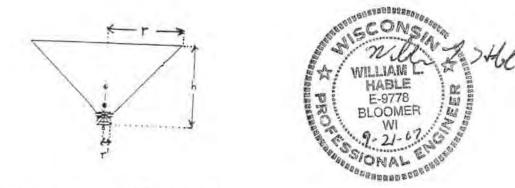
# Section G – Tank Standards: New Tanks

Appendix G-1 Original Professional Engineer New Tank Assessments WRR ENVIRONMENTAL SERVICES CO., INC. DESIGN REVIEW CALCULATIONS FOR REPLACEMENT TANKS J, K, O, Q, R, S, Z

September 21, 2007

## TANK VOLUME CALCULATIONS:

Cylinder Volume = (II/4) x (Inside Tank Diameter) <sup>2</sup> x Tank Height = (II/4) x 9.96 ft.<sup>2</sup> x 16.75 ft. =1,305 cubic feet Cylinder Capacity = 1,305 x 7.48 gallons/cubic feet = 9,760 gallons



Cone Volume =  $(\Pi/3) \times \mathbb{R}^2 \times h \times (1 + (r/\mathbb{R}) + (r/\mathbb{R})^2)$ =  $(\Pi/3) \times (4.98)^2 \times 5 \times (1 + (.479/4.98) + (.479/4.98)^2)$ = 143 cubic feet Cone Capacity= 143 x 7.48 gallons/cubic feet = 1,070 gallons

Total Capacity = Cylinder + Cone = 9,760 + 1,070 = 10,830 gallons (per tank)

WEIGHT OF TANK CONTENTS:

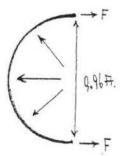
A conservative value of 1.5 will be used for the density of the liquid stored in the tanks.

Maximum weight of tank contents = (1,305 + 143) x 62.4 lbs/cubic foot x 1.5 = 135,533 lbs

TANK HOOP AND PARTING STRESS CALCULATIONS:

Maximum hoop stress will be at base of cone.

Pressure @ at base point =  $\frac{62.4 \text{ ft. x } 1.5 \text{ x } 17 \text{ ft.}}{144}$  x 17 ft. = 11.05 PSI



For 1" Wide Hoop Area = (9.96 ft.)12 x 1 = 119.5 in? 2 F = 119.5 in? x 11.05 PSI = 1320 lbs. F =  $\frac{1320}{2}$  lbs/in? = 660 lbs/in.<sup>2</sup>

Hoop stress of 1/4" thick shell = internal stress = shell thickness x 1

$$\frac{660 \text{ lbs/in.}^2}{1/4 \text{ x } 1} = 2640 \text{ PSI}$$

One quarter inch steel has a yield point of 32,000 PSI Safety factors (Yield) = 32,000 PSI = 12.1 2640 PSI

- Exceeds required strength factor by 12 times

Maximum Parting Stress - Maximum @ at start of cone. Steel area = ¶ x height x conversion factor x shell thickness = ¶ x 10 ft. x 12 in/ft. x 1/4 in. = 94.2 in.<sup>2</sup>

The following calculations use the 10,974 gallon volume determined in 1991 for Tank J rather than the September 2007 calculations of 10,830 gallons. The small 1.3% difference in volume will not affect the outcome of the structural calculations.

Force = tank volume x density = 10,974 gallons x 8 lbs/gal x 1.5 density = 123,926 lbs.

 $S = \frac{123,926 \text{ lbs}}{94.2 \text{ in.}^2} = 1316 \text{ PSI}$ 

- Exceeds required strength

TANK WEIGHT CALCULATIONS: Shell steel area = ¶ x diameter x height = ¶x 10 ft. x 17 ft. = 533.8 ft.<sup>2</sup> 1/4" plate steel weight = 10.20 lbs/ft.<sup>2</sup> Weight of shell = 533.8 ft.<sup>2</sup> x 10.20 lbs/ft<sup>2</sup> = 5445 lbs. Tank top area =  $\frac{10 \text{ ft.}^2}{h} = 78.5 \text{ ft.}^2$ Weight of tank top =  $78.5 \text{ ft.}^2 \times 10.20 \text{ lbs/ft.}^2 = 801 \text{ lbs.}$ Bottom cone area =  $\P(5.0 \text{ ft.} + .5 \text{ ft.})\sqrt{(5.0 \text{ ft.} - .5 \text{ ft.})^2 + 5 \text{ ft.}^2} = 116 \text{ ft.}^2$ Cone weight = 116 ft.<sup>2</sup> x 10.20  $lbs/ft^2 = 1183 lbs$ . Estimated weight of miscellaneous steel and fittings = 684 lbs. Total tank weight = cylinder + cone + top + misc. fittings = 5445 lbs. + 801 lbs. + 1183 lbs. + 684 lbs. = 8113 lbs. Maximum weight of tank plus contents = 137,311 lbs. + 8113 lbs. = 145,424 lbs. TANK BASE LEG LOADING: Total weight = weight per leg Number of legs <u>145,424 lbs.</u> = 36,356 lbs/leg <u>4 legs</u> TANK LEG Leg Area = length x width = (6.0 in. x 0.5 in.) + (5.5 in. x 0.5 in.) = 5.75 in.<sup>2</sup> Column stress = weight per leg =  $\frac{36,356}{5.75}$  lbs. = 6323 PSI stress on support structure Leg Strength without Bracing Slenderness ratio of fixed column. Use design K of 1.2 (Theoretical K = 1.0) r (Axix ZZ) For 6 in. x 6 in. x 1/2 in. leg = 1.18 in.  $\frac{KL}{r} = \frac{1.2 \text{ K x } (9.33 \text{ ft})12}{1.18 \text{ in}} = 113.86$ 

Slenderness ratio is less than 120. This is classified as a short column.

From table 1-36, AISC Manual of Steel Construction, 7th Edition, Appendix A, pp. 5-84

For 36,000 PSI yield stress steel, maximum allowance stress is 11,130 PSI With bracing at midpoint, slenderness ratio is 57. Maximum allowable stress is 17,710 PSI

\*\*Leg stress acceptable with no wind loading.

Wind Load Calculations:

State building codes up to height of 50 ft. - 20 PSF with a shape factor for round tanks is .6.

Time Saver Stds. Fifth Edition - less than 30 ft., 20 PSF at 90 MPH, shape factor is also .6.

Because the three tanks are fairly tight together, a conservative shape factor of 1.0 will be used.

Total wind load = Shape factor x (cone surface area + tank surface area) x wind pressure =  $1.0 \times [(17 \text{ ft. x 10 ft.}) + (10 \text{ ft. + 1 ft. x 5 ft.})] 20 \text{ lbs/ft}^2 = 3950 \text{ lbs.}$ 

Couple stress at right leg =  $(3950 \text{ lbs. x } 18.5 \text{ ft.}) - (145,424 \text{ lbs x } 4) + (F_L \text{ x } 8) = 0$ 73,075 ft. lbs. - 581,696 lbs/leg + 8 F<sub>L</sub> = 0 8 F<sub>L</sub> = 508,621 lbs F<sub>L</sub> = 63,578 lbs.

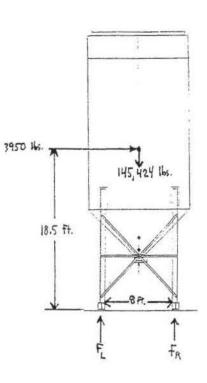
 $F_{\rm R} = 145,424$  lbs. - 63,578 lbs. = 81,846 lbs.

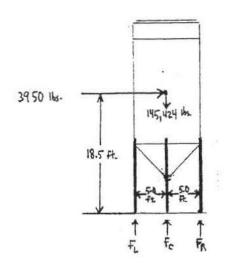
Force on each left leg =  $\frac{63,578 \text{ lbs.}}{2}$  = 31,789 lbs.

Force on each right leg =  $\frac{81,846 \text{ lbs.}}{2}$  = 40,923 lbs.

Right leg column stress =  $\frac{40,923}{5.75}$  = 7117 PSI

\*This is within allowable limits for no leg bracing.





Couple force at  $F_R$  = (3950 lbs. x 18.5) - (145,424 lbs. x 5.0) + 10  $F_L$  + 5.0  $F_C$  = 0 73,075 lbs. - 727,120 lbs. + 10  $F_L$  + 5.0  $F_C$  = 0  $11 F_L + 5.5 F_C = \frac{654,045}{5.0}$ 2  $F_L$  +  $F_C$  = 130,809 lbs.

Couple force at  $F_C$  = (3950 lbs. x 18.5 ft.) + 5.0  $F_L$  - 5.0  $F_R$  = 0 73,075 lbs. + 5.0  $F_L$  - 5.0  $F_R$  = 0  $F_L$  -  $F_R$  = -14,615 lbs.

Load pivots around  $F_{\rm C}$ , so half the total weight is on  $F_{\rm C}$ 

 $F_{\rm C} = \frac{145,424}{2} = 72,712$  lbs.

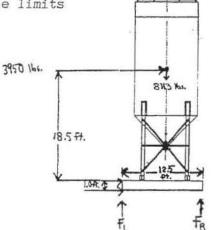
COLUMN LOADING WITH 45° WIND CHANGE

 $F_{\rm L}$  +  $F_{\rm R}$  = 72,712 lbs.

Couple force at  $F_C$  is:  $F_L = F_R - 14,615$  lbs. F - 14,615 lbs. +  $F_R = 72,712$  lbs.  $2 F_R = 72,712$  lbs. + 14,615 lbs.  $F_R = 43,664$  lbs.

Right leg column stress =  $\frac{\text{column weight}}{\text{column surface area}} = \frac{43,664 \text{ lbs.}}{5.75 \text{ in}^2} = 7594 \text{ PSI}$ 

\*Right leg column stress within acceptable limits 90 MPH Wind Loading on Empty Tank:

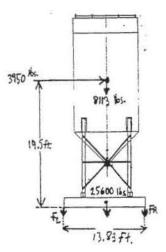


Couple force at  $F_R$  = (3950 lbs. x 18.5) - (8113 lbs. x 6.25) + 12.5  $F_L$  = 0 73,075 lbs. - 50,706 lbs. + 12.5  $F_L$  = 0 12.5  $F_L$  = - 22,369 lbs.  $F_L$  = 1790 lbs.

Tanks are bolted to slabs with (8) 3/4" diameter bolts per tank. Bolts have safe load of 2070 lbs. each at 60,000 PSI ultimate strength. \*Each of 8 bolts exceed required strength.

90 MPH WIND COUPLE FORCE ON SUPPORT SLAB Support slab weight = length x width x depth x concrete weight factor

1.0 ft. x 13.83 ft. x 12.5 ft. = 173 ft.3 concrete 148 lbs/ft3 x 173 ft3 = 25,600 lbs.



Couple force at FR = (3950 lbs. x 19.5) - [(8113 lbs. + 25,600 lbs.)6.915 ft.] + 13.83 ft. FL = 0 77,025 lbs. - 239,259 lbs. + 13.83 FL = 0 13.83 FL = 156,100 lbs.  $F_L = 11,287$  lbs.

Slab will not tip over if tank is empty at 90 MPH winds.

FOOTING SUPPORT:

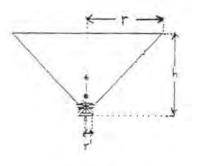
This footing was approved for tanks larger than the proposed replacement. This approval was part of WRR's Feasibility and Plan of Operation Report; Part B.

## WRR ENVIRONMENTAL SERVICES CO., INC. DESIGN REVIEW CALCULATIONS FOR REPLACEMENT TANKS M AND HH

September 21, 2007

TANK VOLUME CALCULATIONS:

Cylinder Volume =  $(\Pi/4) \times (\text{Inside Tank Diameter})^2 \times \text{Tank Height}$ =  $(\Pi/4) \times 9.96 \text{ ft.}^2 \times 9.0 \text{ ft.}$ =701 cubic feet Cylinder Capacity = 701 x 7.48 gallons/cubic feet = 5,240 gallons





Cone Volume =  $(\Pi/3) \times \mathbb{R}^2 \times h \times (1 + (r/\mathbb{R}) + (r/\mathbb{R})^2)$ =  $(\Pi/3) \times (4.98)^2 \times 5 \times (1 + (.479/4.98) + (.479/4.98)^2)$ = 143 cubic feet Cone Capacity= 143 x 7.48 gallons/cubic feet = 1,070 gallons

Total Capacity = Cylinder + Cone = 5,240 + 1,070 = 6,310 gallons (per tank)

WEIGHT OF TANK CONTENTS:

A conservative value of 1.5 will be used for the density of the liquid stored in the tanks.

Maximum weight of tank contents = (701 + 143) x 62.4 lbs/cubic foot x 1.5 = 78,998 lbs

See structural calculations for Tanks J, K, O, Q, R, S, and Z. These tanks are taller than Tanks M and HH, but the same dimensions otherwise. No structural calculations are necessary for M and HH because the taller tanks are stable.

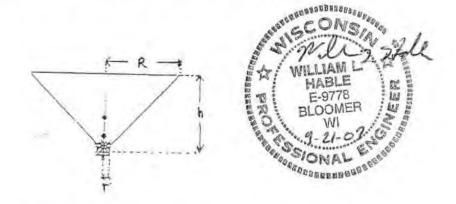
## WRR ENVIRONMENTAL SERVICES CO., INC. DESIGN REVIEW CALCULATIONS FOR REPLACEMENT TANKS L, N, V, W, X, Y

September 21, 2007

### TANK VOLUME CALCULATIONS:

Cylinder Volume =  $(\Pi/4) \times (\text{Inside Tank Diameter})^2 \times \text{Tank Height}$ =  $(\Pi/4) \times 10.95 \text{ ft.}^2 \times 17 \text{ ft.}$ =1,600 cubic feet

Cylinder Capacity = 1,600 x 7.48 gallons/cubic feet = 11,970 gallons



Cone Volume =  $(\Pi/3) \times \mathbb{R}^2 \times h \times (1 + (r/\mathbb{R}) + (r/\mathbb{R})^2)$ =  $(\Pi/3) \times (5.479)^2 \times 5 \times (1 + (.479/5.479) + (.479/5.479)^2)$ = 172.4 cubic feet Cone Capacity= 172.4 x 7.48 gallons/cubic feet = 1,290 gallons

Total Capacity = Cylinder + Cone = 11,970 + 1,290 = 13,260 gallons (per tank)

## WEIGHT OF TANK CONTENTS:

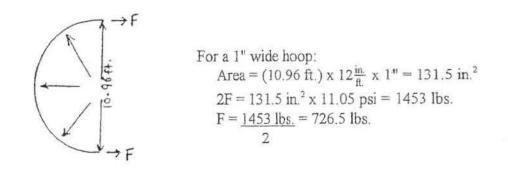
A conservative value of 1.5 will be used for the density of the liquid stored in the tanks.

Maximum weight of tank contents = (1,600 + 172) x 62.4 lbs/cubic foot x 1.5 = 165,860 lbs

## TANK HOOP AND PARTING STRESS CALCULATIONS:

Maximum hoop stress will be at base of cone.

Pressure at base point =  $\underline{62.4 \text{ ft. x } 1.5 \text{ x } 17 \text{ ft.}}_{144}$  = 11.05 psi



Hoop stress of 1/4" thick shell = <u>internal stress</u> shell thickness x 1 =  $\underline{726.5 \text{ lbs.}}$  = 2906 psi 1/4" x 1"

One quarter inch steel has a yield point of 36,000 psi (ASTM A36 Steel Plate) Safety Factor (Yield) = 36,000 psi = 12.39

2906 psi \* Exceeds required strength factor by over 12 times for steel and by .8(12.39) = 9.9 for welds

Maximum Parting Stress is at the start of the cone.

Steel area =  $\pi$  x height x conversion factor x shell thickness =  $\pi$  x 11 ft. x 12  $\frac{in.}{ft.}$  x 1/4" = 103.7 in.<sup>2</sup>

Force = tank volume x density = 13,260 gal. x 8 lbs/gal x 1.5 = 159,120 lbs

 $S = 159,120 \text{ lbs}/103.7 \text{ in}^2 = 1,534 \text{ psi}$ 

\* Exceeds the required strength

TANK WEIGHT CALCULATIONS:

Shell steel area =  $\pi$  x diameter x height

$$= \pi x ]1 ft. x 17 ft.$$
  
= 587.5 ft.<sup>2</sup>

1/4" plate steel weight = 10.20  $\frac{lbs.}{fL^2}$ 

Weight of shell = 587.5 ft.<sup>2</sup> x 10.20  $\frac{\text{lbs.}}{\text{ft.}^2}$  = 5990 lbs.

Tank top area =  $\frac{\pi}{4}$  (11 ft.<sup>2</sup>) = 95 ft.<sup>2</sup>

Weight of tank top = 95 ft.<sup>2</sup> x 10.20  $\frac{\text{lbs.}}{\theta^2}$  = 969 lbs.

Bottom cone area =  $\pi$  (5.5 ft. + .5 ft.)  $\sqrt{(5.5 \text{ ft.} + .5 \text{ ft}) + (5 \text{ ft.})^2}$ = 133 ft.<sup>2</sup>

Cone weight = 133 ft.<sup>2</sup> x 10.20  $\frac{\text{lbs.}}{\text{ft.}^2}$  = 1357 lbs.

Estimated weight of miscellaneous steel and fittings = 684 lbs.

Total tank weight = cylinder + cone + top + misc. fittings = 5590 lbs. + 1357 lbs. + 969 lbs. + 684 lbs= 9000 lbs.

Maximum weight of tank + contents = 166,000 lbs. + 9,000 lbs = 175,000 lbs

TANK BASE LEG LOADING:

Weight per leg = total weight = 175,000 lbs. = 43,750  $\frac{lbs}{leg}$ # of legs 4 legs TANK LEG Leg area = length x width = (6.0" + .5") + (5.5" + .5") = 5.75 in.<sup>2</sup>

Column stress = weight per leg =  $\frac{43,750 \text{ lbs.}}{5.75 \text{ in.}^2}$  = 7609 psi area of leg 5.75 in.<sup>2</sup>

Leg Strength Without Bracing:

Slenderness ratio of fixed column:

use a design K of 1.2 (theoretical K = 1.0) r (axis ZZ) for 6" x 6" x 1/2" angle = 1.18 in.

 $\frac{\text{KL}}{\text{r}} = \frac{1.2 \text{ x} (9.33 \text{ ft}) \text{ x} 12}{1.18 \text{ in}} = 113.86$ \* The elementary notice is been then 120 thus is elemented as a short column

\* The slenderness ratio is less than 120, thus is classified as a short column.

From table 1-36, AISC Manual of Steel Construction, 7th Edition, Appendix A, pg. 5-84 (ASTM A36 Structural Steel angle legs):

"For 36,000 psi yield stress steel, maximum allowance stress is 11,130 psi with bracing at midpoint, slenderness ratio is 57. Maximum allowable stress is 17,710 psi"

\* Leg stress is acceptable with no wind loading.

#### WIND LOAD CALCULATIONS:

State building codes up to height of 50 ft. - 20 psf with a shape factor for round tanks is .6 Time Saver Stds. Fifth Edition - less than 30 ft, 20 psf at 90 mph, shape factor is also .6 A conservative shape factor of 1.0 will be used.

Total wind load = shape factor x (cone S.A. + tank S.A.) x wind pressure =  $1.0 \times [(17 \text{ ft. x } 11 \text{ ft.}) + (11 \text{ ft.} + 1 \text{ ft.} \times 5 \text{ ft.})] \times 20 \text{ psf}$ 2

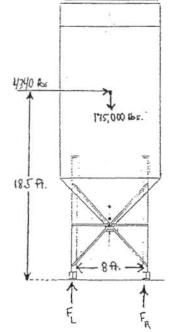
= 4340 lbs.

Couple stress at right leg:

(4340 lbs x 18.5 ft.) - (175,000 lbs x 4 ft.) + ( $F_L x 8 ft.$ ) = 0 80,290 ft-lbs - 700,000 lbs +  $8F_L = 0$  $8F_L = 619,710$  lbs  $F_L = 77,463.75$  lbs

$$F_{p} = 175,000 \text{ lbs} - 77,463.75 \text{ lbs} = 97.536 \text{ lbs}$$

Force on each left leg =  $\frac{77,463.75 \text{ lbs}}{2}$  = 38,732 lbs 2 Force on each right leg =  $\frac{97,536.25 \text{ lbs}}{2}$  = 48,768 lbs 2 Right leg column stress =  $\frac{48,768 \text{ lbs}}{5.75 \text{ in.}^2}$  = 8481 psi 5.75 in.<sup>2</sup>



COLUMN LOADING WITH 45° WIND CHANGE:

Couple force at  $F_R$ : (4340 lbs x 18.5 ft) - (175,000 lbs x 5.5 ft.) + 11 $F_L$  + 5.5 $F_c$  = 0 80,290 lbs - 962,500 lbs + 11 $F_L$  + 5.5 $F_c$  = 0 <u>11 $F_L$  + 5.5 $F_c$  = <u>882,210</u> 5.5 2 $F_L$  +  $F_c$  = 160,402 lbs</u> Couple force at  $F_c$ : (4340 lbs x 18.5 ft.) + 5,5 $F_L$  - 5.5 $F_R$  = 0 80,290 lbs + 5.5 $F_L$  - 5.5 $F_R$  = 0  $F_1$  -  $F_R$  = - 14,598 lbs

Load pivots around  $F_c$ , so half the total weight is on  $F_c$ .  $F_c = \underline{175,000 \text{ lbs}} = 87,500 \text{ lbs.}$ 

 $F_{\rm L} + F_{\rm R} = 87,500 \text{ lbs}$ 

Couple force at F<sub>c</sub> is:

$$\begin{split} F_{\rm L} &= F_{\rm R} - 14,598 \text{ lbs} \\ F_{\rm R} - 14,598 \text{ lbs} + F_{\rm R} = 87,500 \text{ lbs} \\ 2 \ F_{\rm R} &= 87,500 \text{ lbs} + 14,598 \text{ lbs} \\ F_{\rm R} &= 51,049 \text{ lbs}. \end{split}$$

Right leg column stress =  $\frac{\text{column weight}}{\text{column S.A.}} = \frac{51.049 \text{ lbs}}{5.75 \text{ in.}^2} = 8878 \text{ psi}$ 

\* Right leg column stress within acceptable limits

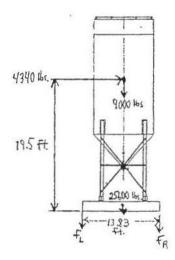
90 mph Wind Loading on Empty Tank:

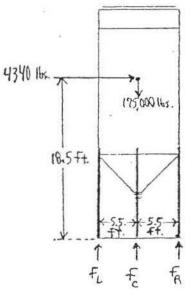
Couple force at  $F_R$ : (4340 lbs x 18.5 ft.) - (9000 lbs x 6.25 ft.) + 12.5 $F_L$  = 0 80,290 lbs - 56,250 lbs + 12.5 $F_L$  = 0 12.5  $F_L$  = - 24,040 lbs  $F_L$  = 1923 lbs.

Tanks are bolted to slabs with (8) 3/4" diameter bolts per tank. Bolts have safe load of 2070 lbs each at 60,000 psi ultimate strength.

\* Each of the 8 bolts exceeds required strength.

90 MPH WIND COUPLE FORCE ON SUPPORT SLAB:





Support slab weight = length x width x depth x concrete weight factor = 1.0 ft. x 13.83 ft. x 12.5 ft. x 148  $\frac{lbs.}{ft.^3}$ = 25,600 lbs. Coupling force at F<sub>R</sub>: (4340 lbs x 19.5 ft.) - [(9000 lbs + 25,600 lbs) x 6.915 ft.] + 13.83F<sub>L</sub> = 0 84,630 lbs - 239,259 lbs + 13.83 F<sub>L</sub> = 0 13.83 F<sub>L</sub> = 166,044 lbs F<sub>L</sub> = 11,181 lbs

\* Tank will not tip over if tank is empty at 90 mph winds.

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## CHECKLIST FOR ABOVEGROUND TANK INSTALLATION

Complete one form for each tank and related piping.

The information you provide may be used for secondary purposes [Privacy Law, s.15.04(1)(m)],

Return Completed Checklist To: Wisconsin Department of Commerce ERS Division Bureau of Petroleum Products and Tanks P. O. Box 7837 Madison, WI 53707-7837

	his checklist covers secondary purposes [Privacy La nstallation of: Tank; Piping; Secondary Contain			<i>r</i> ;	
T	ank V Leak Detection; Spill Containment;				
	. IDENTIFICATION: (Please Print)				
		2. Owner Name 0 0 0		0.0	
U	IR Environmental Services Co. Inc.	WRR Environmental SE	huices	Co, Tin	C.
	Istaliation Street Address (not P.O. Box)	Owner Street Address			
	200 Ruder Road	5200 Ryder Road	State	Zip Code	
-	City - Village I Town of:	City Village Town of:	Wiscons		1
St	tate Zip Code County	County Telephone No.	(include area		1
	Wisconsin 54701 Eau Clarke		834-96		
B	. TANK CONTENTS (Current, or previous product if tank now		0-01- 10		
L	Diesel Leaded Unleaded Gasohol Aviation Hazardous Waste Chemical (Specify name & CAS#):		Waste/Use	ed Motor Oil	
C.	. LAND OWNER TYPE (check one)				
		eral Leased 🔲 Tribal Nation 📄 Other Gove	mment	Jtility	
	Residential Private	8			_
	, OCCUPANCY TYPE (check one)				
	Gas/Retail Sales 🔲 Bulk Storage 🔲 Terminal Storage 🗹 Industri	이 것 같아요. 그는 것 같아요. 이 것 같아요. 가지 않는 것 같아요. ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ?	r Emergency (	Generator	
1	Agricultural (Crop or livestock production) Government School	ol 🔲 Utility 🛄 Residential 🔲 Other (spec			
E.	PLAN APPROVAL		Installer Verified	Inspector Verified	NA
	1. Plans have been approved. State plan number/LPO plan nur	mber is: 1510720	Vermeet	Vernied	
	<ol> <li>Plans have been approved, state plan humber/LPO p</li></ol>				
	<ol> <li>Public POS dispensing (Include form ERS 6294 POS)</li> </ol>	Vehicle Marine craft A	vircraft		4
F.	TANK CONSTRUCTION		unonan		
	1. Tank exhibits recognized Listing or API label (Comm 10.355	5)			Π.
	2. Tank is used and has been tested for leaks.	drostatic Length of test: min			
	3. Tank has vents installed and configured for: I Class I,		···· ¥/	님	
	<ol> <li>Emergency relief vent is provided where required. Type:</li> <li>All normal and emergency vents terminate outside where red</li> </ol>			H	guac
	<ol> <li>Overfill protection provided? [Comm 10.415 (12)] Make/Mo</li> </ol>		1	H	TA
	7. Tank gauge is provided.		Ē		
	8. Pump mounted on tank D Pump mounted in dispenser	r independent of tank			-
G.	TANK HANDLING AND PRE-TESTING	2/2/22	1		100
	1. Tank was tested for leakage per the manufacturer's recomm	nendations	<u>U</u>		
H.			-	-	-
	<ol> <li>Tank located per approved plans (walls, buildings, power line</li> <li>Tank is spaced a minimum of 3 feet from any other tank. (NF</li> </ol>			H	H
	<ol> <li>Tank is spaced a minimum of 3 feet from any other tank. (NF</li> <li>Tank foundation designed to minimize settling.</li> </ol>			H	H
	<ol> <li>Emergency shut-off installed</li> </ol>			đ	<b>D</b>
L.	PROJECT SITE				
	1. Collision protection provided.				4
	<ol><li>Vehicle fueling tank is secured by non combustible enclosure</li></ol>				ব্যব্র
	3. Warning signs posted for dispensing area.			H	R
1	4. A rated fire extinguisher provided.				
J.	PIPING MATERIAL IS: Fiberglass; Steel; or Other i Pipe installation is: Single wall or Ouble wall.	(type)			
	Check one of the types below before proceeding to answer a	questions 1-3 and/or 1-13.			
	Piping System Type: 1. Pressurized piping with a. auto sh				
	<ol><li>Suction piping with check valve at ta</li></ol>				
	3. Suction piping with check valve at pu	ump and inspectable.			
	Aboveground Pipe: 1. Coated to inhibit corrosion.	Stainless			F
	<ol> <li>Supported and protected against physical damage and stres</li> </ol>	SS.	E E	H	H
	3. Piping was isolated from the tank and dispenser and air teste	ed at 150% of operating pressures of the	/	1	_
	system (but not less than 50 p.s.i.) for 1 hour.	8/6/08			

11. 12. 13. K. SE 1.	Piping is evenly and adequately supporte Piping trench provides at least 18 inches Pipes are separated by at least twice the Pipes are separated from the trench exca Metal piping is at least schedule 40 black Metal piping protected from corrosion by: Fittings and couplings are extra-heavy ma Piping was isolated from the tank and dis system (but not less than 50 psig) for 1 ho After backfilling, piping was isolated from pressure but not less than 50 psig) for 1 ho Test stations have been installed for mon Approved flexible connectors are used be Dispensers, pumps, check valves, etc., no piping		Image: Second state sta
	Groundwater monitoring Tightn	ess testing  Line leak detector Vapor monitoring	New York Control of the second s
	Manufacturer / Vendor:	Prob	e #:
	Model Name/#: Catastrophic Manufacturer Name:	Material Approval #: Model: Mate	rial Approval #:
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	Tank is provided with spill protection Dispensing device is listed and has pro- Electrically operated solenoid valve pro- Anti-siphon device provided on tank mo- Electric equipment and wiring is installe Aircraft fueling system provides bonding Emergency shutoff clearly identified and Where required, listed emergency breat Dispensing nozzle at marine service sta	ection/disconnection for tank vehicle. per setbacks. vided for vehicle fueling. [Comm 10.415 (10)] bunted pump. d in accordance with Comm 16 (NFPA 70). g mechanism between aircraft and fueling equipment d accessible. kaway, hose and dispensing devices are provided. kaway, shall be auto-closing without hold open device.	
Installat Compar ( 7 ( I certify plans, a Installe		Installation Company Mailing Address <u>Juc</u> <u>5200 Ryder Road</u> <u>Eau</u> Certified Installer Name (print) <u>Byrice</u> <u>May-sh</u> ments have been installed according to the manufacturer' Date Sign	
Inspect Inspectio	ion Dates: 1) 6-25-08 2) 7 - 14	Inspector #: 35167	6) Local Operator #: FDID #: 9 0 60
-	MMENTS: V		

Diele Contractor Vallous Outpor

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Only

## CHECKLIST FOR ABOVEGROUND TANK INSTALLATION

Complete one form for each tank and related piping.

The information you provide may be used for secondary purposes [Privacy Law, s.15.04(1)(m)].

Return Completed Checklist To: Wisconsin Department of Commerce ERS Division Bureau of Petroleum Products and Tanks P. O. Box 7837 Madison, WI 53707-7837

in	stallation of: Tank; Piping; Secon	dary Contai		overfill Protect		or Recovery		
	ANK W Leak Detection; Spill C	ontainment	; Automa	ated Fueling (	key-card-cod	te); LlLinir	ig	
	IDENTIFICATION: (Please Print)		2. Owner Nan	ne				1
	PR Environmental Services G	TO	LUPP 1	Environm	19.40	las assar (	T of	
Ins	stallation Street Address (not P.O. Box)	I MAC.	Owner Street	Address	buller -	MUCCT 1	-U, the	C:
	200 Ruder Road		5200	Ryder 1	Load			
	City Village Town of	of:	City	Village	Town of:	State	Zip Code	1.0
	Washington		Wa	shington		Wasconsw		2
Sta	and an entry	a	County	2		(include area o		
		Claure		laine	(715)	834-26	24	-
	TANK CONTENTS (Current, or previous produc Diesel Leaded Unleaded Gasohol 'Hazardous Waste Chemical (Specily name	Aviation		Fuel Oil	Kerosene	Waste/Use	d Motor Oil	
	LAND OWNER TYPE (check one)	a artony.		C C MIN			C cures)	
	State County Municipal Federal O	wned D Fed	leral Leased	Tribal Nation	Other Gove	ernment	Ulity	
	Residential Private							
D.	OCCUPANCY TYPE (check one)				1. 25			-
	Gas/Retail Sales D Bulk Storage D Terminal Storage	ge 🗹 Indust	rial D Merc	antile/Commercia	Backup d	or Emergency G	enerator	
	Agricultural (Crop or livestock production)	nent 🖸 Scho	ol Utility	🗌 Residentia	Other (spec	cify):		
E.	PLAN APPROVAL					Installer	Inspector	NA
				-		Verified	Verified	
	1. Plans have been approved. State plan numbe	r/LPO plan nu	imber is:	15/0721	7	9		
	2. Tank Capacity: <u>13,280</u> gallons.		-					
	3. Deublic POS dispensing (include form ERS	6294 POS)	Vehicle	e 🗌 Marine	e craft 🛛 🗍	Aircraft		
F.	TANK CONSTRUCTION					-	-	-
	<ol> <li>Tank exhibits recognized Listing or API label (</li> <li>Tank is used and has been tested for leaks.</li> </ol>	Comm 10.355	o)	all of lost	mir	pressing.	H	1
	<ol> <li>Tank is used and has been tested for leaks.</li> <li>Tank has vents installed and configured for:</li> </ol>	Class I		Class III produ			H	띔
	<ol> <li>Emergency relief vent is provided where requi</li> </ol>				dot menter menter	ET .	H	H
	5. All normal and emergency vents terminate out					Ē	Ē	ň
	6. Overfill protection provided? [Comm 10.415 (1	2)] Make/Mo	odel:					1 1 1
	7. Tank gauge is provided							
-	8. Pump mounted on tank  Pump mounted	ed in dispense	er independen	t of tank				
G.	TANK HANDLING AND PRE-TESTING		and all and a	7/21	100	M		
11	1. Tank was tested for leakage per the manufact	urer's recomm	nendations		V.D.		ابيا	1
H.	TANK SITE	nar nouror lin	an atroate w	all ata )			-	
	<ol> <li>Tank located per approved plans (walls, buildi</li> <li>Tank is spaced a minimum of 3 feet from any</li> </ol>	other tank (N	IES, Streets, W	2-1)			H	H
	<ol> <li>Tank foundation designed to minimize settling</li> </ol>						H	Ħ
	4. Emergency shut-off installed.							D
l.	PROJECT SITE							
	1. Collision protection provided.  Cement fille							ব্ৰ
	2. Vehicle fueling tank is secured by non combus							M
	<ol><li>Warning signs posted for dispensing area</li></ol>							
-	<ol> <li>A rated fire extinguisher provided.</li> </ol>					L.	L	
J.	PIPING MATERIAL IS: Fiberglass; Steel;	or [] Other	(type)					
	Pipe installation is: V single wall or O doub			2 and and d2				
	Check one of the types below before proceedir Piping System Type: 1. Pressurized piping wit				ow restrictor			
	2. Suction piping with che				SW restrictor,			
	3. Suction piping with ch	eck valve at p	ump and insp	ectable.				
	Aboveground Pipe:							1.00
	1. Coated to inhibit corrosion.	Stainles	5					E
	<ol><li>Supported and protected against physical dam</li></ol>	hage and stres	SS					
	<ol><li>Piping was isolated from the tank and dispense overtage (but not less than 50 n a i) for the part of the second s</li></ol>	er and air test	ted at 150% of	operating pres	sures of the			
-	system (but not less than 50 p.s.i.) for 1 hou	Ç	0.1.4	1.0.0				
	;					000862	2	

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. <b>K. SI</b> 1	Inderground Pipe         Piping is sloped back to tank (min. 1/8 inch per foot).         Piping is evenly and adequately supported by at least 6 inches of backfill bedding.         Piping trench provides at least 18 inches of compacted backfill and paving on top of piping.         Pipes are separated by at least twice the pipe diameter.         Pipes are separated from the trench excavation sidewalls by at least 6 inches.         Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.         Metal piping protected from corrosion by:       cathodic protection or         Piping was isolated from the tank and dispenser and air tested at 150% of operating pressure of the system (but not less than 50 psig) for 1 hour prior to backfilling.         After backfilling, piping was isolated from the tank and dispenser and air tested at 150% of operating pressure of the system (but not less than 50 psig) for 1 hour.         Test stations have been installed for monitoring cathodic protection on piping.         Approved flexible connectors are used below the dispenser.         Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.         Trank:       Diked       Double Wall       Remote impounding         Tank clearance with dike walls and floor.       Vehicle fueling       Bulk storage.         Interstitial monitoring.       Automatic (verified as operative).       Other (specity)         Other (specity)		DODDOOD D DOD D NOOD	াতারাতা বিরেরে রেরেরেরেরেরেরে
E.c.			ed (visual)	
3.	Manufacturer / Vendor: Probe #:			
4.	Model Name/#: Material Approval #:	. *		
5.	Catastrophic Manufacturer Name: Model: Material Approva	al #:		
· COMPANY AND A PROPERTY OF	Tank is provided with spill protection. Dispensing device is listed and has proper setbacks. Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)] Anti-siphon device provided on tank mounted pump. Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70). Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment Emergency shutoff clearly identified and accessible. Where required, listed emergency breakaway, hose and dispensing devices are provided. Dispensing nozzle at marine service stations shall be auto-closing without hold open device. Hose length:ft.	Rodood		ब्ह्यान्नव्यया
Installa Compa ( ? ) I certit plans, Install	<u>Envisor mentfal Services 6</u> , Inc. 5200 Ryder Road Eau Claire ny Telephone No. (include area code) S <u>34-9624</u> W that the tank system and related components have been installed according to the manufacturer's instruction and comply with Comm 10.	4103	54)01 Sertification N	
	tion Dates: 1) 6/25/08 2)7-14-08 3) 10/2/08 4) 5) 6) on Company Name; Chuppens File Destrict			
		erator #;	36200	38
DCC				
TANK	NVENTORY FORM ERS-8731 SIGNED BY THE OWNER MUST BE SUBMITTED WITH EACH INSTALLA			

100	/isconsin	CHECKLIST FOR AN TANK INSTAL		Return Completed Wisconsin Departm			
-	Reg Obj#: For Office Use Only	Complete one for tank and relate	rm for each	ERS Division Bureau of Petroleur			inks
		The information you provide n	nay be used for	P. O. Box 7837 Madison, WI 53707	7-7837		
	This checklist covers installation of: PTank: PPi	secondary purposes [Privacy iping; Secondary Conta					
	Tank X Leak Detec			ling (key-card-code);			
-	A. IDENTIFICATION: (Please Prin			and the second de		3	
	1. Installation Name 40	Concert.	2. Owner Name	20 5-	See.	~ ~	
Y	URR Environ montal Installation Street Address (not P.O. Box)	Services Go, Inc.	Owner Street Address	nmental Ser	11025	t, the	C .
	5200 Ruder Road		5200 Ryde				
[	City Village	Town of:			State Asconsi	Zip Code	
	State Zip Code	County	County	Telephone No. (inc			1_
1	Wisconsin 54hol	Ean Claure	Ean Claire		34-26		
E	B. TANK CONTENTS (Current, or	previous product if tank nov		DII 🗌 Kerosene 🗍	Montelline	d Malar Ol	
		mical (Specify name & CAS#):	on Premix Pred		Unknown	d Motor Oll	
0	C. LAND OWNER TYPE (check on				1.000		
	State County Munici	ipal 🔲 Federal Owned 🔲 Fe	deral Leased D Tribal N	ation Other Governm	ient 1	ltility	
-	Residential Private     OCCUPANCY TYPE (check one	4)					-
	Gas/Retail Sales Bulk Storage	Terminal Storage Indus	strial 🔲 Mercantile/Com	mercial 🔲 Backup or Er	mergency (	Senerator	
E	Agricultural (Crop or livestock product	ion) 🔲 Government 🔲 Sch	ool 🗍 Utility 🗌 Resi	dential 🔲 Other (specify):			
E	E. PLAN APPROVAL				Installer	Inspector	NA
	1. Plans have been approved.	State plan number/LPO plan n	umber is: ICIO	720	Verified	Verified	
	2. Tank Capacity: 13.25			100	-		
		include form ERS 6294 POS)	Vehicle	Marine craft 🛛 Airc	raft		
F					1	_	_
	<ol> <li>Tank exhibits recognized Lis</li> <li>Tank is used and has been</li> </ol>	sting or API label (Comm 10.35 tested for leaks. 🔲 Air 🗹 H	vdrostatic Length of tes	t min.	E.	H	X
	3. Tank has vents installed and	d configured for: Class I,	Class II, Class II		V	H	õ
		vided where required. Type:_			N		
	<ol> <li>All normal and emergency v</li> <li>Overfill protection provided?</li> </ol>	ents terminate outside where n [Comm 10.415 (12)] Make/M	equirea lodel:			H	N
	7. Tank gauge is provided				Ø		
-	8. Pump mounted on tank	Pump mounted in dispens	er independent of tank	M			-
G	<ol> <li>TANK HANDLING AND PRE-TE 1. Tank was tested for leakage</li> </ol>	ESTING e per the manufacturer's recom	mendations 7/	31/08	W		
H							
		plans (walls, buildings, power li					
		of 3 feet from any other tank. (No minimize settling.			NR	H	H
_		1			D	Ħ	E.
1.	A CONTRACT OF CONTRACT				-	-	_
		<ol> <li>Cement filled pipe T</li> <li>T</li> <li>ed by non combustible enclosu</li> </ol>			H	H	
	<ol> <li>Warning signs posted for dis</li> </ol>				F.	H	Ħ
_	<ol><li>A rated fire extinguisher prov</li></ol>	vided.		auroanomanmaan.	Ø		
J,		rglass; Steel; or Othe	r (type)				
	Pipe installation is: I single to Check one of the types below		r questions 1-3 and/or	1-13.			
	Piping System Type: 1. Pres	ssurized piping with a. 🗌 auto	shutoff, b. alarm, or c				
		tion piping with check valve at t					
	Aboveground Pipe:	tion piping with check valve at p					
	1. Coated to inhibit corrosion.						P
	<ol> <li>Supported and protected aga</li> <li>Piping was isolated from the</li> </ol>	ainst physical damage and stre	ated at 150% of operation	a properties of the			
	system (but not less than 5	0 p.s.i.) for 1 hour.	8/6/08	a hissories of the	Ø		
				and the second			

	1				
. 15	Anderground Pipe				5
2.	Piping is sloped back to tank (min. 1/8 inch per foot) Piping is evenly and adequately supported by at least 6 inches of backfill bedding		. H	H	রবিরেরের্বের
3.	Piping trench provides at least 18 inches of compacted backfill and paving on top of	piping	🗆		I
4.	Pipes are separated by at least twice the pipe diameter		🗆		P
5.	Pipes are separated from the trench excavation sidewalls by at least 6 inches.				
6. 7.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or Metal piping protected from corrosion by: a cathodic protection or impressed ou			H	N
8.	Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or be			Ē	9
9.	Piping was isolated from the tank and dispenser and air tested at 150% of operating		_	-	-
10	system (but not less than 50 psig) for 1 hour prior to backfilling	ad at 110% of operating	🗆		3
10.	pressure but not less than 50 psi for 1 hour.				ব
11.	. Test stations have been installed for monitoring cathodic protection on piping		🗆		হাহা
12.	Approved flexible connectors are used below the dispenser.	alatad from motallia	🗋		Y
15.	<ul> <li>Dispensers, pumps, check valves, etc., not cathodically protected are electrically iso piping.</li> </ul>				P
K. SE	ECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under bot		and a second second		Internet Support
	1. Tank: M Diked Double Wall Remote impounding				
		storage			
	Interstitial monitoring Automatic (verified as operative)			H	N
	Other (specify)				
.2.	Piping Leak Detection Method: used if pressurized or suction with check valve at ta	ank: Interstitial mo	nitoring		
-	Groundwater monitoring Tightness testing Line leak detector	apor monitoring	Not require	ed (visual)	
	Manufacturer / Vendor:	Probe #:			
	Model Name/#: Material App	Contraction of the local distance of the local distance of the			Bearing
· FOR DER ADDRESS AND TAXABLE PARTY OF	Catastrophic Manufacturer Name: Model:	Material Appr	oval #:		
L. LI 1.	<ol> <li>JQUID HANDLING, TRANSFER AND USE</li> <li>Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.4]</li> </ol>	115 (11)			
2.				H	n
3.	<ol><li>Tank is provided with spill protection.</li></ol>			5	ाज्ञाणबुद्धिविद
4.	1 Contraction of the second seco				V
6.		[0]]	- H	H	UN N
7.	<ol> <li>Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70</li> </ol>	)			
8.	Contraction of the second s				2
9. 10.				믬	
11.			6	Ē	N
12.	2. Hose length: ft.				
	STALLER CERTIFICATION			7' C I	
	ation Company Name (print)		City/State/2	54001	
Compa	Environmental Services Co Inc 5200 Ryder Roa. any Telephone No. (include area code) Certified Installer Name (print).	of Low Moure	1	Sertification N	lo
(71			4103		
	ify that the tank system and related components have been installed according to the	e manufacturer's instruct	ions, condi	itionally app	roved
plans,	, and comply with Comm 10.		1 2		
Installe	ler Signature: 72 wer W. March	Date Signed: 8	118/08	÷	
N. INS	SPECTOR INFORMATION				
Inspec	ction Dates: 1) 6/25/08 2) 7-14-05 3) 15/2/08 4)	5) 6	)		
Inspecti	tion Company Name: Chippon a Tipe Dutit				
mapeou	stion Company Name: Chippena Fire District			-	
Inspecto	tor Signature: K Inspector #: 3516	Local	Operator #:	24,20	80
Date Sig	signed:/12/08 Fire department providing coverage: Township Fire	Dept.	FDID #:	18060	
0.00	DMMENTS: X	an a	WATER AND A DESCRIPTION OF THE OWNER OWNER OF THE OWNER OWNE		
0, 00		Arritoria			

TANK INVENTORY FORM ERS-8731 SIGNED BY THE OWNER MUST BE SUBMITTED WITH EACH INSTALLATION CHECKLIST.

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Reg Obj #	For Office Use Only

## CHECKLIST FOR ABOVEGROUND TANK INSTALLATION

Complete one form for each tank and related piping.

The information you provide may be used for secondary purposes [Privacy Law, s.15.04(1)(m)].

Return Completed Checklist To: Wisconsin Department of Commerce ERS Division Bureau of Petroleum Products and Tanks P. O. Box 7837 Madison, WI 53707-7837

	his checklist covers secondary purposes [Privacy Law, s.15, Installation of: Tank; Piping; Secondary Containment		tion: Uvanc			
	$a_{\rm Leak}$ Detection; Spill Containment; Au					
A	. IDENTIFICATION: (Please Print)	er Name				
	IRR Environmental Services Co. Inc. WR		antal Se	hurces 1	Co In	c.
In	stallation Street Address (not P.O. Box) Owner	Street Address	1	LV 1 Store	4, 10,	
		00 Ryder 1	Load		_	
E	City - Village P Town of: City		Town of:	State	Zip Code	4
-	Washington	Washington		Wisconsu	5476	2
	tate Zip Code County County		Telephone No.			-
	Visconsin 54701 Eau Claire Eau TANK CONTENTS (Current, or previous product if tank now empty)		(715)	834-26	24	
E			Kerosene	Waste/Use	ed Motor Oil	
	LAND OWNER TYPE (check one)				- mining	
	State County Municipal Federal Owned Federal Lease Residential Private	sed 🔲 Tribal Nation	C Other Gove	mment 🔲 l	Jtility	
D.	OCCUPANCY TYPE (check one)					
		] Mercantile/Commercia	Backup c	or Emergency (	Generator	
	Agricultural (Crop or livestock production)	Utility Residential	Other (spec	:ify):		
E.	PLAN APPROVAL			Installer Verified	Inspector Verified	NA
	1. Plans have been approved. State plan number/LPO plan number is	1510720	7	- P		
	2. Tank Capacity: 13,280 gallons.					
4		Vehicle 🗌 Marine	e craft 🗌 A	Aircraft		
F.	TANK CONSTRUCTION			-	-	-
	<ol> <li>Tank exhibits recognized Listing or API label (Comm 10.355).</li> <li>Tank is used and has been tested for leaks. Air Hydrostatic</li> </ol>				H	H
	3. Tank has vents installed and configured for: Class I, Class				ŏ	Ē
	4. Emergency relief vent is provided where required. Type: Morry			P		
	5. All normal and emergency vents terminate outside where required					
	<ol> <li>Overfill protection provided? [Comm 10.415 (12)] Make/Model:</li> <li>Tank gauge is provided.</li> </ol>				H	P
	<ol> <li>Tank gauge is provided.</li> <li>Pump mounted on tank           Pump mounted in dispenser independent of the provided of tank           Pump mounted in dispenser independent of the provided of tank           Pump mounted in dispenser independent of tank           Pump mounted in dispenser independent           Pump mounted           Pump mounted</li></ol>	endent of tank				Ц
G,	TANK HANDLING AND PRE-TESTING			1		
_	1. Tank was tested for leakage per the manufacturer's recommendation	ons8.1.1.08.		Ľ		
H,				-	-	-
	<ol> <li>Tank located per approved plans (walls, buildings, power lines, stre</li> <li>Tank is a provide plans (walls, buildings, power lines, stre</li> </ol>	ets, well, etc.).			H	H
	<ol> <li>Tank is spaced a minimum of 3 feet from any other tank. (NFPA 30</li> <li>Tank foundation designed to minimize settling.</li> </ol>				H	H
	4. Emergency shul-off installed			E E	ŏ	Ħ
L.	PROJECT SITE				Contract No. of Contractor	
	1. Collision protection provided.					2
	2. Vehicle fueling tank is secured by non combustible enclosure					াব্যব
	Warning signs posted for dispensing area.     A rated fire extinguisher provided.				H	H
J.	PIPING MATERIAL IS: Fiberglass; Steel; or Other (type)	the second s	inger-strainingeringer			<u> </u>
	Pipe installation is: Single wall or double wall.					
	Check one of the types below before proceeding to answer question					
	Piping System Type: 1. Pressurized piping with a. auto shutoff,	b. Dalarm, or c. Dfl	ow restrictor.			
	<ol> <li>Suction piping with check valve at tank.</li> <li>E Suction piping with check valve at pump an</li> </ol>	dipensatable				
	Aboveground Pine:					1.1
	1. Coated to inhibit corrosion.	*****		0/		E
	2. Supported and protected against physical damage and stress					
	3. Piping was isolated from the tank and dispenser and air tested at 15	50% of operating pres	sures of the	-		
	system (but not less than 50 p.s.i.) for 1 hour			····· 🗹		Ц

(1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.	Inderground Pipe         Piping is sloped back to tank (min. 1/8 inch per foot).         Piping is evenly and adequately supported by at least 6 inches of backfill bedding.         Piping trench provides at least 18 inches of compacted backfill and paving on top of piping.         Pipes are separated by at least twice the pipe diameter.         Pipes are separated from the trench excavation sidewalls by at least 6 inches.         Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.         Metal piping protected from corrosion by: □ cathodic protection or □ impressed current.         Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.         Piping was isolated from the tank and dispenser and air tested at 150% of operating pressure of the system (but not less than 50 psig) for 1 hour prior to backfilling.         After backfilling, piping was isolated from the tank and dispenser and precision tested at 110% of operating pressure but not less than 50 psi for 1 hour.         Test stations have been installed for monitoring cathodic protection on piping.         Approved flexible connectors are used below the dispenser.         Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.		<b>_ _ _ _</b>	রে রেরেরে বেরেরেরেরে
1	CONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING) . Tank: Diked Double Wall Remote impounding Tank clearance with dike walls and floor. Vehicle fueling Bulk storage Interstitial monitoring Automatic (verified as operative) Other (specify) Piping Leak Detection Method: used if pressurized or suction with check valve at tank: Interstitial mon			
		Not require	d (visual)	
3.	Manufacturer / Vendor: Probe #:			
4.	Model Name/#: Material Approval #:			R
· Manufacture and a second	Catastrophic Manufacturer Name: Model: Material Appro	oval #:		Contractory of the local division of the loc
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	Check valve installed in piping at connection/disconnection for tank vehicle. Tank is provided with spill protection. Dispensing device is listed and has proper setbacks. Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)] Anti-siphon device provided on tank mounted pump. Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70). Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment Emergency shutoff clearly identified and accessible. Where required, listed emergency breakaway, hose and dispensing devices are provided. Dispensing nozzle at marine service stations shall be auto-closing without hold open device. Hose length:ft.		aad aaalaac	म्रायावायायात्राम्
Installa Compa (?] I certify plans, Installe N. INS Inspec	y that the tank system and related components have been installed according to the manufacturer's instruct and comply with Comm 10.	Installer Co 4/03 ions, condit	54)01 ertification N 4	25.0
Date Sig		Operator #: FDID #:		608
TANKI	INVENTORY FORM ERS-8731 SIGNED BY THE OWNER MUST BE SUBMITTED WITH EACH INSTAL	0008	67	

	Commerce.wi.gov       CHECKLIST FOR ABOVEGROUND       Return Completed         Misconsin       TANK INSTALLATION       Wisconsin Department         Reg Obj#: For Office Use Only       Complete one form for each tank and related piping.       ERS Division         his checklist covers       The information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m)].       Description	nent of Co m Produc 7-7837	ommerce	inks
	astallation of: 「Tank; 「Piping; Secondary Containment; Overfill Protection; Vapor i ヘッド そ 「Leak Detection; Spill Containment; Automated Fueling (key-card-code)			
	IDENTIFICATION: (Please Print)         Installation Name         Installation Name         Installation Name         Image: Print Provided Convices Of The Print Prin	State State Uisconin Clude area 34- U	Co, Fin Zip Code 5476 code)	
	LAND OWNER TYPE (check one)	-	Utility	
	□ Residential       □ Private         OCCUPANCY TYPE (check one)         Gas/Retail Sales       □ Bulk Storage       □ Terminal Storage       □ Industrial       □ Mercantile/Commercial       □ Backup or E         Agricultural (Crop or livestock production)       □ Government       □ School       □ Utility       □ Residential       □ Other (specify)         PLAN APPROVAL       1.       Plans have been approved. State plan number/LPO plan number is:       □ \$\sum_1 \sum_2	Installer Verified	Generator Inspector Verified	NA
F.	TANK CONSTRUCTION         1. Tank exhibits recognized Listing or API label (Comm 10.355)         2. Tank is used and has been tested for leaks.       Air I Hydrostatic Length of test:min.         3. Tank has vents installed and configured for: I Class I, I Class II, I Class III product	विष्वित्वताव		
G,	TANK HANDLING AND PRE-TESTING         1. Tank was tested for leakage per the manufacturer's recommendations.         8./7./08	Ø		
H.	TANK SITE         1. Tank located per approved plans (walls, buildings, power lines, streets, well, etc.).         2. Tank is spaced a minimum of 3 feet from any other tank. (NFPA 30 Table 2-1).         3. Tank foundation designed to minimize settling.         4. Emergency shut-off installed	DE		
I.	<ol> <li>PROJECT SITE</li> <li>Collision protection provided. Cement filled pipe Traffic bullards Other</li> <li>Vehicle fueling tank is secured by non combustible enclosure.</li> <li>Warning signs posted for dispensing area.</li> <li>A rated fire extinguisher provided.</li> </ol>	M.		
J.	PIPING MATERIAL IS:       Fiberglass;       Steet; or       Other (type)         Pipe installation is:       Image: Single wall or       double wall.         Check one of the types below before proceeding to answer questions 1-3 and/or 1-13.         Piping System Type:       1.       Pressurized piping with a.       auto shutoff, b.       lalarm, or c.       filow restrictor.         2.       Suction piping with check valve at tank.       3.       Suction piping with check valve at pump and inspectable.         Aboveground Pipe:       1.       Coated to inhibit corrosion.       Stanless.         2.       Supported and protected against physical damage and stress.       3.         3.       Piping was isolated from the tank and dispenser and air tested at 150% of operating pressures of the system (but not less than 50 p.s.i.) for 1 hour.	र्षे विव		

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	Jnderground Pipe         Piping is sloped back to tank (min. 1/8 inch per foot).         Piping is evenly and adequately supported by at least 6 inches of backfill bedding.         Piping trench provides at least 18 inches of compacted backfill and paving on top of piping.         Pipes are separated by at least twice the pipe diameter.         Pipes are separated from the trench excavation sidewalls by at least 6 inches.         Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.         Metal piping protected from corrosion by:       □ cathodic protection or □ impressed current.         Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.       Piping was isolated from the tank and dispenser and air tested at 150% of operating pressure of the system (but not less than 50 psig) for 1 hour prior to backfilling.         After backfilling, piping was isolated from the tank and dispenser and precision tested at 110% of operating pressure but not less than 50 psi for 1 hour.         Test stations have been installed for monitoring cathodic protection on piping.         Approved flexible connectors are used below the dispenser.         Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.         ECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)			রে রেব্রের রেরেরেরের্বার্ব্য :
1	. Tank:  Diked Double Wall Remote impounding Tank clearance with dike walls and floor. Interstitial monitoring. Automatic (verified as operative) Other (specify)			
2.	Piping Leak Detection Method: used if pressurized or suction with check valve at tank: Interstitial moni		ed (visual)	
3.	Manufacturer / Vendor: Probe #:	voi require	u (visual)	
4.	Model Name/#: Material Approval #:			
A DESCRIPTION OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER	Catastrophic Manufacturer Name: Model: Material Approv	val #:	A MARK STORE STORE	All and a second se
BACKLONES, DAMAGE	Check valve installed in piping at connection/disconnection for tank vehicle.     Tank is provided with spill protection.     Dispensing device is listed and has proper setbacks.     Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]     Anti-siphon device provided on tank mounted pump.     Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).     Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment     Emergency shutoff clearly identified and accessible.     Where required, listed emergency breakaway, hose and dispensing devices are provided.     Dispensing nozzle at marine service stations shall be auto-closing without hold open device.     Hose length: ft.			<u>ষ্বিতারাতার্যারোব্যের</u>
Installa WRR Compa ( ?   I certify plans, Installe N. INS Inspection	Environmental Servicer & Inc 5200 Ryder Road Eau Claure any Telephone No. (include area code) 5) <u>834-9624</u> y that the tank system and related components have been installed according to the manufacturer's instruction and comply with Comm 10. Er Signature: Environment Mark Date Signed: 8/11 SPECTOR INFORMATION stion Dates: 1/6/25/05 2) 7-14-05 3) 10/2/08 4) 5) 6) ion Company Name: Chappen Live District 1 or Signature: Inspector #: <u>35/107</u> Local O	41034 ons, condi 8/08	54)01 ertification N	proved
TANKI	INVENTORY FORM ERS-8731 SIGNED BY THE OWNER MUST BE SUBMITTED WITH EACH INSTALL	ATION CI	HECKLIST	

Washington       Washington       Wisconsider         State       Zip Odde       County       County       Telephone No. (include area code         Wisconsin       SANOI       Ean Claute       (715)       834-9624         B. TANK CONTENTS (Current, or previous product if tank now empty)       Desel       Leaded       Unleaded       Gasohol       Aviation       Premix       Fuel Oil       Kerosene       Waste/Used Materia	P Code
Itemplete one form for each       Bureau of Petroleum Products a         tank and related piping.       Bureau of Petroleum Products a         This checklist covers       The information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m)].       Bureau of Petroleum Products a         This checklist covers       Secondary purposes [Privacy Law, s. 15.04(1)(m)].       Madison, WI 53707-7837         Installation of:       Tank; [Piping; ] Secondary Containment; [Overfill Protection; [Vapor Recovery; Tank H] [Leak Detection; [Spill Containment; Automated Fueling (key-card-code); [Lining         A. IDENTIFICATION:       (Please Print)       1. Installation Name       2. Owner Name         WTR Environ methal       Secondary Containment; [Overfill Protection; [Vapor Recovery; Installation Street Address (not P.O. Box)       Switch Recover Commethal Securices Co	p Code 5470
This checklist covers       The information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m)].       P. O. Box 7837 Madison, WI 53707-7837         This checklist covers       Secondary purposes [Privacy Law, s. 15.04(1)(m)].       Madison, WI 53707-7837         installation of:       Tank;       Pipping;       Secondary Containment;       Overfill Protection;       Vapor Recovery;         Townk       HH       Leak Detection;       Spill Containment;       Automated Fueling (key-card-code);       Lining         A. IDENTIFICATION:       (Please Print)       1.       Installation Name       2.       Owner Name       Secondary Containment;       Automated Fueling (key-card-code);       Lining         Mathematication Street Address (not P.O. Box)       Owner Street Address       Secondary       Owner Street Address       Secondary         State       Zip Code       County       Village       Town of:       State       Zip Code       Misconstruct       Secondary       Misconstruct       Secondary       Misconstruct       Misconstruct       Misconstruct       Misconstruct       Secondary       Secondary       State       Zip Code       County       Telephone No. (include area code       Misconstruct       Misconstruct       Misconstruct       Misconstruct       Misconstruct       Misconstruct       Misconstruct       Misconstruct </td <td>p Code 5470</td>	p Code 5470
This checklist covers       secondary purposes [Privacy Law, s. 15.04(1)(m)].       Madison, WI 53707-7837         Installation of:       Tank;       Piping;       Secondary Containment;       Overfill Protection;       Vapor Recovery;         Touck       HH       Leak Detection;       Spill Containment;       Overfill Protection;       Vapor Recovery;         Touck       HH       Leak Detection;       Spill Containment;       Overfill Protection;       Vapor Recovery;         A. IDENTIFICATION:       (Please Print)       1.       Installation Name       2.       Owner Name         WTR       Euvineum workal       Secondary core Cot, Tucc.       WRR       Euvineum workal       Secondary core         Installation Street Address (not P.O. Box)       Owner Street Address       S200 Ryder Road       State       State       State       Washington       Witscand       Witscand       Witscand       Witscand       Witscand       Witscand       Witscand       State       State       State       State       State       State       County       Telephone No. (include area code         Witscandus Waste       County       County       County       Telephone No. (include area code       Witscand       State       Unknown       County       Telephone No. (include area code       Witscand       Unk	p Code 5 4 20 1
installation of:       Tank;       Piping;       Secondary Containment;       Overfill Protection;       Vapor Recovery;         Tounk       HH       Leak Detection;       Spill Containment;       Automated Fueling (key-card-code);       Lining         A. IDENTIFICATION:       (Please Print)       1.       Installation Name       2.       Owner Name         WAR       Euviron word all       Services       GF, Tuc.       WRR       Euviron moutall       Services       C8         Installation Street Address (not P.O. Box)       State       S2.00 R ydler       Road       State       S100 R ydler       Maschington of:       State       State       Village       Town of:       State       Vilsconsul       S34-9624         State       Zip Gode       County       County       County       Telephone No. (include area code         Wisconserve       Sa4-9624       Eau       Clarke       Clarke       15 334-9624         B. TANK CONTENTS (Current, or previous product if tank now empty)       Diesel       Leaded       Unleaded       Gasohol       Aviation       Premix       Fuel Oil       Kerosene       Waste/Used Mo         Ø'Hazardous Waste       Chemical (Specify name & CAS#):       Other       Other       Unknown       Utilitity         C. L	p Code 5 4 20 1
Tank HH       Leak Detection;       Spill Containment;       Automated Fueling (key-card-code);       Lining         A. IDENTIFICATION:       (Please Print)       1.       Installation Name       2.       Owner Name       2.       Owner Name         WRR       Environ mental       Services       Gr.       WRR       Environ mental       Services       Cervices       Cervices<	p Code 5 4 20 1
1. Installation Name       2. Owner Name         WRR Environ wondal Services Cot, Inc.       WRR Environ mondal Services Cot         Installation Street Address (not P.O. Box)       Owner Street Address         52.00       Ryder Road       52.00         City       Village       Town of:       City         Washington       Washington       Willage       Town of:         State       Zip Oode       County       County       Telephone No. (include area code         Wiscowsin       S4/01       Eau Claute       (D15)       834-4624         B. TANK CONTENTS (Current, or previous product if tank now empty)       Diesel       Leaded       Unleaded       Gasohol       Aviation       Premix       Fuel Oil       Kerosene       Waste/Used Mo         @"Hazardous Waste       Chemical (Specify name & CAS#):       Other       Unknown       County         C. LAND OWNER TYPE (check one)       State       County       Federal Leased       Tribal Nation       Other Government       Utility         Residential       Private       Private       Federal Counts       Other Government       Utility	p Code 5 4 20 1
White Environ mental Services Gr. Tinc.       White Environ mental Services Gr. Tinc.         Installation Street Address (not P.O. Box)       Owner Street Address         52.00       Ryder Road       52.00       Ryder Road         City       Village       Town of:       City       Village       Town of:       State         State       Zip Oode       County       County       County       Telephone No. (include area code         Wisconsin       54-701       Ean Cloube       Ean Cloube       (715)       834-9624         B. TANK CONTENTS (Current, or previous product if tank now empty)       Diesel       Leaded       Unleaded       Gasohol       Aviation       Premix       Fuel Oil       Kerosene       Waste/Used Mote         @'Hazardous Waste       Chemical (Specily name & CAS#):       Other       Other       Unknown       Unknown         C. LAND OWNER TYPE (check one)       State       County       Municipal       Federal Leased       Tribal Nation       Other Government       Utility         Residential       Private       Private       Private       Private	p Code 5 4 20 1
Installation Street Address (not P.O. Box)       /       Owner Street Address         52.00       Ryder       Road         City       Village       Town of:       52.00       Ryder       Road         City       Village       Town of:       Cliv       Village       Town of:       State         State       Zip Gode       County       County       Telephone No. (include area code         Wisconsin       State       State       County       Telephone No. (include area code         Wisconsin       State       State       County       Telephone No. (include area code         B. TANK CONTENTS (Current, or previous product if tank now empty)       Diesel       Leaded       Unleaded       Gasohol       Aviation       Premix       Fuel Oil       Kerosene       Waste/Used Mo         Ø'Hazardous Waste       Chemical (Specify name & CAS#):       Other       Unknown       Unknown       C         State       County       Municipal       Federal Owned       Federal Leased       Tribal Nation       Other Government       Utlitty         State       County       Municipal       Federal Owned       Federal Leased       Tribal Nation       Other Government       Utlitty         Residential       Private       Private	p Code 5 4 20 1
52.00       Ryder       Road       52.00       Ryder       Road         City       Village       Village       Town of:       Cliv       Village       Town of:       State       Zip         State       Zip Göde       County       County       Telephone No. (include area code       Wiscoursing       State       Viscoursing       State       State       County       Telephone No. (include area code       Viscoursing       State       State       State       State       State/Used Mode         Diesel       Leaded       Unleaded       Gasohol       Aviation       Premix       Fuel Oli       Kerosene       Waste/Used Mode         Mazardous Waste       Chemical (Specify name & CAS#):       Other       Other       Unknown       Unknown       Unknown       Utlitty         State       County       Municipal       Federal Owned       Federal Leased       Tr	5-4701 ) 
City       Village       Town of:       City       Village       Town of:       State       Zip         Washington       Washington       Wisconsington       Wisconsington       Wisconsington         State       Zip Gode       County       County       County       Telephone No. (include area code         Wisconsington       State       Zip Gode       County       Eau       Clouble       Telephone No. (include area code         Wisconsington       State       State       State       County       Eau       Clouble       Telephone No. (include area code         Wisconsington       State       State       State       County       Eau       Clouble       Telephone No. (include area code         Wisconsington       State       State       State       State       Waste/Used Mo         Diesel       Leaded       Unleaded       Gaschol       Aviation       Premix       Fuel Oil       Kerosene       Waste/Used Mo         Waste/Used       Gaschol       Aviation       Premix       Fuel Oil       Kerosene       Unknown         C. LAND OWNER TYPE (check one)       State       County       Municipal       Federal Owned       Federal Leased       Tribal Nation       Other Government       Utility	5-4701 ) 
State       Zip Gode       County       County       Telephone No. (include area code         Uisconsin       54701       Ean       Claude       (715)       834-9624         B. TANK CONTENTS (Current, or previous product if tank now empty)       Deseel       Leaded       Unleaded       Gasohol       Aviation       Premix       Fuel Oil       Kerosene       Waste/Used Mo         2"Hazardous Waste       Chemical (Specify name & CAS#):       Other       Unknown       Unknown         C. LAND OWNER TYPE (check one)       State       County       Municipal       Federal Owned       Federal Leased       Tribal Nation       Other Government       Utility         Residential       Private       Private       Private       Private	e)
Used with the second	otor Oil
B. TANK CONTENTS (Current, or previous product if tank now empty) Desel Leaded Unleaded Gasohol Aviation Premix Fuel Oli Kerosene Waste/Used Model Waste/Used Model Waste/Used Model Waste/Used Model Waste/Used Model C. LAND OWNER TYPE (check one) State County Municipal Federal Owned Federal Leased Tribal Nation Other Government Utility Residential Private	otor Oil
Dlesel Leaded   Unleaded Gasohol   Aviation Premix   Fuel Oil Kerosene   Waste/Used Model   Hazardous Waste Chemical (Specify name & CAS#):   Other Unknown   C. LAND OWNER TYPE (check one)   State County   Municipal Federal Owned   Federal Leased   Tribal Nation Other Government   Utility	
Image: Chemical (Specify name & CAS#):       Image: Other       Image: Unknown         Image: Check one)       Image: Other       Image: Unknown         Image: State       Image: County       Image: Municipal       Image: Federal Owned       Image: Federal Leased       Image: Tribal Nation       Image: Other Government       Image: Utility         Image: Residential       Image: Private       Image: Private       Image: Chemical (Specify name & CAS#):	Empty
State County Municipal Federal Owned Federal Leased Tribal Nation Other Government Utility Residential	
Residential Private	
	ť.
Gas/Retail Sales Bulk Storage Terminal Storage Industrial Mercantile/Commercial Backup or Emergency Gene	erator
Agricultural (Crop or livestock production) Government School Utility Residential Other (specify):	
E. PLAN APPROVAL Installer Inst	pector NA
Verified Ve	erified
1. Plans have been approved. State plan number/LPO plan number is: 1510720	
2. Tank Capacity: 6,180 gallons.	
3. Public POS dispensing (include form ERS 6294 POS) Vehicle Marine craft Aircraft	
F. TANK CONSTRUCTION 1. Tank exhibits recognized Listing or API label (Comm 10.355)	
<ol> <li>Tank exhibits recognized Listing or API label (Comm 10.355)</li> <li>Tank is used and has been tested for leaks. Air PHydrostatic Length of test: min.</li> <li>Tank has vents installed and configured for; Class I, Class II, Class III product</li></ol>	
3. Tank has vents installed and configured for: D'Class I, DClass II, Class III product	
5. All normal and emergency vents terminate outside where required 6. Overfill protection provided? [Comm 10.415 (12)] Make/Model:	님 片
7. Tank gauge is provided.	d d
8. Pump mounted on tank  Pump mounted in dispenser independent of tank	
G. TANK HANDLING AND PRE-TESTING	
TANK HANDLING AND PRE-TESTING     Tank was tested for leakage per the manufacturer's recommendations	
H. TANK SITE 1. Tank located per approved plans (walls, buildings, power lines, streets, well, etc.).	n n
<ol> <li>Tank located per approved plans (wais, buildings, power lines, siteets, weil, etc.).</li> <li>Tank is spaced a minimum of 3 feet from any other tank. (NFPA 30 Table 2-1)</li></ol>	HH
<ol> <li>Tank is spaced a minimum of 3 feet from any other tank. (NFPA 30 Table 2-1)</li> <li>Tank foundation designed to minimize settling.</li> </ol>	ō ō
4. Emergency shut-off installed	
I. PROJECT SITE	
1. Collision protection provided.	
<ol> <li>Vehicle fueling tank is secured by non combustible enclosure.</li> <li>Warning signs posted for dispensing area.</li> </ol>	HH
4. A rated fire extinguisher provided.	d d
J. PIPING MATERIAL IS: Fiberglass; Steel; or Other (type)	
Pipe installation is: 🗹 single wall or 🗌 double wall.	
Check one of the types below before proceeding to answer questions 1-3 and/or 1-13.	
Check one of the types below before proceeding to answer questions 1-3 and/or 1-13. Piping System Type: 1. Pressurized piping with a. auto shutoff, b. alarm, or c. flow restrictor,	
Check one of the types below before proceeding to answer questions 1-3 and/or 1-13. Piping System Type: 1. Pressurized piping with a. auto shutoff, b. alarm, or c. flow restrictor, 2. Suction piping with check valve at tank.	
Check one of the types below before proceeding to answer questions 1-3 and/or 1-13. Piping System Type: 1. Pressurized piping with a. auto shutoff, b. alarm, or c. flow restrictor,	
Check one of the types below before proceeding to answer questions 1-3 and/or 1-13. Piping System Type: 1. Pressurized piping with a. auto shutoff, b. alarm, or c. flow restrictor, 2. Suction piping with check valve at tank. 3. Suction piping with check valve at pump and inspectable. Aboveground Pipe: 1. Coated to inhibit corrosion.	
Check one of the types below before proceeding to answer questions 1-3 and/or 1-13. Piping System Type: 1. Pressurized piping with a. auto shutoff, b. alarm, or c. flow restrictor, 2. Suction piping with check valve at tank. 3. Suction piping with check valve at pump and inspectable. Aboveground Pipe: 1. Coated to inhibit corrosion.	
Check one of the types below before proceeding to answer questions 1-3 and/or 1-13. Piping System Type: 1. Pressurized piping with a. auto shutoff, b. alarm, or c. flow restrictor, 2. Suction piping with check valve at tank. 3. Suction piping with check valve at pump and inspectable. Aboveground Pipe: 1. Coated to inhibit corrosion.	

- CONTINUE ON NEXT PAGE -

2. 3. 4. 5. 6. 7. 8. 9.	Inderground Pipe         Piping is sloped back to tank (min. 1/8 inch per foot).         Piping is evenly and adequately supported by at least 6 inches of backfill bedding.         Piping trench provides at least 18 inches of compacted backfill and paving on top of piping.         Pipes are separated by at least twice the pipe diameter.         Pipes are separated from the trench excavation sidewalls by at least 6 inches.         Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.         Metal piping protected from corrosion by: □ cathodic protection or □ impressed current.         Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.         Piping was isolated from the tank and dispenser and air tested at 150% of operating pressure of the			হাবেরবার্বে
10.	system (but not less than 50 psig) for 1 hour prior to backfilling. After backfilling, piping was isolated from the tank and dispenser and precision tested at 110% of operating	. 🗆		Y
	pressure but not less than 50 psi for 1 hour			ব্যব্যব
12.	Test stations have been installed for monitoring cathodic protection on piping Approved flexible connectors are used below the dispenser.		H	DID
13.	Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	_		ব
K. SE	CONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)			
	Tank:       Diked       Double Wall       Remote impounding         Tank clearance with dike walls and floor.       Vehicle fueling       Bulk storage         Interstitial monitoring       Automatic (verified as operative)       Other (specify)		poo	
.2.	Piping Leak Detection Method: used if pressurized or suction with check valve at tank: Interstitial mon	/ -	ed (visual)	
3.	Groundwater monitoring Tightness testing Line leak detector Vapor monitoring Manufacturer / Vendor: Probe #:	Not require	ed (visual)	
_	Model Name/#: Material Approval #:			-
The Real Property lies and the real Property lies of the real Property	Catastrophic Manufacturer Name: Model: Material Appro	val #:		
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	Tank is provided with spill protection. Dispensing device is listed and has proper setbacks. Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)] Anti-siphon device provided on tank mounted pump. Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70). Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment Emergency shutoff clearly identified and accessible. Where required, listed emergency breakaway, hose and dispensing devices are provided. Dispensing nozzle at marine service stations shall be auto-closing without hold open device.			ष्रिणवण्यव्यित्
Installa WRR Compa (?) I certifi plans, Installe N. INS	Environmental Services Co Inc. 5200 Ryder Road Eau Claire iny Telephone No. (include area code) 5 334-9624 by that the tank system and related components have been installed according to the manufacturer's instruction and comply with Comm 10.	41034 ons, condi	54901 Certification I	
Inspecti	ion Company Name: chippens Feis Destrol		2620	. 0
	or Signature: <u>Drumely</u> <u>Inspector #: <u>35/67</u> Local C gned: <u>10/2/08</u> Fire department providing coverage: <u>Township Five Appt.</u></u>		18060	100 0000
_	MMENTS: HH	ATION C	HECKLIST	
TANK I	INVENTORY FORM ERS-8731 SIGNED BY THE OWNER MUST BE SUBMITTED WITH EACH INSTALL		HECKLIST 0871	•

wisconsin (	CHECKLIST FOR AI TANK INSTAL		Return Comple			
Reg Obj #: For Office Use Only	Complete one for	rm for each	Wisconsin Depa ERS Division Bureau of Petrol			nke
	tank and relate The information you provide n		P. O. Box 7837		anu ra	1113
This checklist covers	secondary purposes [Privacy	Law, s.15.04(1)(m)].	Madison, WI 53			
	ng; Secondary Conta n; Spill Containmen					
A. IDENTIFICATION: (Please Print)				and in succession of the local diversion of t		
1. Installation Name WRR Environmental S	envices GT. Inc.	2. Owner Name	montal Se	2414FCES	Co T.	~
Installation Street Address (not P.O. Box)	avices up, mac,	Owner Street Address		SUPICES_		<u>C1</u>
5200 Ryder Road	F2	5200 Ryde	Particul	State	Zip Code	
City - Village	Town of:	City Unashingt		Wiscons		
State Zip Oode	County	County	Telephone No.	(include area	code)	
Wisconsin 54-701	Ean Claire	Fan clade	(715)	834-26	24	
B. TANK CONTENTS (Current, or pro	d Gasohol Aviatio		II 🗌 Kerosene	Waste/Use	ed Motor Oil	
Pazardous Waste Chemica	I (Specify name & CAS#):	Other	-	Unknown		
C. LAND OWNER TYPE (check one)	Federal Owned	deral Leased 🔲 Tribal Na	tion 🗌 Other Gove		Utility	
Residential Private				animieni 🗆	ounty	
D. OCCUPANCY TYPE (check one)						
에 물질 것 같아요. 그는 것을 잘 가져야 했다. 것을 가지 않는 것을	] Terminal Storage			or Emergency	Generator	
Agricultural (Crop or livestock production)	Government Sch	ool 🗍 Utility 🗋 Resid	lential 🔲 Other (spec			
E. PLAN APPROVAL				Installer Verified	Inspector Verified	NA
1. Plans have been approved. Sta	te plan number/LPO plan n	umber is:15101	120			
2. Tank Capacity: 10 りろの						
3. Public POS dispensing (incl	ude form ERS 6294 POS)	🗌 Vehicle 🗌 🛛	Narine craft 🛛 🗍	Aircraft		
F. TANK CONSTRUCTION 1. Tank exhibits recognized Listing	or API label (Comm 10.35	5)				n
<ol><li>Tank is used and has been test</li></ol>	ed for leaks. 🗌 Air 🗹 H	ydrostatic Length of test	: mir	1. E	H	Ø
<ol><li>Tank has vents installed and co</li></ol>	onfigured for: Class I,	Class II, Class III	product		B	
<ol> <li>Emergency relief vent is provide</li> <li>All normal and emergency vent</li> </ol>	s terminate outside where r	riorrison		्रात्त्र स्ट्रां इत्त्रस्टात्	H	H
6. Overfill protection provided? [C	omm 10.415 (12)] Make/M	lodel:		- UK		D
<ol> <li>Tank gauge is provided</li> <li>Pump mounted on tank </li> </ol>	Pump mounted in dispans	er independent of tank	٦		Ц	
G. TANK HANDLING AND PRE-TEST	ING			-		
1. Tank was tested for leakage pe	r the manufacturer's recom	mendations8/4/c	8	🗹		
<ul> <li>H. TANK SITE</li> <li>1. Tank located per approved plan</li> </ul>	wells buildings never li	inan atranta wall ata )		TT		
<ol> <li>Tank located per approved plar</li> <li>Tank is spaced a minimum of 3</li> </ol>					H	H
3. Tank foundation designed to m	inimize settling			M		
4. Emergency shut-off installed.						
<ol> <li>PROJECT SITE</li> <li>Collision protection provided.</li> </ol>	Cement filled pipe	raffic bullards  Other		П		M
2. Vehicle fueling tank is secured	by non combustible enclosu	ure			Ē	
<ol> <li>Warning signs posted for disper 4. A rated fire extinguisher provide</li> </ol>					H	H
J. PIPING MATERIAL IS: Fibergla			second in the local data was not as a second s			
Pipe installation is: V single wal		(type)				
Check one of the types below bef						
Piping System Type: 1. Pressur 2 Suction	piping with check valve at		. Utiow restrictor.			
3. Suction	piping with check valve at					
Aboveground Pipe: 1. Coated to inhibit corrosion,	st.1					-
<ol> <li>Coated to inhibit corrosion,</li> <li>Supported and protected agains</li> </ol>					H	SIC
<ol><li>Piping was isolated from the tan</li></ol>	k and dispenser and air tes	sted at 150%, of pperating	pressures of the		-	_
system (but not less than 50 p	.s.i.) for 1 hour.	8/6/08				

11. 12. 13.	Aderground Pipe /Piping is sloped back to tank (min. 1/8 inch per foot). Piping is evenly and adequately supported by at least 6 inches of backfill bedding. Piping trench provides at least 18 inches of compacted backfill and paving on top of piping. Pipes are separated by at least twice the pipe diameter. Pipes are separated from the trench excavation sidewalls by at least 6 inches. Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated. Metal piping protected from corrosion by: a cathodic protection or a impressed current. Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better. Piping was isolated from the tank and dispenser and air tested at 150% of operating pressure of the system (but not less than 50 psig) for 1 hour prior to backfilling. After backfilling, piping was isolated from the tank and dispenser and precision tested at 110% of operating pressure but not less than 50 psi for 1 hour. Test stations have been installed for monitoring cathodic protection on piping. Approved flexible connectors are used below the dispenser. Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.			বে বেবের রে রেরেররেরের
1.	CONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING Tank: Diked Double Wall Remote impounding Tank clearance with dike walls and floor. Vehicle fueling Bulk storage Interstitial monitoring Automatic (verified as operative)			
- Kan -		Not require	ed (visual)	
3.	Manufacturer / Vendor: Probe #			
4.	Model Name/#: Material Approval #:	TYME STREET IN MICH.		
<ul> <li>Beneric and the second s</li></ul>	Catastrophic Manufacturer Name: Model: Material Ap	oproval #:	Principle Apparture 1924	And U.S. Anderson of
L. LI 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	Check valve installed in piping at connection/disconnection for tank vehicle. Tank is provided with spill protection. Dispensing device is listed and has proper setbacks. Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)] Anti-siphon device provided on tank mounted pump. Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70). Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment Emergency shutoff clearly identified and accessible. Where required, listed emergency breakaway, hose and dispensing devices are provided.	okoedaaka		ৰ্বিটাজাটাই বিধিয়া
Installa WRR Compa (? ( I certify plans, Installe N. INS Inspecti Inspecto	that the tank system and related components have been installed according to the manufacturer's instr and comply with Comm 10. Date Signed: PECTOR INFORMATION tion Dates: 1) 6/25/08 2) 7/14/08 3) 10/2/08 4) 5) on Company Name: Chuppense File Defined	/ Installer C 4103	S4) 01 ertification N S4 tionally app	proved
0, CO	MMENTS: J			
TANK I	NVENTORY FORM ERS-8731 SIGNED BY THE OWNER MUST BE SUBMITTED WITH EACH INST	8000	373	

commerce.wi.gov	CHECKLIST FOR A		Return Completed	Checkli	st To:	
Mass Department of Commerce	TANK INSTA	LLATION	Wisconsin Departn			
Reg Obj#: For Office Use Only	Complete one fo		ERS Division Bureau of Petroleu	m Produc	ts and Ta	inks
	tank and relate The information you provide		P. O. Box 7837	minioduc		TIND
This checklist covers	secondary purposes [Privacy		Madison, WI 5370	7-7837		
	iping; Secondary Cont	ainment; Overfill P	rotection; Vapor	Recovery	G	
Tank K Leak Detec	the first of the second s	nt; Automated Fue	ling (key-card-code)	; 🗍 Linir	ng	
A. IDENTIFICATION: (Please Prin	it)	In constant				
1. Installation Name	Courses Con The	2. Owner Name	montal son	e sendin (	no T	
Installation Street Address (not P.O. Box)	Services Go, Inc.	Owner Street Address	n marinan sea	ALCOS	to the	<u>,C</u> ,
5200 Ruder Road		5200 Rude	n Road			-
City - Village	Town of:	City Villa		State	Zip Code	1
State Zip Code	County	County	Telephone No. (in	Ulscansin	5476	21
Wisconsin 54701	Ean Claure	Ean Clade		34- 26		
B. TANK CONTENTS (Current, or	previous product if tank no		1.112 0	21-10		-
Diesel Leaded Unle			Dil 🗌 Kerosene 📃	Waste/Use		
C. LAND OWNER TYPE (check on	mical (Specify name & CAS#):	Other		Unknown	Empty	
State County Munic		ederal Leased 🔲 Tribal Na	ation Other Governm	nent	Jtility	
Residential Private	the Dimensioner Div					
D. OCCUPANCY TYPE (check one						
Gas/Retail Sales Bulk Storage			the second s		Generator	
Agricultural (Crop or livestock product	lion) 🔲 Government 🔲 Sci	hool 🗌 Utility 🗌 Resi	dential D Other (specify)			and in case of the
E. PLAN APPROVAL				Installer Verified	Inspector Verified	NA
1. Plans have been approved.	State plan number/LPO plan r	number is: 1510	720	M		
2. Tank Capacity: 10 73						
	include form ERS 6294 POS)	Vehicle	Marine craft 🛛 🗍 Airc	raft		
F. TANK CONSTRUCTION				-	-	-
<ol> <li>Tank exhibits recognized Lis</li> <li>Tank is used and has been</li> </ol>	sting or API label (Comm 10.3) tested for leaks.	55)	t: min.		H	P
	d configured for: Class I,			B	Ē	
	vided where required. Type:			ৰামবেতি		
	ents terminate outside where [Comm 10.415 (12)] Make/M			1	H	V
7. Tank gauge is provided						
8. Pump mounted on tank	and the second s	ser independent of tank				
G. TANK HANDLING AND PRE-TE 1. Tank was tested for leakage	ESTING	smandations SIG	108	K		
H. TANK SITE	e per trie manulacturer s recon	ninenuations				<u> </u>
	plans (walls, buildings, power	lines, streets, well, etc.).		Q.		
2. Tank is spaced a minimum of	of 3 feet from any other tank. (	(NFPA 30 Table 2-1)		Z.		
	o minimize settling,				H	H
PROJECT SITE	Ar periodia anticontrativo anticontrativo de la contrativo de la contrativo de la contrativo de la contrativo d			- E		
1. Collision protection provided	I. Cement filled pipe					ব্র
	ed by non combustible enclos					Y
	spensing area vided				H	H
J. PIPING MATERIAL IS: Fibe		the second se				
Pipe installation is: V single	wall or 🗌 double wall.		1.7			
Check one of the types below						
Piping System Type: 1. Pres	ssurized piping with a. [] auto tion piping with check valve at		. Unow restrictor.			
	tion piping with check valve at					
About measured Dises		den en e		-	-	-
Aboveground Pipe:     Coated to inhibit corrosion     Supported and protected aga	ainst physical damage and the				H	SIC
<ol> <li>Supported and protected age</li> <li>Piping was isolated from the</li> </ol>					Ц	
system (but not less than 5				V		

2 8 77 8 9 1 1 1 1	4. 5. 5. 7. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8.	Inderground Pipe         Piping is sloped back to tank (min. 1/8 inch per foot).         Piping is evenly and adequately supported by at least 6 inches of backfill bedding.         Piping trench provides at least 18 inches of compacted backfill and paving on top of piping.         Pipes are separated by at least twice the pipe diameter.         Pipes are separated from the trench excavation sidewalls by at least 6 inches.         Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.         Metal piping protected from corrosion by:       □ cathodic protection or □ impressed current.         Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.       Piping was isolated from the tank and dispenser and air tested at 150% of operating pressure of the system (but not less than 50 psig) for 1 hour prior to backfilling.         After backfilling, piping was isolated from the tank and dispenser and precision tested at 110% of operating pressure but not less than 50 psi for 1 hour.         Test stations have been installed for monitoring cathodic protection on piping.         Approved flexible connectors are used below the dispenser.         Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.         CONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)		 	রে র্বেরে রে রেরেরেরের্বের্বে
	1.	Tank:       Diked       Double Wall       Remote impounding         Tank clearance with dike walls and floor.       Vehicle fueling       Bulk storage         Interstitial monitoring       Automatic (verified as operative)       Other (specify)		ADDD	
-6	۷.	Piping Leak Detection Method: used if pressurized or suction with check valve at tank: Interstitial mo	Not require	d (visual)	
	3.	Manufacturer / Vendor: Probe #:	, not require	d (visual)	
	4.	Model Name/#: Material Approval #:			
	5.	Catastrophic Manufacturer Name: Model: Material Appr	oval #:		
	1. 2. 3. 4. 5. 6. 7. 8. 9.	Check valve installed in piping at connection/disconnection for tank vehicle. Tank is provided with spill protection. Dispensing device is listed and has proper setbacks. Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)] Anti-siphon device provided on tank mounted pump. Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70). Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment Emergency shutoff clearly identified and accessible. Where required, listed emergency breakaway, hose and dispensing devices are provided.			ধ্ববিতাভাতাব্যজ্ঞান্য
Insta Com ( ?? I cer plan Insta N. Ir Insp	llai Palle tify s, i alle ect	r Signature: The Signed: 8 PECTOR INFORMATION	<sup>1</sup> Installer C 41034	54901 ertification N	
			Operator #: FDID #:	and the	100 P
0. C	:01	NVENTORY FORM ERS-8731 SIGNED BY THE OWNER MUST BE SUBMITTED WITH EACH INSTAL	LATION CH	IECKLIST. 875	

the second se	CHECKLIST FOR ABOVEGROUND			
é	Reg Obj #: For Office Use Only Complete one form for each ERS Division	t of Con	nmerce	
	Reg Obj #: For Office Use Only Complete one form for each ERS Division Bureau of Petroleum F	Products	and Tai	nks
	The information you provide may be used for P. O. Box 7837	700		
	I his checklist covers			
	nstallation of: 「Zank; 「Piping; Secondary Containment; Overfill Protection; Vapor Rec てっんく し □Leak Detection; □Spill Containment; □Automated Fueling (key-card-code); □		ı	
	A. IDENTIFICATION: (Please Print)			
; ,	1. Installation Name 2. Owner Name 2. Owner Name	~ ^	- T	
1	nstallation Street Address (not P.O. Box) Owner Street Address	2.80	t, the	<u>c</u> ,
-	5200 Ryder Road 5200 Ryder Road		7-0-1-	
L	City Z Village D'Town of: City D'Village D'Town of: State Washington Washington Wis	e sconsin	Zip Code	1
	State Zip Oode County County Telephone No. (includ	e area co	de)	
F	11:500 Sin 54701 Ean Clarke Ean Clarke (715) 834 3. TANK CONTENTS (Current, or previous product if tank now empty)	- 962	4	
E	Diesel Leaded Unleaded Gasohol Aviation Premix Fuel Oll Kerosene Wa	ste/Used	ALC: NO DE LA COMPLEXA	
-	Pazardous Waste Chemical (Specify name & CAS#): Other Other Uni	known [	Empty	
	State County Municipal Federal Owned Federal Leased Tribal Nation Other Government	Uti	lity	
-				
	). OCCUPANCY TYPE (check one) ] Gas/Retail Sales	gency Ge	nerator	
Ē	Agricultural (Crop or livestock production)			
E			nspector Verified	NA
	1. Plans have been approved. State plan number/LPO plan number is: 1510720			
	2. Tank Capacity: 13,200 gallons.			
F.	3.  Public POS dispensing (include form ERS 6294 POS) Vehicle Marine craft Aircraft TANK CONSTRUCTION			
E.		Ø		$\Box$ ,
	<ol> <li>Tank is used and has been tested for leaks. Air P Hydrostatic Length of test: min.</li> <li>Tank has vents installed and configured for: Class I, Class II, Class III product</li> </ol>	and and a second s	R	P
	4. Emergency relief vent is provided where required. Type: <u>Movrison</u>		H	
	All normal and emergency vents terminate outside where required     Overfill protection provided? [Comm 10.415 (12)] Make/Model:	职	$\square$	P
		D	H	
-	8. Pump mounted on tank  Pump mounted in dispenser independent of tank			
G	. TANK HANDLING AND PRE-TESTING 1. Tank was tested for leakage per the manufacturer's recommendations	1	X	
Н				
	1. Tank located per approved plans (walls, buildings, power lines, streets, well, etc.).	N		
	<ol> <li>Tank is spaced a minimum of 3 feet from any other tank. (NFPA 30 Table 2-1)</li> <li>Tank foundation designed to minimize settling.</li> </ol>	ব্ববিষ	H	H
-		Ø		
1.	PROJECT SITE	-		177
	<ol> <li>Collision protection provided. Cement filled pipe Traffic bullards Other</li> <li>Vehicle fueling tank is secured by non combustible enclosure.</li> </ol>	H	H	াব্যৰ
	<ol><li>Warning signs posted for dispensing area.</li></ol>	D		
	4. A rated fire extinguisher provided.	L		
J.	PIPING MATERIAL IS: Fiberglass; Steel; or Other (type)			, e.
	Check one of the types below before proceeding to answer questions 1-3 and/or 1-13.			
	Piping System Type: 1. Pressurized piping with a. auto shutoff, b. alarm, or c. flow restrictor. 2. Suction piping with check valve at tank.			
	<ol><li>Suction piping with check valve at pump and inspectable.</li></ol>			
	Aboveground Pipe:			1
	<ol> <li>Coated to inhibit corrosion.</li> <li>Supported and protected against physical damage and stress.</li> </ol>	1	H	
	<ol><li>Piping was isolated from the tank and dispenser and air tested at 150% of operating pressures of the</li></ol>		_	_
	system (but not less than 50 p.s.i.) for 1 hour	2	Ц,	
325		000876		

	Underground Pipe			11111111111
1.	Piping is sloped back to tank (min. 1/8 inch per foot).			P.
2.	Piping is evenly and adequately supported by at least 6 inches of backfill bedding.			
3.	Piping trench provides at least 18 inches of compacted backfill and paving on top of piping.			Y
4.	Pipes are separated by at least twice the pipe diameter		H	
* 5.	Pipes are separated from the trench excavation sidewalls by at least 6 inches.		H	ব্যরেরেরের্য্যের
6. 7.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.	H	H	
8.	Metal piping protected from corrosion by: Cathodic protection or Cimpressed current.		H	
9.	Piping was isolated from the tank and dispenser and air tested at 150% of operating pressure of the	7.1 - 7.4		100000
10.	system (but not less than 50 psig) for 1 hour prior to backfilling After backfilling, piping was isolated from the tank and dispenser and precision tested at 110% of operating			Y
	pressure but not less than 50 psi for 1 hour.			Y
	Test stations have been installed for monitoring cathodic protection on piping.		H	বার্বা
	Approved flexible connectors are used below the dispenser. Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic			4
15.	piping.			g
K CI				
	CONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)			
1	Tank clearance with dike walls and floor. Vehicle fueling		D	
	Interstitial monitoring			H
	Automatic (verified as operative).	H	H	H
	Other (specify)	H	H	H
0		itoring		
۷.	Piping Leak Detection Method: used if pressurized or suction with check valve at tank:			
		Not require	d (visual)	
3.	Manufacturer / Vendor: Probe #:		THE CONTRACTOR OF	
4.	Model Name/#: Material Approval #:		A STREET STREET	
5.	Catastrophic Manufacturer Name: Model: Material Appro	val #:		
L. L	IQUID HANDLING, TRANSFER AND USE			
1				9
2				V
3	Tank is provided with spill protection.			
4				4
5				Ø
6				N
7				
8.	9.1			Les la
9.			H	प्रिणडाणहात्वाचित
10 11	1		H	
12		•		
MURRY MARCHINE REAL		and the second sectors in		
	STALLER CERTIFICATION ition Company Name (print) Installation Company Mailing Address	City/State/Z	in Code	
		WT	FADOL	
	Environmental Sourices Co Inc. 5200 Ryder Road Eau Claire any Telephone No. (include area code) Certified Installer Name (print),	10 -	ertification N	lo
(7)				¥0.
		410.34		round
	y that the tank system and related components have been installed according to the manufacturer's instruction and comply with Comm 10.	ons, condi	lonally app	лочец
piana,	A > 1 2 a			
Install	er Signature: Druce W. Marsh _ Date Signed: 8/	8/08		
the second s	SPECTOR INFORMATION	0 ION	10.00 M 100 M 10 000	
Inspec	tion Dates: 1) $6/25/08 2$ $7/14/08 3) / 0/2/08 4$ 5) 6)			
Innneal	in Commutant of the contract			
Inspeci	ion Company Name: Chippena Fiel Restrict			
Terror and	or Signature: Kullen Inspector #: 35/67 Local C		2100	
Inspect	or Signature: 1 Local C	perator #:	262	005
Date Si	gned: 10/2/08 Fire department providing coverage: Township Five Appt	FDID #:	18060	
		-		
000	DMMENTS: L	t		
-				
TANK	INVENTORY FORM ERS 8731 SIGNED BY THE OWNED MUST BE SUDMITTED WITH EACH INSTALL	ATION CL	FCKUST	
1 MININ	INVENTORY FORM ERS-8731 SIGNED BY THE OWNER MUST BE SUBMITTED WITH EACH INSTALL	000	0877	*

Reg Obj#: Fo	Sin Infine Use Only	CHECKLIST FOR A TANK INSTAL Complete one for tank and relate The information you provide r secondary purposes [Privacy	LLATION rm for each ed piping. nay be used for	Return Comple Wisconsin Depa ERS Division Bureau of Petro P. O. Box 7837 Madison, WI 53	rtment of C	ommerce	anks
installation of Tank M		ng; Secondary Conta on; Spill Containmen	ainment; Overfill P at; Automated Fue				
1. Installation Na WRR Euvi Installation Street 5200 Ryd City State Wiscowsign B. TANK CONT Diesel O'Hazardous Wa C. LAND OWNE State Residentia D. OCCUPANC	Address (nol P.O. Box) Address (nol P.O. Box) Village Zip Oode SGNO1 ENTS (Current, or p) Leaded Unlead Iste Chemic ER TYPE (check one) County Municipa Municipa Municipa Private Y TYPE (check one)	al (Specify name & CAS#):	Owner Street Address         \$200 Rydle         City       Villa         County       Villa         County       Ean         Clauxe       Villa         w empty)       Premix         On       Premix         Other         ederal Leased       Tribal Na	A Road Ige Town of: Telephone No (715) Dil Kerosene ation Other Gove	State Wisconse (include area 834- V Waste/Us Unknown	code) 24 ed Motor Oil Empty Utility	-10
	es U Bulk Storage [ op or livestock production			dential 🔲 Other (spe	and the second se	Generator	
E. PLAN APPR				Contract Contract Cobo	Installer	Inspector	NA
2. Tank Ca 3. D Publ	apacity: <u>6,160</u> ic POS dispensing (inc	ate plan number/LPO plan n 2galions. lude form ERS 6294 POS)		N20 Marine craft	Verified Aircraft	Verified	
<ol> <li>Tank is</li> <li>Tank ha</li> <li>Emerge</li> <li>All norm</li> <li>Overfill j</li> <li>Tank ga</li> </ol>	hibits recognized Listin used and has been test is vents installed and o noy relief vent is provio nal and emergency ven protection provided? [0	ng or API label (Comm 10,38 sted for leaks. Air P H onfigured for: Class I, led where required. Type:_ ts terminate outside where r Comm 10.415 (12)] Make/W Pump mounted in dispense	Vdrostatic Length of tes ☐ Class II, ☐ Class II <u>Movrtsow</u> equired Nodel:	t: mir product			
G. TANK HANE 1. Tank wa	DLING AND PRE-TES	TING er the manufacturer's recom	mendations 8/	8.10.8	IT IT	Π	П
H. TANK SITE					1		
<ol> <li>Tank is :</li> <li>Tank for</li> </ol>	spaced a minimum of undation designed to n	ns (walls, buildings, power l 3 feet from any other tank. (I ninimize settling.	NFPA 30 Table 2-1)		90		
<ol> <li>Vehicle i</li> <li>Warning</li> </ol>	protection provided. fueling tank is secured signs posted for dispe	Cement filled pipe 1 by non combustible enclosi ensing area.	Jre				
Pipe installa Check one c Piping Syster	tion is:  single was of the types below be m Type: 1.  Pressu 2.  Suction 3.  Suction	lass; Steel; or Othe Il or double wall. fore proceeding to answe rized piping with a. auto piping with check valve at piping with check valve at	r questions 1-3 and/or shutoff, b. ⊟alarm, or o tank.	1-13. c. ∏flow restrictor.	-		
Abovegroun 1. Coated to	d Pipe: inhibit corrosion.	Stainless					V
2. Supporte	ed and protected again	st physical damage and stre nk and dispenser and air tes	ess				
system (I	out not less than 50	b.s.i.) for 1 hour.	G108				
					0008	78	

11. 12. 13.	Piping is evenly and adequately supported Piping trench provides at least 18 inches of Pipes are separated by at least twice the p Pipes are separated from the trench excav Metal piping is at least schedule 40 black s Metal piping protected from corrosion by: [ Fittings and couplings are extra-heavy mall Piping was isolated from the tank and dispo- system (but not less than 50 psig) for 1 hour After backfilling, piping was isolated from the pressure but not less than 50 psi for 1 hour Test stations have been installed for monitu Approved flexible connectors are used below Dispensers, pumps, check valves, etc., not piping.	f compacted backfill and pav ipe diameter ation sidewalls by at least 6 iteel or galvanized pipe, and cathodic protection or i i leable iron screw-type, sched enser and air tested at 150% ur prior to backfilling he tank and dispenser and pir. oring cathodic protection on bw the dispenser t cathodically protected are e	ill bedding. ing on top of piping. inches. is wrapped or coated. mpressed current. dule 40 or better. of operating pressure recision tested at 110% piping. lectrically isolated from	of the 6 of operating n metallic			র্বোর্বার রেরেরেরেরেরে
1	Tank clearance with dike walls and floor. Interstitial monitoring Automatic (verified as operative) Other (specify)	Remote impounding	Bulk storage			hooo	
·Z.,	Piping Leak Detection Method: used if pre	ssurized or suction with check ss testing   Line leak determined by the second se		/		ed (visual)	
3.	Manufacturer / Vendor:			Probe #:	riequi	er (neddi)	
4.	Model Name/#:		Viaterial Approval #:				
5.	Catastrophic Manufacturer Name:	Mode		Material Approva	al #:		COMMENSION
1 2 3 4 5 6 7 8 9 10 11	Check valve installed in piping at connect Tank is provided with spill protection Dispensing device is listed and has propi Electrically operated solenoid valve provi Anti-siphon device provided on tank mou Electric equipment and wiring is installed Aircraft fueling system provides bonding Emergency shutoff clearly identified and Where required, listed emergency breaks	tion/disconnection for tank v er setbacks. ided for vehicle fueling. [Con inted pump. in accordance with Comm 1 mechanism between aircraft accessible.	ehicle. nm 10.415 (10)] 6 (NFPA 70). and fueling equipment levices are provided.	nt			ष्विणवण्यविद
And Distances in the later.	Hose length: ft.				and the star		Constant Constant
M. INS Installa WRR Compa ( ?   I certif plans,	Hose length:fl. STALLER CERTIFICATION tion Company Name (print) <u>Environ</u> wental Sources Co- iny Telephone No. (include area code)	Certified Installer Name Brice Mc	ording to the manufact	miclaria	MI nstaller ( 4103) ns, cond		
M. INS Installa WRR Compa ( ? ) I certif plans, Installa	Hose length:fl. STALLER CERTIFICATION tion Company Name (print) <u>Environ</u> <u>mental</u> <u>Squices</u> Co- iny Telephone No. (include area code) <u>5</u> ) <u>B34-9624</u> y that the tank system and related compone and comply with Comm 10.	Inc 5200 Ryde Certified Installer Name Brice Mc	ording to the manufact	urer's instruction	MI nstaller ( 4103) ns, cond	54)01 Certification	
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-	CHECKLIST FOR ABOVEGROUND Return Completed (			
1	ISCONSIN TANK INSTALLATION Wisconsin Departme	nt of Co	mmerce	
	Reg Obj#: For Office Use Only Complete one form for each ERS Division tank and related piping. ERS Division Bureau of Petroleum	Produc	ts and Ta	inks
	The information you provide may be used for P. O. Box 7837			
	his checklist covers secondary purposes [Privacy Law, s.15.04(1)(m)]. Madison, WI 53707-			
	nstallation of:  Tank;  Piping;  Secondary Containment;  Overfill Protection;  Vapor Re			
110.000	Leak Detection; □Spill Containment; □Automated Fueling (key-card-code); DENTIFICATION: (Please Print)		g	
	1. Installation Name 2 Owner Name			
	IRR Environmental Services GT. Inc. WRR Environmental Services	) 2507	Co Tin	.C.
	stallation Street Address (nol P.O. Box) Owner Street Address			
Ē	RUNC NOR	ate	Zip Code	
_	Washington Washington W	virmont's	5470	
	tate Zip Ode County County Telephone No. (inclu Uscowsin 54701 Ean Claire Ean Claire (715) B34			
B	Misconsin 54701 Ean Claire Ean Claire (715) 83. . TANK CONTENTS (Current, or previous product if tank now empty)	9-26	24	
E	Diesel Leaded Unleaded Gasohol Aviation Premix Fuel Oil Kerosene W		d Motor Oil	
	Hazardous Waste Chemical (Specify name & CAS#): Other U . LAND OWNER TYPE (check one)	nknown	Empty	-
5	State County Municipal Federal Owned Federal Leased Tribal Nation Other Government		tility	
_	Residential			
	. OCCUPANCY TYPE (check one)		5.000 C	
	] Gas/Retall Sales 🔲 Bulk Storage 🔲 Terminal Storage 🗹 Industrial 🔲 Mercantile/Commercial 🔲 Backup or Emi ] Agricultural (Crop or livestock production) 📄 Government 📄 School 📄 Utility 📄 Residential 📄 Other (specify);	argency G	senerator	
E		staller	Inspector	NA
L	Ve	erified	Verified	140
	1. Plans have been approved. State plan number/LPO plan number is: 1510720			
	2. Tank Capacity: <u>3,2∞</u> gallons.     3. □ Public POS dispensing (include form ERS 6294 POS) □ Vehicle □ Marine craft □ Aircra			
F.		<u>au</u>	-	
	1. Tank exhibits recognized Listing or API label (Comm 10.355)	D		
	<ol> <li>Tank is used and has been tested for leaks. □ Air ☑ Hydrostatic Length of test: min.</li> <li>Tank has vents installed and configured for: ☑ Class I, □ Class II, □ Class II product</li></ol>			R
	4. Emergency relief vent is provided where required. Type: <u>Novrisous</u>		H	H
	<ol><li>All normal and emergency vents terminate outside where required</li></ol>	ব্যারাবার্টে		N
	Overfill protection provided? [Comm 10.415 (12)] Make/Model:      Tank gauge is provided	P	H	M
_	8. Pump mounted on tank  Pump mounted in dispenser independent of tank			-
G.	TANK HANDLING AND PRE-TESTING 1. Tank was tested for leakage per the manufacturer's recommendations.	R		
H.		E		
14.	1. Tank located per approved plans (walls, buildings, power lines, streets, well, etc.).	RA		
	2. Tank is spaced a minimum of 3 feet from any other tank. (NFPA 30 Table 2-1)	P		
	Tank foundation designed to minimize settling.     Emergency shut-off installed	A	Н	H
1.	PROJECT SITE			
	1. Collision protection provided.			ব্রি
	<ol> <li>Vehicle fueling tank is secured by non combustible enclosure.</li> <li>Warning signs posted for dispensing area.</li> </ol>	F	H	M
_	4. A rated fire extinguisher provided	विव	Ē	
J.	PIPING MATERIAL IS: Fiberglass; Steel; or Other (type)			
	Pipe installation is: I single wall or I double wall. Check one of the types below before proceeding to answer questions 1-3 and/or 1-13.			
	Piping System Type: 1. Pressurized piping with a. auto shutoff, b. alarm, or c. flow restrictor.			
	2. Suction piping with check valve at tank.			
	3. Suction piping with check valve at pump and inspectable.			
	1. Coated to inhibit corrosion.	$\square$		V
	<ol> <li>Supported and protected against physical damage and stress.</li> <li>Piping was isolated from the tank and dispenser and air tested at 150% of operating pressures of the</li> </ol>	Ø		
	system (but not less than 50 p.s.i.) for 1 hour.	V		
		000880	)	

1.	Inderground Pipe					
2		per foot)				7
free.	Piping is evenly and adequately supported b	by at least 6 inches of backfill bedding				~
3.		compacted backfill and paving on top of piping				2
4.		be diameter				14
5.		tion sidewalls by at least 6 inches.				M
6.		eel or galvanized pipe, and is wrapped or coate				ব্যব্যব্যব্যব্যব্য
7.		cathodic protection or impressed current.			H	
9.	Piping was isolated from the tank and disper	able iron screw-type, schedule 40 or better nser and air tested at 150% of operating press	ure of the			
10.		r prior to backfilling e tank and dispenser and precision tested at 11				2
	pressure but not less than 50 psi for 1 hour.	******				হাহাহ
11.	Approved flexible connectors are used below	ring cathodic protection on piping w the dispenser.		H	H	臣
13	Dispensers numps check values etc. not	cathodically protected are electrically isolated f	rom metallic		10000	Ľ
10.		samouloury prototo are creationly toolated i				e
K SE		TION (Check which applies under both TAN		ACCURATE OF TAXABLE PARTY.	NAME AND POST OFFICE ADDRESS OF TAXABLE PARTY.	NIS COLOR
		Remote impounding	R and Firmoj			
1.	Tank clearance with dike walls and floor.		÷		P	
					E	V
					H	Ē
	Other (specify)				Ħ	F
2		surized or suction with check valve at tank:				-
· K				-	al Asianal)	
		s testing 🔲 Line leak detector 🔛 Vapor m	and the second se	vot require	ed (visual)	-
	Manufacturer / Vendor:	and the second	Probe #:		and the second second	
Contract on the local division in	Model Name/#:	Material Approval #				
No. of Concession, Name	Catastrophic Manufacturer Name:	Model:	Material Approv	val #:	OF STATE OF STATE	AllenAuron
	QUID HANDLING, TRANSFER AND USE			-	_	_
1.		is labeled and color coded. [Comm 10.415 (11				E.
2.		ion/disconnection for tank vehicle.				V
3.	Tank is provided with spill protection					L
4.	Dispensing device is listed and has proper	r setbacks				L
5.	Electrically operated solenoid valve provid	led for vehicle fueling. [Comm 10.415 (10)]				10
6.	Anti-siphon device provided on tank moun	nted pump.				V
7.		n accordance with Comm 16 (NFPA 70)		L		L
8.		nechanism between aircraft and fueling equip		H	-	U
9.		ccessible.			님	-
10.		way, hose and dispensing devices are provide			H	L
10. 11.	Dispensing nozzle at marine service static	way, hose and dispensing devices are provide ons shall be auto-closing without hold open dev				5
10. 11. 12.	Dispensing nozzle at marine service static Hose length: ft.					L L
10. 11. 12. M. INS	Dispensing nozzle at marine service static Hose length: ft. TALLER CERTIFICATION	ons shall be auto-closing without hold open dev	vice.	. 🗆		R R
10. 11. 12. M. INS Installa	Dispensing nozzle at marine service static Hose length:ft. TALLER CERTIFICATION tion Company Name (print)	Installation Company Mailing Address	vice	City/State/2		R R
10. 11. 12. M. INS Installa	Dispensing nozzle at marine service static Hose length:ft. TALLER CERTIFICATION tion Company Name (print) Environ mental Services Co I	Installation Company Mailing Address	vice.	City/State/2	54001	
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10. 11. 12. M. INS Installa Compa ( 7 ( I certify plans, Installe N. INS Inspection Inspector Date Sig	Dispensing nozzle at marine service station Hose length: ft. TALLER CERTIFICATION tion Company Name (print) <u>Envision method</u> Sources Control ny Telephone No. (include area code) 5 ) <u>334-9624</u> y that the tank system and related component and comply with Comm 10. er Signature: <u>Birch V. Mark</u> PECTOR INFORMATION tion Dates: 1)6/25/08-2)7/14/0 on Company Name: <u>Chappend</u> br Signature: <u>Bandy</u> <u>Service</u> pred:/ <u>D</u> /2/08 Fire department providing- MMENTS: <u>N</u>	Installation Company Mailing Address Installation Company Mailing Address SZOO Ryder Road Certified Installer Name (print) Brice Marsh Inspector diagonal Marshall according to the manur Marshall according to the manur Marsh	vice Eau Clauine facturer's instruction vate Signed: 8/. 6) Local C	City/State/2 WT Installer C 4/03 ons, condi 18/08 perator #: FDID #:	<u>S4)01</u> Certification M H H H H H H H H H H H H H H H H H H H	vo.
10. 11. 12. M. INS Installa Compa ( 7 ( I certify plans, Installe N. INS Inspection Inspector Date Sig	Dispensing nozzle at marine service station Hose length: ft. TALLER CERTIFICATION tion Company Name (print) <u>Envision method</u> Sources Control ny Telephone No. (include area code) 5 ) <u>334-9624</u> y that the tank system and related component and comply with Comm 10. er Signature: <u>Birch V. Mark</u> PECTOR INFORMATION tion Dates: 1)6/25/08-2)7/14/0 on Company Name: <u>Chappend</u> br Signature: <u>Bandy</u> <u>Service</u> pred:/ <u>D</u> /2/08 Fire department providing- MMENTS: <u>N</u>	Installation Company Mailing Address Installation Company Mailing Address SZOO Ryder Road Certified Installer Name (print) Brice Marsh Installed according to the manur S 3) $1dZ/08$ 4) 5) S 3) $1dZ/08$ 4) 5)	vice Eau Clauine facturer's instruction vate Signed: 8/. 6) Local C	City/State/2 WT Installer C 4/03 ons, condi 18/08 perator #: FDID #: ATION C	<u>54)ol</u> Certification M H HECKLIST	vo.
10. 11. 12. M. INS Installa Compa ( 7 ( I certify plans, Installe N. INS Inspection Inspector Date Sig	Dispensing nozzle at marine service station Hose length: ft. TALLER CERTIFICATION tion Company Name (print) <u>Envision method</u> Sources Control ny Telephone No. (include area code) 5 ) <u>334-9624</u> y that the tank system and related component and comply with Comm 10. er Signature: <u>Birch V. Mark</u> PECTOR INFORMATION tion Dates: 1)6/25/08-2)7/14/0 on Company Name: <u>Chappend</u> br Signature: <u>Bandy</u> <u>Service</u> pred:/ <u>D</u> /2/08 Fire department providing- MMENTS: <u>N</u>	Installation Company Mailing Address Installation Company Mailing Address SZOO Ryder Road Certified Installer Name (print) Brice Marsh Inspector diagonal Marshall according to the manur Marshall according to the manur Marsh	vice Eau Clauine facturer's instruction vate Signed: 8/. 6) Local C	City/State/2 WT Installer C 4/03 ons, condi 18/08 perator #: FDID #: ATION C	<u>S4)01</u> Certification M H H H H H H H H H H H H H H H H H H H	vo.

/isconsin	HECKLIST FOR A		Return Complete Wisconsin Depart			
Reg Obj#: For Office Use Only	Complete one fo	rm for each	ERS Division Bureau of Petrole			inks
	tank and relate The information you provide r secondary purposes [Privacy	nay be used for	P. O. Box 7837 Madison, WI 537			(INO
installation of: Tank; Piping	g; Secondary Conta	ainment; 🗌 Overfill P	rotection; Vapor	Recover		
A. IDENTIFICATION: (Please Print)	; Spill Containmer	it; []Automated Fue	ling (key-caro-code	e); LILini	ng	-
1. Installation Name	C. T	2. Owner Name	10 50		Co T	
WRR Environ montal So Installation Street Address (not P.O. Box)	hvices Go, Inc.	Owner Street Address	n montal Se	Lurces	Ut, the	<u>c</u> ,
5200 Ruder Road		5200 Ryde		State	7 Dede	
City ~ [] Village Washington	Town of:	City D' Ville		Wisconsi	Zip Code	
State Zip Oode	County	County	Telephone No. (	include area	code)	
Wisconsin 54701 B. TANK CONTENTS (Current, or pre	Ean Claire	Ean claire	(715)	334-91	\$24	
Diesel Leaded Unleaded	Gasohol Aviati	on Premix E Fuel (	Dil 🗌 Kerosene	Waste/Use		
	(Specify name & CAS#):	Other		Unknown	Empty	<u> </u>
C. LAND OWNER TYPE (check one)	Federal Owned	ederal Leased Tribal N	ation Other Govern	nment	Utility	
Residential Private		1				-
D. OCCUPANCY TYPE (check one)	-			-		-
Gas/Retail Sales Bulk Storage Agricultural (Crop or livestock production)	Terminal Storage Indus		mercial		Generator	
and the second s				y). Installer	Inspector	NA
E. PLAN APPROVAL				Verified	Verified	INA
1. Plans have been approved. Stat	and other states of the states of the states of the states of the	umber is:1510	120			
2. Tank Capacity: 10,730	gallons.		-			
3. Public POS dispensing (inclu	de form ERS 6294 POS)	Vehicle	Marine crafi 🛛 🗌 Ai	rcraft		-
<ul> <li>TANK CONSTRUCTION</li> <li>1. Tank exhibits recognized Listing</li> </ul>	or API label (Comm 10.3	55).		N		
2. Tank is used and has been teste	ed for leaks. 🗌 Air 🗹 H	lydrostatic Length of tes	t: min.		Ē	Ø
3. Tank has vents installed and con	nfigured for: Class I,	Class II, Class II	product	1	8	
<ol> <li>Emergency relief vent is provide</li> <li>All normal and emergency vents</li> </ol>				া মহাব্	H	
6. Overfill protection provided? [Co	mm 10.415 (12)] Make/N	Nodel:		2		V
<ol> <li>Tank gauge is provided</li> <li>Pump mounted on tank</li> </ol>	Pump mounted in dispens	or independent of tank		0		
S TANK HANDLING AND PRE-TEST	NG		and a discovery to be a first or other			
1. Tank was tested for leakage per	the manufacturer's recom	mendations8/.7.	108			
H. TANK SITE	1	and the second state		-	-	-
<ol> <li>Tank located per approved plan</li> <li>Tank is spaced a minimum of 3</li> </ol>					H	H
<ol> <li>Tank is spaced a minimum of s</li> <li>Tank foundation designed to min</li> </ol>					H	H
4. Emergency shut-off installed						
PROJECT SITE						
<ol> <li>Collision protection provided.</li> <li>Vehicle fueling tank is secured b</li> </ol>					H	V
<ol> <li>Warning signs posted for dispen</li> </ol>					đ	Ē
4. A rated fire extinguisher provider						
I. PIPING MATERIAL IS: Fibergia		er (type)		_		
Pipe installation is: I single wall Check one of the types below befor		r questions 1-3 and/or	1-13.			
Piping System Type: 1. Pressuri						
2. Suction	piping with check valve at	tank.				
3. Suction Aboveground Pipe:	piping with check valve at	pump and inspectable.				
<ol> <li>Coated to inhibit corrosion.</li> </ol>	Stainless					P
<ol><li>Supported and protected against</li></ol>	physical damage and str	ess				
<ol><li>Piping was isolated from the tank system (but not less than 50 p.</li></ol>	and dispenser and air te	sted at 150% of operatin	g pressures of the			
oporan (pur nor leas than 50 þ.	only ion i flour, manner					
				0008	82	
				0000	~-	

1 2 3 4 5 5 6 7 8 9 9 10 11 12 13	Onderground Pipe         Plping is sloped back to tank (min. 1/8 inch per foot).         Piping is evenly and adequately supported by at least 6 inches of backfill bedding.         Piping trench provides at least 18 inches of compacted backfill and paving on top of piping.         Pipes are separated by at least twice the pipe diameter.         Pipes are separated from the trench excavation sidewalls by at least 6 inches.         Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.         Metal piping protected from corrosion by: □ cathodic protection or □ impressed current.         Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.         Piping was isolated from the tank and dispenser and air tested at 150% of operating pressure of the system (but not less than 50 psig) for 1 hour prior to backfilling.         After backfilling, piping was isolated from the tank and dispenser and precision tested at 110% of operating pressure but not less than 50 psi for 1 hour.         Test stations have been installed for monitoring cathodic protection on piping.         Approved flexible connectors are used below the dispenser.         Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.         ECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)			রে রেরের বেরেরেরার
*	<ol> <li>Tank: Diked Double Wall Remote impounding Tank clearance with dike walls and floor. Vehicle fueling Bulk storage</li></ol>	nitoring		
	Groundwater monitoring Tightness testing Line leak detector Vapor monitoring Manufacturer / Vendor: Probe #:	Not requ	ired (visual)	
3		C. L. C.		
- Manual Annual An	Catastrophic Manufacturer Name: Model: Material Approval	val #:		
1	. Dispensing nozzle at marine service stations shall be auto-closing without hold open device	םאממממות		<u> ৰ্ব্বে</u> টায় <b>টা</b> ব্যব্দ ব্যবদ্দ ব্যব্দ ব্যবদ্দ ব্যব্দ ব্যব্দ ব্যব্দ ব্যবদ্দ ব্যবদ্দ ব্যবদ্দ ব্যবদ্দ ব্যবদ্ধ ব্যবদ্দ ব্যবদ্দ ব্যবদ্দ ব্যবদ্দ ব্যবদ্দ ব্যবদ্দ ব্যবদ্দ ব্যবদ্দ ব্যবদ্দ ব্যবদ ব্যবদ্দ ব্যবদ্দ ব্যবদ্দ ব্যবদ্দ ব্যবদ্দ ব্যবদ্দ ব্যবদ্ধ ব্যবদ্দ ব্যবদ্ধ ব্যবদ্দ ব্যবদ্ধ ব্যবদ্দ ব্যবদ্ধ ব্যবদ্দ ব্যবদ্দ ব্যবদ্দ ব্যবদ্দ ব্যবদ্ধ ব্যবদ্দ ব্যবদ্ধ ব্যবদ্ধ ব্যবদ্ধ ব্যবদ্ধ ব্যবদ্ধ ব্যবদ্ধ ব্যবদ্ধ ব্যব্দ ব্যবদ্ধ ব্যব্যব্দ ব্যবদ্ধ ব্যবদ্ধ ব্যব্দ ব্যবদ্ধ ব্যব্ধ ব্যব্ধ ব্যবদ্ধ ব্যবদ্ধ ব্যব্ধ ব্যব্যব্ধ ব্যব্ধ ব্য ব্যব্ধ ব্য ব্যব্ধ ব্যব্ধ ব্যব্ধ ব্য ব্যব্ধ ব
Instal Comp ( ? I cert plans	STALLER CERTIFICATION         ation Company Name (print)         L Envison mental Sequicer Co Inc.         State State         State         State         State         State <td>WI Installer 4/0</td> <td>Certification N 34</td> <td>•</td>	WI Installer 4/0	Certification N 34	•
Inspe Inspe Inspe	ction Dates: 1) 4/25/08 2) 7/14/08 3) 10/2/08 4) 5) 6) tion Company Name: Chippener-Freie District	Operator #	± 2620	<u>o</u> £
	INVENTORY FORM ERS-8731 SIGNED BY THE OWNER MUST BE SUBMITTED WITH EACH INSTALL		CHECKLIST 0883	

Reg Obj #: For Office Use Only The Sectors	ECKLIST FOR AE TANK INSTAL Complete one for tank and related information you provide m ondary purposes [Privacy L	LATION m for each d piping. ay be used for .aw, s.15.04(1)(m)].	Return Complet Wisconsin Depa ERS Division Bureau of Petrol P. O. Box 7837 Madison, WI 53	rtment of Cor eum Products 707-7837	nmerce s and Ta	inks
installation of: Tank; Piping; Tank Q Deak Detection;	Secondary Contai	inment;	rotection; Vapo ling (key-card-cor	or Recovery;	a	
Installation Streel Address (not P.O. Box) 5200 R.y. d. Q. Road City Village Village Village Village Village Village Village Village Disconstance B. TANK CONTENTS (Current, or previou Diesel Leaded Unleaded [ Village C. LAND OWNER TYPE (check one)	Gasohol Aviation ecify name & CAS#):	County Ear Cloure empty)	a Road ge ⊡ Town of: Gan Telephone No. (715) Dil □ Kerosene	State Wiscoursed (Include area co 834- 462 Waste/Used Unknown Unknown	Zip Code 5-4-72 ode) 2-4 Motor Oil Empty	01
Gas/Retail Sales Bulk Storage Ten	minal Storage Indust			or Emergency Ge	enerator	
Agricultural (Crop or livestock production)     E. PLAN APPROVAL	Government Scho	ool 🔲 Utility 🗌 Resi	dential D Other (spec		nspector	NA
<ol> <li>Plans have been approved. State pl</li> <li>Tank Capacity: <u>\の</u>, りらの</li> <li><u>□</u> Public POS dispensing (include f</li> <li>F. TANK CONSTRUCTION</li> </ol>	gallons.		りての Marine craft ロノ		Verified	
<ol> <li>Tank exhibits recognized Listing or J</li> <li>Tank is used and has been tested for</li> <li>Tank has vents installed and configured</li> <li>Emergency relief vent is provided with the second se</li></ol>	or leaks. Air I Hy ured for: Class I, here required. Type: minate outside where re 10.415 (12)] Make/Ma	drostatic Length of tes ☐ Class II, ☐ Class II Mov+tsow equired odel:	t mir			
<ul> <li>G. TANK HANDLING AND PRE-TESTING</li> <li>1. Tank was tested for leakage per the</li> </ul>	manufacturer's recomm	mendations 8	10/08		П	
<ul> <li>H. TANK SITE</li> <li>1. Tank located per approved plans (w</li> <li>2. Tank is spaced a minimum of 3 feet</li> <li>3. Tank foundation designed to minimi.</li> <li>4. Emergency shut-off installed.</li> </ul>	alls, buildings, power lir from any other tank. (N ze settling.	nes, streets, well, etc.). IFPA 30 Table 2-1)				
<ol> <li>PROJECT SITE         <ol> <li>Collision protection provided.</li> <li>Collision protection provided.</li> <li>Collision protection provided.</li> <li>Vehicle fueling tank is secured by no 3. Warning signs posted for dispensing 4. A rated fire extinguisher provided.</li> </ol> </li> </ol>	on combustible enclosu   area.	re	······			
<ul> <li>J. PIPING MATERIAL IS: Fiberglass; Pipe installation is: single wall or Check one of the types below before p Piping System Type: 1. Pressurized 2. Suction pipin 3. Suction pipin Aboveground Pipe: 1. Coated to inhibit corrosion.</li> <li>2. Supported and protected against phy 3. Piping was isolated from the tank an system (but not less than 50 p.s.i.)</li> </ul>	double wall. proceeding to answer piping with a. double auto s and with check valve at the gwith check valve at p stinkes vsical damage and stress d dispenser and air test	questions 1-3 and/or shutoff, b. alarm, or c ank. pump and inspectable. ss. ted at 150% of operatin	;.			
				000884		

<ul> <li>/derground Pipe</li> <li>Piping is sloped back to tank (min. 1/8 inch per foot).</li> <li>Piping is evenly and adequately supported by at least 6 inches of backfill bedding.</li> <li>Piping trench provides at least 18 inches of compacted backfill and paving on top of piping.</li> <li>4. Pipes are separated by at least twice the pipe diameter.</li> <li>5. Pipes are separated from the trench excavation sidewalls by at least 6 inches.</li> <li>6. Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.</li> <li>7. Metal piping protected from corrosion by: attraction or provide and is wrapped or coated.</li> <li>7. Metal piping are extra-heavy malleable iron screw-type, schedule 40 or better.</li> <li>9. Piping was isolated from the tank and dispenser and air tested at 150% of operating pressure of the system (but not less than 50 psig) for 1 hour prior to backfilling.</li> <li>10. After backfilling, piping was isolated from the tank and dispenser and precision tested at 110% of operating pressure but not less than 50 psi for 1 hour.</li> <li>11. Test stations have been installed for monitoring cathodic protection on piping.</li> <li>12. Approved flexible connectors are used below the dispenser.</li> <li>13. Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.</li> </ul>			ন্ ন্যন্থান ব্য ন্যনেরোরার্য
K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)		AND DESCRIPTION OF THE OWNER, SAME AND DESCRIPTION OF THE OWNER, SAME AND DESCRIPTION OF THE OWNER, SAME AND D	-
<ol> <li>Tank: Diked Double Wall Remote impounding Tank clearance with dike walls and floor. Vehicle fueling Bulk storage Interstitial monitoring Automatic (verified as operative) Other (specify)</li></ol>		Acco	
		ed (visual)	
3. Manufacturer / Vendor: Probe #:			
4. Model Name/#: Material Approval #:			
5. Catastrophic Manufacturer Name: Model: Material Approv	al #:		THE REPORT
<ol> <li>Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]</li> <li>Check valve installed in piping at connection/disconnection for tank vehicle.</li> <li>Tank is provided with spill protection.</li> <li>Dispensing device is listed and has proper setbacks.</li> <li>Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]</li> <li>Anti-siphon device provided on tank mounted pump.</li> <li>Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).</li> <li>Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment.</li> <li>Emergency shutoff clearly identified and accessible.</li> <li>Where required, listed emergency breakaway, hose and dispensing devices are provided.</li> <li>Dispensing nozzle at marine service stations shall be auto-closing without hold open device.</li> <li>Hose length: ft.</li> </ol>			षुष्ठ्रण्डाण्ड्रत्वित्वत्व
Installation Company Name (print)       Installation Company Mailing Address       Company Telephone No. (include area code)       S 200 R y der Road Eau Clarie         (715)       834-9624       Certified Installer Name (print)       Certified Installer Name (print)         I certify that the tank system and related components have been installed according to the manufacturer's instruction plans, and comply with Comm 10.       Date Signed: 3/16         Installer Signature:       Mark Mark Mark       Date Signed: 3/16         N. INSPECTOR INFORMATION       Inspection Dates:       1) 6/25/08       2) 7/14/08       3) /0/2/08       4)       5)       6)         Inspection Company Name:       Curppend Few Print       Certified Installer Signature       Signed: 3/16	4)034 ns, condi 8 108	54)01 certification N	roved
		18060	
O. COMMENTS:			

CHECKLIST FOR ABOVEGROUND Return Complete	d Checkli	st To:	
TANK INSTALLATION Wisconsin Depart	ment of Co	ommerce	
Reg Obj#: For Office Use Only Complete one form for each ERS Division tank and related piping Bureau of Petrole	um Produc	ts and Ta	nks
The information you provide may be used for P. O. Box 7837		to and re	inite.
This checklist covers secondary purposes [Privacy Law, s.15.04(1)(m)]. Madison, WI 537	07-7837		
installation of: Tank; Piping; Secondary Containment; Overfill Protection; Vapor Touck R Leak Detection; Spill Containment; Automated Fueling (key-card-code			
A. IDENTIFICATION: (Please Print)	ninin taan ti star Kistaan ka maanin ja ma		
1. Installation Name 40 Control Lub D Contro	a la cara di	Co T	
WRR Environmental Services Go, Inc. WRR Environmental Ser Installation Street Address (not P.O. Box) Owner Street Address	135711	t, the	<u>C</u> ,
5200 Ruder Road 5200 Ruder Road		-	_
City Village Town of: City Village Town of:	State	Zip Code	1
State Zip Code County County Telephone No. (	Wescons		1_
	334- 26		
B. TANK CONTENTS (Current, or previous product if tank now empty)			
Diesel Leaded Unleaded Gasohol Aviation Premix Fuel Oll Kerosene CAS#); Other	Waste/Use	Empty	
C. LAND OWNER TYPE (check one)	_ OUKIOWI	LI Emply	_
State County Municipal Federal Owned Federal Leased Tribal Nation Other Goven	nment	Hility	
Residential Private			
D. OCCUPANCY TYPE (check one)	Emerican	Constater	
Gas/Retail Sales Bulk Storage Terminal Storage Industrial Mercantile/Commercial Backup or Agricultural (Crop or livestock production) Government School Utility Residential Other (specific		senerator	
E. PLAN APPROVAL	Installer	Inspector	NA
	Verified	Verified	1411
1. Plans have been approved. State plan number/LPO plan number is:	N		
2. Tank Capacity: <u>\のり30</u> gallons.			
3. Public POS dispensing (include form ERS 6294 POS) Vehicle Marine craft Ai	rcraft		
F. TANK CONSTRUCTION 1. Tank exhibits recognized Listing or API label (Comm 10.355).	. D		
2. Tank is used and has been tested for leaks. Air e Hydrostatic Length of test: min.			
3. Tank has vents installed and configured for: ☑ Class I, □ Class II, □ Class III product 4. Emergency relief vent is provided where required. Type:	- 1	H	H
5. All normal and emergency vents terminate outside where required	ন ন বহাব্যবাদ	E .	H
Overfill protection provided? [Comm 10.415 (12)] Make/Model:	=/		N
7. Tank gauge is provided.     8. Pump mounted on tank      Pump mounted in dispenser independent of tank			
G. TANK HANDLING AND PREJESTING			-
1. Tank was tested for leakage per the manufacturer's recommendations			
H. TANK SITE	-	-	-
<ol> <li>Tank located per approved plans (walls, buildings, power lines, streets, well, etc.).</li> <li>Tank is spaced a minimum of 3 feet from any other tank. (NFPA 30 Table 2-1).</li> </ol>		H	H
<ol> <li>Tank foundation designed to minimize settling.</li> </ol>			
4. Emergency shul-off installed	0		
I. PROJECT SITE		-	127
<ol> <li>Collision protection provided. Cement filled pipe Traffic bullards Other</li> <li>Vehicle fueling tank is secured by non combustible enclosure.</li> </ol>		H	ব্র
3. Warning signs posted for dispensing area.		ō	$\Box$
<ol><li>A rated fire extinguisher provided.</li></ol>	<b>Y</b>		
J. PIPING MATERIAL IS: Fiberglass; Steel; or Other (type)	-		
Pipe installation is: I single wall or double wall. Check one of the types below before proceeding to answer questions 1-3 and/or 1-13.			
Piping System Type: 1. Pressurized piping with a. auto shutoff, b. alarm, or c. flow restrictor.			
<ol> <li>Suction piping with check valve at tank.</li> <li>Suction piping with check valve at pump and inspectable.</li> </ol>			
3. Suction piping with check valve at pump and inspectable.			Sec.
1. Coated to inhibit corrosion.			N
<ol> <li>Supported and protected against physical damage and stress.</li> <li>Biblic was included from the task and disconserved of tables.</li> </ol>	N		
3. Piping was isolated from the tank and dispenser and air tested at 150% of operating pressures of the			
system (but not less than 50 p.s.i.) for 1 hour.	4		

11. 12.	rground Pipe viping is sloped back to tank (m Piping is evenly and adequately Piping trench provides at least Pipes are separated by at least Pipes are separated from the tro Metal piping is at least schedule Metal piping protected from com Fittings and couplings are extra Piping was isolated from the tan system (but not less than 50 psi After backfilling, piping was isolat pressure but not less than 50 psi Test stations have been installe Approved flexible connectors ar Dispensers, pumps, check valve piping.	supported by at least 6 in 18 inches of compacted by twice the pipe diameter ench excavation sidewalls 40 black steel or galvan rosion by: cathodic pro- heavy malleable iron scr hk and dispenser and air ig) for 1 hour prior to back ated from the tank and di si for 1 hour	nches of backfill I backfill and paving s by at least 6 inc ized pipe, and is btection or imp rew-type, schedul tested at 150% of kfilling	bedding. g on top of pipin thes. wrapped or coa pressed current. e 40 or better. f operating pres bision tested at bing. ctrically isolated	9 ted. sure of the 110% of operat			র্বেরের বেরেরের্যার্বার্য
.2,	CONDARY CONTAINMENT/LE Tank: Diked Doub Tank clearance with dike wall Interstitial monitoring Automatic (verified as operati Other (specify) Piping Leak Detection Method: Groundwater monitoring Manufacturer / Vendor:	le Wall Remote in s and floor. Vel ve)	npounding nicle fueling uction with check	Bulk storag	je Interstitial		ed (visual)	
4.	Model Name/#:		Ma	terial Approval	101-112-24-110-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	THE REAL PROPERTY AND ADDRESS	NAME AND ADDRESS OF OWNER	
· BARDAR AND BARDAR	Catastrophic Manufacturer Nam	AND THE REAL PROPERTY AND ADDRESS OF THE PARTY OF THE PARTY AND ADDRESS OF THE PARTY OF THE PART	Model:	Name and some was some a second as	Material A	pproval #:	CHARLEN AND AND AND AND AND AND AND AND AND AN	ACCREMENTED IN COLUMN
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	Check valve installed in piping Tank is provided with spill pro Dispensing device is listed an Electrically operated solenoid Anti-siphon device provided o Electric equipment and wiring Aircraft fueling system provide Emergency shutoff clearly ide Where required, listed emerge Dispensing nozzle at marine s Hose length:ft.	eing locked, is labeled ar g at connection/disconne tection	e fueling. [Comm e with Comm 16 etween aircraft and dispensing dev	icle. 10.415 (10)] (NFPA 70). and fueling equi	pment			ষ্বিতারাতষ্বির্বিয়েরি
Installa Compa (?) I certif plans,	TALLER CERTIFICATION tion Company Name (print) <u>Environment</u> <u>Support</u> ny Telephone No. (include area cod <u>5</u> ) <u>834-9624</u> y that the tank system and relate and comply with Comm 10. er Signature:	e) Certifie e) Certifie ed components have bee	tion Company Maili <u> vo Ryder</u> d Installer Name (p <u>vice Mou</u> en installed accom	Road rint) rsh ding to the man		410 3° ructions, cond	54)01 Certification N	
N. INS	PECTOR INFORMATION		/		ACCOMPANY ALLOW THE AUTOM		Million - I - Day	
Inspect	or Signature:	peura Fiir D	Inspector #:		Lo	6) ocal Operator #:		
Date Si	gned: 10-2-05 Fire departm	ent providing coverage;	Township	1.126 116	pc.	FDID #: .	10000	
	MMENTS:	SIGNED BY THE OWN	ER MUST BE SI	JBMITTED WIT	TH EACH INST	ALLATION C	HECKLIST.	
							00887	

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	Reg Obj#:	For Office	Use Only

# CHECKLIST FOR ABOVEGROUND TANK INSTALLATION

Complete one form for each tank and related piping.

The information you provide may be used for secondary purposes [Privacy Law, s.15.04(1)(m)].

Return Completed Checklist To: Wisconsin Department of Commerce ERS Division Bureau of Petroleum Products and Tanks P. O. Box 7837 Madison, WI 53707-7837

	This checklist covers secondary purposes [Privacy Law, s.15.04(1)(m)]. Madisi nstallation of: Tank; Piping; Secondary Containment; Overfill Protection	n; 🗌 Vapor Recove	ry;	
T	Tank S Leak Detection; Spill Containment; Automated Fueling (key			
i	A. IDENTIFICATION: (Please Print) 1. Installation Name <u>CRR Environ montal Services GT, Inc.</u> <u>URR Environ montal</u> Installation Street Address (not P.O. Box) Owner Street Address.	tal Schurges	Co, Fr	<u>,c</u> ,
	5200 Ruder Road 5200 Ruder Road	rd		
	City - Village E Town of: City Village E	Town of: State	Zip Code	
_	Washington Washington	Wiscon	rm 5476	0
1	Nisconsin 54701 Ean Claire Ean claire (1	Nephone No. (include area 715 ) 834-9		
E	B. TANK CONTENTS (Current, or previous product if tank now empty) Diesel Leaded Unleaded Gaschol Aviation Premix Fuel Oll K Hazardous Waste Chemical (Specify name & CAS#):	erosene 🗌 Waste/U	sed Motor Oll	
	. LAND OWNER TYPE (check one)			
	State County Municipal Federal Owned Federal Leased Tribal Nation Residential Private	Other Government	) Utility	
	0. OCCUPANCY TYPE (check one)		ale au	
	Gas/Retail Sales Delik Storage Terminal Storage Industrial Mercantile/Commercial Agricultural (Crop or livestock production) Government School Utility Residential	Backup or Emergency Other (specify):	/ Generator	
-			1	
E	PLAN APPROVAL	Installer Verified	Inspector Verified	NA
	1. Plans have been approved. State plan number/LPO plan number is: 150720	P		
	2. Tank Capacity: 10,130 gallons.			
	3. Dublic POS dispensing (include form ERS 6294 POS) Dublic POS dispensing (include form ERS 6294 POS)	aft 🗌 Aircraft		
F.		~	1000	
	1. Tank exhibits recognized Listing or API label (Comm 10.355).		8	
	<ol> <li>Tank is used and has been tested for leaks. Air Hydrostatic Length of test:</li> <li>Tank has vents installed and configured for: Class I, Class II, Class III product.</li> </ol>		H	H
	4. Emergency relief vent is provided where required. Type: Martison	Ø.		Ē
	<ol><li>All normal and emergency vents terminate outside where required</li></ol>			
	Overfill protection provided? [Comm 10.415 (12)] Make/Model:			Ľ
	<ol> <li>Tank gauge is provided.</li> <li>Pump mounted in dispenser independent of tank</li> </ol>		Ц	
G.	TANK HANDLING AND PRE-TESTING			
	1. Tank was tested for leakage per the manufacturer's recommendations. 3/5/08	U		
Н.	TANK SITE	1		
	1. Tank located per approved plans (walls, buildings, power lines, streets, well, etc.).			
	<ol> <li>Tank is spaced a minimum of 3 feet from any other tank. (NFPA 30 Table 2-1)</li> <li>Tank toundation dealers of the minimum and the mini</li></ol>		H	H
	<ol> <li>Tank foundation designed to minimize settling.</li> <li>Emergency shut-off installed.</li> </ol>		H	H
I.	PROJECT SITE			
	1. Collision protection provided.			V
	2. Vehicle fueling tank is secured by non combustible enclosure.			ার্ব
	3. Warning signs posted for dispensing area.		님	H
1	4. A rated fire extinguisher provided.			
٩,	PIPING MATERIAL IS: Fiberglass; Steel; or Other (type)			
	Check one of the types below before proceeding to answer questions 1-3 and/or 1-13.			
	Piping System Type: 1. Pressurized piping with a. auto shutoff, b. alarm, or c. flow r	estrictor.		
	<ol><li>Suction piping with check valve at tank.</li></ol>			
	<ol> <li>Bruction piping with check valve at pump and inspectable.</li> <li>Aboveground Pipe:</li> </ol>			
	1. Coated to inhibit corrosion			R
	2. Supported and protected against physical damage and stress.			Ō
	3. Piping was isolated from the tank and dispenser and air tested at 150% of operating pressure	es of the		-
	system (but not less than 50 p.s.i.) for 1 hour.	Ľ		

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	Inderground Pipe         Piping is sloped back to tank (min. 1/8 inch per foot).         Piping is evenly and adequately supported by at least 6 inches of backfill bedding.         Piping trench provides at least 18 inches of compacted backfill and paving on top of piping.         Pipes are separated by at least twice the pipe diameter.         Pipes are separated from the trench excavation sidewalls by at least 6 inches.         Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.         Metal piping protected from corrosion by: □ cathodic protection or □ impressed current.         Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.         Piping was isolated from the tank and dispenser and air tested at 150% of operating pressure of the system (but not less than 50 psig) for 1 hour prior to backfilling.         After backfilling, piping was isolated from the tank and dispenser and precision tested at 110% of operating pressure but not less than 50 psi for 1 hour.         Test stations have been installed for monitoring cathodic protection on piping.         Approved flexible connectors are used below the dispenser.         Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.			ন ন্যার্য র নারারারার্য্য
1	CONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)         Tank:       Diked       Double Wall       Remote impounding         Tank clearance with dike walls and floor.       Vehicle fueling       Bulk storage         Interstitial monitoring.       Automatic (verified as operative).       Other (specify)         Piping Leak Detection Method:       used if pressurized or suction with check valve at tank:       Interstitial monitoring	    onitoring	hooo	
		Not require	ed (visual)	
1000	Manufacturer / Vendor: Probe #:	New Color of the Color		
· De alternet des	Model Name/#: Material Approval #: Catastrophic Manufacturer Name: Model: Material App	roval #	NATIONAL CONTRACTORS	-
· Name and a state of the state	IQUID HANDLING, TRANSFER AND USE	IOVAI #.	all stress many reactions	No. of Concession, Name
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	Check valve installed in piping at connection/disconnection for tank vehicle. Tank is provided with spill protection. Dispensing device is listed and has proper setbacks. Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)] Anti-siphon device provided on tank mounted pump. Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70). Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment Emergency shutoff clearly identified and accessible. Where required, listed emergency breakaway, hose and dispensing devices are provided. Dispensing nozzle at marine service stations shall be auto-closing without hold open device.			<u> য্যায় যা </u>
Installa <u>WRR</u> Compa ( ? ) I certify plans, Installe N. INS Inspect Inspect Date Sig	y that the tank system and related components have been installed according to the manufacturer's instruct and comply with comm 10. The Signature: Director INFORMATION tion Dates: 1) (1/25/08 2) 7-14-08 3) 10-2-08 4) 5) to tion Company Name: Chappene File Dist- or Signature: Chappene File Dist- br Signature: Chappene File Dist-	Installer C 4/034	2620	oroved
TANKI	NVENTORY FORM ERS-8731 SIGNED BY THE OWNER MUST BE SUBMITTED WITH EACH INSTAL	00	0889	

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Misco	nsin
	For Office Use Only

#### CHECKLIST FOR ABOVEGROUND TANK INSTALLATION

Complete one form for each tank and related piping.

Return Completed Checklist To: Wisconsin Department of Commerce **ERS** Division Bureau of Petroleum Products and Tanks P. O. Box 7837 Madison, WI 53707-7837

The information you	provide may be used for
secondary purposes	[Privacy Law, s.15.04(1)(m)].

This checklist covers secondary purposes [Privacy Law, s.15.04(1)(m)]. Madison, WI 53707-7837	
installation of: Tank; Piping; Secondary Containment; Overfill Protection; Vapor Recovery;	
Tank=Overflow Leak Detection; Spill Containment; Automated Fueling (key-card-code); Lining	
A. IDENTIFICATION: (Please Print)	
1. Installation Name	Æ
WRR Environ montal Services Cot, Inc. WRR Environ montal Services Cot Installation Street Address (not P.O. Box) Owner Street Address	the,
5200 Ruder Road 5200 Ryder Road	
City Village G Town of: City Village G Town of: State Zi	p Code
	54701
State Zip Code County County Telephone No. (include area code	
Wisconsin 54701 Ean Claire Ean Claire (715) 834-9629	
B. TANK CONTENTS (Current, or previous product if tank now empty)	
Diesel Leaded Unleaded Gasohol Aviation Premix Fuel Oil Kerosene Waste/Used M	
Image: Chemical (Specify name & CAS#):       Image: Other       Image: Unknown         Image: C. LAND OWNER TYPE (check one)       Image: Other       Image: Unknown	Empty
State County Municipal Federal Owned Federal Leased Tribal Nation Other Government Utility	
D. OCCUPANCY TYPE (check one)	
Gas/Retail Sales Bulk Storage Terminal Storage Industrial Mercantile/Commercial Backup or Emergency Gene	rator
Agricultural (Crop or livestock production)	
E. PLAN APPROVAL Installer Ins	pector NA
Verified Ve	erified
1. Plans have been approved. State plan number/LPO plan number is: 1510720	
2. Tank Capacity: <u>300</u> gallons.	
3.  Public POS dispensing (include form ERS 6294 POS) Vehicle Marine craft Aircraft Aircraft	
F. TANK CONSTRUCTION	
Tank exhibits recognized Listing or API label (Comm 10.355)     Z. Tank is used and has been tested for leaks. Arr PHydrostatic Length of test: min.	님님
3. Tank has vents installed and configured for: I Class I, Class II, Class III product	
4. Emergency relief vent is provided where required. Type: Morrison	
5. All normal and emergency vents terminate outside where required	
6. Overfill protection provided? [Comm 10.415 (12)] Make/Model:	
7. Tank gauge is provided     8. Pump mounted on tank      Pump mounted in dispenser independent of tank	
G. TANK HANDLING AND PRE-TESTING	
1. Tank was tested for leakage per the manufacturer's recommendations.	п п
H. TANK SITE	Contractor of the second second
1. Tank located per approved plans (walls, buildings, power lines, streets, well, etc.).	
2. Tank is spaced a minimum of 3 feet from any other tank. (NFPA 30 Table 2-1)	
4. Emergency shut-off installed.	
PROJECT SITE     1. Collision protection provided.      Cement filled pipe      Traffic bullards      Other	
2. Vehicle fueling tank is secured by non combustible enclosure	
3. Warning signs posted for dispensing area.	ō ō
4. A rated fire extinguisher provided	
J. PIPING MATERIAL IS: Fiberglass; Steel; or Other (type)	
Pipe installation is: 🗹 single wall or 🗌 double wall.	
Check one of the types below before proceeding to answer questions 1-3 and/or 1-13.	
Piping System Type: 1. Pressurized piping with a. auto shutoff, b. alarm, or c. flow restrictor.	
Piping System Type: 1. Pressurized piping with a. auto shutoff, b. alarm, or c. flow restrictor. 2. Suction piping with check valve at tank. 3. Suction piping with check valve at pump and inspectable.	
Piping System Type: 1. Pressurized piping with a. auto shutoff, b. alarm, or c. flow restrictor. 2. Suction piping with check valve at tank. 3. Suction piping with check valve at pump and inspectable. Aboveground Pipe: 1. Coated to inhibit corrosion.	
<ul> <li>Piping System Type: 1. Pressurized piping with a. auto shutoff, b. alarm, or c. flow restrictor.</li> <li>2. Suction piping with check valve at tank.</li> <li>3. Suction piping with check valve at pump and inspectable.</li> <li>Aboveground Pipe:</li> <li>1. Coated to inhibit corrosion.</li> <li>2. Supported and protected against physical damage and stress.</li> </ul>	
Piping System Type: 1. Pressurized piping with a. auto shutoff, b. alarm, or c. flow restrictor. 2. Suction piping with check valve at tank. 3. Suction piping with check valve at pump and inspectable. Aboveground Pipe: 1. Coated to inhibit corrosion.	

<ul> <li>Underground Pipe</li> <li>Piping is sloped back to tank (min. 1/8 inch per foot).</li> <li>Piping is evenly and adequately supported by at least 6 inches of backfill bedding.</li> <li>Piping trench provides at least 18 inches of compacted backfill and paving on top of piping.</li> <li>Pipes are separated by at least twice the pipe diameter.</li> <li>Pipes are separated from the trench excavation sidewalls by at least 6 inches.</li> <li>Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.</li> <li>Metal piping protected from corrosion by: □ cathodic protection or □ impressed current.</li> <li>Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.</li> <li>Piping was isolated from the tank and dispenser and air tested at 150% of operating pressure of the system (but not less than 50 psig) for 1 hour prior to backfilling.</li> <li>After backfilling, piping was isolated from the tank and dispenser.</li> <li>Approved flexible connectors are used below the dispenser.</li> <li>Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.</li> <li>K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)</li> </ul>			র্বার্বার ব্যব্যর্বার্ব্য
Tank: ☑ Diked  ☐ Double Wall  ☐ Remote impounding Tank clearance with dike walls and floor.  ☐ Vehicle fueling  ☑ Bulk storage Interstitial monitoring Automatic (verified as operative) Other (specify)			
2. Piping Leak Detection Method: used if pressurized or suction with check valve at tank: Interstitial more complexity and the set of the leak detector.	/	ired (visual)	
Groundwater monitoring	Not requi	ired (visual)	
4. Model Name/#: Material Approval #:		and the second second	
5. Catastrophic Manufacturer Name: Model: Material Appro	oval #:		
L. LIQUID HANDLING, TRANSFER AND USE <ol> <li>Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]</li> <li>Check valve installed in piping at connection/disconnection for tank vehicle.</li> <li>Tank is provided with spill protection.</li> <li>Dispensing device is listed and has proper setbacks.</li> <li>Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]</li> <li>Anti-siphon device provided on tank mounted pump.</li> <li>Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).</li> <li>Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment.</li> <li>Emergency shutoff clearly identified and accessible.</li> <li>Where required, listed emergency breakaway, hose and dispensing devices are provided.</li> <li>Dispensing nozzle at marine service stations shall be auto-closing without hold open device.</li> <li>Hose length:ft.</li> </ol>			ষ্বেতারতাষ্ববিদ্যির্
M. INSTALLER CERTIFICATION Installation Company Name (print) MRR Environmental Services Grine State Company Mailing Address Company Telephone No. (include area code) (715) 834-9624 I certify that the tank system and related components have been installed according to the manufacturer's instruct plans, and comply with Comm 10. Installer Signature: MARN MANN N. INSPECTOR INFORMATION	ions, cond	Certification N	
Inspection Dates: 1) (e/25/05 2) 7-14-05 3) 10/2/08 4) 5) 6 Inspection Company Name: Chappens Five Destruct Inspector Signature: Inspector #: 35/67 Local of Date Signed: / 0/2/05 Fire department providing coverage: Township Five Appt. 0. COMMENTS: OverAour	Operator #	3 (2) (2) 18060	
TANK INVENTORY FORM ERS-8731 SIGNED BY THE OWNER MUST BE SUBMITTED WITH EACH INSTALL	00	00891	

HABLE ENGINEERING SERVICES, LLC

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405 FAX - (715) 568-5406

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the tank system located at WRR Environmental Services CO., Inc., 5200 Ryder Road, Eau Claire, WI which they designate as their tank system number  $\underbrace{J, K, M, O, G, R, S, Z A \sim D H H}_{for weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, structural damage, and inadequate construction or installation. The visual inspection was made before the tank system was covered, enclosed or placed in use. All discrepancies that were found were remedied to my satisfaction before the system was covered, enclosed or placed in use.$ 

William L. Hable, P.E.

Consulting Engineer P.E. Number 9778

Averst 12, 2008 Date Stamped & Certified



#### HABLE ENGINEERING SERVICES, LLC

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405 FAX - (715) 568-5406

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the tank system located at WRR Environmental Services CO., Inc., 5200 Ryder Road, Eau Claire, WI which they designate as their tank system number  $\frac{L, N, V, W, X, Arro Y}{for weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, structural damage, and inadequate construction or installation. The visual inspection was made before the tank system was covered, enclosed or placed in use. All discrepancies that were found were remedied to my satisfaction before the system was covered, enclosed or placed in use.$ 

William L. Hable, P.E. Consulting Engineer P.E. Number 9778

AULUST Date Stamped & Certified



WWW.WITES.com

715-834-9624 FAX 715-836-8785 EMAIL wrrstaff@wrres.com

WRR Environmental Services Co., Inc.

5200 Ryder Road, Eau Claire, Wisconsin 54701

"Where Technology and Ecology Meet"

August 16, 2011

Mike Ellenbecker Waste and Materials Management Specialist Wisconsin Department of Natural Resources 9531 Rayne Road, Suite IV Sturtevant, WI 53177

Re: RCRA Permit Class 1 Plan Modification Application For Replacement Tanks Q & R, FPOR Revisions, and The Addition of Waste Code F034 EPA ID No. WID 990 829 475 WDNR FID No. 618 026 530

Dear Mr. Ellenbecker:

The purpose of this submittal is for Class 1 Modifications to the WRR Environmental Services Co., Inc. (WRR) Hazardous Waste Storage and Treatment Permit. Some of the modifications do not require prior approval from the Wisconsin Department of Natural Resources (WDNR). These modifications consist of replacing two waste tanks, minor changes to pages in the January 2003 Feasibility and Plan of Operation Report (FPOR), and changes to Section G, Contingency Plan. However, it is our understanding that the addition of Waste Code F034 is a modification that requires prior Department approval. An updated Part A application form is enclosed.

# Tanks Q and R

Hazardous waste storage Tanks Q and R were destroyed in an explosion on June 29, 2010. The cause was determined to be the level sensors. WRR has replaced these two tanks with identical size and capacity tanks and at the same location as the previous tanks. The previous tanks were approved in a January 7, 2008 letter from the WDNR. The replacement tanks have the same gross and net capacities as shown on page 5 of that document. The tank manufacturer is Lannon Tank Corporation. The replacement is a Class 1 RCRA plan modification that does not require prior approval per NR 670, Appendix I, Section G, #6. Jill Schoen concurred with this determination in an email dated October 12, 2010. A copy is attached. Replacement Tanks Q and R were installed on June 22, 2011. Tank Q was placed into service on August 12, 2011. Tank R has not yet been placed into service, but will be soon. According to NR 670.042(1)(a)1. it was necessary to notify you of this change within 7 days after



Tank Q was put into service. WRR will likewise notify you (via email) after Tank R is placed into service. The information requested under NR 664.0192 and 670.016 is as follows.

NR 664.0192 Information for Design and Installation of New Tank Systems:

(1) An assessment by Bill Hable is enclosed that the replacement tanks have sufficient structural integrity and are acceptable for storing and treating hazardous waste.

(1)(a) The tanks were manufactured by Lannon Tank Corporation to UL 142 standards.

(1)(b) As a minimum, the following are materials or combinations of them which have vapor pressures less than 76.6 kPa are anticipated for storage in these two tanks: 1-1-1 trichloroethane, 2-butanol, acetone, acetonitrile, stoddard solvent, butyl cellosolve, d-Limonene, ethanol, ethyl acetate, ethyl benzene, glycol ether, isopropyl acetate, Isobutanol, isopropanol, methanol, MAK, MEK, MIAK, MIBK, methylene chloride,

monochlorobenzene, n-propanol, n-propyl acetate, tetrachloroethylene, tetrahydrofuran, toluene, trichloroethylene, and xylenes.

(1)(c) This section of the code is not applicable because the tanks are set on concrete and not in contact with soil or water.

(1)(d) This section of the code is not applicable because these tanks are above ground storage tanks.

(1)(e)1 The concrete tank foundation is the same as was used for the recently removed tanks.

(1)(e) 2 This section of the code is not applicable because the tanks are not placed in a saturated zone.

(1)(e)3 Frost heave has not been a problem for previous tanks at this location.

- (2) For installation of the tanks, the same crane operator installed the previous tanks at this location. After installation, Mr. Hable inspected the tanks looking for weld breaks, punctures, coating scrapes, cracks, corrosion, or any other damage that may have occurred during installation. On August 3, 2011 a tank leakage test was conducted on both tanks in accordance with the Wisconsin Department of Commerce (COMM) regulations.
- (3) This section of the code is not applicable because these tanks are above ground storage tanks.
- (4) A tank leakage test was conducted on both tanks in accordance with the COMM regulations.
- (5) All piping and valves connected to these two tanks are properly supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.
- (6) Both tanks were primed and painted by the tank manufacturer.
- (7) WRR will keep a record of the design information on file for these two tanks as required by this section of the code as well as the referenced certification statement.

**NR 670.016** Tank System Information Specific to the Feasibility and Plan of Operation Report (FPOR) for Tanks Q and R:

- (1) An assessment by Bill Hable is enclosed that the replacement tanks have sufficient structural integrity and are acceptable for storing and treating hazardous waste.
- (2) Both tanks are identical and have the same capacity and dimension of the tanks that they replaced. Each tank has a gross capacity of 10,730 gallons and each tank has a silo diameter of ten feet and are 25.5 feet high as shown on Drawing No. D-71 in the FPOR.
- (3) Each tank has an overflow pipe. There are two vents on top of each tank. The working vent is a 3-inch Morrison OPW 523V-3100 pressure vacuum vent and the emergency vent is an 8-inch Morrison 244OF. Each tank also has a new level sensor.
- (4) Piping is shown on Drawing Nos. D-13B and D-13C in the FPOR.
- (5) Both tanks were primed and painted by the tank manufacturer.
- (6) The tanks were installed in accordance with the procedure described above for NR 664.0192(2), (4), and (5).
- (7) Containment for Tanks Q and R is the same as for the previous same two tanks. The containment system for the E-II South Sludge Tank Farm is described in Appendix D-1 of the FPOR. The containment capacity is over double the gross capacity of either tank.
- (8) There is no change at the facility since prior to the June, 2010 incident pertaining to how a hazardous waste release from Tanks Q or R could adversely impact groundwater or surface water. There were no liquid releases from either tank at the time of the incident.
- (9) Tanks Q and R have the same overflow pipes and valves as the previous same two tanks. At the bottom of the cone there is a gate valve, a check valve with a ball valve on the inlet pipe, and a fire valve on the outlet pipe. The former tank level sensing device will not be used. A new system was installed to monitor the level of waste in the above ground storage tanks located in the E-II South Sludge Tank Farm. The system consists of two components. A pressure transducer manufactured for Swanson Flo-Systems Company by Ashcroft is installed along the coned bottom portion of each tank. The transmitter is model A2X. It is explosion and flame proof. It will determine the distance to the top of the tank contents. The other component to the system will be an ultrasonic transmitter attached to the fixed roof of each tank. It is manufactured by Gems Sensors & Controls and is model ULS-100 EP which is explosion proof. This transmitter will set off the high level alarm and light when the tank content reaches a predetermined level. Both sensors are part of the WRR programmable logic controller computer system.
- (10) Reactive waste will not be stored in Tanks Q and R. However, ignitable waste will routinely be stored in these two tanks. The tanks are bottom filled and bottom emptied. All of the tanks in this tank farm are grounded in accordance with NFPA 77. The E-II South Sludge Tank Farm

is approximately 170 feet from the west property line. The Eau Claire County Parks and Forest Department owns the property to the west of WRR. There are no buildings on that property.

(11) The tank farm is not located within a building. The tanks do not have floating roofs. WRR is required under the facility air permit to conduct air emissions monitoring at the pressure release valves twice a year. A photo ionization detector is used for the monitoring.

#### **FPOR Revisions**

Copies of revised pages B-4, B-14, G-2, and Table G-1 are enclosed. Page B-4 has been modified to reflect personnel changes at WRR. Page B-14 has been changed to reflect the change in rail transfer location from Chippewa Falls to Bloomer, Wisconsin. Page G-2 has an updated list of WRR emergency coordinators. Table G-1of the Contingency Plan has been modified for the new telephone number of the emergency room at Sacred Heart Hospital, and to replace Jill Schoen with Tom Kendzierski as the emergency contact at the WDNR.

These modifications are also considered a Class 1 RCRA plan modification that do not require prior approval in accordance with NR 670, Appendix I, Section B. 6.d., and Section A.1. As required in NR 664.0053(2) pages G-2 and Table G-1 of the Contingency Plan will be provided to local and State of Wisconsin emergency agencies and Sacred Heart Hospital.

#### Waste Code F034

Another modification to the RCRA plan requested is the addition of waste code F034. Attached is an email from you dated July 22, 2011 in which you concurred that the addition of waste code F034 is a Class 1 RCRA plan modification that requires prior Department approval. Part of this email is my July 20, 2011 email that describes the proposed treatment of the F034 material.

As part of your review please indicate if you concur that this waste code will stay with the oily mixture going to the fuels program and that the waste code would not carry the F code listing. Check #117476 dated August 3, 2011 in the amount of \$400 for the Class 1 plan modification review fee is enclosed as required in Appendix II of NR 670.

#### Summary

WRR will send the letter to those on the facility mailing list in accordance with the requirements of NR 670.042(1)(a)2. Let me know if there are any changes to the January, 2010 list.

If you have any questions on this submittal or need additional information, either send me an email at <u>ismit@wrres.com</u> or call me at (715) 852-1630.

Sincerely,

Jan Sur

Van M. Smit, PE Compliance Director WRR Environmental Services Company, Inc.

cc: Jim Hager President/CEO WRR Environmental Services Company, Inc.

Scott Szymanski (via email) Waste Management Specialist Wisconsin Department of Natural Resources

Enclosures (two copies each, except check): Updated Part A October 12, 2010 email from Jill Schoen Tank Assessment Pages B-4, B-14, G-2, and Table G-1 July 22, 2011 Email Regarding F034 A check in the amount of \$400 for the plan modification document review fee

### CHECKLIST FOR ABOVEGROUND STORAGE TANK INSTALLATION

Reg Obj #: For Office Use Only

Complete one form for each tank and related piping.

The information you provide may be used for

Return Completed Checklist To: Wisconsin Department of Safety and Professional Services Bureau of Petroleum Products and Tanks P. O. Box 7837 Madison, WI 53707-7837

This checklis installation o Tank Q			ay Law, s.15.04(1)(m)]. M tainment; ∎Overfill Prote ent; □Automated Fueling		or Recover	у;	
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3.40 -

TANK INVENTORY FORM ERS-8731 SIGNED BY THE OWNER MUST BE SUBMITTED WITH EACH INSTALLATION CHECKLIST.

Copy Distribution: White - Commerce Blue - Inspector Pink - Contractor Yellow - Owner 000900

### CHECKLIST FOR ABOVEGROUND STORAGE TANK INSTALLATION

Reg Obj #: For Office Use Only

Complete one form for each tank and related piping.

<u>Return Completed Checklist To:</u> Wisconsin Department of Safety and Professional Services Bureau of Petroleum Products and Tanks P. O. Box 7837

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The	information you prov	vide may be	used for
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Date Signed: Fire department providing coverage: Township Fire Department FDID #: 18061							
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TANK INVENTORY FORM ERS-8731 SIGNED BY THE OWNER MUST BE SUBMITTED WITH EACH INSTALLATION CHECKLIST.

#### HABLE ENGINEERING SERVICES, 'LLC

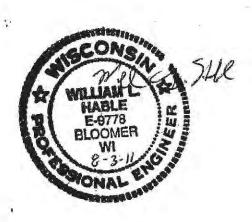
721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405 FAX - (715) 568-5406

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the tank system located at WRR Environmental Services CO., Inc., 5200 Ryder Road, Eau Claire, WI which they designate as their tank system numbers  $\frac{R}{AND} \frac{AND}{Q}$ 

for weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, structural damage, and inadequate construction or installation. The visual inspection was made before the tank system was covered, enclosed or placed in use. All discrepancies that were found were remedied to my satisfaction before the system was covered, enclosed or placed in use.

William L. Hable, P.E. Consulting Engineer P.E. Number 9778

HUL. 3, 2011 Date Stamped & Certified



#### HABLE ENGINEERING SERVICES

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the new tank located at WRR Environmental Services Co., Inc., 5200 State Road 93, Eau Claire, WI which they designate as their tank no. D. This tank is to replace the former tank of the same designation. From this inspection, it is my opinion that the new tank has been constructed in substantial conformity with the originally designed tank as shown in the drawings of their Feasibility Report and Plan of Operation. This tank has sufficient structural integrity and is acceptable for the storing of hazardous waste. The foundation, structural support, seams, and connections have sufficient structural strength, compatibility with the wastes to be stored, and corrosion protection to ensure that it will not collapse, rupture or fail.

Will 2 Hele

William L. Hable, P.E. Plant Engineering & Environmental Consultant P.E. Number 9778

MAY 18 1995 Date Stamped & Certified

P.E. Stamp



# State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

George E. Meyer Secretary 1300 West Clairemont Avenue P.O. Box 4001 Eau Claire, Wisconsin 54702-4001 TELEPHONE 715-839-3700 TELEFAX 715-839-6076

May 9, 1995

Mr. George Anderson, CHMM WRR Environmental Services Co., Inc. 5200 State Road 93 Eau Claire, WI 54701 WID990829475 FID618012010 Eau Claire County CMEL-Comm. TSD

Subject: Hazardous Waste Management Compliance Inspection and Tank Maintenance Replacement Documentation

Dear Mr. Anderson:

On March 23, 1995, Jill Harschlip and I performed an inspection at WRR to check for compliance with the hazardous waste management regulations found in NR 600 - 685, Wis. Admin. Code and with the requirements of your EPA permit and plan of operation approval. During that inspection, WRR appeared to be in compliance with the regulations and the license conditions.

During the inspection, you supplied me with letters regarding the intended maintenance change out and closure procedures for 6 tanks in the EI containment area. The tanks listed were D, G, F, CC, DD, ZZ. This information contained the engineer's certification for the manufacture and installation of the tank but it did not attest to the design's structural integrity and strength, compatibility with the waste to be stored and corrosion protection to ensure that it will not collapse, rupture or fail. Please see ss NR 645.08(1) Wis. Admin. Code. Tank designs and drawings were not attached as indicated and need to be supplied. In the future, the notice of intent, closure information and the engineer certification can be supplied as one document for each tank replaced.

I received a copy of the available closure information for Tank E which was replaced in 1994. Please supply the closure documentation for ZZ since that was replaced early this year. You can supply the closure information for the rest of the tanks, as they are changed. Since these tanks were built to the original design and specifications as approved in your plan of operation, no changes are necessary to your plan of operation and these are considered maintenance.

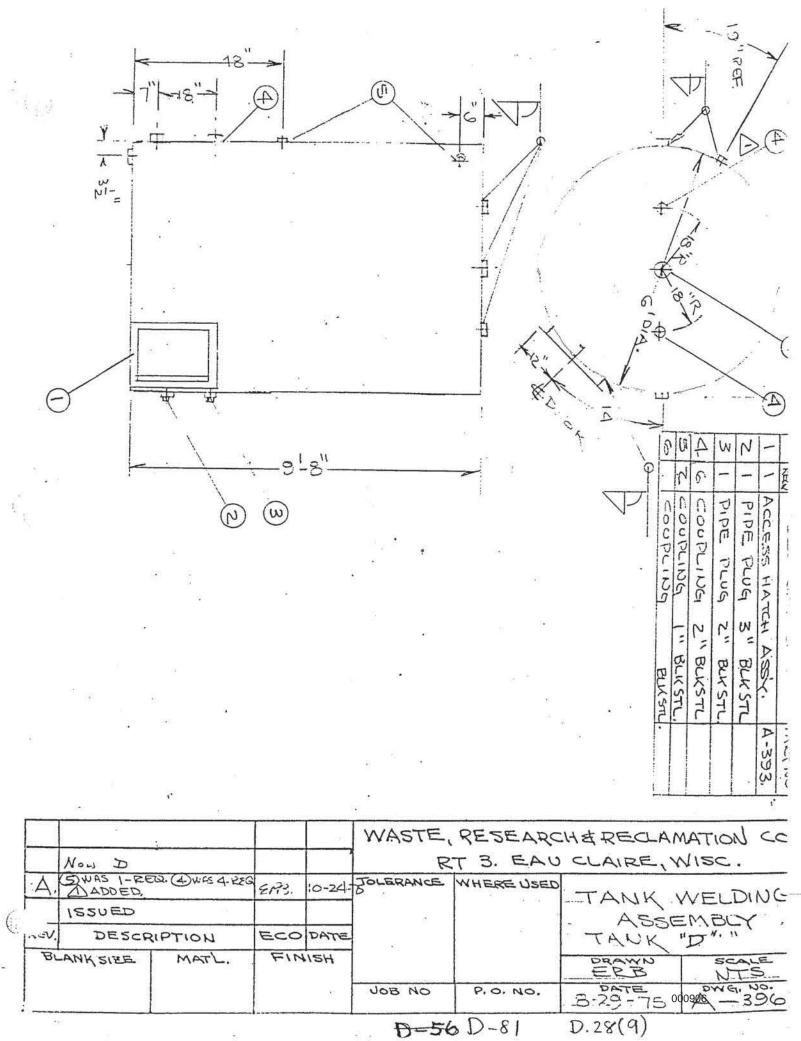
If you have any questions regarding this letter, please call me.

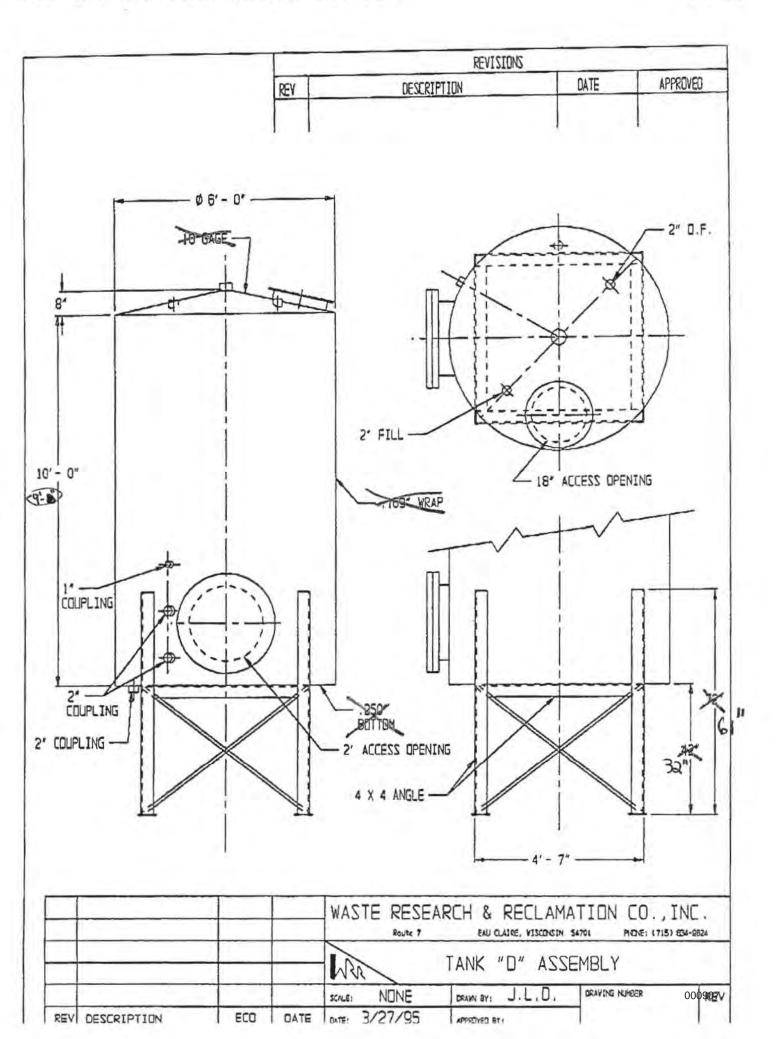
Sincerely,

Dingen K. Hoopen, CHMM Hazardous Waste Specialist

c: Aggie Cook - SW/3

Lundberg







715-834-9624 FAX 715-836-8785



Waste Research & Reclamation Co. Inc.

5200 State Road 93, Eau Claire, Wisconsin 54701

March 22, 1995

Ginger Hooper Wisconsin Department of Natural Resources Box 4001 Eau Claire, WI 54702-4001

REASON: Maintenance Replacement of Storage Tank D

Ms Hooper:

WRR Environmental Services Co., Inc. (WRR), WID990829475, as a maintenance item, is planning on replacing the tank portion of Tank D with a tank to be fabricated using the same design and specifications.

This replacement is being initiated by WRR because semiannual testing of Tank D's integrity has indicated that the useful life of the tank has expired. Accordingly, Tank DD has been taken out of service. A replacement tank will be manufactured by; TMC, 937 14th Avenue, Boskin, Wisconsin, using the plans and specifications in WRR's Hazardous Waste Storage Plan of Operation. These plans and specifications meet current NR 645 requirements. This tank will also have a Underwriter Laboratories Certification.

Exchanging the current Tank D with a new tank built to the same design and specifications will provide improved spill protection. Because it has the same design and specifications, it will not change any of the conditions in which WRR's Plan of Operation was based on and can be considered maintenance.

Closure and replacement of Tank D is intended to take place within a 6 month period following notification of the Department.

Closure of this tank will follow closure procedures outlined in WRR's Plan of Operation entitled; "Feasibility and Plan of Operation Report for Storage and Treatment at Waste Research & Reclamation Co., Inc. Facility, WID 990829475" in Section I-2d. These include the following steps:

- Removal of all waste from tank. Contents of the tank will be handled as a hazardous waste. They will be handled through WRR's current recycling and treatment processes.
- 2) Following waste removal, all piping to and from the tank will be disconnected, dismantled and decontaminated. The work will be supervised and performed using qualified WRR personnel. They will be equipped with solvent resistant coveralls (Olefin material coated with polyethylene

film), head protection, neoprene-coated gloves and boots resistant to the appropriate solvents. Both the wrists and ankles will be taped (electrical tape) to aid in protection against upward and inward splash. Full face respirators with organic vapor filter cartridges will be used. Hazsorb spill control pillows will be used in the event of any spills resulting from pipe drainage during the disconnection and dismantling process. Contaminated spill control pillows will be placed in a 55-gallon steel recovery drum located in the dismantling area during this closure process. Positive displacement pumps used to transfer solvents to and from tanks will be disconnected and cleaned. All valves will be disconnected and cleaned.

- 3) The interior surfaces will be cleaned with one or a combination of solvents that are compatible with the final waste. The most commonly used include; Acetone, Toluene, Methylene Chloride, Alcohols, and blends of solvents. To clean the residue on the interior surface after bulk removal (pumping), the manhole opening on the tank (side bottom) will be used for access. The interior will be sprayed with a nozzle pressure of 15 psi for both cleaning and rinsing.
- 4) All waste from the cleaning will be processed through WRR's recycling and treatment operation. To protect workers during the cleaning of the interior of the tank, a positive pressure air supply with full face mask will be used. A stand-by worker and all other required safety procedures will be employed.
- 5) The tank will then be steam cleaned and dried. Waste water generated during this process will also be handled through WRR's current recycling and treatment operations. The tank interior will also be checked with a PID to verify the absence of solvent vapors. All piping and the tank will then be recycled as scrap steel through Max Phillips & Sons of Eau Claire, Wisconsin.

While this tank is being replaced, the closure process is expected to take less than 30 days. No closure of any of the containment areas will take place. The containment area will continue to serve those tanks still in service.

The Tank D replacement tank designs are presented in the attached drawing named: "Sludge Tank D Assembly - E-1 Area". In accordance with NR 680.05(2)(d), five copies of the drawing are signed by an independent, qualified, registered, Wisconsin professional engineer.

Characteristics of the waste to be stored in this tank will remain consistent with those already approved by the Department and US EPA in WRR's Feasibility and Plan of Operation Report listed in Table D.27 (See Attached Copy). For Tank D, this includes Perk-Butanol. This information was also reviewed and approved by the independent engineer that certified the design of the replacement tank.

As per NR 645.08(2), and NR 645.09(4), (5) and (7) Wis. Adm. Code, the tank, tank systems, including containment structures and supports will be inspected to confirm they are sufficient after installation and before use. This will include results from leak testing of the tank and ancillary equipment as per NR 645.08(4), Wis. Adm. Code. Page 3 Hooper, G./WDNR March 22, 1995

As required by NR 645.08(5), Wis. Adm. Code, all supporting tank ancillary equipment will be protected and supported against physical damage and excessive stress due to settlement, vibration, expansion or contraction. Protection against physical damage is provided by the location of the tank. This tank is removed from traffic patterns by concrete berm, that ranges 10 to 12 inches high. All carbon steel will be covered with protective paint. The containment area has been in use and stable since 1979. Since the volume of waste and corresponding weight will not increase, no additional settling should occur. No increase in overall stress will be exerted on the containment area.

As per NR 645.09(8), Wis. Adm. Code, secondary containment exists for all ancillary equipment associated with these new tanks. All items are located in the tank containment area.

As per NR 645.06(1)(i)5, Wis. Adm. Code, a corrosion resistant coating that meets NR 645.08(1)(c)2, requirements will be used to provide external corrosion protection.

Protection against internal corrosion will continue to be provided by analyzing each waste prior to pumping into the tank system. Wastes corrosive to carbon steel are not in WRR's permit and are not accepted for storage. One-hundred percent of all wastes in tanks and containers accepted by WRR are analyzed prior to placing into storage. Because of this, excessive corrosion has not been a problem. At least annually, each tank is ultrasonically tested for thickness. A tank reaching the end of its designed life (ASME Code Replacement Thickness, Table D-26A of the Feasibility and Plan of Operation Report) is taken out of service.

If any additional information is required by the Department please contact me at: (715) 834-9624.

WRR ENVIRONMENTAL SERVICES CO., INC. aozh George Anderson

Corporate Difector of Compliance

enclosures

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the tank system located at Waste Research & Reclamation, 5200 State Road 93, Eau Claire, WI which they designate as their tank system no. Dfor weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, structural damage, and inadequate construction or installation. The visual inspection was made before the tank system was covered, enclosed or placed in use. All discrepancies that were found were remedied-to my satisfaction before the system was covered, enclosed or placed in use.

William L. Hable, P.E.

William L. Hable, P.E. Plant Engineering & Environmental Consultant P.E. Number 9778

MARCH 22, 1995 Date Stamped & Certified

P.E. Stamp 2274

#### TANK "D" CLOSURE

Tank D was determined to be unfit for further service on 2-20-95, see attached form. On that date, closure proceedures were initiated. Residuals were removed, the tank was steam cleaned, and readings were taken with an explosion meter to verify complete decontamination. If readings found decontamination incomplete, the steam cleaning process is repeated until the results were negetive. All residuals were treated as a hazardous waste and handled through the appropriate waste management process. Sludges were fuel blended, and water from stream cleaning was disposed of through our hazardous waste water stream to DuPont's Deepwater, New Jersy facilty.

On 3-13-95 Vern Miller issued a Fire Permit for dismantling Tank D. Readings were taken to verify complete decontamination. The tank was placed in the Tank Cutting Pad by a crane, and dismantled. The metal was placed in a roll off box and picked up by Max Phillips & Son of Eau Claire.

#### HABLE ENGINEERING SERVICES

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the tank system located at Waste Research & Reclamation, 5200 State Road 93, Eau Claire, WI which they designate as their tank system no. For weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, structural damage, and inadequate construction or installation. The visual inspection was made before the tank system was covered, enclosed or placed in use. All discrepancies

that were found were remedied to my satisfaction before the

Wil 2 Hl

William L. Hable, P.E. Plant Engineering & Environmental Consultant P.E. Number 9778

system was covered, enclosed or placed in use.

July 20 1994 Date Stamped & Certified

P.E. Stamp

TM

715-834-9624 FAX 715-836-8785



5200 State Road 93, Eau Claire, Wisconsin 54701

May 31, 1994

Ginger Hooper Wisconsin Department of Natural Resources 1300 West Clairemont Eau Claire, WI 54702-4001

REASON: Maintenance Replacement of Storage Tank E

Ms Hooper:

Waste Research & Reclamation Co., Inc. (WRR), WID990829475, as a maintenance item, is planning on replacing the tank portion of Tank E with a tank to be fabricated using the same design and specifications.

This replacement is being initiated by WRR because semiannual testing of Tank E's integrity has indicated that the useful life of the tank has expired. Correspondingly, Tank E has been taken out of service. A replacement tank will be manufactured by; TMC, 937 14th Avenue, Boskin, Wisconsin, using the plans and specifications in WRR's Hazardous Waste Storage Plan of Operation. These plans and specifications meet current NR 645 requirements. This tank will also have a Underwriter Laboratories Certification.

Exchanging the current Tank E with a new tank built to the same design and specifications will provide improved spill protection. Because it has the same design and specifications, it will not change any of the conditions in which WRR's Plan of Operation was based on and can be considered maintenance.

Closure and replacement of Tank E is intended to take place within a 6 month period following notification of the Department.

Closure of this tank will follow closure procedures outlined in WRR's Plan of Operation entitled; "Feasibility and Plan of Operation Report for Storage and Treatment at Waste Research & Reclamation Co., Inc. Facility, WID 990829475" in Section I-2d. These include the following steps:

- 1) Removal of all waste from tank. Contents of the tank will be handled as a hazardous waste. They will be handled through WRR's current recycling and treatment processes.
  - 2) Following waste removal, all piping to and from the tank will be disconnected, dismantled and decontaminated. The work will be supervised and performed using qualified WRR personnel. They will be equipped with solvent resistant coveralls (Olefin material coated with polyethylene



film), head protection, neoprene-coated gloves and boots resistant to the appropriate solvents. Both the wrists and ankles will be taped (electrical tape) to aid in protection against upward and inward splash. Full face respirators with organic vapor filter cartridges will be used. Hazsorb spill control pillows will be used in the event of any spills resulting from pipe drainage during the disconnection and dismantling process. Contaminated spill control pillows will be placed in a 55-gallon steel recovery drum located in the dismantling area during this closure process. Positive displacement pumps used to transfer solvents to and from tanks will be disconnected and cleaned. All valves will be disconnected and cleaned.

- 3) The interior surfaces will be cleaned with one or a combination of solvents that are compatible with the final waste. The most commonly used include; Acetone, Toluene, Methylene Chloride, Alcohols, and blends of solvents. To clean the residue on the interior surface after bulk removal (pumping), the manhole opening on the tank (side bottom) will be used for access. The interior will be sprayed with a nozzle pressure of 15 psi for both cleaning and rinsing.
- 4) All waste from the cleaning will be processed through WRR's recycling and treatment operation. To protect workers during the cleaning of the interior of the tank, a positive pressure air supply with full face mask will be used. A stand-by worker and all other required safety procedures will be employed.
- 5) The tank will then be steam cleaned and dried. Waste water generated during this process will also be handled through WRR's current recycling and treatment operations. The tank interior will also be checked with a PID to verify the absence of solvent vapors. All piping and the tank will then be recycled as scrap steel through Max Phillips & Sons of Eau Claire, Wisconsin.

While this tank is being replaced, the closure process is expected to take less than 30 days. No closure of any of the containment areas will take place. The containment area will continue to serve those tanks still in service.

The Tank E replacement tank designs are presented in the attached drawings named: "Residue Holding Tank Assembly" and "H-Beam Support Base, Weld Assembly - Tank". In accordance with NR 680.05(2)(d), each of the five copies of each drawing is signed by an independent, qualified, registered, Wisconsin professional engineer.

Characteristics of the waste to be stored in this tank will remain consistent with those already approved by the Department and US EPA in WRR's Feasibility and Plan of Operation Report listed in Table D.27 (See Attached Copy). For Tank E, this includes Methylene Chloride or a Methylene Chloride-Methanol blend. This information was also reviewed and approved by the independent engineer that certified the design of the replacement tank.

As per NR 645.08(2), and NR 645.09(4), (5) and (7) Wis. Adm. Code, the tank, tank systems, including containment structures and supports will be inspected to confirm they are sufficient after installation and before use. This will include results from leak testing of the tank and ancillary equipment as per NR 645.08(4), Wis. Adm. Code.

Page 3 Hooper, G./WDNR May 31, 1994

As required by NR 645.08(5), Wis. Adm. Code, all supporting tank ancillary equipment will be protected and supported against physical damage and excessive stress due to settlement, vibration, expansion or contraction. Protection against physical damage is provided by the location of the tank. This tank is removed from traffic patterns by concrete berm, that ranges 10 to 12 inches high. All carbon steel will be covered with protective paint. The containment area has been in use and stable since 1979. Since the volume of waste and corresponding weight will not increase, no additional settling should occur. No increase in overall stress will be exerted on the containment area.

As per NR 645.09(8), Wis. Adm. Code, secondary containment exists for all ancillary equipment associated with these new tanks. All items are located in the tank containment area.

As per NR 645.06(1)(i)5, Wis. Adm. Code, a corrosion resistant coating that meets NR 645.08(1)(c)2, requirements will be used to provide external corrosion protection.

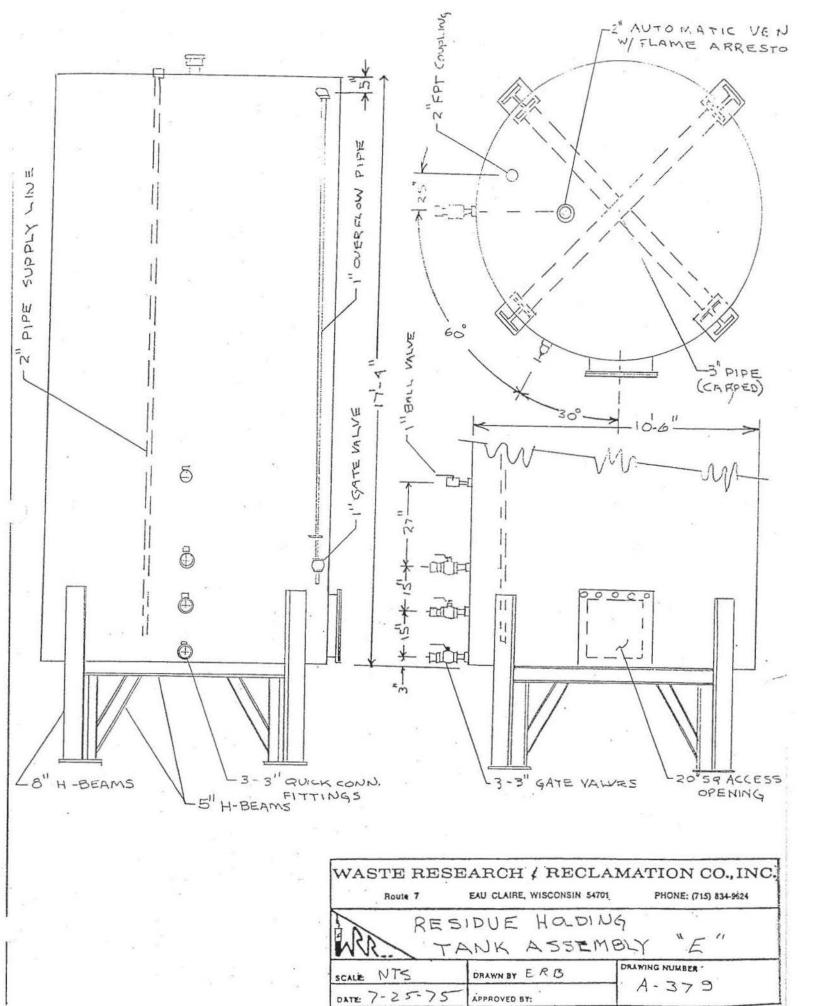
Protection against internal corrosion will continue to be provided by analyzing each waste prior to pumping into the tank system. Wastes corrosive to carbon steel are not in WRR's permit and are not accepted for storage. One-hundred percent of all wastes in tanks and containers accepted by WRR are analyzed prior to placing into storage. Because of this, excessive corrosion has not been a problem. At least annually, each tank is ultrasonically tested for thickness. A tank reaching the end of its designed life (ASME Code Replacement Thickness, Table D-26A of the Feasibility and Plan of Operation Report) is taken out of service.

If any additional information is required by the Department please contact me at: (715) 834-9624.

WASTE RESEARCH & RECLAMATION CO., INC.

George Anderson Corporate Director of Compliance

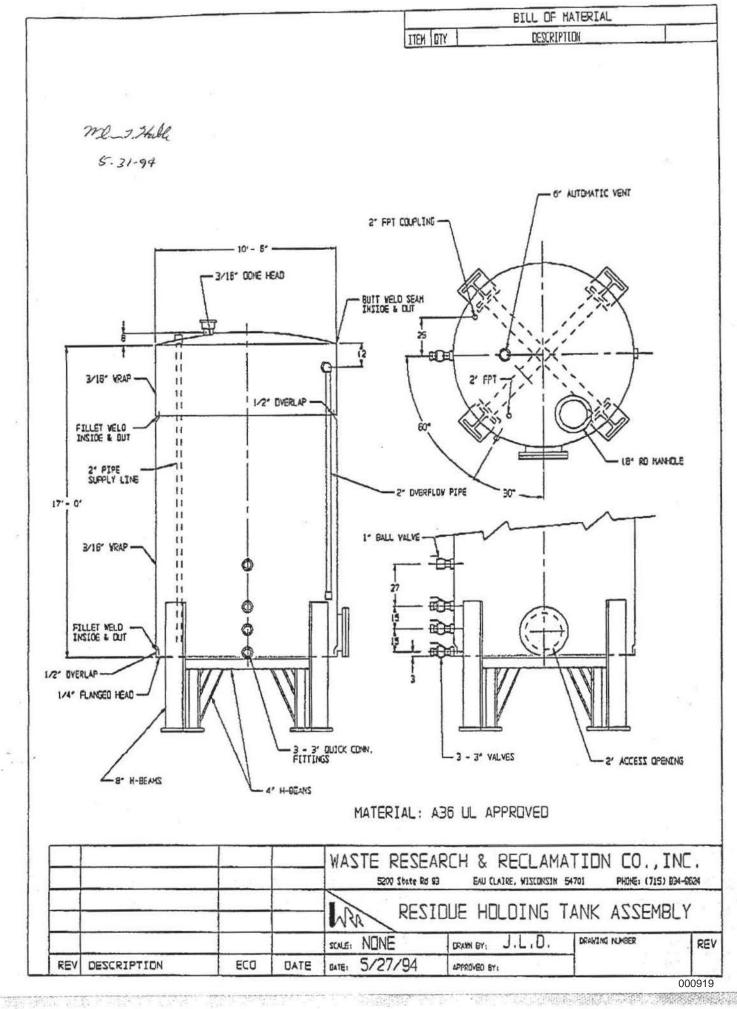
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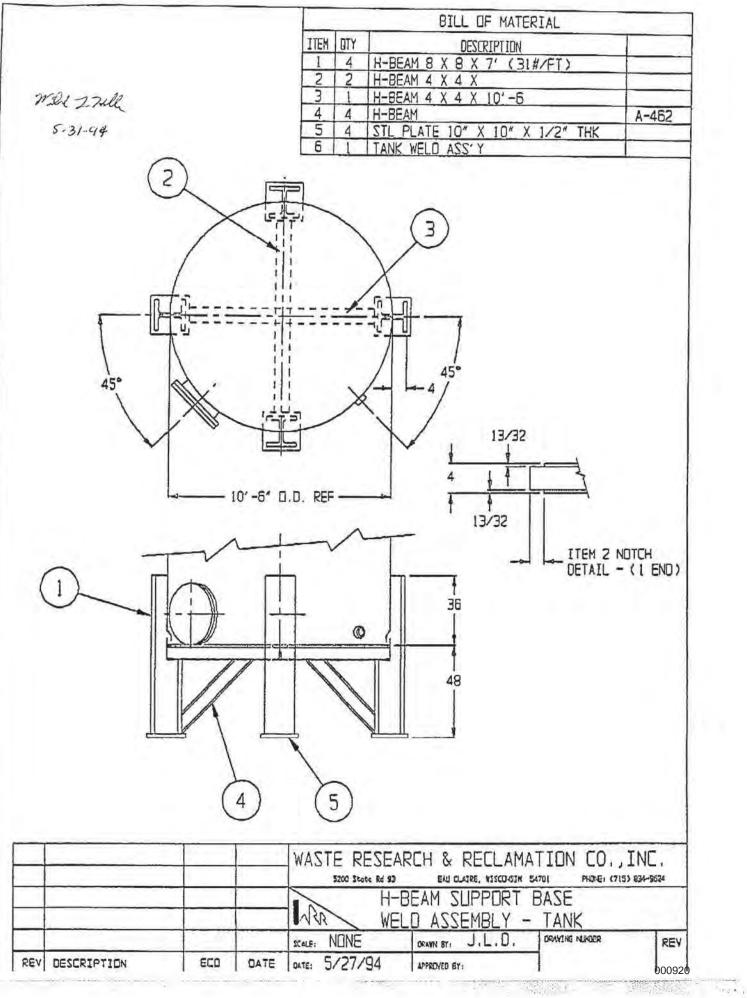


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### HABLE ENGINEERING SERVICES

### 721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the new tank located at WRR Environmental Services Co., Inc., 5200 State Road 93, Eau Claire, WI which they designate as their tank no. \_\_\_\_\_\_. This tank is to replace the former tank of the same designation. From this inspection, it is my opinion that the new tank has been constructed in substantial conformity with the originally designed tank as shown in the drawings of their Feasibility Report and Plan of Operation. This tank has sufficient structural integrity and is acceptable for the storing of hazardous waste. The foundation, structural support, seams, and connections have sufficient structural strength, compatibility with the wastes to be stored, and corrosion protection to ensure that it will not collapse, rupture or fail.

Will Zihle

William L. Hable, P.E. Plant Engineering & Environmental Consultant P.E. Number 9778

MAX 18 1995 Date Stamped & Certified

P.E. Stamp



# State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

1300 West Clairemont Avenue P.O. Box 4001 Esu Claire, Wisconsin 54702-4001 TELEPHONE 715-839-3700 TELEFAX 715-839-6076

George E. Meyer Secretary

May 9, 1995

Mr. George Anderson, CHMM WRR Environmental Services Co., Inc. 5200 State Road 93 Eau Claire, WI 54701 WID990829475 FID618012010 Eau Claire County CMEL-Comm, TSD

Subject: Hazardous Waste Management Compliance Inspection and Tank Maintenance Replacement Documentation

Dear Mr. Anderson:

On March 23, 1995, Jill Harschlip and I performed an inspection at WRR to check for compliance with the hazardous waste management regulations found in NR 600 - 685, Wis. Admin. Code and with the requirements of your EPA permit and plan of operation approval. During that inspection, WRR appeared to be in compliance with the regulations and the license conditions.

During the inspection, you supplied me with letters regarding the intended maintenance change out and closure procedures for 6 tanks in the EI containment area. The tanks listed were D, G, F, CC, DD, ZZ. This information contained the engineer's certification for the manufacture and installation of the tank but it did not attest to the design's structural integrity and strength, compatibility with the waste to be stored and corrosion protection to ensure that it will not collapse, rupture or fail. Please see ss NR 645.08(1) Wis. Admin. Code. Tank designs and drawings were not attached as indicated and need to be supplied. In the future, the notice of intent, closure information and the engineer certification can be supplied as one document for each tank replaced.

I received a copy of the available closure information for Tank E which was replaced in 1994. Please supply the closure documentation for ZZ since that was replaced early this year. You can supply the closure information for the rest of the tanks, as they are changed. Since these tanks were built to the original design and specifications as approved in your plan of operation, no changes are necessary to your plan of operation and these are considered maintenance.

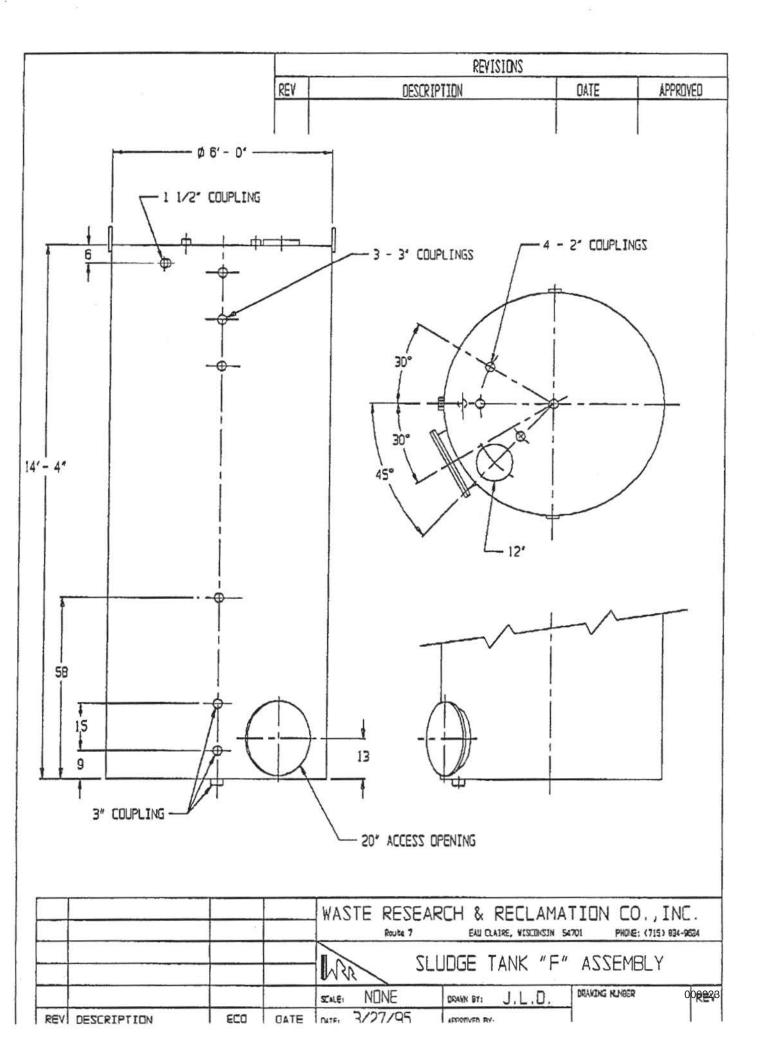
If you have any questions regarding this letter, please call me.

Sincerely,

Dinger K. Hooper, CHMM Hazardous Waste Specialist

c: Aggie Cook - SW/3

Lundberg



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DESCRIPTION

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COUPLING

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PART NO

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PU

BLKSTL

BLX STL!



715-834-9624 FAX 715-836-8785

Printed on recycled

paper



5200 State Road 93, Eau Claire, Wisconsin 54701

March 22, 1995

Ginger Hooper Wisconsin Department of Natural Resources Box 4001 Eau Claire, WI 54702-4001

REASON: Maintenance Replacement of Storage Tank F

Ms Hooper:

WRR Environmental Services Co., Inc. (WRR), WID990829475, as a maintenance item, is planning on replacing the tank portion of Tank F with a tank to be fabricated using the same design and specifications.

This replacement is being initiated by WRR because semiannual testing of Tank F's integrity has indicated that the useful life of the tank has expired. Accordingly, Tank F has been taken out of service. A replacement tank will be manufactured by; TMC, 937 14th Avenue, Boskin, Wisconsin, using the plans and specifications in WRR's Hazardous Waste Storage Plan of Operation. These plans and specifications meet current NR 645 requirements. This tank will also have a Underwriter Laboratories Certification.

Exchanging the current Tank F with a new tank built to the same design and specifications will provide improved spill protection. Because it has the same design and specifications, it will not change any of the conditions in which WRR's Plan of Operation was based on and can be considered maintenance.

Closure and replacement of Tank F is intended to take place within a 6 month period following notification of the Department.

Closure of this tank will follow closure procedures outlined in WRR's Plan of Operation entitled; "Feasibility and Plan of Operation Report for Storage and Treatment at Waste Research & Reclamation Co., Inc. Facility, WID 990829475" in Section I-2d. These include the following steps:

- Removal of all waste from tank. Contents of the tank will be handled as a hazardous waste. They will be handled through WRR's current recycling and treatment processes.
- 2) Following waste removal, all piping to and from the tank will be disconnected, dismantled and decontaminated. The work will be supervised and performed using qualified WRR personnel. They will be equipped with solvent resistant coveralls (Olefin material coated with polyethylene

Page 2 Hooper, G./WDNR March 22, 1995

> film), head protection, neoprene-coated gloves and boots resistant to the appropriate solvents. Both the wrists and ankles will be taped (electrical tape) to aid in protection against upward and inward splash. Full face respirators with organic vapor filter cartridges will be used. Hazsorb spill control pillows will be used in the event of any spills resulting from pipe drainage during the disconnection and dismantling process. Contaminated spill control pillows will be placed in a 55-gallon steel recovery drum located in the dismantling area during this closure process. Positive displacement pumps used to transfer solvents to and from tanks will be disconnected and cleaned. All valves will be disconnected and cleaned.

- 3) The interior surfaces will be cleaned with one or a combination of solvents that are compatible with the final waste. The most commonly used include; Acetone, Toluene, Methylene Chloride, Alcohols, and blends of solvents. To clean the residue on the interior surface after bulk removal (pumping), the manhole opening on the tank (side bottom) will be used for access. The interior will be sprayed with a nozzle pressure of 15 psi for both cleaning and rinsing.
- 4) All waste from the cleaning will be processed through WRR's recycling and treatment operation. To protect workers during the cleaning of the interior of the tank, a positive pressure air supply with full face mask will be used. A stand-by worker and all other required safety procedures will be employed.
- 5) The tank will then be steam cleaned and dried. Waste water generated during this process will also be handled through WRR's current recycling and treatment operations. The tank interior will also be checked with a PID to verify the absence of solvent vapors. All piping and the tank will then be recycled as scrap steel through Max Phillips & Sons of Eau Claire, Wisconsin.

While this tank is being replaced, the closure process is expected to take less than 30 days. No closure of any of the containment areas will take place. The containment area will continue to serve those tanks still in service.

The Tank F replacement tank designs are presented in the attached drawing named: "Sludge Tank F Assembly - E-1 Area". In accordance with NR 680.05(2)(d), five copies of the drawing are signed by an independent, qualified, registered, Wisconsin professional engineer.

Characteristics of the waste to be stored in this tank will remain consistent with those already approved by the Department and US EPA in WRR's Feasibility and Plan of Operation Report listed in Table D.27 (See Attached Copy). For Tank F, this includes; Methylene Chloride, 1-1-1 Trichloroethane, Trichloroethylene, and Alcohol Solvents. This information was also reviewed and approved by the independent engineer that certified the design of the replacement tank.

As per NR 645.08(2), and NR 645.09(4), (5) and (7) Wis. Adm. Code, the tank, tank systems, including containment structures and supports will be inspected to confirm they are sufficient after installation and before use. This will include results from leak testing of the tank and ancillary equipment as per NR 645.08(4), Wis. Adm. Code.

Page 3 Hooper, G./WDNR March 22, 1995

As required by NR 645.08(5), Wis. Adm. Code, all supporting tank ancillary equipment will be protected and supported against physical damage and excessive stress due to settlement, vibration, expansion or contraction. Protection against physical damage is provided by the location of the tank. This tank is removed from traffic patterns by concrete berm, that ranges 10 to 12 inches high. All carbon steel will be covered with protective paint. The containment area has been in use and stable since 1979. Since the volume of waste and corresponding weight will not increase, no additional settling should occur. No increase in overall stress will be exerted on the containment area.

As per NR 645.09(8), Wis. Adm. Code, secondary containment exists for all ancillary equipment associated with these new tanks. All items are located in the tank containment area.

As per NR 645.06(1)(i)5, Wis. Adm. Code, a corrosion resistant coating that meets NR 645.08(1)(c)2, requirements will be used to provide external corrosion protection.

Protection against internal corrosion will continue to be provided by analyzing each waste prior to pumping into the tank system. Wastes corrosive to carbon steel are not in WRR's permit and are not accepted for storage. One-hundred percent of all wastes in tanks and containers accepted by WRR are analyzed prior to placing into storage. Because of this, excessive corrosion has not been a problem. At least annually, each tank is ultrasonically tested for thickness. A tank reaching the end of its designed life (ASME Code Replacement Thickness, Table D-26A of the Feasibility and Plan of Operation Report) is taken out of service.

If any additional information is required by the Department please contact me at: (715) 834-9624.

WRR ENVIRONMENTAL SERVICES CO., INC.

corporate Director of Compliance

enclosures

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the tank system located at Waste Research & Reclamation, 5200 State Road 93, Eau Claire, WI which they designate as their tank system no. F for weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, structural damage, and inadequate construction or installation. The visual inspection was made before the tank system was covered, enclosed or placed in use. All discrepancies

that were found were remedied - to my satisfaction before the

William L. Hable, P.E.

William L. Hable, P.E. Plant Engineering & Environmental Consultant P.E. Number 9778

system was covered, enclosed or placed in use.

MARCH 22, 1995 Date Stamped & Certified

P.E. Stamp

000928

### TANK "F" CLOSURE

Tank F was determined to be unfit for further service on 5-6-87, see attached form. On that date, closure proceedures were initiated. Residuals were removed, the tank was steam cleaned, and readings were taken with an explosion meter to verify complete decontamination. If readings found decontamination incomplete, the steam cleaning process is repeated until the results were negetive. All residuals were treated as a hazardous waste and handled through the appropriate waste management process. Sludges were fuel blended, and water from stream cleaning was disposed of through our hazardous waste water stream to DuPont's Deepwater, New Jersy facilty.

On 5-12-87 Vern Miller issued a Fire Permit for dismantling Tank F. Readings were taken to verify complete decontamination. The tank was placed in the Tank Cutting Pad by a crane, and dismantled. The metal was placed in a roll off box and picked up by Max Phillips & Son of Eau Claire.

#### HABLE ENGINEERING SERVICES

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the new tank located at WRR Environmental Services Co., Inc., 5200 State Road 93, Eau Claire, WI which they designate as their tank no. \_\_\_\_\_\_. This tank is to replace the former tank of the same designation. From this inspection, it is my opinion that the new tank has been constructed in substantial conformity with the originally designed tank as shown in the drawings of their Feasibility Report and Plan of Operation. This tank has sufficient structural integrity and is acceptable for the storing of hazardous waste. The foundation, structural support, seams, and connections have sufficient structural strength, compatibility with the wastes to be stored, and corrosion protection to ensure that it will not collapse, rupture or fail.

2 The

William L. Hable, P.E. Plant Engineering & Environmental Consultant P.E. Number 9778

MAY 13, 1995 Date Stamped & Certified

P.E.

Stamp

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State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

George E. Meyer Secretary 1300 West Clairemont Avenue P.O. Box 4001 Eau Claire, Wisconsin 54702-4001 TELEPHONE 715-839-3700 TELEFAX 715-839-6076

May 9, 1995

Mr. George Anderson, CHMM WRR Environmental Services Co., Inc. 5200 State Road 93 Eau Claire, WI 54701 WID990829475 FID618012010 Eau Claire County CMEL-Comm. TSD

Subject: Hazardous Waste Management Compliance Inspection and Tank Maintenance Replacement Documentation

Dear Mr. Anderson:

On March 23, 1995, Jill Harschlip and I performed an inspection at WRR to check for compliance with the hazardous waste management regulations found in NR 600 - 685, Wis. Admin. Code and with the requirements of your EPA permit and plan of operation approval. During that inspection, WRR appeared to be in compliance with the regulations and the license conditions.

During the inspection, you supplied me with letters regarding the intended maintenance change out and closure procedures for 6 tanks in the EI containment area. The tanks listed were D, G, F, CC, DD, ZZ. This information contained the engineer's certification for the manufacture and installation of the tank but it did not attest to the design's structural integrity and strength, compatibility with the waste to be stored and corrosion protection to ensure that it will not collapse, rupture or fail. Please see ss NR 645.08(1) Wis. Admin. Code. Tank designs and drawings were not attached as indicated and need to be supplied. In the future, the notice of intent, closure information and the engineer certification can be supplied as one document for each tank replaced.

I received a copy of the available closure information for Tank E which was replaced in 1994. Please supply the closure documentation for ZZ since that was replaced early this year. You can supply the closure information for the rest of the tanks, as they are changed. Since these tanks were built to the original design and specifications as approved in your plan of operation, no changes are necessary to your plan of operation and these are considered maintenance.

If you have any questions regarding this letter, please call me.

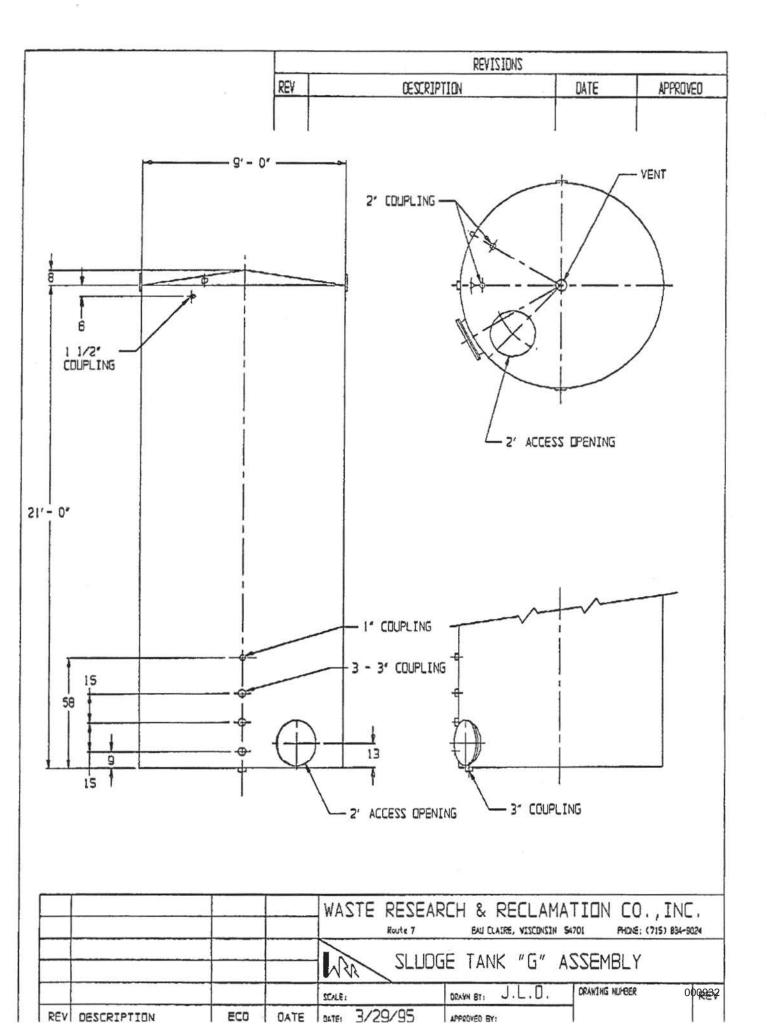
Sincerely,

Dinger K. Hooper, CHMM

Hazardous Waste Specialist

c: Aggie Cook - SW/3

Lundberg



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715-834-9624 FAX 715-836-8785



Waste Research & Reclamation Co. Inc.

5200 State Road 93, Eau Claire, Wisconsin 54701

March 22, 1995

Ginger Hooper Wisconsin Department of Natural Resources Box 4001 Eau Claire, WI 54702-4001

REASON: Maintenance Replacement of Storage Tank G

73.4

Ms Hooper:

WRR Environmental Services Co., Inc. (WRR), WID990829475, as a maintenance item, is planning on replacing the tank portion of Tank G with a tank to be fabricated using the same design and specifications.

This replacement is being initiated by WRR because semiannual testing of Tank G's integrity has indicated that the useful life of the tank has expired. Accordingly, Tank DD has been taken out of service. A replacement tank will be manufactured by; TMC, 937 14th Avenue, Boskin, Wisconsin, using the plans and specifications in WRR's Hazardous Waste Storage Plan of Operation. These plans and specifications meet current NR 645 requirements. This tank will also have a Underwriter Laboratories Certification.

Exchanging the current Tank G with a new tank built to the same design and specifications will provide improved spill protection. Because it has the same design and specifications, it will not change any of the conditions in which WRR's Plan of Operation was based on and can be considered maintenance.

Closure and replacement of Tank G is intended to take place within a 6 month period following notification of the Department.

Closure of this tank will follow closure procedures outlined in WRR's Plan of Operation entitled; "Feasibility and Plan of Operation Report for Storage and Treatment at Waste Research & Reclamation Co., Inc. Facility, WID 990829475" in Section I-2d. These include the following steps:

- Removal of all waste from tank. Contents of the tank will be handled as a hazardous waste. They will be handled through WRR's current recycling and treatment processes.
- 2) Following waste removal, all piping to and from the tank will be disconnected, dismantled and decontaminated. The work will be supervised and performed using qualified WRR personnel. They will be equipped with solvent resistant coveralls (Olefin material coated with polyethylene

film), head protection, neoprene-coated gloves and boots resistant to the appropriate solvents. Both the wrists and ankles will be taped (electrical tape) to aid in protection against upward and inward splash. Full face respirators with organic vapor filter cartridges will be used. Hazsorb spill control pillows will be used in the event of any spills resulting from pipe drainage during the disconnection and dismantling process. Contaminated spill control pillows will be placed in a 55-gallon steel recovery drum located in the dismantling area during this closure process. Positive displacement pumps used to transfer solvents to and from tanks will be disconnected and cleaned. All valves will be disconnected and cleaned.

- 3) The interior surfaces will be cleaned with one or a combination of solvents that are compatible with the final waste. The most commonly used include; Acetone, Toluene, Methylene Chloride, Alcohols, and blends of solvents. To clean the residue on the interior surface after bulk removal (pumping), the manhole opening on the tank (side bottom) will be used for access. The interior will be sprayed with a nozzle pressure of 15 psi for both cleaning and rinsing.
- 4) All waste from the cleaning will be processed through WRR's recycling and treatment operation. To protect workers during the cleaning of the interior of the tank, a positive pressure air supply with full face mask will be used. A stand-by worker and all other required safety procedures will be employed.
- 5) The tank will then be steam cleaned and dried. Waste water generated during this process will also be handled through WRR's current recycling and treatment operations. The tank interior will also be checked with a PID to verify the absence of solvent vapors. All piping and the tank will then be recycled as scrap steel through Max Phillips & Sons of Eau Claire, Wisconsin.

While this tank is being replaced, the closure process is expected to take less than 30 days. No closure of any of the containment areas will take place. The containment area will continue to serve those tanks still in service.

The Tank D replacement tank designs are presented in the attached drawing named: "Sludge Tank G Assembly - E-1 Area". In accordance with NR 680.05(2)(d), five copies of the drawing are signed by an independent, qualified, registered, Wisconsin professional engineer.

Characteristics of the waste to be stored in this tank will remain consistent with those already approved by the Department and US EPA in WRR's Feasibility and Plan of Operation Report listed in Table D.27 (See Attached Copy). For Tank G, this includes 1-1-1 Trichloroethane. This information was also reviewed and approved by the independent engineer that certified the design of the replacement tank.

As per NR 645.08(2), and NR 645.09(4), (5) and (7) Wis. Adm. Code, the tank, tank systems, including containment structures and supports will be inspected to confirm they are sufficient after installation and before use. This will include results from leak testing of the tank and ancillary equipment as per NR 645.08(4), Wis. Adm. Code.

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As required by NR 645.08(5), Wis. Adm. Code, all supporting tank ancillary equipment will be protected and supported against physical damage and excessive stress due to settlement, vibration, expansion or contraction. Protection against physical damage is provided by the location of the tank. This tank is removed from traffic patterns by concrete berm, that ranges 10 to 12 inches high. All carbon steel will be covered with protective paint. The containment area has been in use and stable since 1979. Since the volume of waste and corresponding weight will not increase, no additional settling should occur. No increase in overall stress will be exerted on the containment area.

As per NR 645.09(8), Wis. Adm. Code, secondary containment exists for all ancillary equipment associated with these new tanks. All items are located in the tank containment area.

As per NR 645.06(1)(i)5, Wis. Adm. Code, a corrosion resistant coating that meets NR 645.08(1)(c)2, requirements will be used to provide external corrosion protection.

Protection against internal corrosion will continue to be provided by analyzing each waste prior to pumping into the tank system. Wastes corrosive to carbon steel are not in WRR's permit and are not accepted for storage. One-hundred percent of all wastes in tanks and containers accepted by WRR are analyzed prior to placing into storage. Because of this, excessive corrosion has not been a problem. At least annually, each tank is ultrasonically tested for thickness. A tank reaching the end of its designed life (ASME Code Replacement Thickness, Table D-26A of the Feasibility and Plan of Operation Report) is taken out of service.

If any additional information is required by the Department please contact me at: (715) 834-9624.

WRR ENVIRONMENTAL SERVICES CO., INC.

0526 eorge Anderson

corporate Director of Compliance

enclosures

HABLE ENGINEERING SERVICES

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the tank system located at Waste Research & Reclamation, 5200 State Road 93, Eau Claire, WI which they designate as their tank system no. for weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, structural damage, and inadequate construction or installation. The visual inspection was made before the tank system was covered, enclosed or placed in use. All discrepancies that were found were remedied to my satisfaction before the system was covered, enclosed or placed in use.

William L. Hable, P.E.

William L. Hable, P.E. Plant Engineering & Environmental Consultant P.E. Number 9778

MARCH 22, 1995 Date Stamped & Certified

P.E. Stamp 2-224

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### TANK "G" CLOSURE

Tank G was determined to be unfit for further service on 2-20-95, see attached form. On that date, closure proceedures were initiated. Residuals were removed, the tank was steam cleaned, and readings were taken with an explosion meter to verify complete decontamination. If readings found decontamination incomplete, the steam cleaning process is repeated until the results were negetive. All residuals were treated as a hazardous waste and handled through the appropriate waste management process. Sludges were fuel blended, and water from stream cleaning was disposed of through our hazardous waste water stream to DuPont's Deepwater, New Jersy facilty.

On 4-12-95, Vern Miller issued a Fire Permit for dismantling Tank G. Readings were taken to verify complete decontamination. The tank was placed in the Tank Cutting Pad by a crane, and dismantled. The metal was placed in a roll off box and picked up by Max Phillips & Son of Eau Claire.



715-834-9624 FAX 715-836-8785

WRR Environmental Services Co., Inc.

/13-834-7024 FAA /13-850-8785

5200 State Road 93, Eau Claire, Wisconsin 54701

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"Dedicated to Providing Quality Service into the 21st Century"

October 22, 1997

Ginger Hooper Wisconsin Department of Natural Resources 1300 West Clairemont Eau Claire, WI 54702-4001

SUBJECT : Permit Modification to Add Waste Codes; K050, U036, U061, U165, U188, U240, U247, and Replace Tank H

Dear Ms. Hooper:

The following letter and enclosures request approval from the Department for the addition of Waste Codes; K050, U036, U061, U165, U188, U240 and U247 to our permit, and the replacement of Tank H with a tank of superior design and construction. This is to take place at WRR Environmental Services Co., Inc. (WRR) (WID 990 829 475), 5200 State Road 93, Eau Claire, Wisconsin 54701. These proposed changes are intended to more accurately describe, as well as, improve operations with in our currently licensed parameters. It is not intended to be an expansion of those activities.

WRR already has on its permit waste codes; K048, K049, K051, and K052. These waste codes are Petroleum Refining wastes. K050, "Heat exchanger bundle cleaning sludge from the petroleum refining industry" exhibits similar characteristics and constituents. Adding this waste code would allow WRR to handle all 5 petroleum refining wastes, allowing us to provide better service to the petroleum refining industry.

WRR is also requesting to add a number of pesticide waste codes; U036 Chlordane, U061 DDT, U165 Naphthalene, U188 Phenol, U240 2,4-D, and U247 Methoxychlor. WRR provides Household Hazardous Materials Collection (Clean Sweep) services to a number of counties. To enhance this service, and to provide a lower cost of service, WRR would like to accumulate quantities over a greater period of time and consolidate these materials prior to shipment. Adding these codes would allow WRR to do this. Because WRR's treatment systems are not applicable to pesticides, storage and consolidation for off-site treatment would be WRR's only handling option for these waste codes. The characteristics exhibited by these materials, flammability and toxicity, would be compatible with the types of materials already handled at WRR.

If approved by the Department, WRR will immediately submit an updated Part A to US EPA that includes the K050, U036, U061, U165, U188, U240, and U247 waste codes.

If possible, I am asking that the Tank H replacement be evaluated under the same light as our May 30, 1996 request. In that submittal, the same tank design and specifications used for Tank J, and approved by the Department, will be used for Tank H's replacement.

Tank H (E-I Tank Area) is proposed to be replaced with cone bottom tank. This is being initiated by WRR for the following reasons; 1) The upgrade to cone bottom tanks will allow more complete inspection of the tank by exposing the bottom portion. More complete inspection will further decrease the possibility of an undetected spill from tank failure. 2) Worker exposure to hazardous waste is reduced. Cone bottom tanks do not normally require a worker to enter the tank for cleaning. This has been required on at least an annual basis for standard hazardous waste storage tanks. 3) More accurate readings of the volume are possible. 4) Due to the design, sludge accumulation is reduced. Therefore, the volume of waste generated is reduced.

Tank closure will follow closure procedures outlined in WRR's Plan of Operation entitled; "Feasibility and Plan of Operation Report for Storage and Treatment at Waste Research & Reclamation Co., Inc. Facility, WID 990829475" in Section I-2d. This included the following steps:

- 1) Removal of all waste from the tank. Contents of the tank will be handled as a hazardous waste. They will be handled through WRR's current recycling and treatment processes.
- 2) Following waste removal, all piping to and from the tank will be disconnected, dismantled and decontaminated. The work will be supervised and performed using qualified WRR personnel.

They will be equipped with solvent resistant coveralls, head protection, neoprene-coated gloves and boots resistant to the appropriate solvents. Both the wrists and ankles will be taped to aid in protection against upward and inward splash. Full face respirators with organic vapor filter cartridges will be used. Hazsorb spill control pillows will be used in the event of any spills resulting from pipe drainage during the disconnection and dismantling process. Positive displacement pumps used to transfer solvents to and from the tank will be disconnected and cleaned. All valves will be disconnected and cleaned.

- 3) The interior surface will be cleaned with one or a combination of solvents that are compatible with the final waste. The most commonly used include; Acetone, Toluene, Methylene chloride, Alcohol's, and blends of solvents. To clean the residue on the interior surface after bulk removal (pumping), the manhole opening on each tank will be used for access. The interior will be sprayed with a nozzle pressure of 15 psi for both cleaning and rinsing.
- 4) All waste from the cleaning will be processed through WRR's recycling and treatment operation. To protect workers during the cleaning of the interior of the tank, a positive pressure air supply with full face mask will be used. A stand-by worker and all other required safety procedures will be employed.
- 5) The tank will then be steam cleaned and dried. Waste water generated during this process will also be handled through WRR's current recycling and treatment operations. All tank interiors will be checked with a PID to verify the absence of solvent vapors. All piping and the tank will then be recycled.

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A Closure Report will be written confirming these steps and other procedures when the tank is removed.

The replacement tank has different dimensions than the originally permitted tank, however, the capacity will remain at 2,500 gallons, WRR's permitted limit for that tank. The replacement tank design's are presented in the drawing named; "SLUDGE TANK H - WELDING ASSEMBLY". The accompanying tank report, reviewed and certified by an independent, qualified, Wisconsin registered professional engineer, is titled; "WRR ENVIRONMENTAL SERVICES CO., INC., DESIGN REVIEW CALCULATIONS FOR REPLACEMENT TANK H".

Tanks H will have an exterior diameter of 7 feet. The tank cylinder will be 7.75 feet long, with an additional 3.25 foot of cone. Including legs, it will stand 15 feet high. The capacity of the replacement tank will remain the same; 2,500 gallons. Licensed tank capacity will not be exceeded at any time during the tank replacement process.

The E-I Tank Storage Area will have an excess of 1,330 gallons containment capacity **beyond** the required level. The containment capacity will actually increase slightly because of the removal of the current concrete tank pad, while the new tank will stand on legs. Containment capacity will not be exceeded at any time during the tank replacement process.

Characteristics of the waste to be stored in this tank will remain consistent with that already approved by the Department and US EPA in WRR's Feasibility and Plan of Operation Report. This is listed in Table C-1 from page C-3. This information was also reviewed by the independent engineer that certified the replacement tanks.

These proposed changes will effect pages; C-3, D-64, D-65, D-66, D-73, D-74, and D-91 of WRR's Feasibility Report and Plan of Operation. Revised and dated copies of the pages are attached for inclusion in Department copies of the Feasibility and Plan of Operation Report.

As per NR 645.08(2), and NR 645.09(4), (5) and (7) Wis. Adm. Code, the tank, tank systems, including containment structures and support, will be inspected to confirm they are sufficient after installation and before use. A copy of that report will be provided to the Department prior to use of the tank. This will include a construction documentation report and the results from leak testing of the tank and ancillary equipment as per NR 645.08(4), Wis. Adm. Code.

As required by NR 645.08(5), Wis. Adm. Code, all supporting tank ancillary equipment will be protected and supported against physical damage and excessive stress due to settlement, vibration, expansion or contraction. Protection against physical damage is provided by the location of the tank. The tank is removed from traffic patterns by a concrete berm 1.5 feet high. All carbon steel will be covered with protective paint. The containment area has been in use and stable for at least 10 years. Because the new design disperses the tank weight over a greater area, stress exerted upon the containment base will be reduced. As per NR 645.09(8), Wis. Adm. Code, secondary containment exists for all ancillary equipment associated with this tank. All items are located in the tank containment area.

WRR's 1997 closure cost estimate submitted to the Department is \$552,644.43. Review of the closure costs are conducted on an annual basis. Modifications of WRR's Feasibility and Plan of Operation Report do initiate an evaluation as to whether the closure costs estimates are effected. WRR calculates these figures using our maximum permitted waste capacity. In this case, WRR will remain 272 gallons below our permitted capacity. The proposed tank will not change closure projections. The prices of the wastes stored in this tank has also remained consistent. Because of these factors, there will be no increase in closure cost estimates.

As per NR 645.06(1)(i)5, Wis. Adm. Code, a corrosion resistant coating that meets NR 645.08(1)(c)2, requirements will be used to provide external corrosion protection.

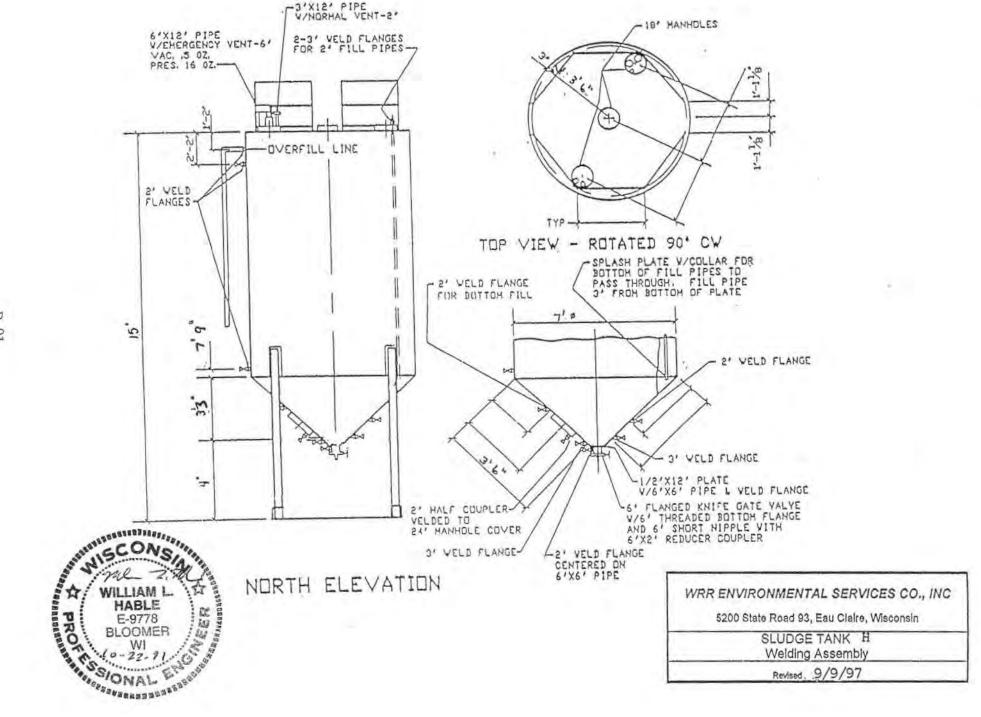
Protection against internal corrosion is provided by analyzing each waste prior to pumping into the tank system. Wastes corrosive to carbon steel will not be accepted for storage in this tank. Also, 100% of all wastes in tanks and containers accepted by WRR are analyzed prior to placing into storage. At least annually, each tank is ultrasonically tested for thickness. A tank reaching the end of its designed life (ASME Code Replacement Thickness, Table D-26A of the Feasibility and Plan of Operation Report) is taken out of service.

As per our earlier discussions, the Tank Assessment Report, Overflow Protection Report, and the Replacement Thickness Report submitted with our May 30, 1996 request covering Tanks L, N, and J would also apply to Tank H. Please refer to these for this submittal.

Again, if possible, I would appreciate this change be evaluated as our May 30, 1996 request. Tank H has the same design and specifications as were approved for Tank J of that submittal. If there are any questions about this letter, please contact me at: 715-834-9624.

WRR ENVIRONMENTAL SERVICES CO., INC.

George Anderson, CHMM Corporate Director of Compliance



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WRR ENVIRONMENTAL SERVICES CO., INC DESIGN REVIEW CALCULATIONS FOR TANK H

October 21, 1997

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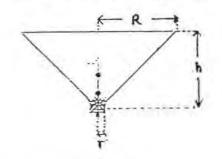


 $=\frac{\pi}{4}$  (Inside Tank Diameter)<sup>2</sup> x Tank Height

 $=\frac{\pi}{4}$  (6.96 ft.)<sup>2</sup> x 7.75 ft.

 $= 294.9 \text{ ft.}^3$ 

Capacity in gallons = 294.9 ft.<sup>3</sup> x 7.48  $\frac{\text{gallons}}{\text{feet}^3}$  = 2206 gallons





Cone volume =  $\frac{\pi}{3} \operatorname{R}^{2} h \left[ 1 + \left(\frac{r}{R}\right) + \left(\frac{r}{R}\right)^{2} \right]$ =  $\frac{\pi}{3} (3.48 \text{ ft.})^{2} x (3.25 \text{ ft.}) \left[ 1 + \left(\frac{.479 \text{ ft.}}{3.48 \text{ ft.}}\right) + \left(\frac{.479 \text{ ft.}}{3.48 \text{ ft.}}\right)^{2} \right]$ = 47.7 ft.<sup>3</sup> x 7.48  $\frac{\text{gal.}}{\text{ft.}^{3}}$ = 357 gallons

Total capacity = cone volume + tank volume = 357 gal. + 2206 gal. = 2560 gallons

## WEIGHT OF TANK CONTENTS:

A conservative value of 1.5 will be used for the density of the liquid stored in the tanks.

Maximum weight of contents at a density of 1.5:

= Volume of Tanks x Conversion Factor to water weight x density

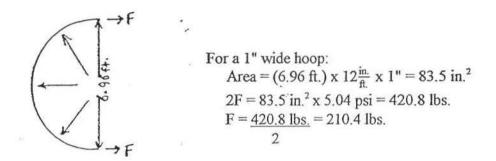
$$= (294.9 + 47.7) \text{ ft.3 x } 62.4 \frac{10s}{c^3} \text{ x } 1.5$$

= 32067 lbs.

# TANK HOOP AND PARTING STRESS CALCULATIONS:

Maximum hoop stress will be at base of cone.

Pressure at base point =  $\frac{62.4 \text{ lb/ft3 x } 1.5 \text{ x } 7.75 \text{ ft.}}{144 \text{ in2/ft2}}$  = 5.04 psi



Hoop stress of 1/4" thick shell = <u>internal stress</u> shell thickness x 1 = 210.4 lbs. = 841.6 psi 1/4" x 1"

One quarter inch steel has a yield point of 36,000 psi (ASTM A36 Steel Plate) Safety Factor (Yield) = <u>36,000 psi</u> = 42.8 841.6 psi \* Exceeds required strength factor by over 12 times for steel and by

.8(42.8) = 34.2 for welds

Maximum Parting Stress is at the start of the cone.

Steel area =  $\pi$  x height x conversion factor x shell thickness =  $\pi$  x 7 ft. x 12  $\frac{\text{in.}}{\text{ft.}}$  x 1/4" = 66 in.<sup>2</sup>

Force = tank volume x density = 294.9 ft3. x 62.4  $\frac{16s.}{f3.}$  x 1.5 = 27600 lbs.

S = 27600 lbs = 418 psi66 in.<sup>2</sup>

\* Exceeds the required strength

## TANK WEIGHT CALCULATIONS:

Shell steel area =  $\pi$  x diameter x height =  $\pi$  x 7 ft. x 7.75 ft. = 170.4 ft.<sup>2</sup>

1/4" plate steel weight =  $10.20 \frac{\text{lbs.}}{\sigma^2}$ 

Weight of shell = 170.4 ft.<sup>2</sup> x 10.20  $\frac{10s.}{ft.^2}$  = 1738 lbs.

Tank top area =  $\frac{\pi}{4}$  (7 ft.<sup>2</sup>) = 38.5 ft.<sup>2</sup>

Weight of tank top = 38.5 ft.<sup>2</sup> x 10.20  $\frac{\text{lbs.}}{\text{ft.}^2}$  = 393 lbs.

Bottom cone area =  $\pi$  (3.5 ft. + .5 ft.)  $\sqrt{(3.25)^2 + (3.5 - 0.5)^2}$ = 55.6 ft.<sup>2</sup>

Cone weight = 55.6 ft.<sup>2</sup> x 10.20  $\frac{\text{lbs.}}{\text{ft.}^2}$  = 567 lbs.

Estimated weight of miscellaneous steel and fittings = 302 lbs.

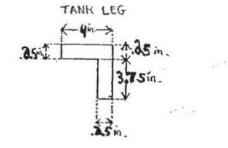
Total tank weight = cylinder + cone + top + misc. fittings = 1738 lbs. + 567 lbs. + 393 lbs. + 302 lbs= 3000 lbs.

Maximum weight of tank + contents = 32,000 lbs. + 3,000 lbs = 35,000 lbs

## TANK BASE LEG LOADING:

Weight per leg =  $\underline{\text{total weight}}$  =  $\underline{35,000 \text{ lbs.}}$  = 8,750  $\frac{\text{lbs}}{\text{leg}}$ # of legs 4 legs

Leg area = length x width =  $(4.0" \times .25") + (3.75" \times .25")$ =  $1.9375 \text{ in.}^2$ 



Column stress = weight per leg =  $\frac{8,750 \text{ lbs.}}{1.9375 \text{ in.}^2}$  = 4516 psi area of leg 1.9375 in.<sup>2</sup>

Leg Strength Without Bracing:

Slenderness ratio of fixed column:

use a design K of 1.2 (theoretical K = 1.0) r (axis ZZ) for 4" x 4" x 1/4" angle = 0.795 in.

$$\frac{\text{KL}}{\text{r}} = \frac{1.2 \text{ x} (7.25 \text{ ft}) \text{ x} 12}{0.795 \text{ in}} = 131.5$$

From table 1-36, AISC Manual of Steel Construction, 7th Edition, Appendix A, pg. 5-84 (ASTM A36 Structural Steel angle legs):

"For 36,000 psi yield stress steel, maximum allowance stress is 8570 psi

\* Leg stress is acceptable with no wind loading.

WIND LOAD CALCULATIONS:

State building codes up to height of 50 ft. - 20 psf with a shape factor for round tanks is .6 Time Saver Stds. Fifth Edition - less than 30 ft, 20 psf at 90 mph, shape factor is also .6 A conservative shape factor of 1.0 will be used.

Total wind load = shape factor x (cone S.A. + tank S.A.) x wind pressure =  $1.0 \times [(7.25 \text{ ft. x 7 ft.}) + (7 \text{ ft.} + 1 \text{ ft. x 3.25 ft.})] \times 20 \text{ psf}$ = 1275 lbs.

Couple around at right leg:

 $(1275 \text{ lbs x } 11.125 \text{ ft.}) - (35,000 \text{ lbs x } 2.5 \text{ ft.}) + (F_1 \text{ x } 5 \text{ ft.}) = 0$ 

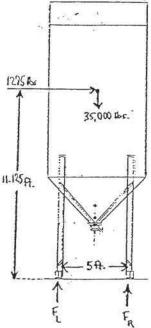
 $5F_{L} = 87,500 \text{ ft-lbs} - 14,180 \text{ lbs} = 73,320 \text{ ft.-lbs}$ 

$$F_{L} = \frac{73,320}{5} = 14,664 \text{ lbs}$$
  
 $F_{R} = 35,000 \text{ lbs} - 14,664 \text{ lbs} = 20,326 \text{ lbs}.$ 

Force on each left leg =  $\frac{14,664 \text{ lbs}}{2}$  = 7,332 lbs 2 Force on each right leg =  $\frac{20,336 \text{ lbs}}{2}$  = 10,168 lbs 2 Right leg column stress =  $\frac{10,168 \text{ lbs}}{1.875 \text{ in.}^2}$  = 5,423 psi 1.875 in.<sup>2</sup>

90 mph Wind Loading on Empty Tank:

Couple force around  $F_R$ : (1275 lbs x 11.125 ft.) - (3000 lbs x 2.5 ft.) + 5 $F_L$  = 0 14,180 lbs - 7,500 lbs + 5 $F_L$  = 0 5  $F_L$  = -6,680 lbs  $F_T$  = -1,336 lbs.



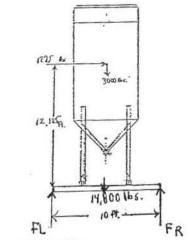
Tanks are bolted to slabs with (2) 3/4" diameter bolts per leg. Bolts have safe load of 2070 lbs each at 60,000 psi ultimate strength.

Tension Per Bolt =  $\frac{1336}{4}$  = 334 lbs/bolt

\* Each of the 8 bolts exceeds required strength.

## 90 MPH WIND COUPLE FORCE ON SUPPORT SLAB FROM EMPTY TANK:

Slab area for this tank is 10' x 10' and 1' thick



Support slab weight = length x width x depth x concrete weight factor

$$= 1.0 \text{ ft. x } 10 \text{ ft. x } 10 \text{ ft. x } 148 \frac{105}{6^3}$$

= 14,800 lbs.

Coupling force at F<sub>R</sub>:

 $(1275 \text{ lbs x } 12.125 \text{ ft.}) - [(3000 \text{ lbs } + 14,800 \text{ lbs}) \text{ x } 5.0 \text{ ft.}] + 10 \text{ F}_{L} = 0$   $15,460 \text{ lbs } - 89,000 \text{ lbs } + 10 \text{ F}_{L} = 0$   $10 \text{ F}_{L} = 73,540 \text{ lbs}$  $\text{F}_{I} = 7,354 \text{ lbs}$ 

\* Tank will not tip over if tank is empty at 90 mph winds.

## CONTAINMENT VOLUME CALCULATIONS:

Tank H:

Overall gross area:

 $B = (53.33' - 1.33') \times (18.92' - 2') = 880 \text{ ft.}^2$   $C = 21.0' \times 42.75' = 898 \text{ ft.}^2$   $D = (53.33' - 1.33') \times (16.25' - .67') = 810 \text{ ft.}^2$   $E = (22.42' - 1.33') \times 42.75' - 1/2[(42.75' - 24.58') \times (22.42' - 1.33')] = 710 \text{ ft.}^2$  $F = 1.5' \times (55.58' - 53.33') + 1/2[1.5' \times 1.5'] = 5 \text{ ft.}^2$ 

Total gross area =  $3303 \text{ ft.}^2$ 

Overall tank area: (individual areas of base mounted tanks)

$B = 1 \times 11'$ dia.	=	95 ft. <sup>2</sup>
1 x 6' dia.	==	28 ft. <sup>2</sup>
1 x 5'4" dia.	==	22 ft. <sup>2</sup>
2 x (3' x 4')	=	24 ft. <sup>2</sup>
1 x 9' dia.	=	64 ft2
$C = 2 \times 11' \text{ dia.}$	=	190 ft. <sup>2</sup>
1 x 10' dia.	=	79-ft. <sup>2</sup>
$D = 1 \ge 10' \text{ dia}.$	=	79 ft. <sup>2</sup>
1 x 9' dia.	=	64 ft. <sup>2</sup>
1 x 8' dia.	==	50 ft. <sup>2</sup>
$E = 1 \times 10^{\circ} dia.$	=	<u>79 ft.</u> <sup>2</sup>
Total	==	774 ft. <sup>2</sup>

Overall net containment =  $3303 \text{ ft.}^2 - 774 \text{ ft.}^2 = 2529 \text{ ft.}^2$ 

Area B: Net containment area =  $880 \text{ ft.}^2 - 233 \text{ ft.}^2$ =  $647 \text{ ft.}^2$ Dike height = 18'' = 1.5 ft.Containment volume =  $647 \text{ ft.}^2 \times 1.5 \text{ ft.}$ =  $970.5 \text{ ft.}^3$ = 7,259 gal.

Area C:

Net containment area = 898 ft.<sup>2</sup> - 269 ft.<sup>2</sup> = 629 ft.<sup>2</sup> Dike height = 18" = 1.5 ft. Containment volume = 629 ft.<sup>2</sup> x 1.5 ft. = 944 ft.<sup>3</sup> = 7,061 gal.

Area D:

Net containment area = 810 ft.<sup>2</sup> - 193 ft.<sup>2</sup> = 617 ft.<sup>2</sup> Dike height = 18" = 1.5 ft. Containment volume = 617 ft.<sup>2</sup> x 1.5 ft. = 923 ft.<sup>3</sup> = 6,904 gal.

Area E:

Net containment area = 710 ft.<sup>2</sup> - 79 ft.<sup>2</sup> = 631 ft.<sup>2</sup>

Dike height = 18'' = 1.5 ft. Containment volume = 631 ft.<sup>2</sup> x 1.5 ft. = 947 ft.<sup>3</sup> = 7,084 gal.

Area F:

Net containment area = 5 ft.<sup>2</sup> - 0 = 5 ft.<sup>2</sup> Dike height = 18" = 1.5 ft. Containment volume = 5 ft.<sup>2</sup> x 1.5 ft. = 8 ft.<sup>3</sup> = 60 gal.

Total containment volume available is the sum of all the individual containment volumes calculated in the preceding section:

 $B = 7,259 \text{ gal} \\ C = 7,061 \text{ gal} \\ D = 6,904 \text{ gal} \\ E = 7,084 \text{ gal} \\ F = \underline{60 \text{ gal}} \\ 28,368 \text{ gal}$ 

Total containment available = 28,368 gallons

Secondary containment required:

The secondary containment required was calculated by adding 10% of the total tank capacities or 100% of the largest tank capacity to the rainfall accumulated during a 24 hour 25 year storm.

Total tank capacity = 146,837 gal Largest tank capacity = 17,500 gal Storm volume = 9,265 gal

Total containment required: = .10(146,837 gal) + 9,265 gal = 23,949 gal OR = 17,500 gal + 9,265 gal = 26,765 gal

The E-I East tank containment system exceeds the secondary containment requirements by 1,603 gallons.

"I, William L. Hable, an Independent, Qualified, Registered Professional Engineer, have reviewed the structural integrity and suitability for handling hazardous waste for your tank designated as Tank H as required by NR 645.06(1)(i)l."

"I, William L. Hable, hereby certify that I am a registered Professional Engineer in the Sate of Wisconsin in accordance with Ch. A E4, Wis. Adm. Code and this report has been prepared in accordance with the Rules of Professional Conduct in Ch. A-E8, Wis. Adm. Code."

Ma 27th

William L. Hable P.E. Number 9778



### HABLE ENGINEERING SERVICES, LLC

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405 FAX - (715) 568-5406

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the tank system located at WRR Environmental Services CO., Inc., 5200 Ryder Road, Eau Claire, WI which they designate as their tank system number *H* for weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, structural damage, and inadequate construction or installation. The visual inspection was made before the tank system was covered, enclosed or placed in use. All discrepancies that were found were remedied to my satisfaction before the system was covered, enclosed or placed in use.

William L. Hable, P.E. Consulting Engineer P.E. Number 9778

I INSPECTED THIS TANK BENONE IT WAS DUSTRIED, THE ONEGIN AL CENTIFICATION CANNOT BE LOCATED. M. 2.764

FCB 12, 2014 Date Stamped & Certified



### HABLE ENGINEERING SERVICES

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the new tank located at WRR Environmental Services Co., Inc., 5200 State Road 93, Eau Claire, WI which they designate as their tank no.  $\mathbb{ZZ}$ . This tank is to replace the former tank of the same designation. From this inspection, it is my opinion that the new tank has been constructed in substantial conformity with the originally designed tank as shown in the drawings of their Feasibility Report and Plan of Operation. This tank has sufficient structural integrity and is acceptable for the storing of hazardous waste. The foundation, structural support, seams, and connections have sufficient structural strength, compatibility with the wastes to be stored, and corrosion protection to ensure that it will not collapse, rupture or fail.

William L. Hable, P.E.

William L. Hable, P.E. Plant Engineering & Environmental Consultant P.E. Number 9778

MAY 13, 1995 Date Stamped & Certified



# State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

1300 West Clairemont Avenue P.O. Box 4001 Eau Claire, Wisconsin 54702-4001 TELEPHONE 715-839-3700 TELEFAX 715-839-6076

George E. Meyer Secretary

May 9, 1995

Mr. George Anderson, CHMM WRR Environmental Services Co., Inc. 5200 State Road 93 Eau Claire, WI 54701 WID990829475 FID618012010 Eau Claire County CMEL-Comm. TSD

Subject: Hazardous Waste Management Compliance Inspection and Tank Maintenance Replacement Documentation

Dear Mr, Anderson:

On March 23, 1995, Jill Harschlip and I performed an inspection at WRR to check for compliance with the hazardous waste management regulations found in NR 600 - 685, Wis. Admin. Code and with the requirements of your EPA permit and plan of operation approval. During that inspection, WRR appeared to be in compliance with the regulations and the license conditions.

During the inspection, you supplied me with letters regarding the intended maintenance change out and closure procedures for 6 tanks in the EI containment area. The tanks listed were D, G, F, CC, DD, ZZ. This information contained the engineer's certification for the manufacture and installation of the tank but it did not attest to the design's structural integrity and strength, compatibility with the waste to be stored and corrosion protection to ensure that it will not collapse, rupture or fail. Please see ss NR 645.08(1) Wis. Admin. Code. Tank designs and drawings were not attached as indicated and need to be supplied. In the future, the notice of intent, closure information and the engineer certification can be supplied as one document for each tank replaced.

I received a copy of the available closure information for Tank E which was replaced in 1994. Please supply the closure documentation for ZZ since that was replaced early this year. You can supply the closure information for the rest of the tanks, as they are changed. Since these tanks were built to the original design and specifications as approved in your plan of operation, no changes are necessary to your plan of operation and these are considered maintenance.

If you have any questions regarding this letter, please call me.

Sincerely,

Dinger K. Hooper, CHMM Hazardous Waste Specialist

c: Aggie Cook - SW/3

Lundberg



715-834-9624 FAX 715-836-8785



Waste Research & Reclamation Co. Inc.

5200 State Road 93, Eau Claire, Wisconsin 54701

March 22, 1995

Ginger Hooper Wisconsin Department of Natural Resources 1300 West Clairemont Eau Claire, WI 54702-4001

REASON: Maintenance Replacement of Storage Tank ZZ

Ms Hooper:

Waste Research & Reclamation Co., Inc. (WRR), WID990829475, as a maintenance item, is planning on replacing the tank portion of Tank ZZ with a tank to be fabricated using the same design and specifications.

This replacement is being initiated by WRR because semiannual testing of Tank ZZ's integrity has indicated that the useful life of the tank has expired. Accordingly, Tank ZZ has been taken out of service. A replacement tank will be manufactured by; TMC, 937 14th Avenue, Boskin, Wisconsin, using the plans and specifications in WRR's Hazardous Waste Storage Plan of Operation. These plans and specifications meet current NR 645 requirements. This tank will also have a Underwriter Laboratories Certification.

Exchanging the current Tank ZZ with a new tank built to the same design and specifications will provide improved spill protection. Because it has the same design and specifications, it will not change any of the conditions in which WRR's Plan of Operation was based on and can be considered maintenance.

Closure and replacement of Tank ZZ is intended to take place within a 6 month period following notification of the Department.

Closure of this tank will follow closure procedures outlined in WRR's Plan of Operation entitled; "Feasibility and Plan of Operation Report for Storage and Treatment at Waste Research & Reclamation Co., Inc. Facility, WID 990829475" in Section I-2d. These include the following steps:

- Removal of all waste from tank. Contents of the tank will be handled as a hazardous waste. They will be handled through WRR's current recycling and treatment processes.
- 2) Following waste removal, all piping to and from the tank will be disconnected, dismantled and decontaminated. The work will be supervised and performed using qualified WRR personnel. They will be equipped with solvent resistant coveralls (Olefin material coated with polyethylene

Page 2 Hooper, G./WDNR March 22, 1995

> film), head protection, neoprene-coated gloves and boots resistant to the appropriate solvents. Both the wrists and ankles will be taped (electrical tape) to aid in protection against upward and inward splash. Full face respirators with organic vapor filter cartridges will be used. Hazsorb spill control pillows will be used in the event of any spills resulting from pipe drainage during the disconnection and dismantling process. Contaminated spill control pillows will be placed in a 55-gallon steel recovery drum located in the dismantling area during this closure process. Positive displacement pumps used to transfer solvents to and from tanks will be disconnected and cleaned. All valves will be disconnected and cleaned.

- 3) The interior surfaces will be cleaned with one or a combination of solvents that are compatible with the final waste. The most commonly used include; Acetone, Toluene, Methylene Chloride, Alcohols, and blends of solvents. To clean the residue on the interior surface after bulk removal (pumping), the manhole opening on the tank (side bottom) will be used for access. The interior will be sprayed with a nozzle pressure of 15 psi for both cleaning and rinsing.
- 4) All waste from the cleaning will be processed through WRR's recycling and treatment operation. To protect workers during the cleaning of the interior of the tank, a positive pressure air supply with full face mask will be used. A stand-by worker and all other required safety procedures will be employed.
- 5) The tank will then be steam cleaned and dried. Waste water generated during this process will also be handled through WRR's current recycling and treatment operations. The tank interior will also be checked with a PID to verify the absence of solvent vapors. All piping and the tank will then be recycled as scrap steel through Max Phillips & Sons of Eau Claire, Wisconsin.

While this tank is being replaced, the closure process is expected to take less than 30 days. No closure of any of the containment areas will take place. The containment area will continue to serve those tanks still in service.

The Tank ZZ replacement tank designs are presented in the attached drawing named: "Sludge Tank ZZ Assembly - E-1 Area". In accordance with NR 680.05(2)(d), five copies of the drawing are signed by an independent, qualified, registered, Wisconsin professional engineer.

Characteristics of the waste to be stored in this tank will remain consistent with those already approved by the Department and US EPA in WRR's Feasibility and Plan of Operation Report listed in Table D.27 (See Attached Copy). For Tank ZZ, this includes Methylene Chloride and 1-1-1 Trichloroethane residue. This information was also reviewed and approved by the independent engineer that certified the design of the replacement tank.

As per NR 645.08(2), and NR 645.09(4), (5) and (7) Wis. Adm. Code, the tank, tank systems, including containment structures and supports will be inspected to confirm they are sufficient after installation and before use. This will include results from leak testing of the tank and ancillary equipment as per NR 645.08(4), Wis. Adm. Code.

Page 3 Hooper, G./WDNR March 22, 1995

As required by NR 645.08(5), Wis. Adm. Code, all supporting tank ancillary equipment will be protected and supported against physical damage and excessive stress due to settlement, vibration, expansion or contraction. Protection against physical damage is provided by the location of the tank. This tank is removed from traffic patterns by concrete berm, that ranges 10 to 12 inches high. All carbon steel will be covered with protective paint. The containment area has been in use and stable since 1979. Since the volume of waste and corresponding weight will not increase, no additional settling should occur. No increase in overall stress will be exerted on the containment area.

As per NR 645.09(8), Wis. Adm. Code, secondary containment exists for all ancillary equipment associated with these new tanks. All items are located in the tank containment area.

As per NR 645.06(1)(i)5, Wis. Adm. Code, a corrosion resistant coating that meets NR 645.08(1)(c)2, requirements will be used to provide external corrosion protection.

Protection against internal corrosion will continue to be provided by analyzing each waste prior to pumping into the tank system. Wastes corrosive to carbon steel are not in WRR's permit and are not accepted for storage. One-hundred percent of all wastes in tanks and containers accepted by WRR are analyzed prior to placing into storage. Because of this, excessive corrosion has not been a problem. At least annually, each tank is ultrasonically tested for thickness. A tank reaching the end of its designed life (ASME Code Replacement Thickness, Table D-26A of the Feasibility and Plan of Operation Report) is taken out of service.

If any additional information is required by the Department please contact me at: (715) 834-9624.

WRR ENVIRONMENTAL SERVICES CO., INC.

eorge Anderson, CHMM

corporate Director of Compliance

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES



George E. Meyer Secretary 101 South Webster Street Box 7921 Madison, Wisconsin 53707 TELEPHONE 608-266-2621 DNR TELEFAX 608-267-3579 DNR TDD 608-267-6897 SOLID & HAZARDOUS WASTE MGMT 608-266-2111 SOLID & HAZARDOUS WASTE TELEFAX 608-267-2768

File Ref: 618026530

Eau Claire HW/LIC

September 7, 1994

Mr. George Anderson Waste Research & Reclamation Company Inc. Route 7 Eau Claire, WI 54701

SUBJECT:

Review of Replacement Proposal for Tank ZZ; Waste Research & Reclamation Company Inc., Eau Claire, WI U.S. EPA I.D. No.: WID990829475

Dear Mr. Anderson:

This letter responds to the correspondence sent by Mr. William L. Hable, P.E., of Hable Engineering Services, dated July 20, 1994. In that letter, Mr. Hable briefly explains how Waste Research & Reclamation (WR&R) plans to replace and upgrade Tank ZZ with an identical tank. In addition, the replacement tank would be supported on a lattice structure to allow better tank inspection and leak detection.

Based on a review of Mr. Hable's letter and attached documents regarding leak detection, the Department has determined that such a change to the tank and tank system constitutes a major modification of WR&R's approved plan of operation. This determination is made pursuant to s. NR 680.07, Wis. Adm. Code.

Since the proposed activities are considered a major modification of the WR&R's approved plan of operation, WR&R should submit appropriate documentation consistent with the requirements of s. NR 680.05 [general plan submittals] and ch. NR 645, Tank System Standards, if it intends to pursue this tank modification. In particular, we will be looking for engineering calculations regarding the tank support lattice work and revised inspection procedures and forms for this tank, and secondary containment documentation. If approved, and after the modifications are performed, WR&R will have to submit construction documentation reports consistent with the requirements of s. NR 680.08(2), Wis. Adm. Code. As a major modification, public participation procedures will be a part of the process.

If you have any questions regarding this matter, please contact me at 608/266-0061.

Sincerety Anelse.

Timothy S. Mulholland, PhD Waste Management Engineer Hazardous Waste Management Section Bureau of Solid & Hazardous Waste Management

cc:

E. Lynch - SW/3G. Hooper - WDW. Hable - Hable Engineering Services

TSM26\WR&R\TANKMOD.LET



# HABLE ENGINEERING SERVICES

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405

July 20, 1994

Mr. Tim Mulholland Review Engineer Wisconsin Dept. of Natural Resources-SW/3 Bureau of Solid & Hazardous Waste Management P.O. Box 7921 Madison, WI 53707

Subject: Waste Research & Reclamation, Eau Claire, WI, Routine Maintenance, Replacement of Tank ZZ

Dear Mr. Mulholland:

As we discussed on the phone yesterday, I have been retained by Waste Research & Reclamation to review and inspect the tanks that they replace as routine maintenance. They are presently planning to replace their tank designated as ZZ with a tank that is identical to the existing tank. Because this tank rests directly on a concrete pad and is classified as an onground tank, visual leak detection is not now possible. To rectify this situation, WR&R would like to add a support lattice between the replacement tank and the pad that it sets on so that they can visually see the bottom of the tank to inspect for leaks. You requested a written description of this addition to the tank so that you can better evaluate the system.

The planned latticework consists of a cross made from 8" wide flange structural steel beams. These beams will rest directly on the existing 10' dia. 16" high tank pad. The 1/4" thick tank head will then rest directly on these beams. To improve the stability of the tank system and to prevent the tank from tipping over due to high winds when it is empty, the ends of the beams are to be welded to the tank and to 8" wide flange anchor legs. (Wind load calculations show that the a 20 psf wind load will tip the tank over, when empty, if it is not anchored. ILHR 53.12 Wis. Adm. Code requires that all structures up to 50' high must withstand this wind load.) The anchor legs will extend up along the side of the tank 2'-8" and are to be welded to the tank. This is to transfer the wind load to the anchors. The anchor legs are to extend to the concrete slab that the tank base sets on and are to be fastened to this slab by the use of anchor bolts. Calculations show that the weight of the base is large enough to prevent the tank from tipping over if properly anchored to it. To help in your review, I am enclosing a copy of suggested leak detection systems which was sent to George Anderson. I used item no.1 as the basis for this design.

Because I will be away from my office starting next week and extending to August 21, please address any questions that you may have to George Anderson at WR&R (715-834-9624) Also if you send a written reply before August 21, please send it to him at WR&R, 5200 State Rd. 93, Eau Claire, WI 54701-9807.

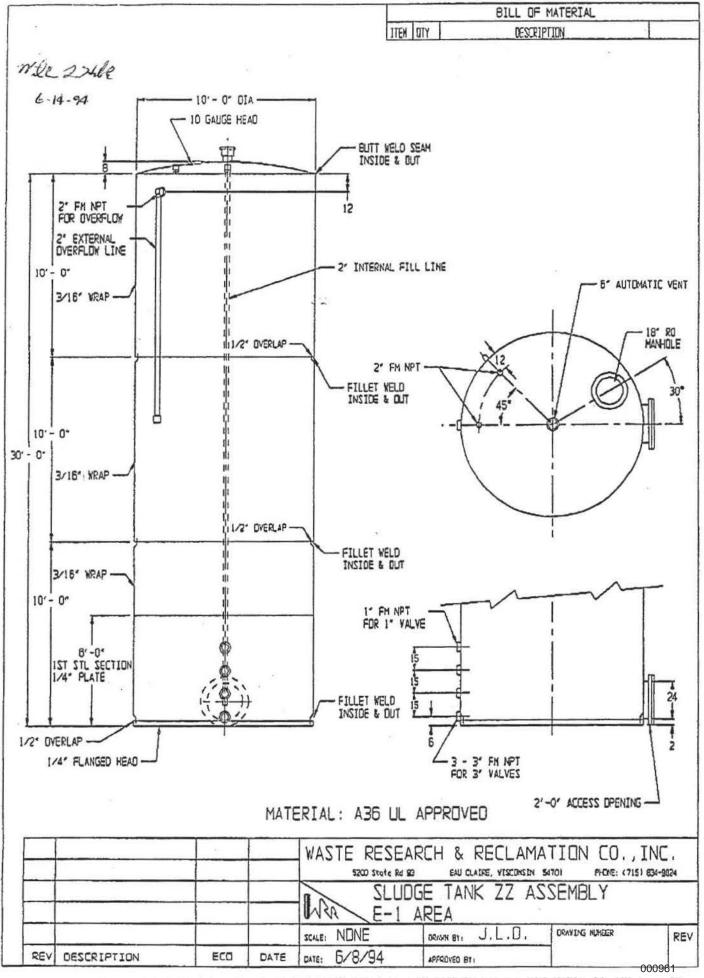
Sincerely,

me 2 Hele

William L. Hable P.E. Consulting Engineer

cc: George Anderson

Enclosure



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# TANK "ZZ" CLOSURE

Tank ZZ was determined to be unfit for further service on 9-14-94, see attached form. On that date, closure proceedures were initiated. Residuals were removed, the tank was steam cleaned, and readings were taken with an explosion meter to verify complete decontamination. If readings found decontamination incomplete, the steam cleaning process is repeated until the results were negetive. All residuals were treated as a hazardous waste and handled through the appropriate waste management process. Sludges were fuel blended, and water from stream cleaning was disposed of through our hazardous waste water stream to DuPont's Deepwater, New Jersy facilty.

On 10-5-94 Vern Miller issued a Fire Permit for dismantling Tank ZZ. Readings were taken to verify complete decontamination. The tank was placed in the Tank Cutting Pad by a crane, and dismantled. The metal was placed in a roll off box and picked up by Max Phillips & Son of Eau Claire.

HABLE ENGINEERING SERVICES

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the tank system located at Waste Research & Reclamation, 5200 State Road 93, Eau Claire, WI which they designate as their tank system no.  $\boxed{ZZ}$  for weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, structural damage, and inadequate construction or installation. The visual inspection was made before the tank system was covered, enclosed or placed in use. All discrepancies that were found were remedied to my satisfaction before the system was covered, enclosed or placed in use.

Will I Halle

William L. Hable, P.E. Plant Engineering & Environmental Consultant P.E. Number 9778

MARCH 22, 1995 Date Stamped & Certified

P.E. Stamp 2-24

#### HABLE ENGINEERING SERVICES

# 721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the new tank located at WRR Environmental Services Co., Inc., 5200 State Road 93, Eau Claire, WI which they designate as their tank no.  $\underline{CC}$ . This tank is to replace the former tank of the same designation. From this inspection, it is my opinion that the new tank has been constructed in substantial conformity with the originally designed tank as shown in the drawings of their Feasibility Report and Plan of Operation. This tank has sufficient structural integrity and is acceptable for the storing of hazardous waste. The foundation, structural support, seams, and connections have sufficient structural strength, compatibility with the wastes to be stored, and corrosion protection to ensure that it will not collapse, rupture or fail.

Ne William L. Hable, P.E.

William L. Hable, P.E. Plant Engineering & Environmental Consultant P.E. Number 9778

May 13 1995 Date Stamped & Certified

P.E. Stamp



# State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

1300 West Clairemont Avenue P.O. Box 4001 Eau Claire, Wisconsin 54702-4001 TELEPHONE 715-839-3700 TELEFAX 715-839-6076

George E. Meyer Secretary

May 9, 1995

Mr. George Anderson, CHMM WRR Environmental Services Co., Inc. 5200 State Road 93 Eau Claire, WI 54701 WID990829475 FID618012010 Eau Claire County CMEL-Comm. TSD

Subject: Hazardous Waste Management Compliance Inspection and Tank Maintenance Replacement Documentation

Dear Mr. Anderson:

On March 23, 1995, Jill Harschlip and I performed an inspection at WRR to check for compliance with the hazardous waste management regulations found in NR 600 - 685, Wis. Admin. Code and with the requirements of your EPA permit and plan of operation approval. During that inspection, WRR appeared to be in compliance with the regulations and the license conditions.

During the inspection, you supplied me with letters regarding the intended maintenance change out and closure procedures for 6 tanks in the EI containment area. The tanks listed were D, G, F, CC, DD, ZZ. This information contained the engineer's certification for the manufacture and installation of the tank but it did not attest to the design's structural integrity and strength, compatibility with the waste to be stored and corrosion protection to ensure that it will not collapse, rupture or fail. Please see ss NR 645.08(1) Wis. Admin. Code. Tank designs and drawings were not attached as indicated and need to be supplied. In the future, the notice of intent, closure information and the engineer certification can be supplied as one document for each tank replaced.

I received a copy of the available closure information for Tank E which was replaced in 1994. Please supply the closure documentation for ZZ since that was replaced early this year. You can supply the closure information for the rest of the tanks, as they are changed. Since these tanks were built to the original design and specifications as approved in your plan of operation, no changes are necessary to your plan of operation and these are considered maintenance.

If you have any questions regarding this letter, please call me.

Sincerely,

Dinger K. Hooper, CHMM Hazardous Waste Specialist

c: Aggie Cook - SW/3

Lundberg



715-834-9624 FAX 715-836-8785



Waste Research & Reclamation Co. Inc.

5200 State Road 93, Eau Claire, Wisconsin 54701

March 22, 1995

Ginger Hooper Wisconsin Department of Natural Resources Box 4001 Eau Claire, WI 54702-4001

REASON: Maintenance Replacement of Storage Tank CC

734

Ms Hooper:

WRR Environmental Services Co., Inc. (WRR), WID990829475, as a maintenance item, is planning on replacing the tank portion of Tank CC with a tank to be fabricated using the same design and specifications.

This replacement is being initiated by WRR because semiannual testing of Tank CC's integrity has indicated that the useful life of the tank has expired. Accordingly, Tank CC has been taken out of service. A replacement tank will be manufactured by; TMC, 937 14th Avenue, Boskin, Wisconsin, using the plans and specifications in WRR's Hazardous Waste Storage Plan of Operation. These plans and specifications meet current NR 645 requirements. This tank will also have a Underwriter Laboratories Certification.

Exchanging the current Tank CC with a new tank built to the same design and specifications will provide improved spill protection. Because it has the same design and specifications, it will not change any of the conditions in which WRR's Plan of Operation was based on and can be considered maintenance.

Closure and replacement of Tank CC is intended to take place within a 6 month period following notification of the Department.

Closure of this tank will follow closure procedures outlined in WRR's Plan of Operation entitled; "Feasibility and Plan of Operation Report for Storage and Treatment at Waste Research & Reclamation Co., Inc. Facility, WID 990829475" in Section I-2d. These include the following steps:

- Removal of all waste from tank. Contents of the tank will be handled as a hazardous waste. They will be handled through WRR's current recycling and treatment processes.
- 2) Following waste removal, all piping to and from the tank will be disconnected, dismantled and decontaminated. The work will be supervised and performed using qualified WRR personnel. They will be equipped with solvent resistant coveralls (Olefin material coated with polyethylene

film), head protection, neoprene-coated gloves and boots resistant to the appropriate solvents. Both the wrists and ankles will be taped (electrical tape) to aid in protection against upward and inward splash. Full face respirators with organic vapor filter cartridges will be used. Hazsorb spill control pillows will be used in the event of any spills resulting from pipe drainage during the disconnection and dismantling process. Contaminated spill control pillows will be placed in a 55-gallon steel recovery drum located in the dismantling area during this closure process. Positive displacement pumps used to transfer solvents to and from tanks will be disconnected and cleaned. All valves will be disconnected and cleaned.

- 3) The interior surfaces will be cleaned with one or a combination of solvents that are compatible with the final waste. The most commonly used include; Acetone, Toluene, Methylene Chloride, Alcohols, and blends of solvents. To clean the residue on the interior surface after bulk removal (pumping), the manhole opening on the tank (side bottom) will be used for access. The interior will be sprayed with a nozzle pressure of 15 psi for both cleaning and rinsing.
- 4) All waste from the cleaning will be processed through WRR's recycling and treatment operation. To protect workers during the cleaning of the interior of the tank, a positive pressure air supply with full face mask will be used. A stand-by worker and all other required safety procedures will be employed.
- 5) The tank will then be steam cleaned and dried. Waste water generated during this process will also be handled through WRR's current recycling and treatment operations. The tank interior will also be checked with a PID to verify the absence of solvent vapors. All piping and the tank will then be recycled as scrap steel through Max Phillips & Sons of Eau Claire, Wisconsin.

While this tank is being replaced, the closure process is expected to take less than 30 days. No closure of any of the containment areas will take place. The containment area will continue to serve those tanks still in service.

The Tank CC replacement tank designs are presented in the attached drawing named: "Sludge Tank CC Assembly - E-1 Area". In accordance with NR 680.05(2)(d), five copies of the drawing are signed by an independent, qualified, registered, Wisconsin professional engineer.

Characteristics of the waste to be stored in this tank will remain consistent with those already approved by the Department and US EPA in WRR's Feasibility and Plan of Operation Report listed in Table D.27 (See Attached Copy). For Tank CC, this includes Flammable Solvents. This information was also reviewed and approved by the independent engineer that certified the design of the replacement tank.

As per NR 645.08(2), and NR 645.09(4), (5) and (7) Wis. Adm. Code, the tank, tank systems, including containment structures and supports will be inspected to confirm they are sufficient after installation and before use. This will include results from leak testing of the tank and ancillary equipment as per NR 645.08(4), Wis. Adm. Code.

Page 3 Hooper, G./WDNR March 22, 1995

As required by NR 645.08(5), Wis. Adm. Code, all supporting tank ancillary equipment will be protected and supported against physical damage and excessive stress due to settlement, vibration, expansion or contraction. Protection against physical damage is provided by the location of the tank. This tank is removed from traffic patterns by concrete berm, that ranges 10 to 12 inches high. All carbon steel will be covered with protective paint. The containment area has been in use and stable since 1979. Since the volume of waste and corresponding weight will not increase, no additional settling should occur. No increase in overall stress will be exerted on the containment area.

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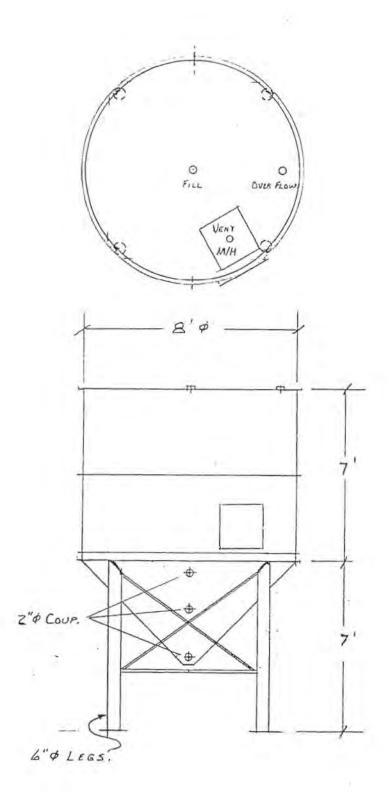
If any additional information is required by the Department please contact me at: (715) 834-9624.

WRR ENVIRONMENTAL SERVICES CO., INC.

George Anderson

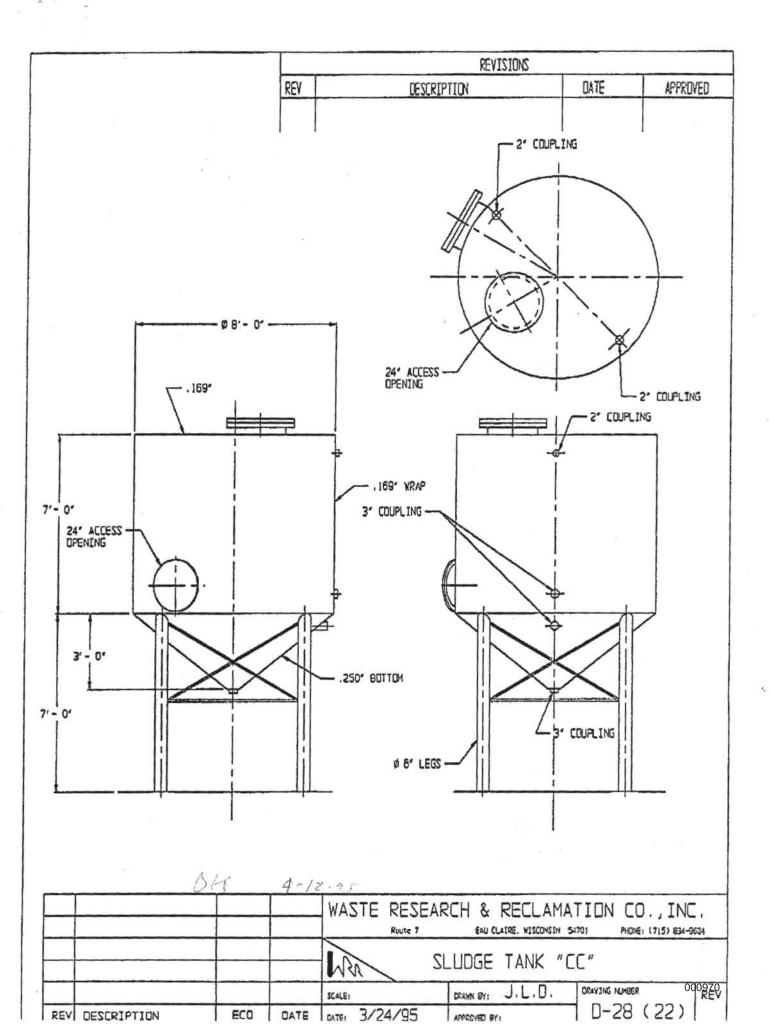
Corporate Director of Compliance

enclosures



Route 7	EAU CLAIRE, WISCONSIN 54701	PHONE: (715) 834-9624
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# TANK "CC" CLOSURE

Tank CC was determined to be unfit for further service on 9-21-94, see attached form. On that date, closure proceedures were initiated. Residuals were removed, the tank was steam cleaned, and readings were taken with an explosion meter to verify complete decontamination. If readings found decontamination incomplete, the steam cleaning process is repeated until the results were negetive. All residuals were treated as a hazardous waste and handled through the appropriate waste management process. Sludges were fuel blended, and water from stream cleaning was disposed of through our hazardous waste water stream to DuPont's Deepwater, New Jersy facilty.

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721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the tank system located at Waste Research & Reclamation, 5200 State Road 93, Eau Claire, WI which they designate as their tank system no.  $\underline{CC}$  for weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, structural damage, and inadequate construction or installation. The visual inspection was made before the tank system was covered, enclosed or placed in use. All discrepancies that were found were remedied to my satisfaction before the

Wil 2. Helle

William L. Hable, P.E. Plant Engineering & Environmental Consultant P.E. Number 9778

system was covered, enclosed or placed in use.

MARCH 22, 1995 Date Stamped & Certified

P.E. Stamp 2-22

#### HABLE ENGINEERING SERVICES

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the new tank located at WRR Environmental Services Co., Inc., 5200 State Road 93, Eau Claire, WI which they designate as their tank no.  $\underline{DD}$ . This tank is to replace the former tank of the same designation. From this inspection, it is my opinion that the new tank has been constructed in substantial conformity with the originally designed tank as shown in the drawings of their Feasibility Report and Plan of Operation. This tank has sufficient structural integrity and is acceptable for the storing of hazardous waste. The foundation, structural support, seams, and connections have sufficient structural strength, compatibility with the wastes to be stored, and corrosion protection to ensure that it will not collapse, rupture or fail.

William L. Hable, P.E.

William L. Hable, P.E. Plant Engineering & Environmental Consultant P.E. Number 9778

MAY 18, 1995 Date Stamped & Certified

P.E. Stamp



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

1300 West Clairemont Avenue P.O. Box 4001 Eau Claire, Wisconsin 54702-4001 TELEPHONE 715-839-3700 TELEFAX 715-839-6076

George E. Meyer Secretary

May 9, 1995

Mr. George Anderson, CHMM WRR Environmental Services Co., Inc. 5200 State Road 93 Eau Claire, WI 54701 WID990829475 FID618012010 Eau Claire County CMEL-Comm. TSD

Subject: Hazardous Waste Management Compliance Inspection and Tank Maintenance Replacement Documentation

Dear Mr. Anderson:

On March 23, 1995, Jill Harschlip and I performed an inspection at WRR to check for compliance with the hazardous waste management regulations found in NR 600 - 685, Wis. Admin. Code and with the requirements of your EPA permit and plan of operation approval. During that inspection, WRR appeared to be in compliance with the regulations and the license conditions.

During the inspection, you supplied me with letters regarding the intended maintenance change out and closure procedures for 6 tanks in the EI containment area. The tanks listed were D, G, F, CC, DD, ZZ. This information contained the engineer's certification for the manufacture and installation of the tank but it did not attest to the design's structural integrity and strength, compatibility with the waste to be stored and corrosion protection to ensure that it will not collapse, rupture or fail. Please see ss NR 645.08(1) Wis. Admin. Code. Tank designs and drawings were not attached as indicated and need to be supplied. In the future, the notice of intent, closure information and the engineer certification can be supplied as one document for each tank replaced.

I received a copy of the available closure information for Tank E which was replaced in 1994. Please supply the closure documentation for ZZ since that was replaced early this year. You can supply the closure information for the rest of the tanks, as they are changed. Since these tanks were built to the original design and specifications as approved in your plan of operation, no changes are necessary to your plan of operation and these are considered maintenance.

If you have any questions regarding this letter, please call me.

Sincerely,

Dinger K. Hoogen

Ginger K. Hooper, CHMM Hazardous Waste Specialist

c: Aggie Cook - SW/3

Lundberg



715-834-9624 FAX 715-836-8785



Waste Research & Reclamation Co. Inc.

5200 State Road 93, Eau Claire, Wisconsin 54701

March 22, 1995

Ginger Hooper Wisconsin Department of Natural Resources Box 4001 Eau Claire, WI 54702-4001

REASON: Maintenance Replacement of Storage Tank DD

Ms Hooper:

WRR Environmental Services Co., Inc. (WRR), WID990829475, as a maintenance item, is planning on replacing the tank portion of Tank DD with a tank to be fabricated using the same design and specifications.

This replacement is being initiated by WRR because semiannual testing of Tank DD's integrity has indicated that the useful life of the tank has expired. Accordingly, Tank DD has been taken out of service. A replacement tank will be manufactured by; TMC, 937 14th Avenue, Boskin, Wisconsin, using the plans and specifications in WRR's Hazardous Waste Storage Plan of Operation. These plans and specifications meet current NR 645 requirements. This tank will also have a Underwriter Laboratories Certification.

Exchanging the current Tank DD with a new tank built to the same design and specifications will provide improved spill protection. Because it has the same design and specifications, it will not change any of the conditions in which WRR's Plan of Operation was based on and can be considered maintenance.

Closure and replacement of Tank DD is intended to take place within a 6 month period following notification of the Department.

Closure of this tank will follow closure procedures outlined in WRR's Plan of Operation entitled; "Feasibility and Plan of Operation Report for Storage and Treatment at Waste Research & Reclamation Co., Inc. Facility, WID 990829475" in Section I-2d. These include the following steps:

- Removal of all waste from tank. Contents of the tank will be handled as a hazardous waste. They will be handled through WRR's current recycling and treatment processes.
- 2) Following waste removal, all piping to and from the tank will be disconnected, dismantled and decontaminated. The work will be supervised and performed using qualified WRR personnel. They will be equipped with solvent resistant coveralls (Olefin material coated with polyethylene

Page 2 Hooper, G./WDNR March 22, 1995

> film), head protection, neoprene-coated gloves and boots resistant to the appropriate solvents. Both the wrists and ankles will be taped (electrical tape) to aid in protection against upward and inward splash. Full face respirators with organic vapor filter cartridges will be used. Hazsorb spill control pillows will be used in the event of any spills resulting from pipe drainage during the disconnection and dismantling process. Contaminated spill control pillows will be placed in a 55-gallon steel recovery drum located in the dismantling area during this closure process. Positive displacement pumps used to transfer solvents to and from tanks will be disconnected and cleaned. All valves will be disconnected and cleaned.

- 3) The interior surfaces will be cleaned with one or a combination of solvents that are compatible with the final waste. The most commonly used include; Acetone, Toluene, Methylene Chloride, Alcohols, and blends of solvents. To clean the residue on the interior surface after bulk removal (pumping), the manhole opening on the tank (side bottom) will be used for access. The interior will be sprayed with a nozzle pressure of 15 psi for both cleaning and rinsing.
- 4) All waste from the cleaning will be processed through WRR's recycling and treatment operation. To protect workers during the cleaning of the interior of the tank, a positive pressure air supply with full face mask will be used. A stand-by worker and all other required safety procedures will be employed.
- 5) The tank will then be steam cleaned and dried. Waste water generated during this process will also be handled through WRR's current recycling and treatment operations. The tank interior will also be checked with a PID to verify the absence of solvent vapors. All piping and the tank will then be recycled as scrap steel through Max Phillips & Sons of Eau Claire, Wisconsin.

While this tank is being replaced, the closure process is expected to take less than 30 days. No closure of any of the containment areas will take place. The containment area will continue to serve those tanks still in service.

The Tank DD replacement tank designs are presented in the attached drawing named: "Sludge Tank DD Assembly - E-1 Area". In accordance with NR 680.05(2)(d), five copies of the drawing are signed by an independent, qualified, registered, Wisconsin professional engineer.

Characteristics of the waste to be stored in this tank will remain consistent with those already approved by the Department and US EPA in WRR's Feasibility and Plan of Operation Report listed in Table D.27 (See Attached Copy). For Tank DD, this includes Flammable Solvents. This information was also reviewed and approved by the independent engineer that certified the design of the replacement tank.

As per NR 645.08(2), and NR 645.09(4), (5) and (7) Wis. Adm. Code, the tank, tank systems, including containment structures and supports will be inspected to confirm they are sufficient after installation and before use. This will include results from leak testing of the tank and ancillary equipment as per NR 645.08(4), Wis. Adm. Code.

Page 3 Hooper, G./WDNR March 22, 1995

As required by NR 645.08(5), Wis. Adm. Code, all supporting tank ancillary equipment will be protected and supported against physical damage and excessive stress due to settlement, vibration, expansion or contraction. Protection against physical damage is provided by the location of the tank. This tank is removed from traffic patterns by concrete berm, that ranges 10 to 12 inches high. All carbon steel will be covered with protective paint. The containment area has been in use and stable since 1979. Since the volume of waste and corresponding weight will not increase, no additional settling should occur. No increase in overall stress will be exerted on the containment area.

As per NR 645.09(8), Wis. Adm. Code, secondary containment exists for all ancillary equipment associated with these new tanks. All items are located in the tank containment area.

As per NR 645.06(1)(i)5, Wis. Adm. Code, a corrosion resistant coating that meets NR 645.08(1)(c)2, requirements will be used to provide external corrosion protection.

Protection against internal corrosion will continue to be provided by analyzing each waste prior to pumping into the tank system. Wastes corrosive to carbon steel are not in WRR's permit and are not accepted for storage. One-hundred percent of all wastes in tanks and containers accepted by WRR are analyzed prior to placing into storage. Because of this, excessive corrosion has not been a problem. At least annually, each tank is ultrasonically tested for thickness. A tank reaching the end of its designed life (ASME Code Replacement Thickness, Table D-26A of the Feasibility and Plan of Operation Report) is taken out of service.

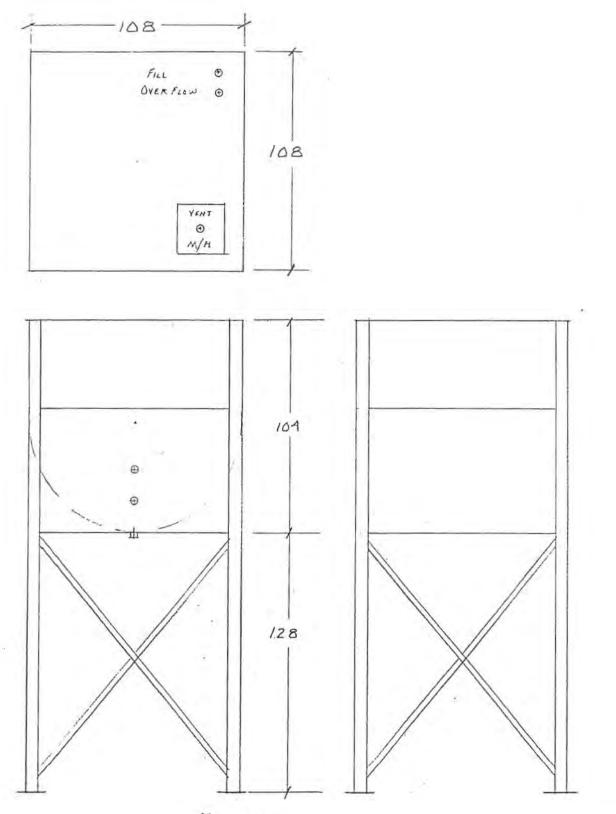
If any additional information is required by the Department please contact me at:  $\sqrt{715}$  834-9624.

WRR ENVIRONMENTAL SERVICES CO., INC.

LEERK George Anderson

corporate Director of Compliance

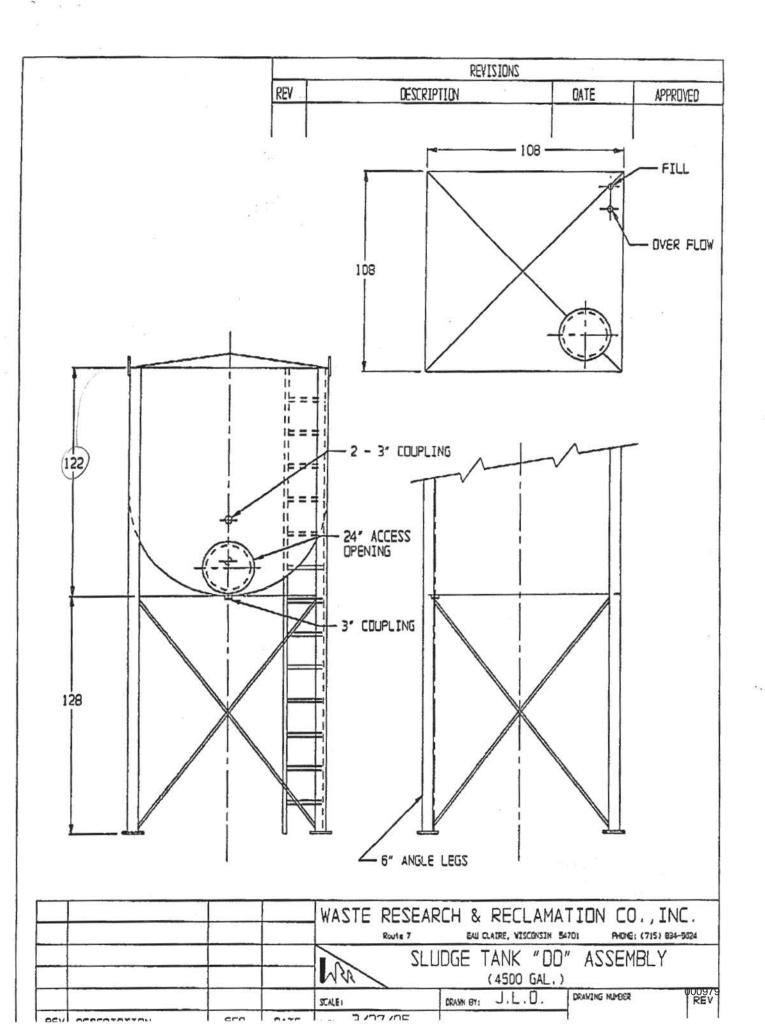
enclosures



6"L LEGS

2.000

Route 7	EAU CLAIRE, WISCONSIN 5470	1. PHONE: (715) 834-9624
PA -	SLUDGE TANK	D-D
MNS-	(4500 GAL)	DRAWING NUMBER
SCALE N.T.S.	DRAWN BY TM	CONTRACTOR MALE AND REACTING ALL CONTRACTOR AND
DATE 1-29-83	APPROVED BY:	D.28(23)



# TANK "DD" CLOSURE

Tank DD was determined to be unfit for further service on 2-20-95, see attached form. On that date, closure proceedures were initiated. Residuals were removed, the tank was steam cleaned, and readings were taken with an explosion meter to verify complete decontamination. If readings found decontamination incomplete, the steam cleaning process is repeated until the results were negetive. All residuals were treated as a hazardous waste and handled through the appropriate waste management process. Sludges were fuel blended, and water from stream cleaning was disposed of through our hazardous waste water stream to DuPont's Deepwater, New Jersy facilty.

On 3-14-95 Vern Miller issued a Fire Permit for dismantling Tank DD. Readings were taken to verify complete decontamination. The tank was placed in the Tank Cutting Pad by a crane, and dismantled. The metal was placed in a roll off box and picked up by Max Phillips & Son of Eau Claire.

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the tank system located at Waste Research & Reclamation, 5200 State Road 93, Eau Claire, WI which they designate as their tank system no. for weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, structural damage, and inadequate construction or installation. The visual inspection was made before the tank system was covered, enclosed or placed in use. All discrepancies that were found were remedied-to my satisfaction before the system was covered, enclosed or placed in use.

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William L. Hable, P.E. Plant Engineering & Environmental Consultant P.E. Number 9778

MARCH 22,1995 Date Stamped & Certified

P.E. Stamp W274 "I, William L. Hable, an Independent, Qualified, Registered Professional Engineer, have reviewed the structural integrity and suitability for handling hazardous waste for your tank designated as Tank EE as required by NR 645.06(1)(i)l."

Tank EE is to be identical to Tank J so my assessment for this tank is the same as stated in my Assessment Report dated March 21, 1996 and my Replacement Thickness Report dated May 24, 1996, and my Overfill Protection Report dated May 30, 1996.

"I, William L. Hable, hereby certify that I am a registered Professional Engineer in the Sate of Wisconsin in accordance with Ch. A E4, Wis. Adm. Code and this report has been prepared in accordance with the Rules of Professional Conduct in Ch. A-E8, Wis. Adm. Code."

We 2 - 7/l

William L. Hable P.E. Number 9778





715-834-9624 FAX 715-836-8785

WRR Environmental Services Co., Inc.

the reality

5200 State Road 93, Eau Claire, Wisconsin 54701

"Dedicated to Providing Quality Service into the 21st Century"

April 25, 1997

Ginger Hooper Wisconsin Department of Natural Resources 1300 West Clairemont Eau Claire, WI 54702-4001

SUBJECT : Permit Modification to Add Waste Code D002 and Replace Tank EE

TM

Dear Ms. Hooper:

The following letter and enclosures request the addition of Waste Code D002 to our permit, and the replacement of Tank EE with a tank of superior design and construction. This is to take place at WRR Environmental Services Co., Inc. (WRR) (WID 990 829 475), 5200 State Road 93, Eau Claire, Wisconsin 54701. These proposed changes are intended to more accurately describe, as well as, improve operations with in our currently licensed parameters. It is not intended to be an expansion of those activities.

WRR already has on its permit, and safely handles, wastes that include D002 as a secondary waste code. These waste codes are; F006 (electroplating sludge), D006, D009 & U151 (Cadmium batteries, metallic mercury and other metal salts), as well as, F001, F002, U080, U210, U220, U226, and U228 (halogenated solvents, when contaminated with water, often become corrosive).

Because we accept materials that can carry corrosivity as a characteristic, WRR has long standing procedures to test, handle, and when appropriate, segregate corrosive materials. The pH is analyzed for as part of our Waste Analysis Plan. Every container and tank received at WRR is sampled to insure that the appropriate handling protocol will be assigned. Wastes that exhibit corrosivity as a characteristic are segregated from incompatible materials by storing them in separate tanks or container storage areas.

If approved by the Department, WRR will immediately submit an updated Part A to US EPA including D002 as a waste code.

If possible, I am asking that the Tank EE replacement be evaluated under the same light as our May 30, 1996 request. In that submittal, the same tank design and specifications used for Tank J, and approved by the Department, will be used for Tank EE's replacement.

Tank EE (E-I Tank Area) is proposed to be replaced with cone bottom tank. This is being initiated by WRR for the following reasons; 1) The upgrade to cone bottom tanks will allow more complete inspection of the tank by exposing the bottom portion. More complete inspection will further decrease the possibility of an undetected spill from tank failure. 2) Worker exposure to hazardous waste is reduced. Cone bottom tanks do not normally require a worker to enter the tank for cleaning. This has been required on at least an annual basis for standard hazardous waste storage tanks. 3) More accurate readings of the

volume are possible. 4) Due to the design, sludge accumulation is reduced. Therefore, the volume of waste generated is reduced.

Tank closure will follow closure procedures outlined in WRR's Plan of Operation entitled; "Feasibility and Plan of Operation Report for Storage and Treatment at Waste Research & Reclamation Co., Inc. Facility, WID 990829475" in Section I-2d. This included the following steps:

- Removal of all waste from the tank. Contents of the tank will be handled as a hazardous waste. They will be handled through WRR's current recycling and treatment processes.
- Following waste removal, all piping to and from the tank will be disconnected, dismantled and decontaminated. The work will be supervised and performed using qualified WRR personnel.

They will be equipped with solvent resistant coveralls, head protection, neoprene-coated gloves and boots resistant to the appropriate solvents. Both the wrists and ankles will be taped to aid in protection against upward and inward splash. Full face respirators with organic vapor filter cartridges will be used. Hazsorb spill control pillows will be used in the event of any spills resulting from pipe drainage during the disconnection and dismantling process. Positive displacement pumps used to transfer solvents to and from the tank will be disconnected and cleaned. All valves will be disconnected and cleaned.

- 3) The interior surface will be cleaned with one or a combination of solvents that are compatible with the final waste. The most commonly used include; Acetone, Toluene, Methylene chloride, Alcohol's, and blends of solvents. To clean the residue on the interior surface after bulk removal (pumping), the manhole opening on each tank will be used for access. The interior will be sprayed with a nozzle pressure of 15 psi for both cleaning and rinsing.
- 4) All waste from the cleaning will be processed through WRR's recycling and treatment operation. To protect workers during the cleaning of the interior of the tank, a positive pressure air supply with full face mask will be used. A stand-by worker and all other required safety procedures will be employed.
- 5) The tank will then be steam cleaned and dried. Waste water generated during this process will also be handled through WRR's current recycling and treatment operations. All tank interiors will be checked with a PID to verify the absence of solvent vapors. All piping and the tank will then be recycled.

A Closure Report will be written confirming these steps and other procedures when the tank is removed.

The replacement tank has different dimensions than the originally permitted tank, however, the capacity will stay within WRR's permitted limits. The replacement tank design's are presented in the drawing named; "SLUDGE TANK EE - WELDING ASSEMBLY". The accompanying tank report, reviewed and certified by an independent, qualified, Wisconsin registered professional engineer, is titled; "WRR

# ENVIRONMENTAL SERVICES CO., INC., DESIGN REVIEW CALCULATIONS FOR REPLACEMENT TANK EE".

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Tanks EE will have an exterior diameter of 10 feet. The tank cylinder will be 17 feet long, with an additional 5 foot of cone. Including legs, it will stand 27 feet high. The capacity of the replacement tank will be 10,974 gallons. It will be replacing a capacity of 8,500 gallons. Because of a decrease in site capacity of from the replacement of Tanks L, N, and J, WRR would still remain 272 gallons below our site permitted tank storage limit. Licensed tank capacity will not be exceeded at any time during the tank replacement process.

Although Tank EE would increase the waste storage capacity in the E-I Tank Storage Area by 2,474 gallons, the E-I Tank Storage Area will still maintain in excess of 1,330 gallons containment capacity **beyond** the required level. The containment capacity will actually increase slightly because of the removal of the current concrete tank pad, while the new tank will stand on legs. Containment capacity will not be exceeded at any time during the tank replacement process.

Characteristics of the waste to be stored in this tank will remain consistent with that already approved by the Department and US EPA in WRR's Feasibility and Plan of Operation Report. This is listed in Table C-1 from page C-3. This information was also reviewed by the independent engineer that certified the replacement tanks.

These proposed changes will effect pages; C-3, D-21, D-22, D-23, D-24, D-25, D-64, D-65, D-66, D-73, D-74, and D-96 of WRR's Feasibility Report and Plan of Operation. Revised and dated copies of the pages are attached for inclusion in Department copies of the Feasibility and Plan of Operation Report.

As per NR 645.08(2), and NR 645.09(4), (5) and (7) Wis. Adm. Code, the tank, tank systems, including containment structures and support, will be inspected to confirm they are sufficient after installation and before use. A copy of that report will be provided to the Department prior to use of the tank. This will include a construction documentation report and the results from leak testing of the tank and ancillary equipment as per NR 645.08(4), Wis. Adm. Code.

As required by NR 645.08(5), Wis. Adm. Code, all supporting tank ancillary equipment will be protected and supported against physical damage and excessive stress due to settlement, vibration, expansion or contraction. Protection against physical damage is provided by the location of the tank. The tank is removed from traffic patterns by a concrete berm 1.5 feet high. All carbon steel will be covered with protective paint. The containment area has been in use and stable for at least 10 years. Because the new design disperses the tank weight over a greater area, stress exerted upon the containment base will be reduced.

As per NR 645.09(8), Wis. Adm. Code, secondary containment exists for all ancillary equipment associated with this tank. All items are located in the tank containment area.

WRR's 1997 closure cost estimate submitted to the Department is \$552,644.43. Review of the closure costs are conducted on an annual basis. Modifications of WRR's Feasibility and Plan of Operation Report do initiate an evaluation as to whether the closure costs estimates are effected. WRR calculates these figures using our maximum permitted waste capacity. In this case, WRR will remain 272 gallons below our permitted capacity. The proposed tank size and placement will not change closure projections. The prices of the wastes stored in this tank has also remained consistent. Because of these factors, there will be no increase in closure cost estimates.

As per NR 645.06(1)(i)5, Wis. Adm. Code, a corrosion resistant coating that meets NR 645.08(1)(c)2, requirements will be used to provide external corrosion protection.

Protection against internal corrosion is provided by analyzing each waste prior to pumping into the tank system. Wastes corrosive to carbon steel will not be accepted for storage in this tank. Also, 100% of all wastes in tanks and containers accepted by WRR are analyzed prior to placing into storage. At least annually, each tank is ultrasonically tested for thickness. A tank reaching the end of its designed life (ASME Code Replacement Thickness, Table D-26A of the Feasibility and Plan of Operation Report) is taken out of service.

As per our earlier discussions, the Tank Assessment Report, Overflow Protection Report, and the Replacement Thickness Report submitted with our May 30, 1996 request covering Tanks L, N, and J would also apply to Tank EE. Please refer to these for this submittal.

Again, if possible, I would appreciate this change be evaluated as our May 30, 1996 request. Tank EE has the same design and specifications as were approved for Tank J of that submittal. If there are any questions about this letter, please contact me at: 715-834-9624.

WRR ENVIRONMENTAL SERVICES CO., INC.

orge Anderson, CHMM

Corporate Director of Compliance

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WRR ENVIRONMENTAL SERVICES CO., INC.

DESIGN REVIEW CALCULATIONS FOR REPLACEMENT TANK EE

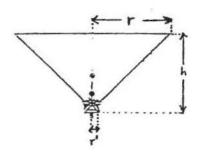
November 20, 1991

TANK VOLUME CALCULATIONS:

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 $\frac{\text{Inside Tank Diameter x Tank Height}}{4}$   $\frac{\text{(9.96 ft.)}^2 \times 17 \text{ ft.}^2 = 1324 \text{ ft.}^3}{4}$ 

Capacity in Gallons = 1324 ft<sup>3</sup> x 7.48  $\underline{\text{gallons}}_{\text{ft}^3}$  = 9904 Gallons



Cone Volume =  $1/3 \operatorname{qr^{2}h} \left[1 + \left(\frac{r}{r}\right) + \left(\frac{r}{r}\right)^{2}\right] =$   $1/3 \operatorname{q} (4.98 \text{ ft.})^{2} \times 5 \text{ ft.} \left[1 + \left(\frac{0.479 \text{ ft.}}{4.98 \text{ ft.}}\right)^{2} + \left(\frac{0.479 \text{ ft.}}{4.98 \text{ ft.}}\right)^{2}\right] = 143 \text{ ft.}^{3}$  $143 \text{ ft.}^{3} \times 7.48 \text{ gal/ft.}^{3} = 1070 \text{ Gallons}$ 

Total Capacity = Cone Volume + Tank Volume =

1070 gallons (cone) + 9904 gallons (tank) = 10,974 Gallons

# WEIGHT OF TANK CONTENTS:

Flammable liquids are stored in these tanks. The average density of materials is about 1.0. However, a conservative density of 1.5 for a chlorinated hydrocarbon will be used.

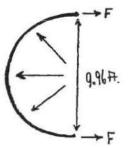
### Page 2

Maximum weight of contents at a density of 1.5 = Volume of Tanks x Conversion factor to water weight x density = 1467 ft<sup>3</sup> x 62.4 lbs/ft.<sup>3</sup> x 1.5 = 137,311 lbs.

TANK HOOP AND PARTING STRESS CALCULATIONS:

Maximum hoop stress will be at base of cone.

Pressure @ at base point =  $\frac{62.4 \text{ ft. x } 1.5 \text{ x } 17 \text{ ft. } = 11.05 \text{ PSI}}{144}$ 



۰,

For 1" Wide Hoop Area =  $(9.96 \text{ ft.})12 \times 1 = 119.5 \text{ in}^2$ 2 F = 119.5 in<sup>2</sup> x 11.05 PSI = 1320 lbs. F = <u>1320</u> lbs/in<sup>2</sup> = 660 lbs/in.<sup>2</sup>

Hoop stress of 1/4" thick shell = internal stress = shell thickness x 1

 $\frac{660 \text{ lbs/in.}^2}{1/4 \text{ x } 1} = 2640 \text{ PSI}$ 

One quarter inch steel has a yield point of 32,000 PSI Safety factors (Yield) =  $\frac{32,000 \text{ PSI}}{2640 \text{ PSI}}$  = 12.1

- Exceeds required strength factor by 12 times

Maximum Parting Stress - Maximum @ at start of cone. Steel area = ¶ x height x conversion factor x shell thickness = ¶ x 10 ft. x 12 in/ft. x 1/4 in. = 94.2 in.<sup>2</sup>

Force = tank volume x density = 10,974 gallons x 8 lbs/gal x 1.5 density = 123,926 lbs.

 $S = \frac{123,926 \text{ lbs}}{94.2 \text{ in.}^2} = 1316 \text{ PSI}$ 

- Exceeds required strength

# Page 3

TANK WEIGHT CALCULATIONS:

Shell steel area = ¶ x diameter x height = ¶ x 10 ft. x 17 ft. = 533.8 ft.<sup>2</sup> 1/4" plate steel weight = 10.20 lbs/ft.2 Weight of shell = 533.8 ft.<sup>2</sup> x 10.20 lbs/ft<sup>2</sup> = 5445 lbs. Tank top area =  $\frac{10 \text{ ft.}^2}{4} = 78.5 \text{ ft.}^2$ Weight of tank top = 78.5 ft.<sup>2</sup> x 10.20 lbs/ft<sup>2</sup> = 801 lbs. Bottom cone area =  $\pi(5.0 \text{ ft.} + .5 \text{ ft.})\sqrt{(5.0 \text{ ft.} - .5 \text{ ft.})^2 + 5 \text{ ft.}^2} = 116 \text{ ft.}^2$ Cone weight = 116 ft.<sup>2</sup> x 10.20 lbs/ft<sup>2</sup> = 1183 lbs. Estimated weight of miscellaneous steel and fittings = 684 lbs. Total tank weight = cylinder + cone + top + misc. fittings = 5445 lbs. + 801 lbs. + 1183 lbs. + 684 lbs. = 8113 lbs. Maximum weight of tank plus contents = 137,311 lbs. + 8113 lbs. = 145,424 lbs. TANK BASE LEG LOADING: = weight per leg Total weight Number of legs <u>145,424 lbs.</u> = 36,356 lbs/leg <u>4 legs</u> TANK LEG Leg Area = length x width = (6.0 in. x 0.5 in.) + (5.5 in. x 0.5 in.) = 5.75 in<sup>2</sup> Column stress = weight per leg =  $\frac{36,356}{5.75 \text{ in}^2}$  lbs. = 6323 PSI stress on support structure Leg Strength without Bracing

Slenderness ratio of fixed column. Use design K of 1.2 (Theoretical K = 1.0) r (Axix ZZ) For 6 in. x 6 in. x 1/2 in. leg = 1.18 in.  $\frac{KL}{r} = \frac{1.2 \text{ K x (9.33 ft)12}}{1.18 \text{ in.}} = 113.86$ 

#### Page 4

Slenderness ratio is less than 120. This is classified as a short column.

From table 1-36, AISC Manual of Steel Construction, 7th Edition, Appendix A, pp. 5-84

For 36,000 PSI yield stress steel, maximum allowance stress is 11,130 PSI With bracing at midpoint, slenderness ratio is 57. Maximum allowable stress is 17,710 PSI

\*\*Leg stress acceptable with no wind loading.

Wind Load Calculations:

State building codes up to height of 50 ft. - 20 PSF with a shape factor for round tanks is .6.

Time Saver Stds. Fifth Edition - less than 30 ft., 20 PSF at 90 MPH, shape factor is also .6.

Because the three tanks are fairly tight together, a conservative shape factor of 1.0 will be used.

Total wind load = Shape factor x (cone surface area + tank surface area) x wind pressure =  $1.0 \times [(17 \text{ ft. } x \text{ 10 ft.}) + (\underline{10 \text{ ft. } + 1 \text{ ft. } x \text{ 5 ft.})]20 \text{ lbs/ft}^2 = 3950 \text{ lbs.}$ 

Couple stress at right leg = (3950 lbs. x 18.5 ft.) - (145,424 lbs x 4) + ( $F_L$  x 8) = 0 73,075 ft. lbs. - 581,696 lbs/leg + 8  $F_L$  = 0 8  $F_L$  = 508,621 lbs  $F_L$  = 63,578 lbs.

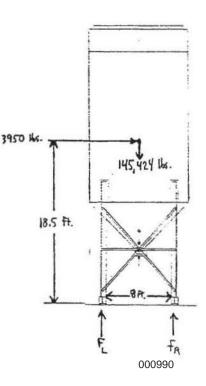
 $F_{\rm R} = 145,424$  lbs. - 63,578 lbs. = 81,846 lbs.

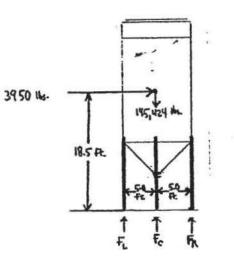
Force on each left leg =  $\frac{63,578 \text{ lbs.}}{2}$  = 31,789 lbs.

Force on each right leg =  $\frac{81,846 \text{ lbs.}}{2}$  = 40,923 lbs.

Right leg column stress =  $\frac{40,923}{5.75}$  = 7117 PSI

\*This is within allowable limits for no leg bracing.





Couple force at  $F_R = (3950 \text{ lbs. x } 18.5) - (145,424 \text{ lbs. x } 5.0) + 10 F_L + 5.0 F_C = 0$   $73,075 \text{ lbs.} - 727,120 \text{ lbs.} + 10 F_L + 5.0 F_C = 0$  $11 F_L + 5.5 F_C = \frac{654,045}{5.0}$ 

 $2 F_L + F_C = 130,809$  lbs.

Couple force at  $F_C$  = (3950 lbs. x 18.5 ft.) + 5.0  $F_L$  - 5.0  $F_R$  = 0 73,075 lbs. + 5.0  $F_L$  - 5.0  $F_R$  = 0  $F_L$  -  $F_R$  = -14,615 lbs.

Load pivots around  $F_C$ , so half the total weight is on  $F_C$ 

$$F_{\rm C} = \frac{145,424}{2} = 72,712$$
 lbs.

COLUMN LOADING WITH 45° WIND CHANGE

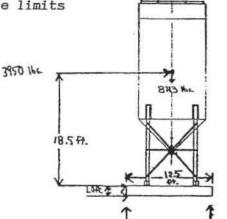
 $F_L + F_R = 72,712$  lbs.

Page 5

Couple force at  $F_C$  is:  $F_L = F_R - 14,615$  lbs. F - 14,615 lbs.  $+ F_R = 72,712$  lbs.  $2 F_R = 72,712$  lbs. + 14,615 lbs.  $F_R = 43,664$  lbs.

Right leg column stress =  $\frac{\text{column weight}}{\text{column surface area}} = \frac{43,664 \text{ lbs.}}{5.75 \text{ in}^2} = 7594 \text{ PSI}$ 

\*Right leg column stress within acceptable limits 90 MPH Wind Loading on Empty Tank:



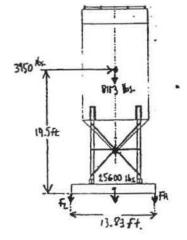
Page 6

Couple force at  $F_R$  = (3950 lbs. x 18.5) - (8113 lbs. x 6.25) + 12.5  $F_L$  = 0 73,075 lbs. - 50,706 lbs. + 12.5  $F_L$  = 0 12.5  $F_L$  = - 22,369 lbs.  $F_L$  = 1790 lbs.

Tanks are bolted to slabs with (8) 3/4" diameter bolts per tank. Bolts have safe load of 2070 lbs. each at 60,000 PSI ultimate strength. \*Each of 8 bolts exceed required strength.

90 MPH WIND COUPLE FORCE ON SUPPORT SLAB Support slab weight = length x width x depth x concrete weight factor

1.0 ft. x 13.83 ft. x 12.5 ft. = 173 ft.3 concrete 148 lbs/ft3 x 173 ft3 = 25,600 lbs.



Couple force at FR = (3950 lbs. x 19.5) - [(8113 lbs. + 25,600 lbs.)6.915 ft.] + 13.83 ft. FL = 077,025 lbs. - 239,259 lbs. + 13.83 FL = 0 13.83 F<sub>L</sub> = 156,100 lbs. F<sub>L</sub> = 11,287 lbs.

Slab will not tip over if tank is empty at 90 MPH winds.

FOOTING SUPPORT:

This footing was approved for tanks larger than the proposed replacement. This approval was part of WRR's Feasibility and Plan of Operation Report; Part B.

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the tank system located at Waste Research & Reclamation, 5200 State Road 93, Eau Claire, WI which they designate as their tank system no. EE

for weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, structural damage, and inadequate construction or installation. The visual inspection was made before the tank system was covered, enclosed or placed in use. All discrepancies that were found were remedied to my satisfaction before the system was covered, enclosed or placed in use.

\_1. THE

William L. Hable, P.E. Plant Engineering & Environmental Consultant P.E. Number 9778

Date Stamped & Certified



"I, William L. Hable, an Independent, Qualified, Registered Professional Engineer, have reviewed the structural integrity and suitability for handling hazardous waste for your tanks designated as Tanks FF and VV as required by NR 645.06(1)(i)l."

Tanks FF and VV are to be identical to Tanks L& N so my assessment for these tanks is the same as stated in my Assessment Report dated March 21, 1996 and my Replacement Thickness Report dated May 24, 1996, and my Overfill Protection Report dated May 30, 1996.

"I, William L. Hable, hereby certify that I am a registered Professional Engineer in the Sate of Wisconsin in accordance with Ch. A E4, Wis. Adm. Code and this report has been prepared in accordance with the Rules of Professional Conduct in Ch. A-E8, Wis. Adm. Code."

William L. Hable P.E. Number 9778





715-834-9624 FAX 715-836-8785



WRR Environmental Services Co., Inc.

5200 State Road 93, Eau Claire, Wisconsin 54701

"Dedicated to Providing Quality Service into the 21st Century"

August 20, 1996

Ginger Hooper Wisconsin Department of Natural Resources 1300 West Clairemont Eau Claire, WI 54702-4001

SUBJECT : Replacement of Tanks FF and VV

Dear Ms. Hooper:

The following letter and enclosures reflect proposed upgrades in operations at WRR Environmental Services Co., Inc. (WRR) (WID 990 829 475), 5200 State Road 93, Eau Claire, Wisconsin 54701. These proposed upgrades are intended to improve operations with in our currently licensed activities. It is not intended to be an expansion of those activities. These proposed changes involve the upgrade of Tanks FF and VV with tanks of a superior design and construction.

If possible, I am asking that these changes be included along with our May 30, 1996 request. In that submittal the same tank design used for Tanks FF and VV were submitted for Tanks J, L and N.

Tanks FF (E-I Tank Area) and VV (E-I South Tank Area) are proposed to be replaced with cone bottom tanks. This is being initiated by WRR for the following reasons; 1) The upgrade to cone bottom tanks will allow more complete inspection of the tanks by exposing the bottom portion. More complete inspection will further decrease the possibility of a spill from tank failure. 2) Worker exposure to hazardous waste is reduced. Cone bottom tanks do not normally require a worker to enter the tank for cleaning. This has been required on at least an annual basis for standard hazardous waste storage tanks. 3) More accurate readings of the volume are possible. 4) Due to the design, sludge accumulation is reduced. Therefore, the volume of waste generated is reduced.

Tank closure will follow closure procedures outlined in WRR's Plan of Operation entitled; "Feasibility and Plan of Operation Report for Storage and Treatment at Waste Research & Reclamation Co., Inc. Facility, WID 990829475" in Section I-2d. These included the following steps:

- Removal of all waste from the tanks. Contents of the tanks will be handled as a hazardous waste. They will be handled through WRR's current recycling and treatment processes.
- Following waste removal, all piping to and from the tanks will be disconnected, dismantled and decontaminated. The work will be supervised and performed using qualified WRR personnel.

They will be equipped with solvent resistant coveralls, head protection, neoprene-coated gloves and boots resistant to the appropriate solvents. Both the wrists and ankles will be taped to aid in protection against upward and inward splash. Full face respirators with organic vapor filter cartridges will be used. Hazsorb spill control pillows will be used in the event of any spills resulting from pipe drainage during the disconnection and dismantling process. Positive displacement pumps used to transfer solvents to and from tanks will be disconnected and cleaned. All valves will be disconnected and cleaned.

- 3) The interior surfaces will be cleaned with one or a combination of solvents that are compatible with the final waste. The most commonly used include; Acetone, Toluene, Methylene chloride, Alcohol's, and blends of solvents. To clean the residue on the interior surface after bulk removal (pumping), the manhole opening on each tank will be used for access. The interior will be sprayed with a nozzle pressure of 15 psi for both cleaning and rinsing.
- 4) All waste from the cleaning will be processed through WRR's recycling and treatment operation. To protect workers during the cleaning of the interior of tanks, a positive pressure air supply with full face mask will be used. A stand-by worker and all other required safety procedures will be employed.
- 5) The tank will then be steam cleaned and dried. Waste water generated during this process will also be handled through WRR's current recycling and treatment operations. All tank interiors will be checked with a PID to verify the absence of solvent vapors. All piping and tanks will then be recycled.

Closure Reports will be written confirming these steps and other procedures for both tanks when they are removed.

The replacement tanks have different dimensions than the originally permitted tanks, however, their capacity will stay within WRR's permitted limits. The replacement tank design's are presented in the two drawings named; "SLUDGE TANK FF - WELDING ASSEMBLY" and "SLUDGE TANK VV - WELDING ASSEMBLY". The accompanying tank reports, reviewed and certified by an independent, qualified, Wisconsin registered professional engineer, are titled; "WRR ENVIRONMENTAL SERVICES CO., INC., DESIGN REVIEW CALCULATIONS FOR REPLACEMENT TANKS FF and VV".

Tanks FF and VV will have an exterior diameter of 11 feet. Both tanks cylinders will be 17 feet long, with an additional 5 foot of cone. Including legs, they will stand 27 feet high. The combined capacity of the two replacement tanks will be 26,554 gallons. They will be replacing a combined capacity of 21,000 gallons. Because of a decrease in site capacity of 8,300 gallons from the replacement of Tanks L, N, and J, WRR would still remain 2,746 gallons below our licensed storage limit. Licensed tank capacity will not be exceeded at any time during the tank replacement process.

Although Tank VV would increase the waste storage capacity in the E-I South Tank Storage Area by 7,277 gallons, the E-I South Tank Storage Area will still maintain 6,230 gallons containment capacity **beyond** the required level. The replacement Tank FF will be 1,723 gallon smaller than the current tank, so containment will not be negatively impacted in the E-I Tank Storage Area. Containment capacity will not be exceeded at any time during the tank replacement process.

Characteristics of the waste to be stored in these tanks will remain consistent with those already approved by the Department and US EPA in WRR's Feasibility and Plan of Operation Report. This is listed in Table C-1 from page C-3. This information was also reviewed by the independent engineer that certified the replacement tanks.

These proposed changes will effect pages; C-3, D-18, D-21, D-22, D-23, D-24, D-25, D-26, D-27, D-64, D-65, D-66, D-67, D-73, D-74, D-97, D-104, D-105, D-112, and D-113 of WRR's Feasibility Report and Plan of Operation. Revised and dated copies of the pages are attached for inclusion in Department copies of the Feasibility and Plan of Operation Report.

As per NR 645.08(2), and NR 645.09(4), (5) and (7) Wis. Adm. Code, all tanks, tank systems, including containment structures and support will be inspected to confirm they are sufficient after installation and before use. A copy of that report will be provided to the Department prior to use of the tanks. This will include construction documentation reports and the results from leak testing of the tanks and ancillary equipment as per NR 645.08(4), Wis. Adm. Code.

As required by NR 645.08(5), Wis. Adm. Code, all supporting tank ancillary equipment will be protected and supported against physical damage and excessive stress due to settlement, vibration, expansion or contraction. Protection against physical damage is provided by the location of the tanks. All tanks are removed from traffic patterns by a concrete berm either 1.5 or 3.75 feet high. All carbon steel will be covered with protective paint. All containment areas have been in use and stable for at least 10 years, and because the new design disperses the tank weight over a greater area, stress exerted upon the containment bases will less.

As per NR 645.09(8), Wis. Adm. Code, secondary containment exists for all ancillary equipment associated with these tanks. All items are located in the tank containment areas.

WRR's 1996 closure cost estimate submitted to the Department is \$547,042.72. Review of the closure costs are conducted on an annual basis. Modifications of WRR's Feasibility and Plan of Operation Report do initiate an evaluation as to whether the closure costs estimates are effected. WRR calculates these figures using our maximum permitted waste capacity. In this case, WRR will remain 2,746 gallons below our permitted capacity. The proposed tank sizes, placement and number will not change enough to alter closure projections. The prices of the wastes stored in these tanks has also remained consistent. Because of these factors, there will be no increase in closure cost estimates.

As per NR 645.06(1)(i)5, Wis. Adm. Code, a corrosion resistant coating that meets NR 645.08(1)(c)2, requirements will be used to provide external corrosion protection.

Protection against internal corrosion is provided by analyzing each waste prior to pumping into the tank system. Wastes corrosive to carbon steel are not in WRR's permit and are not accepted for storage. Also, 100% of all wastes in tanks and containers accepted by WRR are analyzed prior to placing into storage. At least annually, each tank is ultrasonically tested for thickness. A tank reaching the end of its designed life (ASME Code Replacement Thickness, Table D-26A of the Feasibility and Plan of Operation Report) is taken out of service.

As per our earlier discussions, the Tank Assessment Report, Overflow Protection Report, and the Replacement Thickness Report submitted with our May 30, 1996 request covering Tanks L, N, and J would also apply to Tanks VV and FF. Please refer to these for this submittal.

Again, if possible, I would appreciate these changes being included along with our May 30, 1996 request. If there are any questions about this letter, please contact me at: 715-834-9624.

WRR ENVIRONMENTAL SERVICES CO., INC.

George Anderson, CHMM Corporate Director of Compliance

## WRR ENVIRONMENTAL SERVICES CO., INC DESIGN REVIEW CALCULATIONS FOR REPLACEMENT TANKS FF & VV

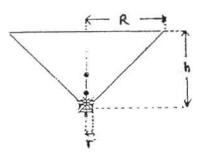
August 1, 1996 Revised August 19, 1996

## TANK VOLUME CALCULATIONS:

- $=\frac{\pi}{4}$  (Inside Tank Diameter)<sup>2</sup> x Tank Height
- $=\frac{\pi}{4}$  (10.96 ft.)<sup>2</sup> x 17 ft.

 $= 1603 \text{ ft.}^{3}$ 

Capacity in gallons = 1603 ft.<sup>3</sup> x 7.48  $\frac{\text{gallons}}{\text{feet}^3}$  = 11990 gallons



Cone volume = 
$$\frac{\pi}{3} \operatorname{R}^{2} \operatorname{h} \left[ 1 + \left(\frac{r}{R}\right) + \left(\frac{r}{R}\right)^{2} \right]$$
  
=  $\frac{\pi}{3} \left( 5.479 \operatorname{ft.} \right)^{2} \operatorname{x} \left( 5 \operatorname{ft.} \right) \left[ 1 + \left(\frac{.479 \operatorname{ft.}}{5.479 \operatorname{ft.}}\right) + \left(\frac{.479 \operatorname{ft.}}{5.479 \operatorname{ft.}}\right)^{2} \right]$   
= 172 ft.<sup>3</sup> x 7.48  $\frac{\operatorname{gal.}}{\operatorname{ft.}^{3}}$   
= 1287 gallons

Total capacity = cone volume + tank volume = 1287 gal. + 11990 gal. = 13,277 gallons



## WEIGHT OF TANK CONTENTS:

A conservative value of 1.5 will be used for the density of the liquid stored in the tanks.

Maximum weight of contents at a density of 1.5:

= Volume of Tanks x Conversion Factor to water weight x density

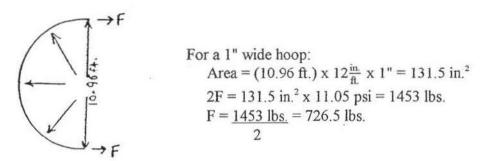
$$= 1775 \text{ ft.3 x } 62.4 \frac{\text{lbs.}}{\text{ft.3}} \text{ x } 1.5$$

= 166,140 lbs.

## TANK HOOP AND PARTING STRESS CALCULATIONS:

Maximum hoop stress will be at base of cone.

Pressure at base point =  $\underline{62.4 \text{ ft. x } 1.5 \text{ x } 17 \text{ ft.}}_{144}$  = 11.05 psi



Hoop stress of 1/4" thick shell = <u>internal stress</u> shell thickness x 1 =  $\underline{726.5 \text{ lbs.}}$  = 2906 psi 1/4" x 1"

One quarter inch steel has a yield point of 36,000 psi (ASTM A36 Steel Plate) Safety Factor (Yield) = 36,000 psi = 12.39

2906 psi

\* Exceeds required strength factor by over 12 times for steel and by .8(12.39) = 9.9 for welds

Maximum Parting Stress is at the start of the cone.

Steel area =  $\pi$  x height x conversion factor x shell thickness =  $\pi$  x 11 ft. x 12  $\frac{in.}{ft.}$  x 1/4" = 103.7 in.<sup>2</sup>

Force = tank volume x density = 13,277 gal. x 8  $\frac{lbs.}{gal.}$  x 1.5 = 159,324 lbs.

 $S = \frac{159,324 \text{ lbs}}{103.7 \text{ in.}^2} = 1536 \text{ psi}$ 

\* Exceeds the required strength

## TANK WEIGHT CALCULATIONS:

Shell steel area =  $\pi$  x diameter x height

 $= \pi \times 11$  ft. x 17 ft. = 587.5 ft.<sup>2</sup> 1/4" plate steel weight = 10.20  $\frac{\text{lbs.}}{6^2}$ 

Weight of shell = 587.5 ft.<sup>2</sup> x 10.20  $\frac{lbs.}{ft.^2}$  = 5990 lbs.

Tank top area =  $\frac{\pi}{4}$  (11 ft.<sup>2</sup>) = 95 ft.<sup>2</sup>

Weight of tank top = 95 ft.<sup>2</sup> x 10.20  $\frac{\text{lbs.}}{\text{ft}^2}$  = 969 lbs.

Bottom cone area =  $\pi$  (5.5 ft. + .5 ft.)  $\sqrt{(5.5 \text{ ft.} + .5 \text{ ft}) + (5 \text{ ft.})^2}$ = 133 ft.<sup>2</sup>

Cone weight = 133 ft.<sup>2</sup> x 10.20  $\frac{\text{lbs.}}{\text{ft}^2}$  = 1357 lbs.

Estimated weight of miscellaneous steel and fittings = 684 lbs.

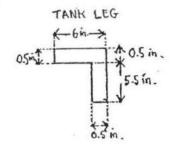
Total tank weight = cylinder + cone + top + misc. fittings = 5590 lbs. + 1357 lbs. + 969 lbs. + 684 lbs= 9000 lbs.

Maximum weight of tank + contents = 166,000 lbs. + 9,000 lbs = 175,000 lbs

## TANK BASE LEG LOADING:

Weight per leg = <u>total weight</u> = <u>175,000 lbs.</u> = 43,750  $\frac{lbs}{leg}$ # of legs 4 legs

Leg area = length x width = (6.0" + .5") + (5.5" + .5")= 5.75 in.<sup>2</sup>



Column stress =  $\frac{\text{weight per leg}}{\text{area of leg}} = \frac{43,750 \text{ lbs.}}{5.75 \text{ in.}^2} = 7609 \text{ psi}$ 

Leg Strength Without Bracing:

Slenderness ratio of fixed column: use a design K of 1.2 (theoretical K = 1.0) r (axis ZZ) for 6" x 6" x 1/2" angle = 1.18 in.

 $\frac{\text{KL}}{\text{r}} = \frac{1.2 \text{ x} (9.33 \text{ ft}) \text{ x} 12}{1.18 \text{ in}} = 113.86$ 

\* The slenderness ratio is less than 120, thus is classified as a short column.

ť.

From table 1-36, AISC Manual of Steel Construction, 7th Edition, Appendix A, pg. 5-84 (ASTM A36 Structural Steel angle legs):

"For 36,000 psi yield stress steel, maximum allowance stress is 11,130 psi with bracing at midpoint, slenderness ratio is 57. Maximum allowable stress is 17,710 psi"

\* Leg stress is acceptable with no wind loading.

## WIND LOAD CALCULATIONS:

State building codes up to height of 50 ft. - 20 psf with a shape factor for round tanks is .6 Time Saver Stds. Fifth Edition - less than 30 ft, 20 psf at 90 mph, shape factor is also .6 A conservative shape factor of 1.0 will be used.

Total wind load = shape factor x (cone S.A. + tank S.A.) x wind pressure =  $1.0 \times [(17 \text{ ft. } x \text{ 11 ft.}) + (\underline{11 \text{ ft. } + 1 \text{ ft.}} \times 5 \text{ ft.})] \times 20 \text{ psf}$ 

2

= 4340 lbs.

Couple stress at right leg:

(4340 lbs x 18.5 ft.) - (175,000 lbs x 4 ft.) + ( $F_L$  x 8 ft.) = 0 80,290 ft-lbs - 700,000 lbs + 8 $F_L$  = 0 8 $F_L$  = 619,710 lbs  $F_L$  = 77,463.75 lbs

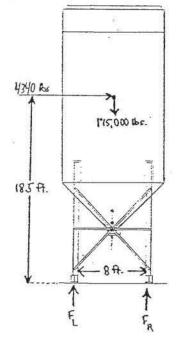
 $F_{R} = 175,000 \text{ lbs} - 77,463.75 \text{ lbs} = 97.536 \text{ lbs}.$ 

Force on each left leg =  $\frac{77,463.75 \text{ lbs}}{2}$  = 38,732 lbs 2 Force on each right leg =  $\frac{97,536.25 \text{ lbs}}{2}$  = 48,768 lbs Right leg column stress =  $\frac{48,768 \text{ lbs}}{5.75 \text{ in.}^2}$  = 8481 psi 5.75 in.<sup>2</sup>

\* This is within allowable stress limits for no leg bracing.

## COLUMN LOADING WITH 45° WIND CHANGE:

Couple force at  $F_R$ : (4340 lbs x 18.5 ft) - (175,000 lbs x 5.5 ft.) + 11 $F_L$  + 5.5 $F_c$  = 0 80,290 lbs - 962,500 lbs + 11 $F_L$  + 5.5 $F_c$  = 0 <u>11 $F_L$  + 5.5 $F_c$  = <u>882,210</u> 5.5 2 $F_L$  +  $F_c$  = 160,402 lbs</u>

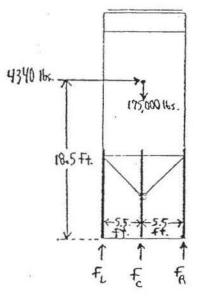


Couple force at  $F_c$ : (4340 lbs x 18.5 ft.) + 5.5 $F_L$  - 5.5 $F_R$  = 0 80,290 lbs + 5.5 $F_L$  - 5.5 $F_R$  = 0  $F_L$  -  $F_R$  = - 14,598 lbs

Load pivots around  $F_c$ , so half the total weight is on  $F_c$ .  $F_c = \frac{175,000 \text{ lbs}}{2} = 87,500 \text{ lbs}.$  $F_L + F_R = 87,500 \text{ lbs}$ 

Couple force at F<sub>c</sub> is:

 $F_L = F_R - 14,598 \text{ lbs}$   $F_R - 14,598 \text{ lbs} + F_R = 87,500 \text{ lbs}$   $2 F_R = 87,500 \text{ lbs} + 14,598 \text{ lbs}$  $F_R = 51,049 \text{ lbs}.$ 



Right leg column stress =  $\frac{\text{column weight}}{\text{column S.A.}} = \frac{51,049 \text{ lbs}}{5.75 \text{ in.}^2} = 8878 \text{ psi}$ 

\* Right leg column stress within acceptable limits

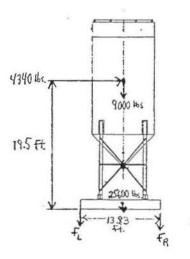
90 mph Wind Loading on Empty Tank:

Couple force at  $F_R$ : (4340 lbs x 18.5 ft.) - (9000 lbs x 6.25 ft.) + 12.5 $F_L$  = 0 80,290 lbs - 56,250 lbs + 12.5 $F_L$  = 0 12.5  $F_L$  = -24,040 lbs  $F_L$  = 1923 lbs.

Tanks are bolted to slabs with (8) 3/4" diameter bolts per tank. Bolts have safe load of 2070 lbs each at 60,000 psi ultimate strength.

\* Each of the 8 bolts exceeds required strength.

90 MPH WIND COUPLE FORCE ON SUPPORT SLAB:



Support slab weight = length x width x depth x concrete weight factor = 1.0 ft. x 13.83 ft. x 12.5 ft. x 148  $\frac{lbs.}{ft.^3}$ = 25,600 lbs. Coupling force at F<sub>R</sub>: (4340 lbs x 19.5 ft.) - [(9000 lbs + 25,600 lbs) x 6.915 ft.] + 13.83F<sub>L</sub> = 0 84,630 lbs - 239,259 lbs + 13.83 F<sub>L</sub> = 0 13.83 F<sub>L</sub> = 166,044 lbs F<sub>L</sub> = 11,181 lbs

\* Tank will not tip over if tank is empty at 90 mph winds.

## FOOTING SUPPORT:

These footings have been approved for tanks larger than the proposed replacements. This approval was part of WRR's Feasibility and Plan of Operation Report; Part B.

CONTAINMENT VOLUME CALCULATIONS:

Tank VV:

Overall gross area:

 $A = 57.0' \times 32.0' = 1824 \text{ ft.}^2$ 

Overall tank area: (individual area of base mounted tanks)  $A = 7 \times 11'$  dia. = 665 ft.<sup>2</sup>

Overall net containment area: =  $1824 \text{ ft.}^2 - 665 \text{ ft.}^2$ =  $1159 \text{ ft.}^2$ 

Average dike height = 46.5" = 3.875 ft.

Containment volume:

=  $1159 \text{ ft.}^2 \text{ x} 3.875 \text{ ft.}$ =  $4491 \text{ ft.}^3$ = 33,594 gallons

Total containment available = 30,346 gallons

Secondary containment required:

The secondary containment required was calculated by adding 10% of the total tank capacity or 100% of the largest tank capacity to the rainfall accumulated during a 24 hour 25 year storm.

Total tank capacity = 140,177 gal (including tank BF) Largest tank capacity = 19,000 gal Storm volume = 5,116 gal Total containment required:

= .10(140,177 gal) + 5,116 gal = 19,134 gal OR = 19,000 gal + 5,116 gal = 24,116 gal

The E-I South tank containment system exceeds the secondary containment requirements by 6,230 gallons.

## Tank FF:

Overall gross area:

 $B = (53.33' - 1.33') \times (18.92' - 2') = 880 \text{ ft.}^2$   $C = 21.0' \times 42.75' = 898 \text{ ft.}^2$   $D = (53.33' - 1.33') \times (16.25' - .67') = 810 \text{ ft.}^2$   $E = (22.42' - 1.33') \times 42.75' - 1/2[(42.75' - 24.58') \times (22.42' - 1.33')] = 710 \text{ ft.}^2$  $F = 1.5' \times (55.58' - 53.33') + 1/2[1.5' \times 1.5'] = 5 \text{ ft.}^2$ 

Total gross area =  $3303 \text{ ft.}^2$ 

Overall tank area: (individual areas of base mounted tanks)

 $B = 1 \times 11' \text{ dia.} = 95 \text{ ft.}^{2}$   $2 \times 6' \text{ dia.} = 57 \text{ ft.}^{2}$   $1 \times 5'4'' \text{ dia.} = 22 \text{ ft.}^{2}$   $2 \times (3' \times 4') = 24 \text{ ft.}^{2}$   $C = 2 \times 11' \text{ dia.} = 190 \text{ ft.}^{2}$   $1 \times 10' \text{ dia.} = 79 \text{ ft.}^{2}$   $D = 1 \times 10' \text{ dia.} = 79 \text{ ft.}^{2}$   $1 \times 9' \text{ dia.} = 64 \text{ ft.}^{2}$   $1 \times 8' \text{ dia.} = 50 \text{ ft.}^{2}$   $E = 1 \times 10' \text{ dia.} = 79 \text{ ft.}^{2}$   $Total = 739 \text{ ft.}^{2}$ 

Overall net containment =  $3303 \text{ ft.}^2 - 739 \text{ ft.}^2 = 2564 \text{ ft.}^2$ 

Area B: Net containment area = 880 ft.<sup>2</sup> - 198 ft.<sup>2</sup> = 682 ft.<sup>2</sup> Dike height = 18" = 1.5 ft. Containment volume = 682 ft.<sup>2</sup> x 1.5 ft. = 1023 ft.<sup>3</sup> = 7,652 gal. Area C:

Net containment area = 898 ft.<sup>2</sup> - 269 ft.<sup>2</sup> = 629 ft.<sup>2</sup> Dike height = 18" = 1.5 ft. Containment volume = 629 ft.<sup>2</sup> x 1.5 ft. = 944 ft.<sup>3</sup> = 7,061 gal.

Area D:

Net containment area =  $810 \text{ ft.}^2 - 193 \text{ ft.}^2$ =  $617 \text{ ft.}^2$ Dike height = 18'' = 1.5 ft.Containment volume =  $617 \text{ ft.}^2 \times 1.5 \text{ ft.}$ =  $923 \text{ ft.}^3$ = 6,904 gal.

Area E:

Net containment area = 710 ft.<sup>2</sup> - 79 ft.<sup>2</sup> = 631 ft.<sup>2</sup> Dike height = 18" = 1.5 ft. Containment volume = 631 ft.<sup>2</sup> x 1.5 ft. = 947 ft.<sup>3</sup> = 7,084 gal.

Area F:

Net containment area = 5 ft.<sup>2</sup> - 0 = 5 ft.<sup>2</sup> Dike height = 18" = 1.5 ft. Containment volume = 5 ft.<sup>2</sup> x 1.5 ft. = 8 ft.<sup>3</sup> = 60 gal.

Total containment volume available is the sum of all the individual containment volumes calculated in the preceding section:

 $B = 7,652 \text{ gal} \\ C = 7,061 \text{ gal} \\ D = 6,904 \text{ gal} \\ E = 7,084 \text{ gal} \\ F = \underline{60 \text{ gal}} \\ 28,761 \text{ gal}$ 

Total containment available = 28,761 gallons

Secondary containment required:

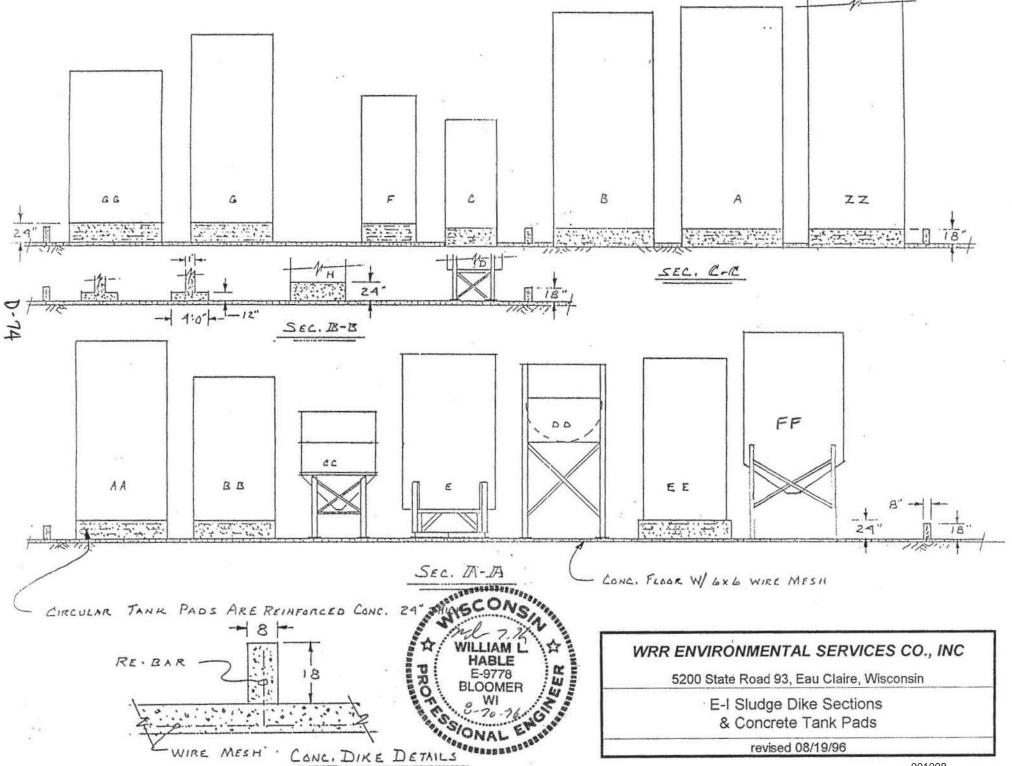
The secondary containment required was calculated by adding 10% of the total tank capacities or 100% of the largest tank capacity to the rainfall accumulated during a 24 hour 25 year storm.

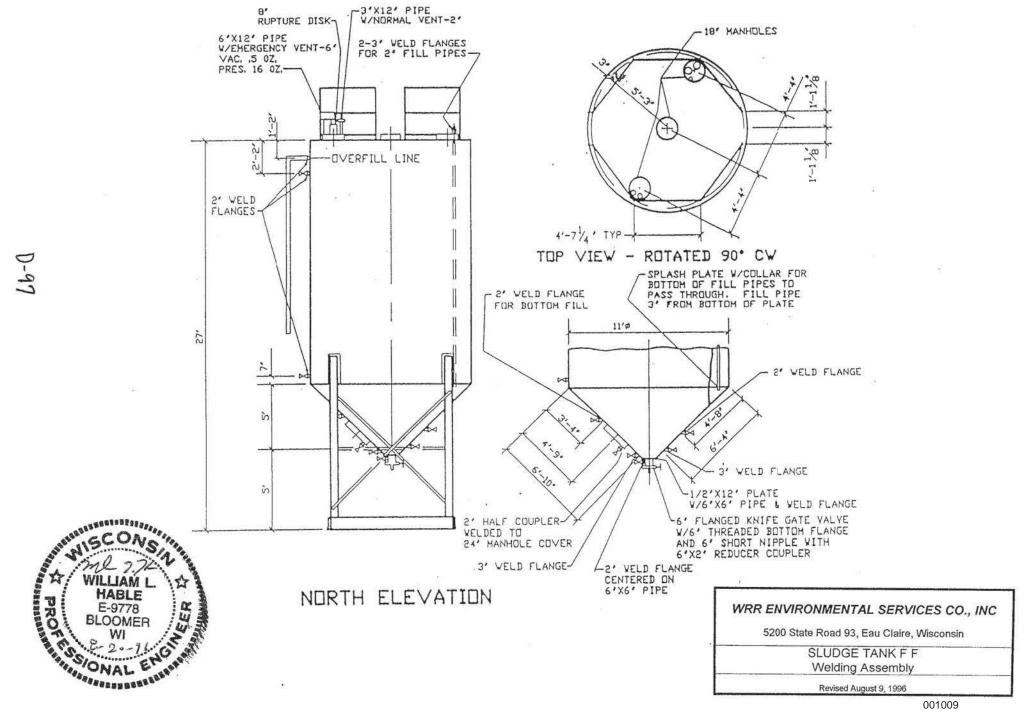
Total tank capacity = 146,777 gal Largest tank capacity = 17,500 gal Storm volume = 9,265 gal

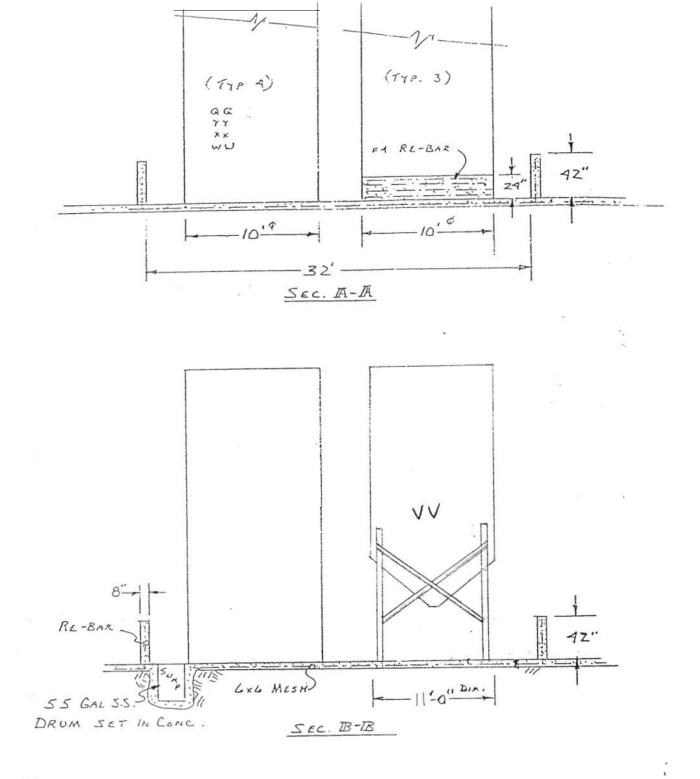
Total containment required:

= .10(146,777 gal) + 9,265 gal = 23,943 gal OR = 17,500 gal + 9,265 gal = 26,765 gal

The E-I East tank containment system exceeds the secondary containment requirements by 1,996 gallons.



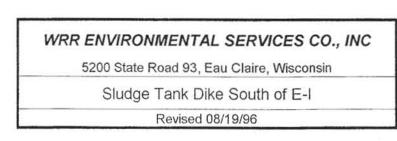


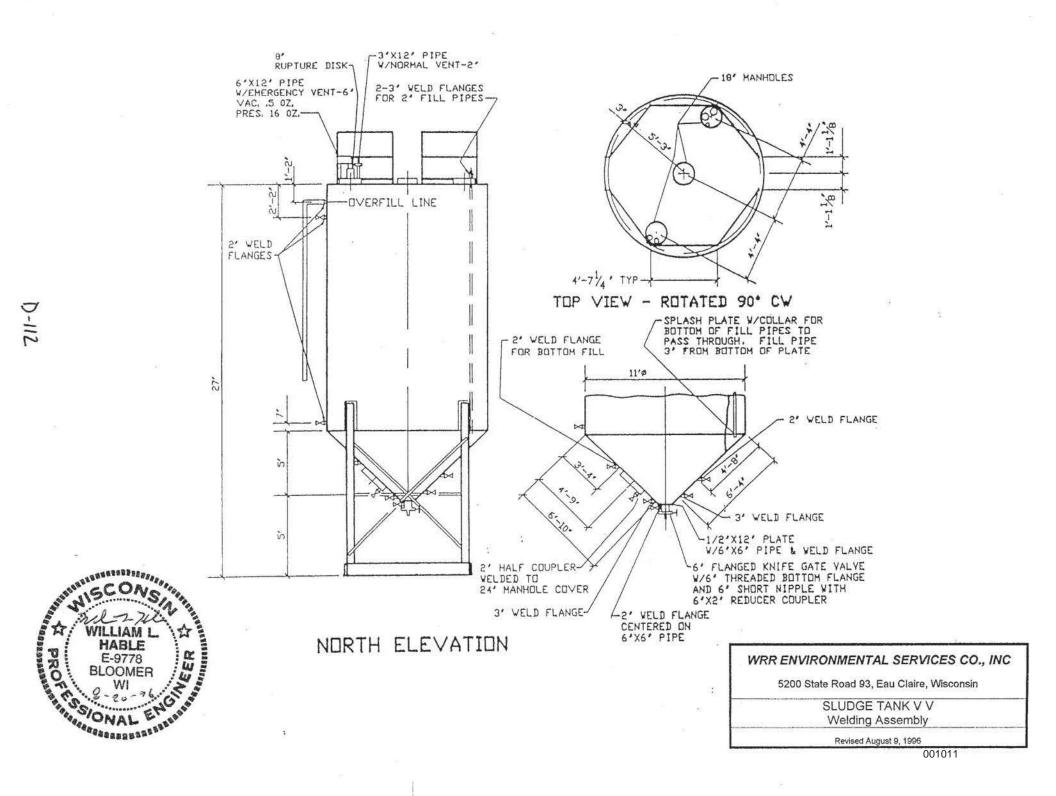


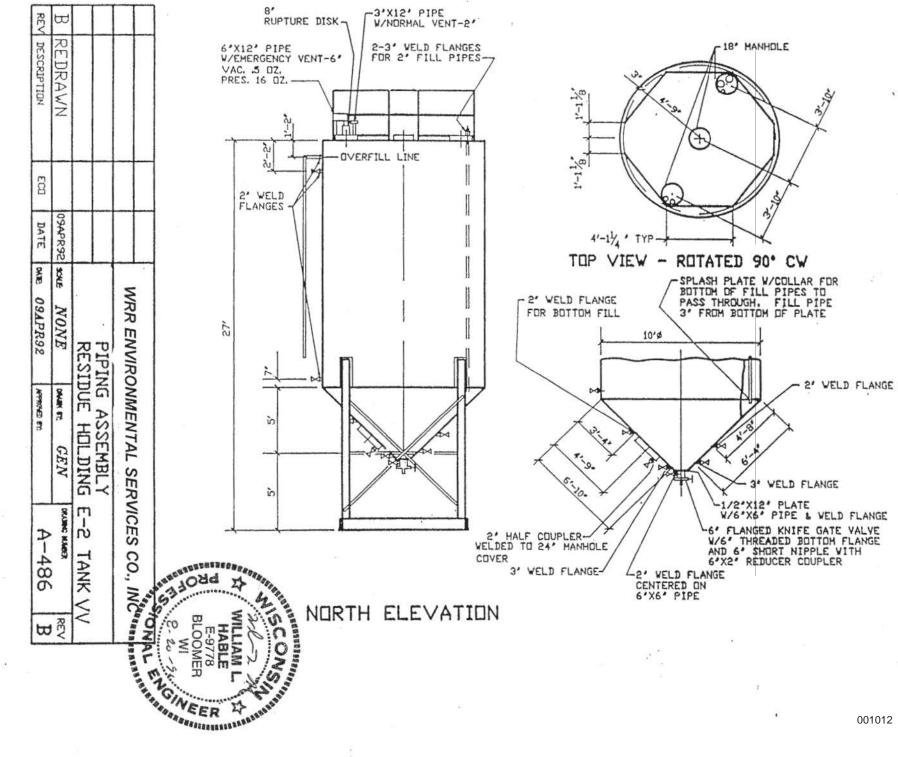
## Note:

PIPINE IS ABOVE GROUND AND GVER SECONDARY CONTAINMENT









D-113

### HABLE ENGINEERING SERVICES, LLC

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405 FAX - (715) 568-5406

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the tank system located at WRR Environmental Services CO., Inc., 5200 Ryder Road, Eau Claire, WI which they designate as their tank system number for weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, structural damage, and inadequate construction or installation. The visual inspection was made before the tank system was covered, enclosed or placed in use. All discrepancies that were found were remedied to my satisfaction before the system was covered, enclosed or placed in use.

W.l. 1. 761

William L. Hable, P.E. Consulting Engineer P.E. Number 9778 I INSPECTED THIS TANK BEFORE It WAS INSTALLED, THE ORIGINAL CERTIFICATION CANNOT BE LOCATES mal 2000

Fers 14,2014 Date Stamped & Certified



#### HABLE ENGINEERING SERVICES

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the tank system located at Waste Research & Reclamation, 5200 State Road 93, Eau Claire, WI which they designate as their tank system no. <u>VV</u> for weld breaks, punctures, scrapes of protective coatings,

for weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, structural damage, and inadequate construction or installation. The visual inspection was made before the tank system was covered, enclosed or placed in use. All discrepancies that were found were remedied to my satisfaction before the system was covered, enclosed or placed in use.

27hle

William L. Hable, P.E. Plant Engineering & Environmental Consultant P.E. Number 9778

1997 28

Date Stamped'& Certified



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## WRR ENVIRONMENTAL SERVICES CO., INC. DESIGN REVIEW CALULATIONS FOR REPLACEMENT TANKS, XX, V, & W

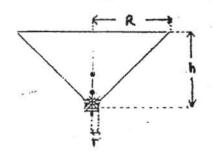
October 23, 2000

## TANK VOLUME CALCULATIONS:

- $=\frac{\pi}{4}$  (Inside Tank Diameter)<sup>2</sup> x Tank Height
- $=\frac{\pi}{4}$  (10.96 ft.)<sup>2</sup> x 17 ft.

 $= 1603 \text{ ft.}^3$ 

Capacity in gallons = 1603 ft.<sup>3</sup> x 7.48  $\frac{\text{gallons}}{\text{ford}^3}$  = 11990 gallons





Cone volume =  $\frac{\pi}{3} \operatorname{R}^{2} h [1 + (\frac{r}{R}) + (\frac{r}{R})^{2}]$ =  $\frac{\pi}{3} (5.479 \text{ ft.})^{2} x (5 \text{ ft.}) [1 + (\frac{.479 \text{ ft.}}{5.479 \text{ ft.}}) + (\frac{.479 \text{ ft.}}{5.479 \text{ ft.}})^{2}]$ = 172 ft.<sup>3</sup> x 7.48  $\frac{\text{gal}}{\text{ft.}^{3}}$ = 1287 gallons

Total capacity = cone volume + tank volume = 1287 gal. + 11990 gal.

## = 13,277 gallons

## WEIGHT OF TANK CONTENTS:

A conservative value of 1.5 will be used for the density of the liquid stored in the tanks.

Maximum weight of contents at a density of 1.5:

= Volume of Tanks x Conversion Factor to water weight x density

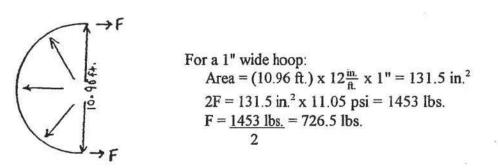
= 1775 ft.3 x 62.4  $\frac{lbs.}{e^3}$  x 1.5

= 166,140 lbs.

## TANK HOOP AND PARTING STRESS CALCULATIONS: Maximum hoop stress will be at base of cone.

Maximum noop stress will be at base of cone.

Pressure at base point =  $\frac{62.4 \text{ ft. x } 1.5 \text{ x } 17 \text{ ft.}}{144}$  = 11.05 psi



Hoop stress of 1/4" thick shell = <u>internal stress</u> shell thickness x 1 =  $\underline{726.5 \text{ lbs.}}$  = 2906 psi 1/4" x 1"

One quarter inch steel has a yield point of 36,000 psi (ASTM A36 Steel Plate) Safety Factor (Yield) =  $\frac{36,000 \text{ psi}}{2906 \text{ psi}}$  = 12.39

\* Exceeds required strength factor by over 12 times for steel and by .8(12.39) = 9.9 for welds

Maximum Parting Stress is at the start of the cone.

Steel area =  $\pi$  x height x conversion factor x shell thickness =  $\pi$  x 11 ft. x 12  $\frac{in.}{ft.}$  x 1/4" = 103.7 in.<sup>2</sup>

Force = tank volume x density = 13,277 gal. x 8  $\frac{lbs.}{gal.}$  x 1.5 = 159,324 lbs.

 $S = \frac{159,324 \text{ lbs}}{103.7 \text{ in.}^2} = 1536 \text{ psi}$ 

\* Exceeds the required strength

## TANK WEIGHT CALCULATIONS:

Shell steel area =  $\pi$  x diameter x height =  $\pi$  x 11 ft. x 17 ft.

$$= 587.5 \, \text{ft.}^2$$

1/4" plate steel weight = 10.20  $\frac{10s}{0.2}$ 

Weight of shell = 587.5 ft.<sup>2</sup> x 10.20  $\frac{lbs.}{ft^2}$  = 5990 lbs.

Tank top area =  $\frac{\pi}{4}$  (11 ft.<sup>2</sup>) = 95 ft.<sup>2</sup>

Weight of tank top = 95 ft.<sup>2</sup> x 10.20  $\frac{\text{lbs.}}{\text{ft.}^2}$  = 969 lbs.

Bottom cone area =  $\pi$  (5.5 ft. + .5 ft.)  $\sqrt{(5.5 \text{ ft.} + .5 \text{ ft}) + (5 \text{ ft.})^2}$ = 133 ft.<sup>2</sup>

Cone weight = 133 ft.<sup>2</sup> x 10.20  $\frac{\text{lbs.}}{\text{ft.}^2}$  = 1357 lbs.

Estimated weight of miscellaneous steel and fittings = 684 lbs.

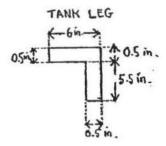
Total tank weight = cylinder + cone + top + misc. fittings = 5590 lbs. + 1357 lbs. + 969 lbs. + 684 lbs = 9000 lbs.

Maximum weight of tank + contents = 166,000 lbs. + 9,000 lbs = 175,000 lbs

## TANK BASE LEG LOADING:

Weight per leg =  $\underline{\text{total weight}}$  =  $\underline{175,000 \text{ lbs.}}$  = 43,750  $\frac{\text{lbs}}{\text{leg}}$ # of legs 4 legs

Leg area = length x width = (6.0" + .5") + (5.5" + .5")= 5.75 in.<sup>2</sup>



Column stress =  $\frac{\text{weight per leg}}{\text{area of leg}} = \frac{43,750 \text{ lbs.}}{5.75 \text{ in.}^2} = 7609 \text{ psi}$ 

Leg Strength Without Bracing:

Slenderness ratio of fixed column: use a design K of 1.2 (theoretical K = 1.0) r (axis ZZ) for 6" x 6" x 1/2" angle = 1.18 in.

 $\frac{\text{KL}}{\text{r}} = \frac{1.2 \text{ x} (9.33 \text{ ft}) \text{ x} 12}{1.18 \text{ in}} = 113.86$ \* The slenderness ratio is less than 120, thus is classified as a short column.

From table 1-36, AISC Manual of Steel Construction, 7th Edition, Appendix A, pg. 5-84 (ASTM A36 Structural Steel angle legs):

"For 36,000 psi yield stress steel, maximum allowance stress is 11,130 psi with bracing at midpoint, slenderness ratio is 57. Maximum allowable stress is 17,710 psi"

\* Leg stress is acceptable with no wind loading.

## WIND LOAD CALCULATIONS:

State building codes up to height of 50 ft. - 20 psf with a shape factor for round tanks is .6 Time Saver Stds. Fifth Edition - less than 30 ft, 20 psf at 90 mph, shape factor is also .6 A conservative shape factor of 1.0 will be used.

Total wind load = shape factor x (cone S.A. + tank S.A.) x wind pressure =  $1.0 \times [(17 \text{ ft. } x \text{ 11 ft.}) + (\underline{11 \text{ ft. } + 1 \text{ ft.}} \times 5 \text{ ft.})] \times 20 \text{ psf}$ 2

= 4340 lbs.

Couple stress at right leg:

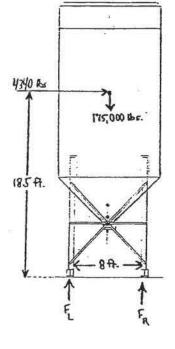
(4340 lbs x 18.5 ft.) - (175,000 lbs x 4 ft.) + ( $F_L$  x 8 ft.) = 0 80,290 ft-lbs - 700,000 lbs + 8 $F_L$  = 0 8 $F_L$  = 619,710 lbs  $F_L$  = 77,463.75 lbs

$$F_{\rm R} = 175,000 \text{ lbs} - 77,463.75 \text{ lbs} = 97.536 \text{ lbs}.$$

Force on each left leg =  $\frac{77,463.75 \text{ lbs}}{2}$  = 38,732 lbs 2 Force on each right leg =  $\frac{97,536.25 \text{ lbs}}{2}$  = 48,768 lbs 2 Right leg column stress =  $\frac{48,768 \text{ lbs}}{5.75 \text{ in.}^2}$  = 8481 psi 5.75 in.<sup>2</sup> \* This is within allowable stress limits for no leg bracing.

COLUMN LOADING WITH 45° WIND CHANGE:

Couple force at  $F_R$ : (4340 lbs x 18.5 ft) - (175,000 lbs x 5.5 ft.) + 11 $F_L$  + 5.5 $F_c$  = 0 80,290 lbs - 962,500 lbs + 11 $F_L$  + 5.5 $F_c$  = 0 <u>11 $F_L$  + 5.5 $F_c$  = <u>882,210</u> 5.5 2 $F_L$  +  $F_c$  = 160,402 lbs</u>



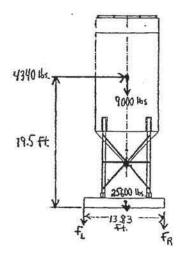
Couple force at F<sub>c</sub>:  $(4340 \text{ lbs x } 18.5 \text{ ft.}) + 5.5F_{L} - 5.5F_{R} = 0$  $80,290 \text{ lbs} + 5.5F_{\text{L}} - 5.5F_{\text{R}} = 0$ 4340 lbs.  $F_{L} - F_{R} = -14,598$  lbs 175,000 165 Load pivots around  $F_c$ , so half the total weight is on  $F_c$ .  $F_c = 175,000 \text{ lbs} = 87,500 \text{ lbs}.$ 18.5 Ft.  $F_{L} + F_{R} = 87,500 \text{ lbs}$ Couple force at F<sub>c</sub> is:  $F_{L} = F_{R} - 14,598 \text{ lbs}$ 1  $F_{R}$  - 14,598 lbs +  $F_{R}$  = 87,500 lbs F, FA f  $2 F_{\rm R} = 87,500 \text{ lbs} + 14,598 \text{ lbs}$  $F_{R} = 51,049$  lbs. Right leg column stress =  $\underline{\text{column weight}} = \underline{51,049 \text{ lbs}} = 8878 \text{ psi}$ column S.A. 5.75 in.<sup>2</sup> \* Right leg column stress within acceptable limits 90 mph Wind Loading on Empty Tank:

Couple force at  $F_R$ : (4340 lbs x 18.5 ft.) - (9000 lbs x 6.25 ft.) + 12.5 $F_L$  = 0 80,290 lbs - 56,250 lbs + 12.5 $F_L$  = 0 12.5  $F_L$  = - 24,040 lbs  $F_L$  = 1923 lbs.

Tanks are bolted to slabs with (8) 3/4" diameter bolts per tank. Bolts have safe load of 2070 lbs each at 60,000 psi ultimate strength.

\* Each of the 8 bolts exceeds required strength.

## 90 MPH WIND COUPLE FORCE ON SUPPORT SLAB:



Support slab weight = length x width x depth x concrete weight factor

= 1.0 ft. x 13.83 ft. x 12.5 ft. x 148  $\frac{lbs}{ft^3}$ 

= 25,600 lbs.

Coupling force at F<sub>R</sub>:

(4340 lbs x 19.5 ft.) - [(9000 lbs + 25,600 lbs) x 6.915 ft.] + 13.83 $F_L = 0$ 84,630 lbs - 239,259 lbs + 13.83  $F_L = 0$ 13.83  $F_L = 166,044$  lbs  $F_L = 11,181$  lbs

\* Tank will not tip over if tank is empty at 90 mph winds.

www.wrres.com

WRR Environmental Services Co., Inc.

715-834-9624 FAX 715-836-8785 EMAIL wrrstaff@wrres.com

5200 State Road 93, Eau Claire, Wisconsin 54701

"Where Technology and Ecology Meet"

May 31, 2000

Ms. Ginger Hooper Hazardous Waste Specialist Wisconsin Department of Natural Resources 1300 West Clairemont Ave P.O. Box 4001 Eau Claire WI 54702-4001

Dear Ms. Hooper,

The purpose of this letter is to request a modification to WRR Environmental Services Company, Incorporated (WRR) Part B Permit. WRR is located at 5200 State Road 93, Eau Claire, Wisconsin (WID 990829475). The modification is required to replace Tanks XX, V and W, which are used to store hazardous waste prior to treatment. This proposed modification is intended to improve our operations while operating within in our currently licensed parameters and is not intended to result in an expansion of our activities.

Waste Storage Tanks XX, V, and W are proposed to be replaced with cone bottom tanks. This is part of a tank replacement program initiated several years ago by WRR for the following reasons; 1) The upgrade to cone bottom tanks will allow more complete inspection of the tank by exposing the bottom portion. More complete inspection will further decrease the potential of undetected leaks resulting from tank failure. 2) Worker exposure to hazardous waste is reduced. Cone bottom tanks do not normally require a worker to enter the tank for cleaning. Presently, with flat bottom tanks, this has been required on an at least annual basis due to accumulation of sludge. 3) More accurate readings of the volumes are possible due to the elimination of the sludge. 4) Due to the design, sludge accumulation is reduced thereby, reducing the volume of waste generated.

Tank closure will follow closure procedures outlined in WRR's Plan of Operation entitled, "Feasibility and Plan of Operation Report for Storage and Treatment at Waste Research & Reclamation Company, Inc. Facility, WID 990829475" Section I-2d. This includes the following steps:

- Removal of all waste from the tank. Contents of the tank will be handled as a hazardous waste through WRR's approved recycling and treatment processes.
- Following waste removal, all piping to and from the tank will be disconnected, dismantled and decontaminated. The work will be supervised and performed using qualified WRR Personnel.



Personnel will be equipped with solvent resistant coveralls, head protection, neoprene-coated gloves and boots resistant to the appropriate solvents. Both the wrists and ankles will be taped to aid in protection against upward and inward splash. Full face respirators with organic vapor or other appropriate filter cartridges. Absorbent pads, pillows or socks will be utilized in the event any spills result from pipe drainage during the deconnection and dismantling process. Positive displacement pumps used to transfer solvents to and from the tank will be disconnected and cleaned. All valves will be disconnected and cleaned.

- 3) The interior surface will be cleaned with one or a combination of solvents that are compatible with the final waste. The most commonly used include; Toluene, Methylene Chloride, Alcohols, and blends of solvents. To clean the residue on the interior surface after bulk removal (pumping), the manhole opening on each tank will be used for access. The interior will be sprayed with a nozzle pressure of 15 psi for both cleaning and rinsing.
- 4) All waste from the cleaning will be processed through WRR's approved recycling and treatment operation. To protect workers during the cleaning of the interior of the tank, a positive pressure air supply with full face mask will be used. An attendant and all other safety procedures will be employed.
- 5) The tank will then be steam cleaned and allowed to dry. Wastewater generated during this process will also be processed through WRR's current recycling and treatment operations. All tank interiors will be checked with a PID to verify the absence of solvent vapors. All piping and the tank will then be recycled.
- A Closure Report will be written confirming these steps and other procedures when the tank is removed.

The replacement tanks have different dimensions than the originally permitted tanks however, the volumetric capacities remain the same. The replacement tanks design's are presented in the accompanying drawings. The accompanying tank report, reviewed and certified by an independent, qualified Wisconsin registered Professional Engineer, is identical to previous modification request for Tank EE.

Tanks XX, V, and W will have an exterior diameter of 10 feet. The tank cylinder will be 17 feet long, with an additional 5 feet of cone. Including legs, it will stand 27 feet high. The capacity of the replacement tanks will be 10,974 gallons each. They will be replacing tanks with the following capacities; Tank V - 5995 gallons, Tank W - 15,015 gallons, Tank XX - 11,990 gallons. The new tanks will have a total capacity of 32,922 gallons versus 33,000 gallons of capacity for the old tanks. Because of this decrease in site capacity due to replacement, WRR will still remain below our site permitted tank storage limit.

All three tanks are located within the E-II Sludge Dike. The installation of the new tanks will result in an additional containment capacity beyond the required level. Containment capacity will not be exceeded at any time during the tank replacement process.

Characteristics of the waste to be stored in these tanks will remain consistent with that already approved by the WDNR and US EPA in WRR's Feasibility and Plan of Operation Report. This is listed in Table C-1 to Page C-3. This information was also reviewed by the independent engineer who certified the replacement tanks.

Pursuant to NR 645.08(2), and NR 645.09(4), (5) and (7) Wis. Adm. Code, the tanks, tank systems, including containment structures and support, will be inspected to confirm they are sufficient after installation and before use. A copy of that report will be provided to the WDNR prior to use of the tank. This will include construction documentation report and the results from leak testing of the tank and ancillary equipment pursuant to NR 645.08(4), Wis. Adm. Code.

As required by NR 645.08(5), Wis. Adm. Code, all supporting tank ancillary equipment will be protected and supported against physical damage and excessive stress due to settlement, vibration, expansion, or contraction. Protection against physical damage is provided by the location of the tanks. The tanks are removed from traffic patterns by concrete diking, All carbon steel will be covered with protective paint coatings. The containment area has been in use and stable for at least 10 years. Because the new design disperses the tank weight over a greater area, stress exerted upon the containment base will be reduced.

Pursuant to NR 645.09(8), Wis. Adm. Code, secondary containment exists for all ancillary equipment associated with this tank. All items are located in the tank containment area.

WRR submitted it's revised closure cost estimate in the fall of 1999. Modifications of WRR's Feasibility and Plan of Operation Report do initiate an evaluation as to whether the closure costs are affected. WRR calculates these figures using our maximum permitted waste capacity. The proposed tank size and placement will not change these closure cost projections. The prices of the wastes stored in these tanks has also remained consistent. Because of these factors, there will be no increase in closure cost estimates.

Pursuant to NR 645.06(1)(i)5, Wis. Adm. Code, a corrosion resistant coating that meets NR 645.08(1)(c)2, requirements will be used to provide external corrosion protection. Protection against internal corrosion is provided by analyzing each waste prior to pumping into the tank system. Wastes corrosive to carbon steel will not be accepted for storage in this tank. Also, 100% of all wastes in tanks and containers accepted by WRR are analyzed prior to placing in storage. At least annually, each tank is ultrasonically tested for thickness. A tank reaching the end of its designed life (ASME Code Replacement Thickness, Table D-26A of the Feasibility and Plan of Operation Report) is taken out of service.

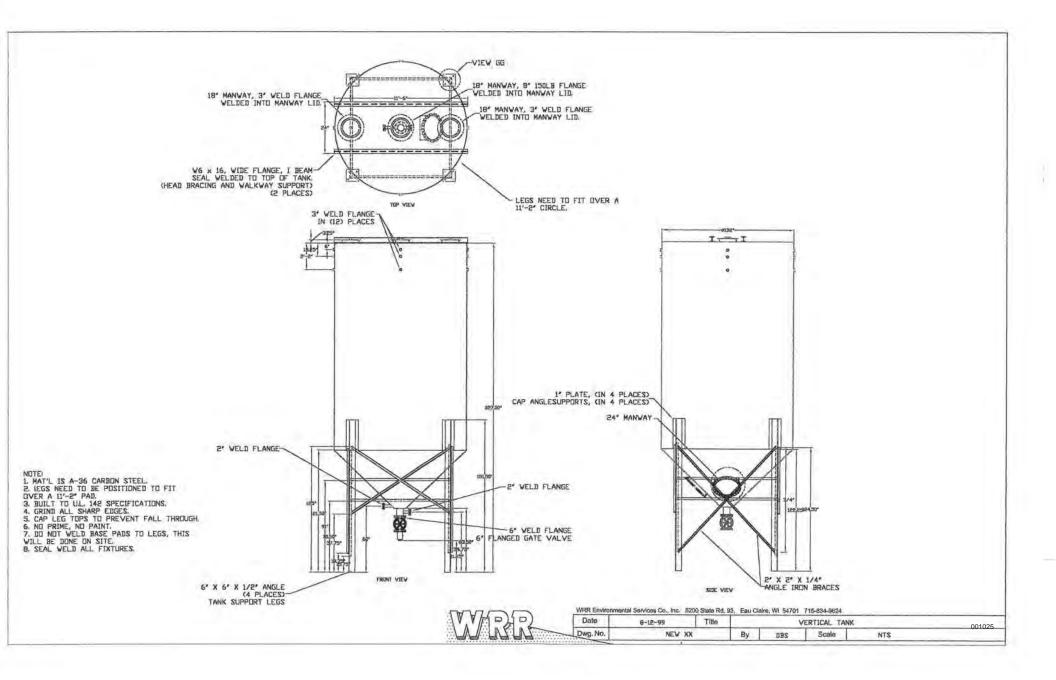
I would ask that you refer to our May 30, 1996 submittal covering the replacement of Tanks L, N, and J and subsequent replacement of Tank EE for the Tank Assessment Report,

Overflow Protection Report, and the Replacement Thickness Report if necessary to fulfill your review of this request.

The replacement of Tanks V, W, and XX are of the same design and specifications of Tanks which have been previously requested and approved. Should you have any questions or if I may be of any further assistance, please do not hesitate to contact me at (715) 834-9624. Thank you for your attention in this matter.

Sincerely

STEVEN P. STOKKE Vice President - Operations Support



### HABLE ENGINEERING SERVICES, LLC

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405 FAX - (715) 568-5406

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have assessed the new tank system installed at WRR Environmental Services CO., Inc., 5200 Ryder Road, Eau Claire, WI which they designate as their tank number . It is my opinion that the tank system has sufficient structural integrity and is acceptable for storing hazardous waste. The assessment shows that the foundation, structural supports, seams, connections, and pressure controls are adequately designed. The new tank system has sufficient structural strength, compatibility with the wastes to be stored, and corrosion protection to insure that the tank will not collapse, rupture or fail.

William L. Hable, P.E. Consulting Engineer P.E. Number 9778

MARIN 12, 2014 Date Stamped & Certified



## HABLE ENGINEERING SERVICES, LLC

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405 FAX - (715) 568-5406

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have visually inspected the tank system located at WRR Environmental Services CO., Inc., 5200 Ryder Road, Eau Claire, WI which they designate as their tank system number XX for weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, structural damage, and inadequate construction or installation. The visual inspection was made before the tank system was covered, enclosed or placed in use. All discrepancies that were found were remedied to my satisfaction before the system was covered, enclosed or placed in use.

William L. Hable, P.E. Consulting Engineer P.E. Number 9778 I KNOW THAT I INSPECTED THAS TANK BEFORE IT WAS POACED INTO USE. ORIGINAL CERTIFICATION DOCUMENTS CANNOT BE FOUNDO MUL 2. THE

JAN 9 2014 Date Stambed & Certified

Stoffensesterrouge ONSIA, anagangaga NABLE œ 089 E-9778 12F SSIONAL ENGINE

# Part 2

# Section G – Tank Standards: New Tanks

# Appendix G-2 Current Professional Engineer Tank Assessment

### HABLE ENGINEERING SERVICES, LLC

721 Seventeenth Avenue - Bloomer, WI. 54724 - (715) 568-3405 FAX - (715) 568-5406

I, William L. Hable, a Registered Professional Engineer in the State of Wisconsin, have supplied Consulting Engineering Services to WRR Environmental Services CO., Inc., 5200 Ryder Road, Eau Claire, WI on a regular bases since 1991. One of these services as an independent Professional Engineer has been to provide WRR tank design calculations and visual inspections of all new Hazardous Waste Tanks installed since 1991. In addition, I have provided WRR information on vent sizing for all tanks including product tanks.

In the process of providing the above services, I have spent a great deal of time in all of WRR's tank farms. My observations are that all tanks are well maintained. The tanks are painted to provide exterior corrosion resistance and the regular sonic tank thickness tests the company conducts shows that any interior corrosion is minimal or none existent.

I have also observed the fact the employees of WRR spend time, every working day, in all tank farms. They are vary consciences about the condition of all tanks and tank fittings. I have never seen a tank or fitting problem that was not immediately addressed in some way and corrected. In addition, all rain or snow water collected in the tank containment areas is analyzed for contamination before it is removed. Any contaminated water is pumped to tanks for proper future disposal.

In summary, it is my opinion that all of WRR's tanks are in good observable condition and my observations are that they are well maintained.

TANK TI OUT OF SERVICE IT HAS A VERY SMALL LEAK SK4 STILL DUT OF SERVICE SK3 IS BACK IN SERVICE

NORE : ALL TANKS WERE CLEANED

AND PAINFED DURING 2013



DEC 19,2013

Consulting Engineer P.E. Number 9778

L. Hable, P.E.

Date Stamped & Certified

# Part 2

# Section G – Tank Standards: New Tanks

Appendix G-3 Tank Coating MSDS and Technical Data Sheet

#### MATERIAL SAFETY DATA SHEET

#### DURAGUARD EGGSHELL ENAMEL WHITE

Page: 1 3/30/2009

PRODUCT NAME: DURAGUARD EGGSHELL ENAMEL WHITE PRODUCT CODE: 276' HMIS CODES: H F R 1 2 0

	SECTION I	-	MANUFACTURER IDENTIFICATION ====================================		
MANUFACTURER'S NAME: HALLMAN/LINDSAY PAINTS			DATE PRINTED: 3/30/2009		
ADDRESS: P.O. BOX 109			NAME OF PREPARER: DON CHAPELLE		
SUN PRAIRIE, WI 53590			INFORMATION PHONE: (608) 834-8844		
			EMERGENCY PHONE: 1-800-688-4005		

======================================	A III INFORMA	TION =======	
		VAPOR PRESSURE	WEIGHT
REPORTABLE COMPONENTS	CAS NUMBER	MM HG @ TEMP	PERCENT
MINERAL SPIRITS 66	8052-41-	-3 2 68	28.66
OSHA PEL: 500ppm, ACGIH TLV: 100ppm			
STEL TLV: N/A			
TITANIUM DIOXIDE	13463-67	7-7	25.11
OSHA PEL: 10 MG/M3, ACGIH TLV: 10 MG/M3, STEL TLV: N/A			
BARIUM SULFATE	7727-43-	-7	7.53
OSHA PEL: 15 MG/M3, ACGIH TLV: 10 MG/M3, STEL TLV: NA			
*** No toxic chemical(s) subject to the reporting requirement:	s of section	313 of Title III an	d of 40 CFR 372 are

\*\*\* No toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372 are present. \*\*\*

Sanding the cured product may produce a nuisance dust. Observe a TLV of 10 mg/m3 for total dust containing no asbestos and <1% silica. Observe a TLV of 5mg/m3 for respirable dust.

		SECTION III	-	PHYSICAL/CHEMICAL CHARACTERISTICS ====================================
BOILING RANGE	: 315 DEG F			SPECIFIC GRAVITY (H2O=1): 1.2
VAPOR DENSITY	: HEAVIER THAN AI	R		EVAPORATION RATE: SLOWER THAN ETHER
COATING V.O.C	C.: 495 g/l			DENSITY: 9.95 lb/gl
COATING V.O.C	C.: 4.13 lb/gl			MATERIAL V.O.C.: 493 g/l
SOLUBILITY IN	WATER: INSOLUBLE			MATERIAL V.O.C.: 4.12 lb/gl
APPEARANCE AN	ND ODOR: LIQUID WI	TH MILD ODOR		

DRY CHEMICAL, CARBON DIOXIDE, FOAM, ALCOHOL FOAMSPECIAL FIREFIGHTING PROCEDURES A water spray may cool containers. A stream of water may spread flames. Wear self contained breathing apparatus and goggles.

#### UNUSUAL FIRE AND EXPLOSION HAZARDS

Keep containers tightly closed. Isolate from heat, electrical equipment, sparks & open flame. Combustible or explosive mixtures may form in air. Closed containers may explode when exposed to extreme heat. Never use welding torch on or near container [even empty] product and/or residue can explode.

#### 

### STABILITY: STABLE

#### CONDITIONS TO AVOID

Avoid all possible sources of ignition. This material is flammable (or combustible per 49CFR 173.120 (b) (2) ) and may be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights etc.) Vapor is heavier than air and may collect in low areas.

#### INCOMPATIBILITY (MATERIALS TO AVOID)

Strong oxidizing agents.HAZARDOUS DECOMPOSITION OR BYPRODUCTS Thermal decomposition may produce carbon monoxide, carbon dioxide, oxides of nitrogen and unidentifiable organic DURAGUARD EGGSHELL ENAMEL WHITE

#### materials.

HAZARDOUS POLYMERIZATION: Will Not Occur

#### 

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Adverse health effects from vapors or spray mists in poorly ventilated areas may include irritation of the mucus membranes of the nose, throat, and respitory tract. Symptoms may also include headache, nausea, dizziness and confusion.

#### SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Prolonged or repeated contact with product may cause skin irritation, dermatitis, cracking. Eye contact- Severe irritation, tearing, redness, and blurred vision.

#### SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Can dry and defat skin causing cracks, irritation, and dermatitis.INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE Can cause gastrointestinal irritation, vomiting, nausea, and diarrhea. DO NOT TAKE INTERNALLYHEALTH HAZARDS (ACUTE AND CHRONIC ACUTE OVEREXPOSURE MAY IRRITATE: respitory tract (Nose, Throat, Lungs), Eyes, Skin. MAY PRODUCE THE FOLLOWING: Headache, Nausea, Central Nervous System Depression.

CHRONIC OVEREXPOSURE MAY IRRITATE: Eyes, Skin. May Damage The Brain, Central Nervous System, Kidneys, Liver. MAY PRODUCE THE FOLLOWING: Headache, Nausea, Nervous System Depression Characterized By: Dizziness, Confusion, Unconsciousness, and Coma.

CARCINOGENICITY: NTP CARCINOGEN: No IARC MONOGRAPHS: No OSHA REGULATED: No CARCINOGEN CONTENT

N/A

#### MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Impaired Pulmonary Functions

#### EMERGENCY AND FIRST AID PROCEDURES

FIRST AID FOR INHALATION: Remove person to fresh air. Give oxygen if breathing is difficult. FIRST AID FOR EYES: Flush eyes with water for at least 15 minutes. Call a Physian if irritation persists. FIRST AID FOR SKIN: Wash with soap and water. Wash exposed clothing before reuse. See a Physician if irritation persists. FIRST AID FOR INGESTION: If person is conscious, give two glasses of water and induce vomiting. See a Physician. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

#### 

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Eliminate ignition sources, provide good ventilation, dike spill to minimize contamination. Absorb with inert material. Collect in containers. Keep spill out of waterways.

#### WASTE DISPOSAL METHOD

Dispose of material in accordance with Federal, State and Local regulations.PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Avoid prolonged contact with liquid and/or vapor. Do not store near heat, sparks, or flame. Store in a cool, dry, and well vented area. Keep containers closed when not in use. Ground all containers when transferring liquid. Use non sparking tools.

#### OTHER PRECAUTIONS

Smoking in areas where this material is used should be strictly prohibited. Never take internally. Wash thoroughly after use. In keeping with good housekeeping practices, soiled rags and wiping cloths should be immersed in a container of water to reduce the potential of combustion.

#### RESPIRATORY PROTECTION

----- SECTION VIII - CONTROL MEASURES ------

When spraying this material use a NIOSH approved cartridge respirator to keep airborne mists and vapor concentrations below TLV values.

#### VENTILATION

General mechanical ventilation or local exhaust should be suitable to keep the vapor concentrations below TLV values. Ventilation equipment must be explosion proof.

#### PROTECTIVE GLOVES

Impermeable chemical gloves for skin protection.

#### EYE PROTECTION

### DURAGUARD EGGSHELL ENAMEL WHITE

Chemical splash goggles.

#### OTHER PROTECTIVE CLOTHING OR EQUIPMENT

Use impermeable aprons and protective clothing whenever possible to protect skin from effects of overexposure. Eye wash. In poorly ventilated and confined spaces, use a fresh-air supplied respirator or self contained breathing app aratus.

#### WORK/HYGIENIC PRACTICES

Eye washes and safety showers in the workplace are recommended. Wash hands thoroughly with soap and water after applying product. When spraying this material, use a respirator (NIOSH/MSHA TC 23 C or equivalent)

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# PRODUCT DATA SHEET DURAGUARD ALKYD EGGSHELL ENAMEL 276

## DESCRIPTION

hallman/lindsay's **ProSeries** is our full line of finishes designed for the professional contractor.

**DURAGUARD ALKYD EGGSHELL ENAMEL** is a premium-quality, solvent-based, alkyd enamel. It is designed for use on a wide variety of surfaces, both interior and exterior. It has excellent durability, a mar-resistant film, and provides stain resistance along with washability.

Intended as a versatile coating, it can be used on plaster, drywall, wood, metal and masonry. It may be used in all types of structures, from residential and multi-family to commercial and institutional, along with light industrial facilities. Not to be used on floors. Do not apply directly to galvanized or aluminum surfaces.

## **FEATURES**

- ✓ Hard, Mar-Resistant Film
- ✓ Water- and Stain-Resistant
- ✓ High-Hiding
- ✓ Excellent Flow and Leveling
- ✓ Interior and Exterior Usage
- ✓ Soft Gloss

## PRECAUTIONS/LIMITATIONS

- ✓ Please refer to Material Safety Data Sheets.
- Do not apply directly to galvanized or aluminum metals.
- ✓ This product does not meet the September 1999 standards for VOC compliancy.
- ✓ Apply only if air, surface and material temperatures remain 50° F or above during application and drying.

# **TECHNICAL SERVICES**

## hallman lindsay quality paints

FACTORY & MAIN OFFICES

Ph. 608/834-8844 Fax 608/837-1064 www.hallmanlindsay.com

## TECHNICAL DATA

- ✓ <u>Color/Tinting</u>: White and tint bases.
- ✓ <u>Vehicle Type</u>: Alkyd
- ✓ <u>Gloss</u>: Satin
   20-30 units @ 60°
- $\checkmark \quad \frac{\text{Percent Solids by Weight:}}{58\% \pm 2}$
- ✓ Percent Solids by Volume:  $37\% \pm 2$
- $\checkmark \frac{\text{Pigment by Weight:}}{36\% \pm 2}$
- $\checkmark \quad \frac{\text{Vehicle Solids by Weight:}}{23\% \pm 2}$
- ✓ <u>Recommended Spreading Rate</u>: Apply at 400 sq. ft./gal. to achieve 4.0 mils Wet Film Thickness 1.5 mils Dry Film Thickness When calculating working coverage, allow for application losses, texture and porosity of surface, application technique, etc.
- ✓ Weight per Gallon: 9.95 lbs.
- ✓ <u>Drying Time at 77° F 50% R.H.</u>: To touch: 30 minutes Recoat: 12 hours
- ✓ <u>Thinning</u>: Do not thin.
- ✓ <u>Cleanup</u>: VM&P Naptha.
- ✓ <u>VOC</u>: 495 g/L
   4.13 lb./gal.

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Painting (09900)

Rev. 4/13

## SURFACE PREPARATION

Surfaces must be thoroughly dry, clean and free of dust, dirt, oil, grease, wax, chalk, rust or any other contaminants that may prevent proper adhesion and curing. Remove all loose or peeling paint. Glossy surfaces must be dulled by sanding. Pre-primed surfaces should be lightly sanded. Bare metal and wood must be primed. Patch all holes and cracks with appropriate patching compound, sand smooth and prime. Galvanized surfaces shall have all oils removed prior to application of coating.

## hallman/lindsay PRIMER RECOMMENDATIONS

## **NEW WORK**

Wood:One coat 215 or 231Rough Masonry/Concrete Block:One coat 181 or 184Smooth Masonry/Brick/Plaster:One coat 215 or 231Metal, Ferrous (Steel):One coat 330 or 338Metal, Non-Ferrous (Galvanized):One coat 231Drywall:One coat 220, 227 or 231

## **REPAINT WORK**

Primer:

Spot-prime all bare areas with suitable primer

hallman/lindsay FINISH RECOMMENDATION One or two coats 276

## APPLICATION

Mix thoroughly before use. Apply by brush, roller, airless, HVLP or conventional spray. Flow and leveling is best achieved by applying a full, uniform coating and working to a wet edge using overlapping strokes. Surfaces should be dry prior to paint application.

## EQUIPMENT REQUIREMENTS

- ✓ Airless: Minimum ¾ GPM with .015" tip @ 2500 PSI
- ✓ Conventional: Binks #7 gun, 38 needle, 36 air nozzle, 38 fluid nozzle, 9.3 CFM @ 30 PSI
- ✓ HVLP: Twin-stage turbine, 5 8 PSI, .051 to .070 projector set
- ✓ Roller:  $\frac{1}{4}$   $\frac{1}{2}$  " nap shed-resistant synthetic cover
- ✓ Brush: Natural china bristle or synthetic blend

9 Finishes Painting (09900)



FACTORY & MAIN OFFICES

This technical bulletin is intended only as a source of information and, to the best of our knowledge, the information herein is correct. However, since conditions of the use of our product are beyond our control, the final determination of any information or of the material for the use contemplated is the sole 001035