar-92	In Service
S69	13,277	Welded	Carbon Steel	24.8	10.5	Vertical	WDF; Caustic,	Regulated	Mar-92	In Service
S70	13,277	Welded	Carbon Steel	24.8	10.5	Vertical	WDF; Caustic,	Regulated	Mar-92	In Service

PCPG TANK SUMMARY

TANK NO.	CAPACITY (GALS.)	CONST. METHOD	TANK MATERIAL	HT. (FT.)	DIA. (FT.)	ORIENTATION	MATERIAL	RCRA/ACT 451 STATUS	INSTALL DATE	DECOM. DATE
S71	10,201	Welded	Carbon Steel	20	10.5	Vertical	WDF; Caustic,	Regulated	Mar-92	In Service
S72	10,201	Welded	Carbon Steel	20	10.5	Vertical	WDF; Caustic,	Regulated	Mar-92	In Service
Tank System 4										
42	200	Welded	Stainless Steel				Air Emission Control Condensate	Exempt		Decommissioned 10/09
S20	15,200	Welded	Carbon Steel	19	14.33	Vertical	Product	Exempt		Decommissioned 02/07
S21	15,200	Welded	Carbon Steel	19	14.33	Vertical	Product	Exempt		Decommissioned 02/07
S22	15,200	Welded	Carbon Steel	19	14.33	Vertical	Product	Exempt		Decommissioned 02/07
S23	15,200	Welded	Carbon Steel	19	14.33	Vertical	Product	Exempt		Decommissioned 02/07
S24	15,200	Welded	Carbon Steel	19	14.33	Vertical	Product	Exempt		Decommissioned 02/07
S25	15,200	Welded	Carbon Steel	19	14.33	Vertical	Product	Exempt		Decommissioned 02/07
S26	17,000	Welded	304 S.S	N/A	11	Horizontal	Product	Exempt		Decommissioned 02/07
S27	16,800	Welded	Carbon Steel	20.5	12	Vertical	Fuel Oil	Exempt		Decommissioned 02/07
S28	23,650	Welded	Carbon Steel	NIA	12	Horizontal	Toluene	Exempt		Decommissioned 02/07
S29	16,800	Welded	Carbon Steel	20.5	12	Vertical	Toluene	Exempt		Decommissioned 02/07
S30	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07

PCPG TANK SUMMARY

TANK NO.	CAPACITY (GALS.)	CONST. METHOD	TANK MATERIAL	HT. (FT.)	DIA. (FT.)	ORIENTATION	MATERIAL	RCRA/ACT 451 STATUS	INSTALL DATE	DECOM. DATE
S31	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S32	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S33	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S34	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S35	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S36	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S37	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S38	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S39	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S40	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S41	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S42	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S43	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S44	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S45	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07

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PCPG TANK SUMMARY

TANK NO.	CAPACITY (GALS.)	CONST. METHOD	TANK MATERIAL	HT. (FT.)	DIA. (FT.)	ORIENTATION	MATERIAL	RCRA/ACT 451 STATUS	INSTALL DATE	DECOM. DATE
S46	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S47	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S48	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S49	10,000	Welded	Carbon Steel	18	10	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S50	11,500	Welded	316 S.S	12.5	12	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S51	11,500	Welded	316 S.S	12.5	12	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S52	11,500	Welded	316 S.S	12.5	12	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S53	11,500	Welded	316 S.S	12.5	12	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S54	11,500	Welded	316 S.S	12.5	12	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S55	13,500	Welded	Carbon Steel	N/A	N/A	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S56	9,500	Welded	Carbon Steel	12	13	Vertical	Cln. Material	Exempt	Mar-92	In Service
S57	9,500	Welded	Carbon Steel	12	13	Vertical	Cln. Material	Exempt	Mar-92	In Service
S58	12,550	Welded	Carbon Steel	12	15	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S59	12,550	Welded	Carbon Steel	12	15	Vertical	Cln. Material	Exempt		Decommissioned 02/07
S73	30,000	Welded	Carbon Steel	26	14	Vertical	Gen. Waste	Exempt		Decommissioned 02/07

PCPG TANK SUMMARY

TANK NO.	CAPACITY (GALS.)	CONST. METHOD	TANK MATERIAL	HT. (FT.)	DIA. (FT.)	ORIENTATION	MATERIAL	RCRA/ACT 451 STATUS	INSTALL DATE	DECOM. DATE
S74	810	Welded	Carbon Steel	5	7	Vertical	Process Feed	Exempt		Decommissioned 02/07
S75	810	Welded	Carbon Steel	5	7	Vertical	Process Feed	Exempt		Decommissioned 02/07
43	30,000	Welded	Carbon Steel	26	14		Generated waste Water	Exempt		Decommissioned 10/09
CMB Tanks										
TK 001	6,000	Welded	304L S.S.	12	10	Vertical	Waste Storage	Regulated	March 2009	Pending Use
TK 002	6,000	Welded	304L S.S.	12	10	Vertical	Waste Storage	Regulated	March 2009	Pending Use
Boiler Fuel Oil Tanks										
F1	20,000	Welded	Carbon Steel	15.7	10.5	Vertical	Fuel Oil	Exempt		Decommissioned 07/05
F2	5000	Welded	Carbon Steel	16	10.5	Horizontal	Fuel Oil	Exempt		Decommissioned 07/05
F3	5000	Welded	Carbon Steel	16	10.5	Horizontal	Fuel Oil	Exempt		Decommissioned 07/05

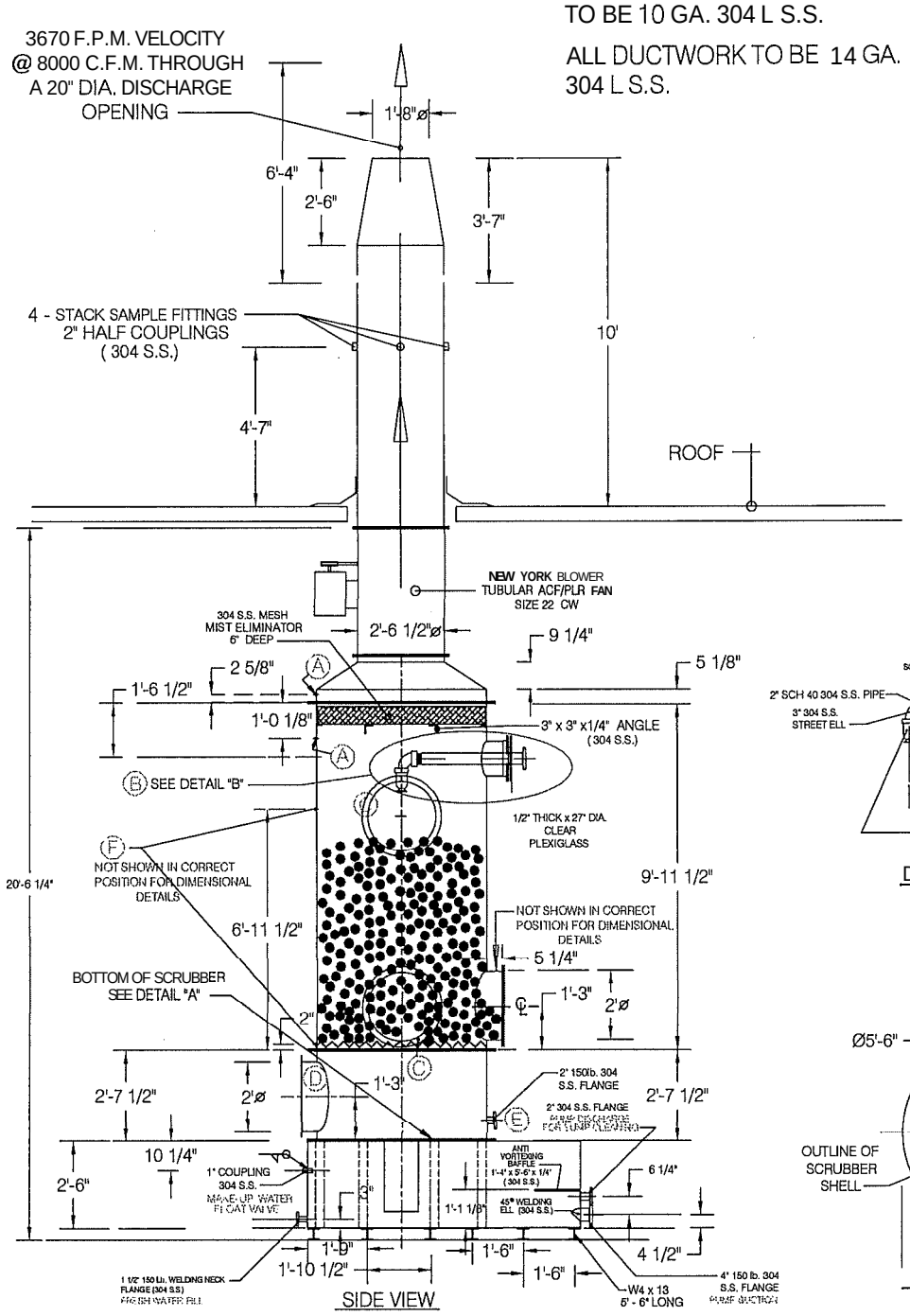
Total In-use Tank Capacity Subject to 40 CFR Part 264 Permitting: 646,956 Gallons

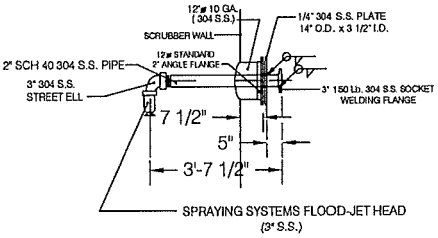
Total In-use Product Tank Capacity: 19,000 Gallons

Total Usable Tank Capacity for all Tanks Onsite: 772,356 Gallons

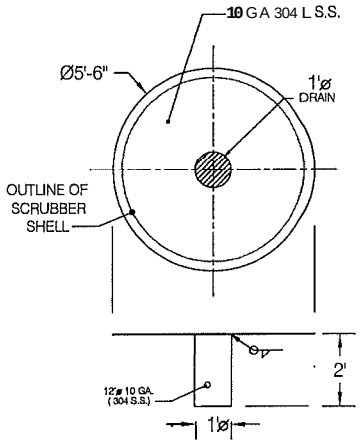
NOTE: ALL SCRUBBER SHEET METAL TO BE 10 GA. 304 L S.S.

ALL DUCTWORK TO BE 14 GA. 304 L S.S.





DETAIL "B"



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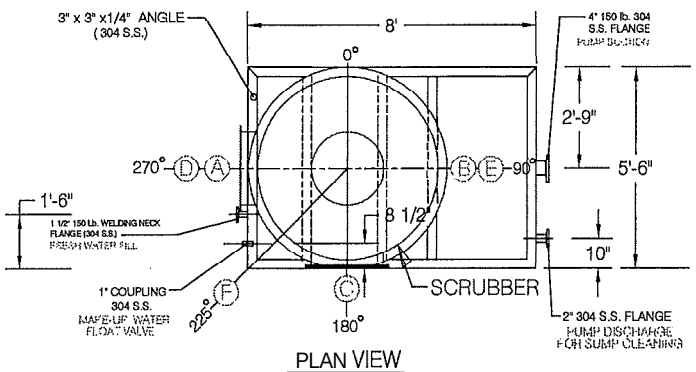


PLAN VIEW

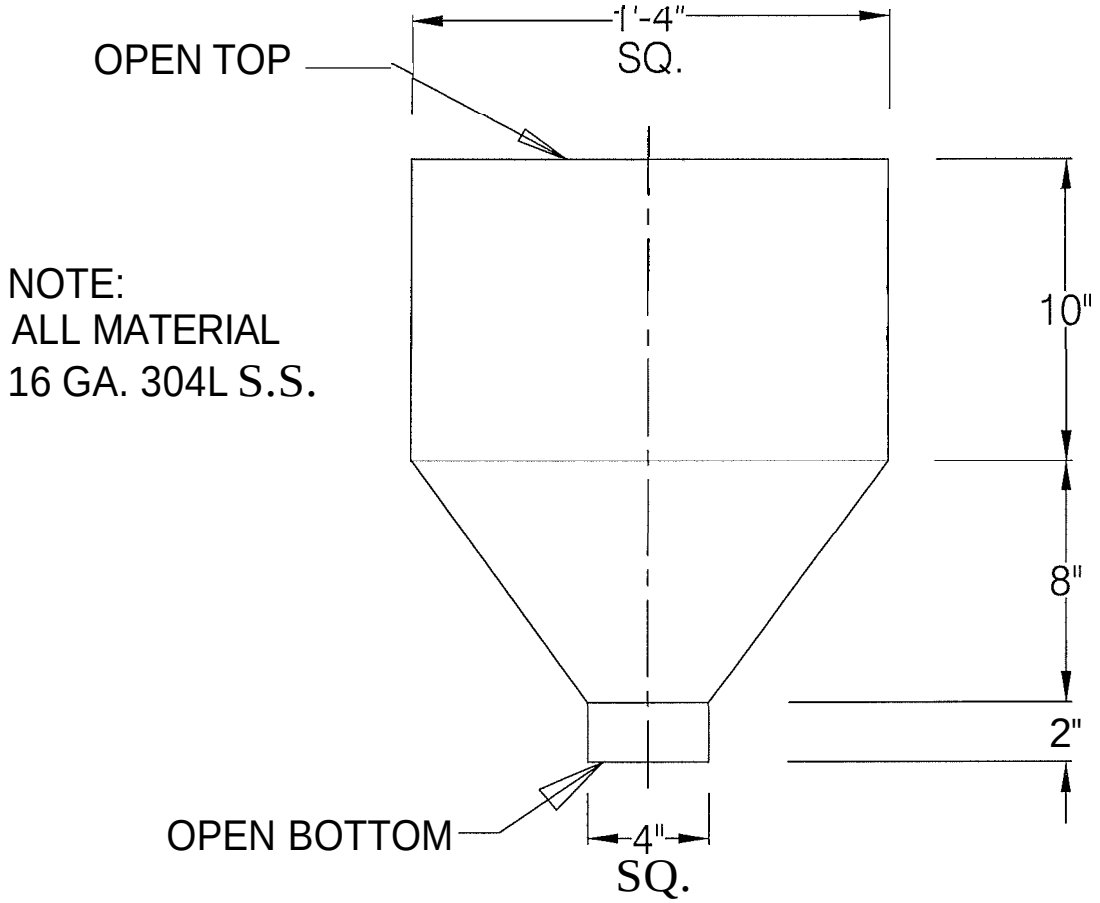
SCRUBBER FITTINGS

ITEM	POSITION	DESCRIPTION
(A)	270°	1/4" WELDING COUPLING, 304 S.S.
(B)	90°	SEE DETAIL "B"
(C)	180°	24" DIA. FLANGED PORT W/PLEXIGLASS
(D)	270°	24" DIA. FLANGED SCRUBBER INLET
(E)	90°	2" 150 Lb. 304 S.S. WELDING NECK FLANGE
(F)	225°	1/4" WELDING COUPLING, 304 S.S.

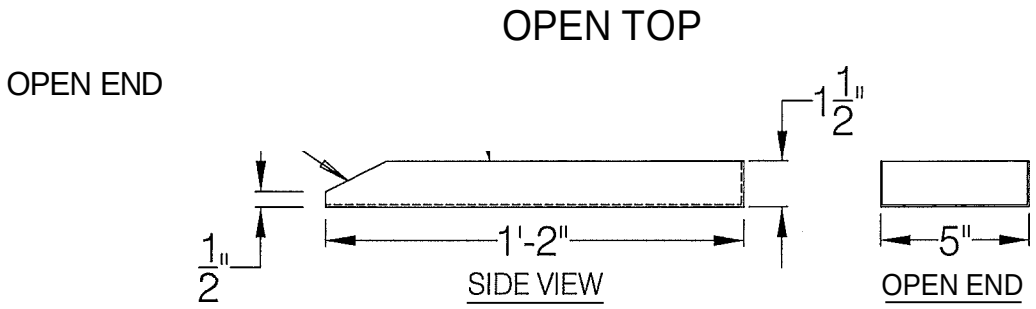
NOTE: SCRUBBER AND SUMP TO BE SHIPPED SEPARATELY AND WELDED TOGETHER IN FIELD.

IN CASE OF PUMP FAILURE, THE SUMP IS TO BE EMPTIED WITH AN AIR OPERATED DIAPHRAGM PUMP USING A SUCTION HOSE TO SUCK OUT THE CONTENTS.

PSC	DATE : 12/07/08 SCRUBBER DETAILS DRAWN BY: LEWIS KRYK	068

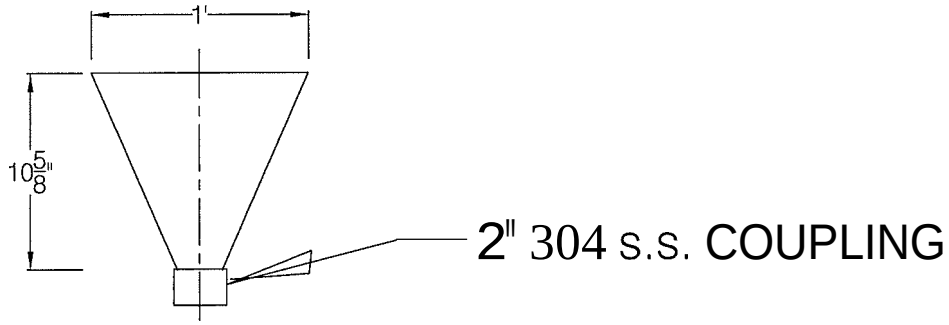


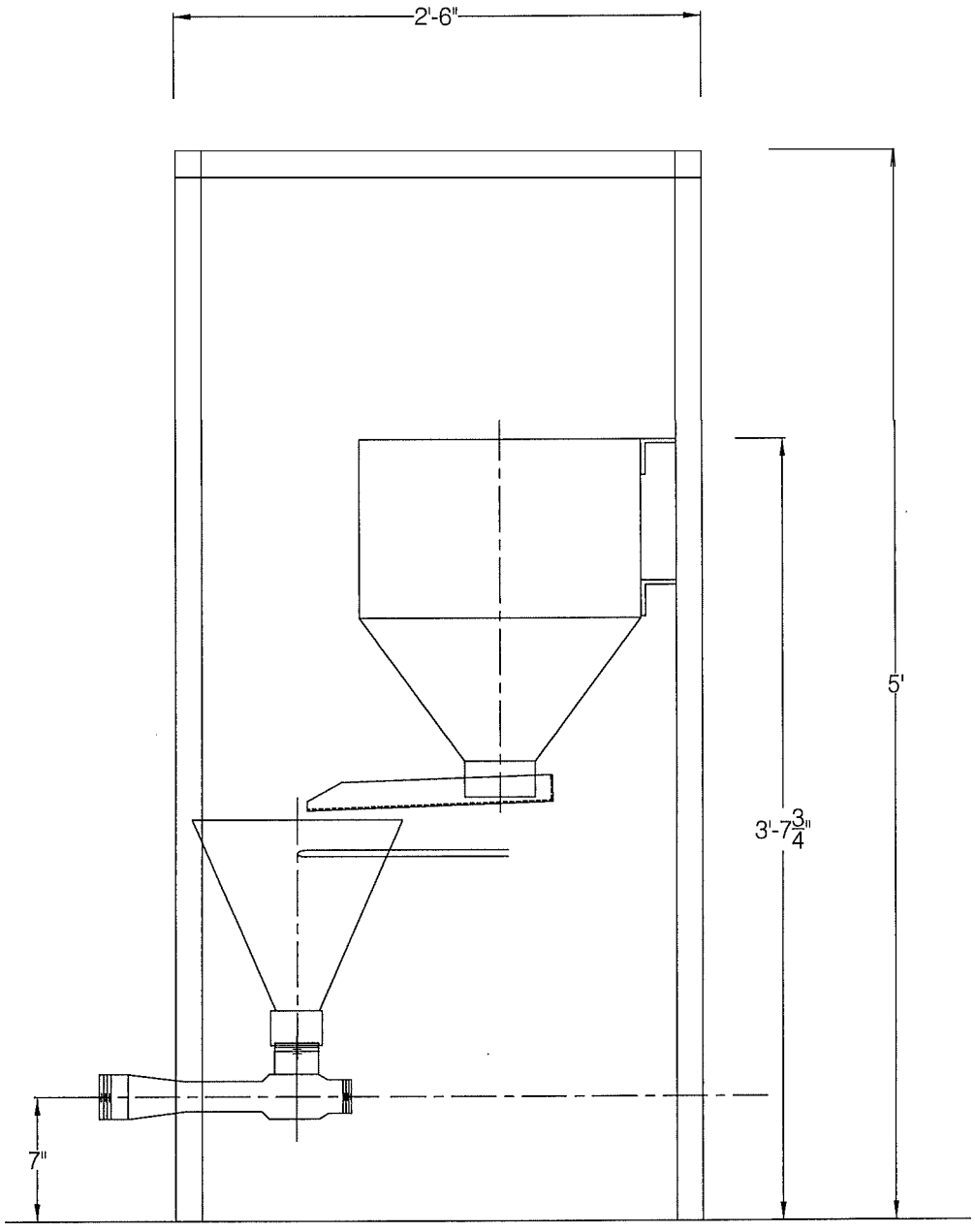
PERMANGANATE HOPPER



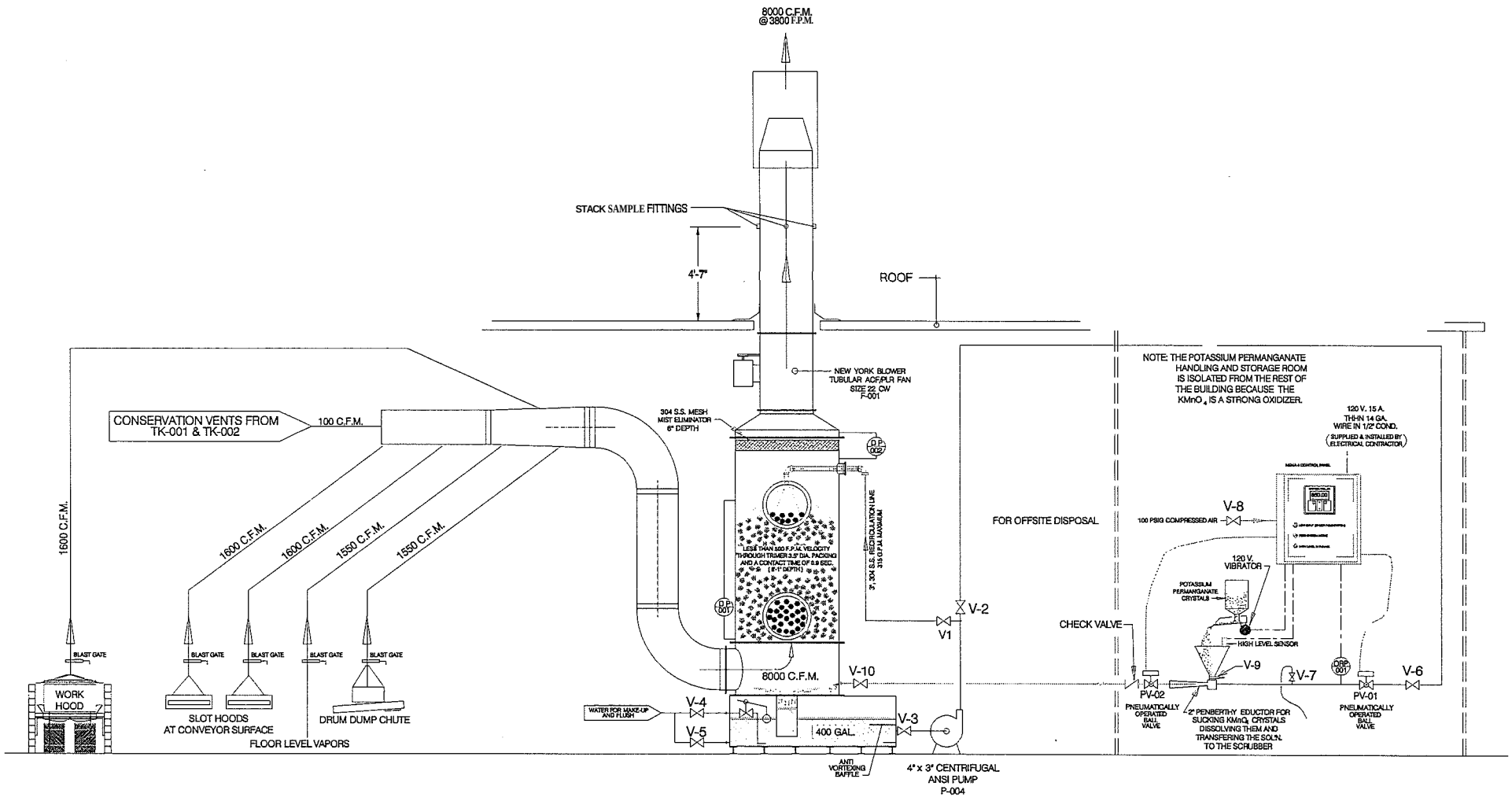
PERMANGANATE FEED CHUTE

PSC	DATE: 12/30/08 PERMANGANATE HOPPER & CHUTE DRAWN BY: LEWIS KRYK	069





PSC	DATE: 12/31/08 PERMANGANATE FEED SYSTEM DRAWN BY: LEWIS KRYK	070



DATE: 08-28-09

SCRUBBER SYSTEM
FOR VOC EMISSIONS
AS BUILT P & I D

DRAWN BY: LEWIS KRYK

074

DEQ MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY – WASTE AND HAZARDOUS MATERIALS DIVISION
P O Box 30241 Lansing, MI 48909-7741

APPLICATION FOR INSTALLATION OF ABOVEGROUND STORAGE TANKS

This information is required under Act 207 of the Public Acts of 1941, as amended, being Section *29.5c* of *the* Michigan Compiled Laws Annotated

'RUCTIONS: The item numbers are referenced in the attached typical installation of an Aboveground Storage Tank. The system must be in ..pliance with the Storage and Handling of Flammable and Combustible Liquids (FUCL) Rules, 2003 AACS R 29.5101 et seq. The manufacturer and part number must be indicated next to the appropriate item. For installations involving container and portable tank storage, please see Part 2, Chapter 4 of the FL/CL Rules for additional requirements. For bulk plants, industrial plants, chemical plants, processing plants, refineries and distilleries, please refer to Part 2, Chapter 5 of the FUCL Rules for additional requirements. For emergency generator tanks please see Part 5 of the FUCL Rules for additional requirements, and complete Section III of this form. Please direct any questions to the Storage Tank Unit at 517-335-7211 or e-mail at DEQ-STD-TANKS@michigan.gov. For detailed instructions, see Page 5.

FACILITY NAME **Petro-Chem Processing Group**	NEW ASSIGNED TANK NUMBER(S) TK001, TK002		FACILITY ID NUMBER
FACILITY STREET ADDRESS (PO BOX NOT ACCEPTABLE) **421 Lycaste**	CONTACT PERSON (AT LOCATION) **Brian Cape**		AREA CODE &TELEPHONE NUMBER **(313) 824 -- 5414**
CITY **Detroit**	COUNTY **Wayne**	STATE MI	ZIP CODE **48214**
OWNER NAME **Nortru, LLC**	OWNER ADDRESS **515 Lycaste**		AREA CODE &TELEPHONE NUMBER **(800) 776 -- 0226**
CITY **Detroit**	STATE **Michigan**		ZIP CODE **48214**
SUBMITTER'S NAME	STREET ADDRESS		AREA CODE &TELEPHONE NUMBER ( ) --
CITY	STATE		ZIP CODE

SECTION I The following section applies to aboveground tank installations, Part 2 of the FL/CL Rules.

ITEM	DESCRIPTION	MANUFACTURER & PART NO.	ITEM	DESCRIPTION	MANUFACTURER & PART NO.
1.	TANK LOCATION: Section 2.3.2: To important buildings, property lines which may be built upon. Adjacent container: minimum three feet, 20 feet from LPG tank.	Tanks have a 65 foot offset from nearest property lines, and are not within 20 feet of LPG tanks.	5.	TANK SUPPORTS1 FOUNDATIONS: Section 2.2.4: rest on ground, concrete, masonry, piling, or steel. Section 2.3.1: Anchorage areas subject to buoyant forces; each tank shall be safeguarded against movement by anchoring or other secure means.	Secondary containment is a slab on grade foundation design.. Tank legs are secured to slab via concrete bolts.
2.	SECONDARY CONTAINMENT: Section 2.3.2.3: Diking/remote impoundment and alternative methods. Section 4.3.3 of Part 3: Vaults and special enciosures. Liquid-tight, non-combustible (walls and floors). Capacity: 100% largest tank plus volume occupied by other tanks.	Diking provided is a concrete pad and wall formed with appropriate waterstops and microsilica concrete mix	6.	SPACING BETWEEN TANKS: Section 2.3.2.2 & Table 2.3.2.2.1: Class I, II, IIIA minimum 10 feet from dike wall to LPG tank. Minimum 20 feet between FUCL tank and LPG tank.	Tank spacing is a minimum of 3 feet tank to tank.
3.	TANK DESIGN/ CONSTRUCTION: Section 2-2: No open tanks for liquid storage. UL142, API 650, and ASME standards.	Clawson Tank – Vessels designed to API 650 and are constructed of 304L SS.	7.	PIPING MATERIAL: Section 3.3: Liquid-tight, steel, nodular iron. Section 3.5.4: protected against corrosion. Section 3.6: pipe testing. Section 3.5.8.3: gravity flow prevention. Section 5.2.4 of Part 3: pipe in building.	Schedule 40 carbon steel in a combination of threaded, flanged and welded connections.
4.	CORROSION PROTECTION: Section 2.2.6: Tank bottom installed on grade must be protected against corrosion.	Tanks are supported on legs	8.	PIPE SUPPORTS: Section 3.5.1: Constructed of non-combustible material.	Steel supports and hangers.

APPLICATION FOR INSTALLATION OF ABOVEGROUND STORAGE TANKS

(Continued from Page 1)

ITEM	DESCRIPTION	MANUFACTURER & PART NO.	ITEM	DESCRIPTION	MANUFACTURER & PART NO.
9.	TANKVALVES (LINES ATTACHED): Section **2.3.2.5:** Above liquid level requires anti-siphon. Approved non-freeze. Below level **50,000** gallons or less shall have approved heat activated internal or external valve. water drain valve.	Apollo Ball Valves – ¼" - 2" Bronze body, TFE Packing. Series 70-100-01. 2 ½" – 4 " Cast iron body, TFE packing. Series 6P-200-IBV-125.	15.	OVERFILL PROTECTION: Section **2.6.1:** Delivery operator shall have means to determine liquid level. Automatically stop filling before liquid level is **95%** of tank capacity and sound audible alarm when liquid level is **90%** of tank capacity.	Pathway – Model EV200. High alarm and automatic shutoff shall both be set to 90% of capacity. Level indication to be provide by ultrasonic unit.
10.	EMERGENCY VENTS: Section **2.2.5.2:** Calculated on basis of CFH per multiplied by the amount of square feet of wetted area. Must be normally closed for flammable liquids.	Morrison Borthers – Model 244 OF-0200 AV	16.	PRODUCT FLOW PROTECTION: Section **3.5.6:** Back flow protection - check valve. Additional valves may be required to Insure proper product flow in the piping system.	As required.
11.	NORMAL VENTS: Section **2.2.5.1:** Relieve excessive internal pressure.	Protectoseal P N Vent – Model 18542D3 (3" x 3")	17.	PRODUCT ID OR RISER: Section **3.9:** Identified by color code or marking.	N/A
12.	PUMP VALVES: Section **3.5.10.1:** Shall be provided with positive shutoffs on both sides.	Inlet and outlet isolation valves are in included the design.	18.	UNLOADING1LOADING RISER LOCATION: Section **5.6:** Separated from property lines, aboveground tanks, plant buildings a minimum: **25** feet Class I liquid, **15** feet Class II and III liquids.	N/A
13.	PUMPS: Section **3.10.2:** Shall be provided with relief valve or bypass.	Centrifugal pump has an internal bypass and shall be installed with appropriate pressure relief.	19.	SPILL PROTECTION - LOADING/UNLOADING POINTS: Section **5.6.4:** Prevent spills from entering drain systems, waterways, groundwater and/or subsurface soils. Cannot drain into diked area.	Transfer pump is located inside the building and is contained by a separate sump.
14.	FIRE PROTECTION AND IDENTIFICATION: Section **2.6.2.3:** Labeled "Flammable Liquid," "Combustible Liquid," or according to NFPA **704.**	Tanks are labeled "Flammable Liquids"	20.	LOCATION OF WATER WELLS: Section **2.3.2.1.8:** Location of **drinking** water wells and surface water intakes within applicable distances of the proposed storage tank system.	N/A

APPLICATION FOR INSTALLATION OF ABOVEGROUND STORAGE TANKS

(Continued from Page 2)

SECTION II **The following section applies to aboveground motor vehicle fueling and marina operations, Part 3 of the FL/CL Rules. The requirements in Chapters 1, 2, and 3 of Part 2 of the FUCL Rules must also be met. Inventory records shall be kept for all Class I, Class II, and Class IIIA storage.**

ITEM	DESCRIPTION	MANUFACTURER & PART NO.	ITEM	DESCRIPTION	MANUFACTURER & PART NO.
1.	TYPE OF SERVICE STATION: Attended qualified supervisor. Unattended self-service. Inside building. Marine service station.		7.	DRAINAGE AND WASTE DISPOSAL: Section 9.2.6.3: Prevent spilled liquid from entering interior of service station. Section 9.2.6.4: Area should be protected to minimize spills from entering groundwater, surface water, and subsurface soils.	
2.	LOCATION OF DISPENSER: Section 6.2.3: Minimum 10 feet from property lines, combustible building walls, and building openings. Within 100 feet of emergency shutoff switch. Section 9.4.5: In clear view of attendant.		8.	EMERGENCY BREAKAWAY DEVICE: Section 6.5: Installed on each hose that dispenses a liquid into motor vehicles. Designed to retain liquid on both sides of the breakaway point.	
3.	DISPENSING DEVICE: Section 6.3.2: Must be listed and identified as to product it dispenses. Section 6.3.3: Equipped to aiiow control of flow. Section 6.3.4: Mounted on concrete island and protected from collision.		9.	ANTI-SIPHON DEVICE: Section 4.2.4 & 4.3.6.5: Normally closed solenoid valve for elevated tanks.	
	AREABENEATH DISPENSER: Section 6.3.4.1: Designed to prevent leaks from entering groundwater, surface water or subsurface soils.		10.	FIRE EXTINGUISHER: Section 9.2.5.2: Minimum of two listed 4A-20BC or one 4A-40BC within 75 feet of dispensers, fill pipes, and dispensing area.	
5.	EMERGENCY SHEAR/FIRE VALVE: Section 6.3.9: Required on submerged pumping systems, rigidly anchored. Section 6.3.10: Suction systems require check valve or pressure regulating valve under the dispenser.		11.	SIGNS: Section 9.2.5.4: Warning signs posted: "No Smoking," "Stop Motor," "Remain in attendance outside of vehicle and in view of the nozzle." Unlawful to dispense gasoline into unapproved containers. No filling of portable containers in or on a motor vehicle.	
6.	DISPENSING NOZZLE: Section 9.6.3: Automatic-closing with or without a latch open device. Section 6.6.6: Spiashguard required.		12.	PHYSICAL PROTECTION: Section 4.3.7: Minimum 6-foot high chain link fence. Secure against unauthorized use and vehicular collision.	

(Continued on Page 4)

APPLICATION FOR INSTALLATION OF ABOVEGROUND STORAGE TANKS

(Continued from Page 3)

SECTION III **The following section applies to aboveground emergency generator operations. Part 5 of the FL/CL Rules. The requirements in Chapters 1 and 2 of Part 2 of the FUCL Rules must also be met. Inventory records shall be kept for all Class I, Class II, and Class IIIA storage.**

ITEM	DESCRIPTION	MANUFACTURER & PART NO.	ITEM	DESCRIPTION	MANUFACTURER & PART NO.
1.	TANK LOCATION: Section 2.3.2: To important buildings, property lines which may be built upon. Adjacent container: minimum three feet, 20 feet from LPG tank.		9.	NORMAL VENTS: Section 2.2.5.1: Relieve excessive internal pressure.	
2.	SECONDARY CONTAINMENT: Part 2, Section 2.3.2.3: Control of spills; diking, alternative methods.		10.	EMERGENCY VENTS: Section 2.2.5.2: Calculated on basis of CFH per multiplied by the amount of square feet of wetted area. Must be normally closed for flammable liquids.	
3.	TANK DESIGN/ CONSTRUCTION: Section 2-2: No open tanks for liquid storage. UL142, API 650, and ASME standards.		11.	UNLOADING/ LOADING RISER LOCATION: Section 5.6 & Part 5, Section 5-8.5: Separated from property lines, aboveground tanks, plant buildings a minimum: 25 feet Class I liquid, 15 feet Class II and III liquids.	
4.	CORROSION PROTECTION: Section 2.2.6: Tank bottom installed on grade must be protected against corrosion.		12.	SPILL PROTECTION - LOADING/UNLOADING POINTS: Section 5.6.4: Prevent spills from entering drain systems, waterways, groundwater and/or subsurface soils. Cannot drain into diked area.	
5.	TANK SUPPORTS1 FOUNDATIONS: Section 2.2.4: rest on ground, concrete, masonry, piling, or steel. Section 2.3.1: Anchorage areas subject to buoyant forces; each tank shall be safeguarded against movement by anchoring or other secure means.		13.	OVERFILL PROTECTION: Section 2.6.1: Delivery operator shall have means to determine liquid level. Automatically stop filling before liquid level is 95% of tank capacity and sound audible alarm when liquid level is 90% of tank capacity.	
6.	PIPING MATERIAL: Section 3.3: Liquid-tight, steel, nodular iron. Section 3.5.4: protected against corrosion. Section 3.6: pipe testing. Section 3.5.8.3: gravity flow prevention.		14.	FIRE PROTECTION AND IDENTIFICATION: Section 2.6.2.3: Labeled "Flammable Liquid," "Combustible Liquid," or according to NFPA 704.	
7.	PIPE SUPPORTS: Section 3.5.1: Constructed of non-combustible material.		15.	FIRE EXTINGUISHER: Section 9.2.5.2: Minimum of two listed 4A-20BC or one 4A-40BC within 75 feet of dispensers, fill pipes, and dispensing area.	
8.	LOCATION OF WATER WELLS: Section 2.3.2.1.8: Location of drinking water wells and surface water intakes within applicable distances of the proposed storage tank system.		16.	PRODUCT ID OR RISER: Section 3.9: Identified by color code or marking.	

PART I – ITEMS

1. TANK LOCATION
2. SECONDARY CONTAINMENT
3. TANK DESIGN/CONSTRUCTION
4. CORROSION PROTECTION
5. TANK SUPPORTS/FOUNDATIONS
6. SPACING BETWEEN TANKS
7. PIPING MATERIAL
8. PIPE SUPPORTS
9. TANK VALVES
10. EMERGENCY VENTS
11. NORMAL VENTS
12. PUMP VALVES
13. PUMPS
14. FIRE PROTECTION AND IDENTIFICATION
15. OVERFILL PROTECTION
16. PRODUCT FLOW PROTECTION
17. PRODUCT ID OR RISER
18. UNLOADING/LOADING RISER LOCATION
19. SPILL PROTECTION— LOADING/UNLOADING POINTS
20. LOCATION OF WATER WELLS, ETC.

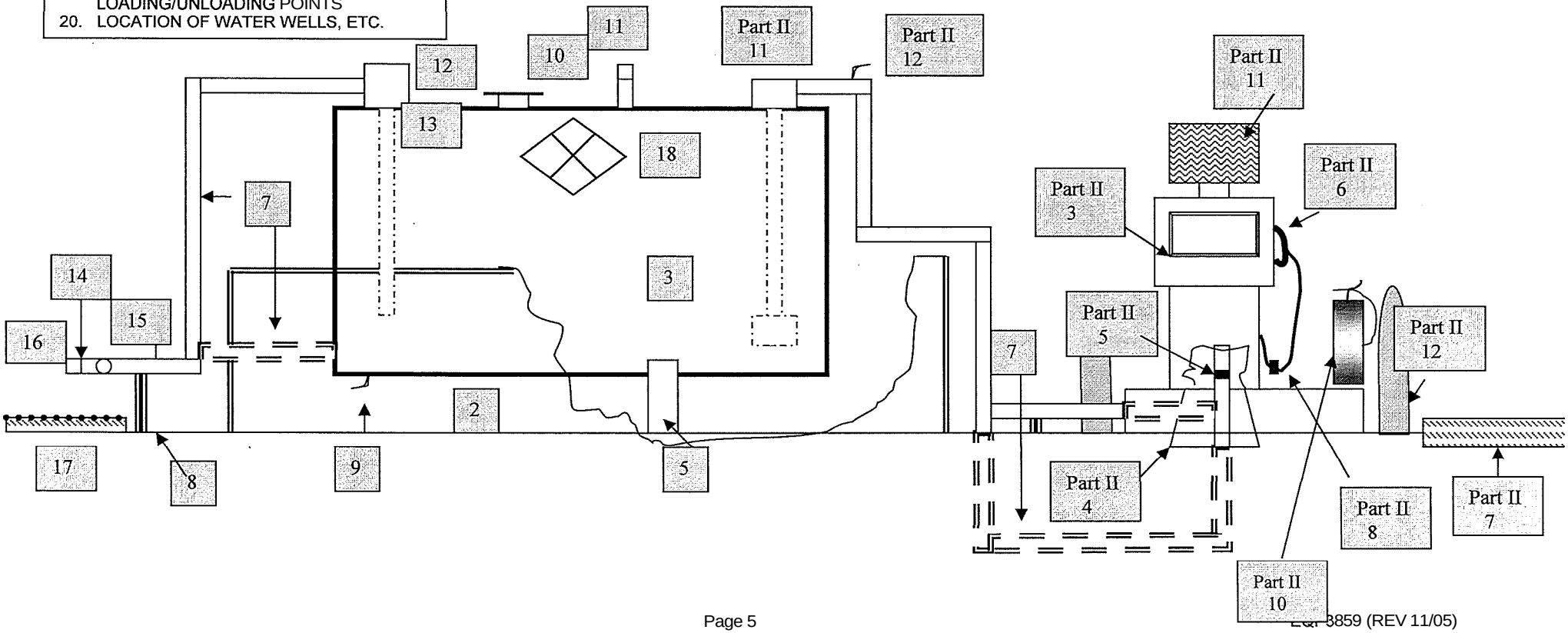
TYPICAL INSTALLATION OF

ABOVEGROUND STORAGE TANK STORING FLAMMABLE AND COMBUSTIBLE LIQUIDS

(Numbers corresponds to the item numbers on the application)

PART II – ITEMS

1. TYPE OF SERVICE STATION
2. LOCATION OF DISPENSER
3. DISPENSING DEVICE
4. AREA BENEATH DISPENSER
5. EMERGENCY SHEAWFIRE VALVE
6. DISPENSING NOZZLE
7. DRAINAGE AND WASTE DISPOSAL
8. EMERGENCY BREAKAWAY DEVICE
9. ANTI-SIPHON
10. FIRE EXTINGUISHER
11. SIGNS
12. PHYSICAL PROTECTION



A plan review must be completed on any tank with a storage capacity greater than 1,100 gallons storing flammable and combustible liquids. A request for plan review must include:

1) Size of existing tank(s) and product stored, flash point. The material of construction, the dimension, and the capacity of each tank.
2) Type of impoundment (diking) provided. Provide dike calculations with the available capacity calculated.
3) A completed parts and materials list for each tank with vent manufacturer, model number and flow rate (gpm, SCFH) as appropriate.
4) A plot map showing the following information:
   a) Location of buildings, public roadways, railroad mainlines, public sidewalks, and property lines.
   b) Storm sewers, sanitary sewers, manholes, and catch basins.
   c) Proposed location of the **container**(s) and **loading/unloading** risers.
   d) Location of property lines.
   e) Location of existing tanks, above and underground, within 50 feet of the installation.
   f) Location of fuel dispensers and canopy footings.
   g) The location of surface water and wetlands within 25 feet of the installation.
   h) The location of single-family drinking wells, and community and non-community public drinking water wells.
4) A separate piping diagram for each tank with pipe, vent and valve specification identified on the diagram. Include manufacturer and model numbers where appropriate.
5) Pipe systems must meet Chapter 3, NFPA 30, 2000 edition, requirements for gravity releases, emergency operation, and anti-siphon. Please show specific valves, vents and locations.
6) Tanks that do not have secondary containment shall not be installed in a delineated wellhead protection area. Tanks that do not have secondary containment shall not be installed in a source water protection area critical assessment zone, or 300 feet from a surface watershed delineated critical assessment zone.
7) A tank of more than **4,000** gallons shall not be installed within the critical assessment zone.
8) A plan review fee of $203 (checks made payable to the State of Michigan) per tank.
   Send the application to:
   DEQ OFFICE OF FINANCIAL MANAGEMENT
   REVENUE CONTROL UNIT
   PO BOX 30657
   LANSING, MI 48909
9) Section I shall be completed for bulk facilities.
10) Sections I and II shall be completed for motor fueling facilities.
11) Section III shall be completed for emergency generator facilities.

The facility cannot be operated without approval from the Waste and Hazardous Materials Division. If you have any additional questions concerning this matter, please contact the Storage Tank Unit at 517-335-7211, or e-mail DEQ-STD-TANKS@michigan.gov.