Part 2

Section G – Tank Standards: New Tanks

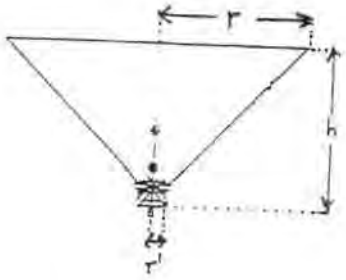
Appendix G-1
Original Professional Engineer New Tank Assessments

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 = (Π/4) x (Inside Tank Diameter) ^{2} x Tank Height
= (Π/4) x 9.96 ft.^{2} x 16.75 ft.
=1,305 cubic feet
Cylinder Capacity = 1,305 x 7.48 gallons/cubic feet = 9,760 gallons



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

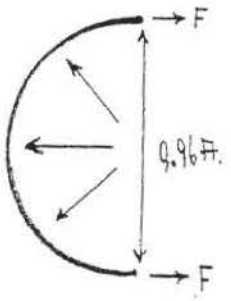
Total Capacity = Cylinder + Cone = 9,760 + 1,070 = 10,830 gallons (per tank)

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 = $\frac{62.4 \text{ ft.} \times 1.5}{144} \times 17 \text{ ft.} = 11.05 \text{ PSI}$



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

Hoop stress of 1/4" thick shell = $\frac{\text{internal stress}}{\text{shell thickness x 1}}$ =

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

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 PSI

- Exceeds required strength

TANK WEIGHT CALCULATIONS:

Shell steel area = ¶ x diameter x height =
¶ x 10 ft. x 17 ft. = 533.8 ft.^{2}

1/4" plate steel weight = 10.20 lbs/ft.^{2}
Weight of shell = 533.8 ft.^{2} x 10.20 lbs/ft.^{2} = 5445 lbs.

Tank top area = ¶ $\frac{10 \text{ ft.}^2}{4}$ = 78.5 ft.^{2}

Weight of tank top = 78.5 ft.^{2} x 10.20 lbs/ft.^{2} = 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 ft.^{2}

Cone weight = 116 ft.^{2} 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.

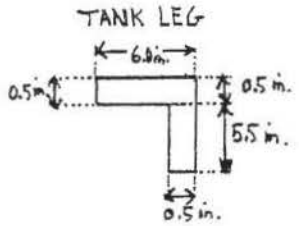
Maximum weight of tank plus contents = 137,311 lbs. + 8113 lbs. = 145,424 lbs.

TANK BASE LEG LOADING:

$\frac{\text{Total weight}}{\text{Number of legs}}$ = weight per leg

$\frac{145{,}424 \text{ lbs.}}{4 \text{ legs}}$ = 36,356 lbs/leg

Leg Area = length x width =
(6.0 in. x 0.5 in.) + (5.5 in. x 0.5 in.) = 5.75 in.^{2}



Column stress = $\frac{\text{weight per leg}}{\text{area of leg}}$ = $\frac{36{,}356 \text{ lbs.}}{5.75 \text{ in}^2}$

= 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 =
$1.0 \times [(17 \text{ ft.} \times 10 \text{ ft.}) + (\frac{10 \text{ ft.} + 1 \text{ ft.}}{2} \times 5 \text{ ft.})] 20 \text{ lbs/ft}^2 = 3950 \text{ lbs.}$

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

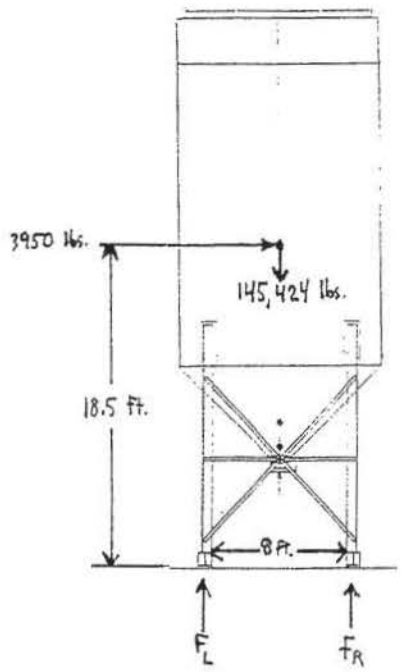
$F_R = 145{,}424 \text{ lbs.} - 63{,}578 \text{ lbs.} = 81{,}846 \text{ lbs.}$

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

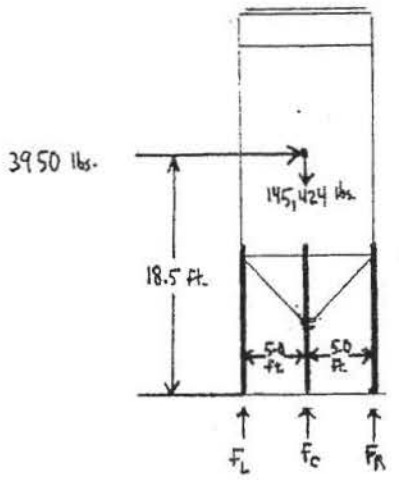
Force on each right leg = $\frac{81{,}846 \text{ lbs.}}{2} = 40{,}923 \text{ lbs.}$

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

*This is within allowable limits for no leg bracing.



COLUMN LOADING WITH 45° WIND CHANGE



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

$$\frac{11\ F_L + 5.5\ F_C}{5.0} = \frac{654,045}{5.0}$$

$$2\ F_L + F_C = 130,809 \text{ lbs.}$$

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

$$F_C = \frac{145,424}{2} = 72,712 \text{ lbs.}$$

$F_L + F_R = 72,712$ lbs.

Couple force at F_C is: $F_L = F_R - 14,615$ lbs.

$F - 14,615$ lbs. + $F_R = 72,712$ lbs.

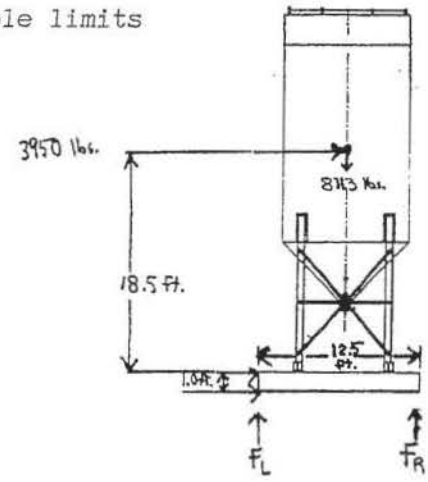
$2\ F_R = 72,712$ lbs. + 14,615 lbs.

$F_R = 43,664$ lbs.

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

*Right leg column stress within acceptable limits

90 MPH Wind Loading on Empty Tank:

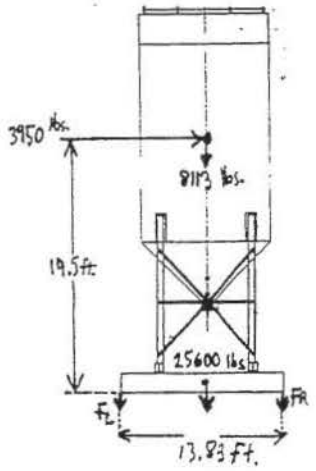


Couple force at F_R =
(3950 lbs. x 18.5) - (8113 lbs. x 6.25) + 12.5 F_L = 0
73,075 lbs. - 50,706 lbs. + 12.5 F_L = 0
12.5 F_L = - 22,369 lbs.
F_L = 1790 lbs.

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/ft^3 x 173 ft^3 = 25,600 lbs.



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

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

FOOTING SUPPORT:

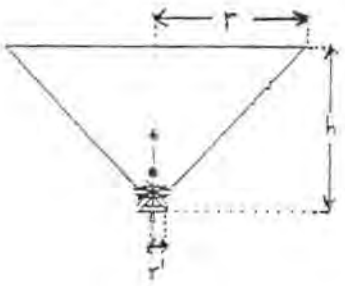
This footing was approved for tanks larger than the proposed replacement. This approval was part of WRR's Feasibility and Plan of Operation Report; Part B.

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

September 21, 2007

TANK VOLUME CALCULATIONS:

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



Cone Volume = (Π/3) x R^2 x h x (1 + (r/R) + (r/R)^2)
= (Π/3) x (4.98)^2 x 5 x (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

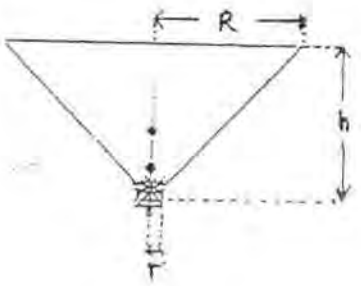
See structural calculations for Tanks J, K, O, Q, R, S, and Z. These tanks are taller than Tanks M and HH, but the same dimensions otherwise. No structural calculations are necessary for M and HH because the taller tanks are stable.

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 = (Π/4) x (Inside Tank Diameter) ^{2} x Tank Height
= (Π/4) x 10.95 ft.^{2} x 17 ft.
=1,600 cubic feet
Cylinder Capacity = 1,600 x 7.48 gallons/cubic feet = 11,970 gallons



Cone Volume = (Π/3) x R^2 x h x (1 + (r/R) + (r/R) ^{2})
= (Π/3) x (5.479) ^{2} x 5 x (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

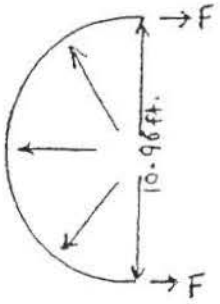
Total Capacity = Cylinder + Cone = 11,970 + 1,290 = 13,260 gallons (per tank)

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 = $\frac{62.4 \text{ ft.} \times 1.5 \times 17 \text{ ft.}}{144} = 11.05$ psi



For a 1" wide hoop:

Area = (10.96 ft.) x $12\frac{\text{in.}}{\text{ft.}}$ x 1" = 131.5 in.^{2}

2F = 131.5 in.^{2} x 11.05 psi = 1453 lbs.

F = $\frac{1453 \text{ lbs.}}{2}$ = 726.5 lbs.

Hoop stress of 1/4" thick shell = $\frac{\text{internal stress}}{\text{shell thickness x 1}}$

$= \frac{726.5 \text{ lbs.}}{1/4" \text{ x } 1"} = 2906$ psi

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 = π x height x conversion factor x shell thickness

= π x 11 ft. x $12\frac{\text{in.}}{\text{ft.}}$ x 1/4" = 103.7 in.^{2}

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

S = 159,120 lbs/103.7 in^2 = 1,534 psi

* Exceeds the required strength

TANK WEIGHT CALCULATIONS:

Shell steel area = π x diameter x height

= π x 11 ft. x 17 ft.

= 587.5 ft.^{2}

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

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

Tank top area = $\frac{\pi}{4}$ (11 ft.^{2}) = 95 ft.^{2}

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

Bottom cone area = π (5.5 ft. + .5 ft.) $\sqrt{(5.5 \text{ ft.} + .5 \text{ ft}) + (5 \text{ ft.})^2}$
= 133 ft.^{2}

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

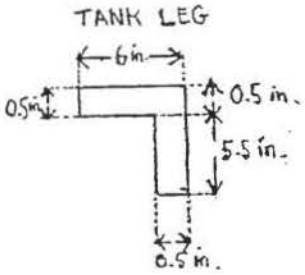
Estimated weight of miscellaneous steel and fittings = 684 lbs.

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



Leg area = length x width
= (6.0" + .5") + (5.5" + .5")
= 5.75 in.^{2}

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

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

* 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.

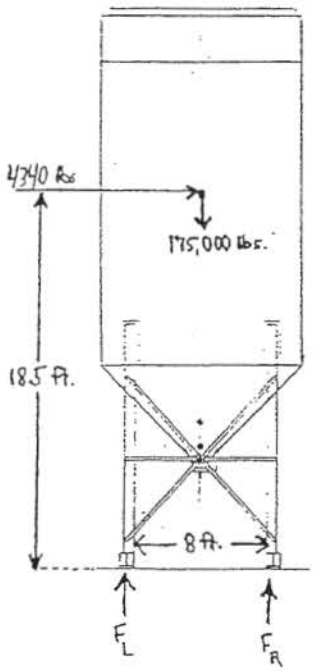
WIND LOAD CALCULATIONS:

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

$$= 1.0 \times \left[(17 \text{ ft.} \times 11 \text{ ft.}) + \frac{(11 \text{ ft.} + 1 \text{ ft.} \times 5 \text{ ft.})}{2}\right] \times 20 \text{ psf}$$

$$= 4340 \text{ lbs.}$$



Couple stress at right leg:

$(4340 \text{ lbs} \times 18.5 \text{ ft.}) - (175{,}000 \text{ lbs} \times 4 \text{ ft.}) + (F_L \times 8 \text{ ft.}) = 0$

$80{,}290 \text{ ft-lbs} - 700{,}000 \text{ lbs} + 8F_L = 0$

$8F_L = 619{,}710 \text{ lbs}$

$F_L = 77{,}463.75 \text{ lbs}$

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

Force on each left leg = $\frac{77{,}463.75 \text{ lbs}}{2} = 38{,}732 \text{ lbs}$

Force on each right leg = $\frac{97{,}536.25 \text{ lbs}}{2} = 48{,}768 \text{ lbs}$

Right leg column stress = $\frac{48{,}768 \text{ lbs}}{5.75 \text{ in.}^2} = 8481 \text{ psi}$

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

COLUMN LOADING WITH 45° WIND CHANGE:

Couple force at F_R:

$(4340 \text{ lbs} \times 18.5 \text{ ft}) - (175{,}000 \text{ lbs} \times 5.5 \text{ ft.}) + 11F_L + 5.5F_C = 0$

$80{,}290 \text{ lbs} - 962{,}500 \text{ lbs} + 11F_L + 5.5F_C = 0$

$\frac{11F_L + 5.5F_C}{5.5} = \frac{882{,}210}{5.5}$

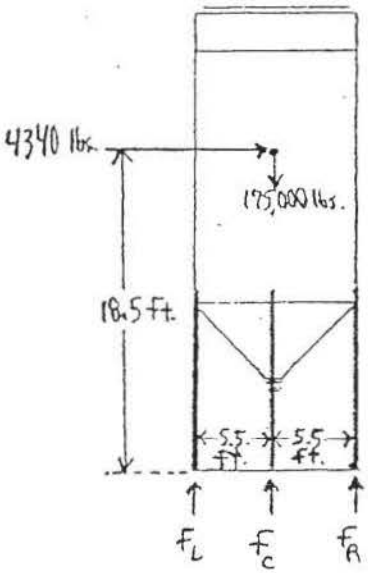
$2F_L + F_C = 160{,}402 \text{ lbs}$

Couple force at F_C:

$(4340 \text{ lbs} \times 18.5 \text{ ft.}) + 5.5F_L - 5.5F_R = 0$

$80{,}290 \text{ lbs} + 5.5F_L - 5.5F_R = 0$

$F_L - F_R = -14{,}598 \text{ lbs}$



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_C is:

$F_L = F_R - 14{,}598 \text{ lbs}$

$F_R - 14{,}598 \text{ lbs} + F_R = 87{,}500 \text{ lbs}$

$2F_R = 87{,}500 \text{ lbs} + 14{,}598 \text{ lbs}$

$F_R = 51{,}049 \text{ lbs.}$

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:

$(4340 \text{ lbs} \times 18.5 \text{ ft.}) - (9000 \text{ lbs} \times 6.25 \text{ ft.}) + 12.5F_L = 0$

$80{,}290 \text{ lbs} - 56{,}250 \text{ lbs} + 12.5F_L = 0$

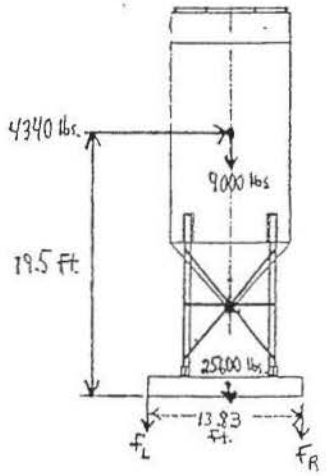
$12.5F_L = -24{,}040 \text{ lbs}$

$F_L = 1923 \text{ lbs.}$

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

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

$= 25{,}600 \text{ lbs.}$

Coupling force at F_R:

$(4340 \text{ lbs} \times 19.5 \text{ ft.}) - [(9000 \text{ lbs} + 25{,}600 \text{ lbs}) \times 6.915 \text{ ft.}] + 13.83F_L = 0$

$84{,}630 \text{ lbs} - 239{,}259 \text{ lbs} + 13.83 F_L = 0$

$13.83 F_L = 166{,}044 \text{ lbs}$

$F_L = 11{,}181 \text{ lbs}$

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

commerce.wi.gov
Wisconsin Department of Commerce
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 installation of: ☑ Tank; ☑ Piping; ☐ Secondary Containment; ☐ Overfill Protection; ☐ Vapor Recovery; ☐ Leak Detection; ☐ Spill Containment; ☐ Automated Fueling (key-card-code); ☐ Lining
Tank V

A. IDENTIFICATION: (Please Print)

1. Installation Name	2. Owner Name
WRR Environmental Services Co, Inc.	WRR Environmental Services Co, Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ☑ Town of: Washington	☐ City ☐ Village ☑ Town of: Washington
State: Wisconsin Zip Code: 54701	State: Wisconsin Zip Code: 54701
County: Eau Claire	County: Eau Claire
Telephone No. (include area code): (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 Motor Oil
☑ Hazardous Waste ☐ Chemical (Specify name & CAS#): _____ ☐ Other _____ ☐ Unknown ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ☑ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ☑ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
1. Plans have been approved. State plan number/LPO plan number is: 151072O	☑	☐	
2. Tank Capacity: 13,280 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).	☑	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☑ 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: 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. 7/30/08	☑	☐	☐

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.	☑	☐	☐

I. 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.	☑	☐	☑
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.
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. Stainless	☐	☐	☑
2. Supported and protected against physical damage and stress.	☑	☐	☐
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. 8/6/08	☑	☐	☐

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/derground Piping

	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.	☐	☐	☑
3.	Piping trench provides at least 18 inches of compacted backfill and paving on top of piping.	☐	☐	☑
4.	Pipes are separated by at least twice the pipe diameter.	☐	☐	☑
5.	Pipes are separated from the trench excavation sidewalls by at least 6 inches.	☐	☐	☑
6.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.	☐	☐	☑
7.	Metal piping protected from corrosion by: ☐ cathodic protection or ☐ impressed current.	☐	☐	☑
8.	Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.	☐	☐	☑
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.	☐	☐	☑
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.	☐	☐	☑
11.	Test stations have been installed for monitoring cathodic protection on piping.	☐	☐	☑
12.	Approved flexible connectors are used below the dispenser.	☐	☐	☑
13.	Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	☐	☐	☑

K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)

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) _____	☐	☐	☐

2. Piping Leak Detection Method: used if pressurized or suction with check valve at tank: ☐ Interstitial monitoring
☐ Groundwater monitoring ☐ Tightness testing ☐ Line leak detector ☐ Vapor monitoring ☑ Not required (visual)

3. Manufacturer / Vendor: _____ Probe #: _____

4. Model Name/#: _____ Material Approval #: _____

5. Catastrophic Manufacturer Name: _____ Model: _____ Material Approval #: _____

L. LIQUID HANDLING, TRANSFER AND USE

1.	Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]	☐	☐	☑
2.	Check valve installed in piping at connection/disconnection for tank vehicle.	☐	☐	☐
3.	Tank is provided with spill protection.	☑	☐	☐
4.	Dispensing device is listed and has proper setbacks.	☐	☐	☑
5.	Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]	☐	☐	☑
6.	Anti-siphon device provided on tank mounted pump.	☐	☐	☑
7.	Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).	☑		☐
8.	Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment	☐		☐
9.	Emergency shutoff clearly identified and accessible.	☑	☐	☐
10.	Where required, listed emergency breakaway, hose and dispensing devices are provided.	☐	☐	☐
11.	Dispensing nozzle at marine service stations shall be auto-closing without hold open device.	☐	☐	☑
12.	Hose length: _____ ft.			

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co, Inc	5200 Ryder Road	Eau Claire WI 54701
Company Telephone No. (include area code)	**Certified Installer Name (print)**	**Installer Certification No.**
(715) 834-9624	Brice Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Brice W. Marsh Date Signed: 8/18/08

N. INSPECTOR INFORMATION

Inspection Dates: 1) 6-25-08 2) 7-14-08 3) 10/2/08 4) 5) 6)

Inspection Company Name: Chippewa Fire District

Inspector Signature: _____ Inspector #: 35167 Local Operator #: 2602005

Date Signed: 10/2/08 Fire department providing coverage: Township Five Dept. FDID #: 19060

O. COMMENTS: V

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

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Pink Contractor Yellow Owner

commerce.wi.gov
Wisconsin Department of Commerce

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 installation of: ☑ Tank; ☑ Piping; ☐ Secondary Containment; ☐ Overfill Protection; ☐ Vapor Recovery; ☐ Leak Detection; ☐ Spill Containment; ☐ Automated Fueling (key-card-code); ☐ Lining

Tank W

A. IDENTIFICATION: (Please Print)

1. Installation Name	2. Owner Name
WRR Environmental Services Co, Inc.	WRR Environmental Services Co, Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ☑ Town of: Washington	☐ City ☐ Village ☑ Town of: Washington
State: Wisconsin; Zip Code: 54701	State: Wisconsin; Zip Code: 54701
County: Eau Claire	County: Eau Claire
Telephone No. (include area code): (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 Motor Oil
☑ Hazardous Waste ☐ Chemical (Specify name & CAS#): _____ ☐ Other _____ ☐ Unknown ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ☑ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ☑ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
1. Plans have been approved. State plan number/LPO plan number is: 151072O	☑	☐	
2. Tank Capacity: 13,280 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).	☑	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☑ 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: 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. 7/31/08	☑	☐	☐

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.	☑	☐	☐

I. 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.	☑	☐	☐
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.
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. Stainless	☐	☐	☑
2. Supported and protected against physical damage and stress.	☑	☐	☐
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. 8/6/08	☑	☐	☐

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Underground Pipe

1.	Piping is sloped back to tag (min. 1/8 inch per foot).	☐	☐	☑
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.	☐	☐	☑
4.	Pipes are separated by at least twice the pipe diameter.	☐	☐	☑
5.	Pipes are separated from the trench excavation sidewalls by at least 6 inches.	☐	☐	☑
6.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.	☐	☐	☑
7.	Metal piping protected from corrosion by: ☐ cathodic protection or ☐ impressed current.	☐	☐	☑
8.	Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.	☐	☐	☑
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.	☐	☐	☑
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.	☐	☐	☑
11.	Test stations have been installed for monitoring cathodic protection on piping.	☐	☐	☑
12.	Approved flexible connectors are used below the dispenser.	☐	☐	☑
13.	Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	☐	☐	☑

K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)

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) _____	☐	☐	☐

2. Piping Leak Detection Method: used if pressurized or suction with check valve at tank: ☐ Interstitial monitoring
☐ Groundwater monitoring ☐ Tightness testing ☐ Line leak detector ☐ Vapor monitoring ☑ Not required (visual)

3. Manufacturer / Vendor: _____ Probe #: _____

4. Model Name/#: _____ Material Approval #: _____

5. Catastrophic Manufacturer Name: _____ Model: _____ Material Approval #: _____

L. LIQUID HANDLING, TRANSFER AND USE

1.	Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]	☐	☐	☑
2.	Check valve installed in piping at connection/disconnection for tank vehicle.	☐	☐	☑
3.	Tank is provided with spill protection.	☑	☐	☐
4.	Dispensing device is listed and has proper setbacks.	☐	☐	☑
5.	Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]	☐	☐	☑
6.	Anti-siphon device provided on tank mounted pump.	☐	☐	☑
7.	Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).	☑		☐
8.	Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment	☐		☐
9.	Emergency shutoff clearly identified and accessible.	☑	☐	☐
10.	Where required, listed emergency breakaway, hose and dispensing devices are provided.	☐	☐	☑
11.	Dispensing nozzle at marine service stations shall be auto-closing without hold open device.	☐	☐	☑
12.	Hose length: _____ ft.			

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co, Inc	5200 Ryder Road	Eau Claire WI 54701
Company Telephone No. (include area code)	**Certified Installer Name (print)**	**Installer Certification No.**
(715) 834-9624	Brice Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Brice W. Marsh Date Signed: 8/18/08

N. INSPECTOR INFORMATION

Inspection Dates: 1) 6/25/08 2) 7-14-08 3) 10/2/08 4) 5) 6)

Inspection Company Name: Chippewa Fire District

Inspector Signature: _____ Inspector #: 35167 Local Operator #: 2620008

Date Signed: 10/2/08 Fire department providing coverage: Township Five Dept. FDID #: 18060

O. COMMENTS: W

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

commerce.wi.gov
Wisconsin Department of Commerce

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 installation of: ☑ Tank; ☑ Piping; ☐ Secondary Containment; ☐ Overfill Protection; ☐ Vapor Recovery; ☐ Leak Detection; ☐ Spill Containment; ☐ Automated Fueling (key-card-code); ☐ Lining

Tank X

A. IDENTIFICATION: (Please Print)

1. Installation Name	2. Owner Name
WRR Environmental Services Co, Inc.	WRR Environmental Services Co, Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ☑ Town of: Washington	☐ City ☐ Village ☑ Town of: Washington
State: Wisconsin Zip Code: 54701	State: Wisconsin Zip Code: 54701
County: Eau Claire	County: Eau Claire
Telephone No. (include area code): (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 Motor Oil
☑ Hazardous Waste ☐ Chemical (Specify name & CAS#): _____ ☐ Other _____ ☐ Unknown ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ☑ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ☑ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
1. Plans have been approved. State plan number/LPO plan number is: 151072O	☑	☐	
2. Tank Capacity: 13,280 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).	☑	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☑ 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: 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. 7/31/08	☑	☐	☐

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.	☑	☐	☐

I. 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.	☑	☐	☐
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.
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. Stainless	☐	☐	☑
2. Supported and protected against physical damage and stress.	☑	☐	☐
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. 8/6/08	☑	☐	☐

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Underground Pipe

1.	Piping is sloped back to tank (min. 1/8 inch per foot).	☐	☐	☑
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.	☐	☐	☑
4.	Pipes are separated by at least twice the pipe diameter.	☐	☐	☑
5.	Pipes are separated from the trench excavation sidewalls by at least 6 inches.	☐	☐	☑
6.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.	☐	☐	☑
7.	Metal piping protected from corrosion by: ☐ cathodic protection or ☐ impressed current.	☐	☐	☑
8.	Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.	☐	☐	☑
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.	☐	☐	☑
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.	☐	☐	☑
11.	Test stations have been installed for monitoring cathodic protection on piping.	☐	☐	☑
12.	Approved flexible connectors are used below the dispenser.	☐	☐	☑
13.	Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	☐	☐	☑

K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)

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) _____	☐	☐	☐

2. Piping Leak Detection Method: used if pressurized or suction with check valve at tank: ☐ Interstitial monitoring
☐ Groundwater monitoring ☐ Tightness testing ☐ Line leak detector ☐ Vapor monitoring ☑ Not required (visual)

3. Manufacturer / Vendor: _____ Probe #: _____

4. Model Name/#: _____ Material Approval #: _____

5. Catastrophic Manufacturer Name: _____ Model: _____ Material Approval #: _____

L. LIQUID HANDLING, TRANSFER AND USE

1.	Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]	☐	☐	☑
2.	Check valve installed in piping at connection/disconnection for tank vehicle.	☐	☐	☑
3.	Tank is provided with spill protection.	☑	☐	☐
4.	Dispensing device is listed and has proper setbacks.	☐	☐	☑
5.	Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]	☐	☐	☑
6.	Anti-siphon device provided on tank mounted pump.	☐	☐	☑
7.	Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).	☑		☐
8.	Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment	☐		☐
9.	Emergency shutoff clearly identified and accessible.	☑	☐	☐
10.	Where required, listed emergency breakaway, hose and dispensing devices are provided.	☐	☐	☑
11.	Dispensing nozzle at marine service stations shall be auto-closing without hold open device.	☐	☐	☑
12.	Hose length: _____ ft.			

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co, Inc	5200 Ryder Road	Eau Claire WI 54701
Company Telephone No. (include area code)	**Certified Installer Name (print)**	**Installer Certification No.**
(715) 834-9624	Brice Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Brice W. Marsh Date Signed: 8/18/08

N. INSPECTOR INFORMATION

Inspection Dates: 1) 6/25/08 2) 7-14-08 3) 10/2/08 4) 5) 6)

Inspection Company Name: Chippewa Fire District

Inspector Signature: _____ Inspector #: 35167 Local Operator #: 262008

Date Signed: 10/2/08 Fire department providing coverage: Township Five Dept. FDID #: 19060

O. COMMENTS: X

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

commerce.wi.gov
Wisconsin Department of Commerce

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 installation of: ☑ Tank; ☑ Piping; ☐ Secondary Containment; ☐ Overfill Protection; ☐ Vapor Recovery; ☐ Leak Detection; ☐ Spill Containment; ☐ Automated Fueling (key-card-code); ☐ Lining

Tank Y

A. IDENTIFICATION: (Please Print)

1. Installation Name	2. Owner Name
WRR Environmental Services Co, Inc.	WRR Environmental Services Co, Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ☑ Town of: Washington	☐ City ☐ Village ☑ Town of: Washington
State: Wisconsin; Zip Code: 54701	State: Wisconsin; Zip Code: 54701
County: Eau Claire	County: Eau Claire
Telephone No. (include area code): (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 Motor Oil
☑ Hazardous Waste ☐ Chemical (Specify name & CAS#): _____ ☐ Other _____ ☐ Unknown ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ☑ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ☑ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
1. Plans have been approved. State plan number/LPO plan number is: 151072O	☑	☐	
2. Tank Capacity: 13,280 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).	☑	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☑ 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: Morrison	☑	☐	☐
5. All normal and emergency vents terminate outside where required	☑	☐	☐
6. Overfill protection provided? [Comm 10.415 (1.2)] 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. 8/1/08	☑	☐	☐

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.	☑	☐	☐

I. 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.	☑	☐	☐
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.
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. Stainless	☐	☐	☑
2. Supported and protected against physical damage and stress.	☑	☐	☐
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. 8/6/08	☑	☐	☐

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ERS 0658 (R 08/05)

- CONTINUE ON NEXT PAGE -

Underground Pipe

1.	Piping is sloped back to tank (min. 1/8 inch per foot).	☐	☐	☑
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..	☐	☐	☑
4.	Pipes are separated by at least twice the pipe diameter.	☐	☐	☑
5.	Pipes are separated from the trench excavation sidewalls by at least 6 inches.	☐	☐	☑
6.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.	☐	☐	☑
7.	Metal piping protected from corrosion by: ☐ cathodic protection or ☐ impressed current.	☐	☐	☑
8.	Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.	☐	☐	☑
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.	☐	☐	☑
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.	☐	☐	☑
11.	Test stations have been installed for monitoring cathodic protection on piping.	☐	☐	☑
12.	Approved flexible connectors are used below the dispenser.	☐	☐	☑
13.	Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	☐	☐	☑

K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)

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) _____	☐	☐	☐

2. Piping Leak Detection Method: used if pressurized or suction with check valve at tank: ☐ Interstitial monitoring
☐ Groundwater monitoring ☐ Tightness testing ☐ Line leak detector ☐ Vapor monitoring ☑ Not required (visual)

3. Manufacturer / Vendor: _____ Probe #: _____

4. Model Name/#: _____ Material Approval #: _____

5. Catastrophic Manufacturer Name: _____ Model: _____ Material Approval #: _____

L. LIQUID HANDLING, TRANSFER AND USE

1.	Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]	☐	☐	☑
2.	Check valve installed in piping at connection/disconnection for tank vehicle.	☐	☐	☑
3.	Tank is provided with spill protection.	☑	☐	☐
4.	Dispensing device is listed and has proper setbacks.	☐	☐	☑
5.	Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]	☐	☐	☑
6.	Anti-siphon device provided on tank mounted pump.	☐	☐	☑
7.	Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).	☑		☐
8.	Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment	☐		☐
9.	Emergency shutoff clearly identified and accessible.	☑	☐	☐
10.	Where required, listed emergency breakaway, hose and dispensing devices are provided.	☐	☐	☑
11.	Dispensing nozzle at marine service stations shall be auto-closing without hold open device.	☐	☐	☑
12.	Hose length: _____ ft.			

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co, Inc	5200 Ryder Road	Eau Claire WI 54701
Company Telephone No. (include area code)	**Certified Installer Name (print)**	**Installer Certification No.**
(715) 834-9624	Brice Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Brice W. Marsh Date Signed: 8/18/08

N. INSPECTOR INFORMATION

Inspection Dates: 1) 6/25/08 2) 7/14/08 3) 10/2/08 4) 5) 6)

Inspection Company Name: Chippewa Fire District

Inspector Signature: _____ Inspector #: 35167 Local Operator #: 262008

Date Signed: 10/2/08 Fire department providing coverage: Township Five Dept. FDID #: 18060

O. COMMENTS: Y

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

commerce.wi.gov
Wisconsin Department of Commerce

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 installation of: ☑ Tank; ☑ Piping; ☐ Secondary Containment; ☐ Overfill Protection; ☐ Vapor Recovery; Tank 2 ☐ Leak Detection; ☐ Spill Containment; ☐ Automated Fueling (key-card-code); ☐ Lining

A. IDENTIFICATION: (Please Print)

1. Installation Name	2. Owner Name
WRR Environmental Services Co, Inc.	WRR Environmental Services Co, Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ☑ Town of: Washington	☐ City ☐ Village ☑ Town of: Washington; State: Wisconsin; Zip Code: 54701
State: Wisconsin; Zip Code: 54701; County: Eau Claire	County: Eau Claire; Telephone No. (include area code): (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 Motor Oil
☑ Hazardous Waste ☐ Chemical (Specify name & CAS#): _____ ☐ Other _____ ☐ Unknown ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ☑ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ☑ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
1. Plans have been approved. State plan number/LPO plan number is: 1510720	☑	☐	
2. Tank Capacity: 10,730 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)	☑	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☑ 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: 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. 8/7/08	☑	☐	☐

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.	☑	☐	☐

I. 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.	☑	☐	☐
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.
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. Stainless	☐	☐	☑
2. Supported and protected against physical damage and stress.	☑	☐	☐
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.	☑	☐	☐

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- CONTINUE ON NEXT PAGE -

Underground Pipe

1.	Piping is sloped back to tank (min. 1/8 inch per foot).	☐	☐	☑
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..	☐	☐	☑
4.	Pipes are separated by at least twice the pipe diameter.	☐	☐	☑
5.	Pipes are separated from the trench excavation sidewalls by at least 6 inches.	☐	☐	☑
6.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.	☐	☐	☑
7.	Metal piping protected from corrosion by: ☐ cathodic protection or ☐ impressed current.	☐	☐	☑
8.	Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.	☐	☐	☑
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.	☐	☐	☑
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.	☐	☐	☑
11.	Test stations have been installed for monitoring cathodic protection on piping.	☐	☐	☑
12.	Approved flexible connectors are used below the dispenser.	☐	☐	☑
13.	Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	☐	☐	☑

K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)

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) _____	☐	☐	☐

2. Piping Leak Detection Method: used if pressurized or suction with check valve at tank: ☐ Interstitial monitoring
☐ Groundwater monitoring ☐ Tightness testing ☐ Line leak detector ☐ Vapor monitoring ☑ Not required (visual)

3. Manufacturer / Vendor: _____ Probe #: _____

4. Model Name/#: _____ Material Approval #: _____

5. Catastrophic Manufacturer Name: _____ Model: _____ Material Approval #: _____

L. LIQUID HANDLING, TRANSFER AND USE

1.	Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]	☐	☐	☑
2.	Check valve installed in piping at connection/disconnection for tank vehicle.	☐	☐	☑
3.	Tank is provided with spill protection.	☑	☐	☐
4.	Dispensing device is listed and has proper setbacks.	☐	☐	☑
5.	Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]	☐	☐	☑
6.	Anti-siphon device provided on tank mounted pump.	☐	☐	☑
7.	Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).	☑		☐
8.	Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment	☐		☐
9.	Emergency shutoff clearly identified and accessible.	☑	☐	☐
10.	Where required, listed emergency breakaway, hose and dispensing devices are provided.	☐	☐	☑
11.	Dispensing nozzle at marine service stations shall be auto-closing without hold open device.	☐	☐	☑
12.	Hose length: _____ ft.			

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co, Inc	5200 Ryder Road	Eau Claire WI 54701
Company Telephone No. (include area code)	**Certified Installer Name (print)**	**Installer Certification No.**
(715) 834-9624	Brice Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Brice W. Marsh Date Signed: 8/18/08

N. INSPECTOR INFORMATION

Inspection Dates: 1) 6/25/08 2) 7-14-08 3) 10/2/08 4) 5) 6)

Inspection Company Name: Chippewa Fire District

Inspector Signature: _____ Inspector #: 35107 Local Operator #: 262008

Date Signed: 10/2/08 Fire department providing coverage: Township Five Dept. FDID #: 18060

O. COMMENTS: 2

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

commerce.wi.gov
Wisconsin Department of Commerce

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 installation of: ☑ Tank; ☑ Piping; ☐ Secondary Containment; ☐ Overfill Protection; ☐ Vapor Recovery; Tank HH ☐ Leak Detection; ☐ Spill Containment; ☐ Automated Fueling (key-card-code); ☐ Lining

A. IDENTIFICATION: (Please Print)

1. Installation Name	2. Owner Name
WRR Environmental Services Co, Inc.	WRR Environmental Services Co, Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ☑ Town of: Washington	☐ City ☐ Village ☑ Town of: Washington; State: Wisconsin; Zip Code: 54701
State: Wisconsin; Zip Code: 54701; County: Eau Claire	County: Eau Claire; Telephone No. (include area code): (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 Motor Oil
☑ Hazardous Waste ☐ Chemical (Specify name & CAS#): _____ ☐ Other _____ ☐ Unknown ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ☑ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ☑ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
1. Plans have been approved. State plan number/LPO plan number is: 151072O	☑	☐	
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)	☑	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☑ 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: 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. 8/8/08	☑	☐	☐

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.	☑	☐	☐

I. PROJECT SITE

1. Collision protection provided. ☐ Cement filled pipe ☐ Traffic bollards ☐ Other _____	☐	☐	☑
2. Vehicle fueling tank is secured by non combustible enclosure.	☐	☐	☑
3. Warning signs posted for dispensing area.	☑	☐	☐
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.
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.	☐	☐	☑
2. Supported and protected against physical damage and stress.	☑	☐	☐
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. 8/6/08	☑	☐	☐

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ERS 0658 (R 08/05)

- CONTINUE ON NEXT PAGE -

Underground Pipe

1.	Piping is sloped back to tank (min. 1/8 inch per foot).	☐	☐	☑
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.	☐	☐	☑
4.	Pipes are separated by at least twice the pipe diameter.	☐	☐	☑
5.	Pipes are separated from the trench excavation sidewalls by at least 6 inches.	☐	☐	☑
6.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.	☐	☐	☑
7.	Metal piping protected from corrosion by: ☐ cathodic protection or ☐ impressed current.	☐	☐	☑
8.	Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.	☐	☐	☑
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.	☐	☐	☑
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.	☐	☐	☑
11.	Test stations have been installed for monitoring cathodic protection on piping.	☐	☐	☑
12.	Approved flexible connectors are used below the dispenser.	☐	☐	☑
13.	Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	☐	☐	☑

K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)

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) _____	☐	☐	☐

2. Piping Leak Detection Method: used if pressurized or suction with check valve at tank: ☐ Interstitial monitoring
☐ Groundwater monitoring ☐ Tightness testing ☐ Line leak detector ☐ Vapor monitoring ☑ Not required (visual)

3. Manufacturer / Vendor: _____ Probe #: _____

4. Model Name/#: _____ Material Approval #: _____

5. Catastrophic Manufacturer Name: _____ Model: _____ Material Approval #: _____

L. LIQUID HANDLING, TRANSFER AND USE

1.	Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]	☐	☐	☑
2.	Check valve installed in piping at connection/disconnection for tank vehicle.	☐	☐	☑
3.	Tank is provided with spill protection.	☑	☐	☐
4.	Dispensing device is listed and has proper setbacks.	☐	☐	☑
5.	Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]	☐	☐	☑
6.	Anti-siphon device provided on tank mounted pump.	☐	☐	☑
7.	Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).	☑		☐
8.	Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment	☐		☑
9.	Emergency shutoff clearly identified and accessible.	☑	☐	☐
10.	Where required, listed emergency breakaway, hose and dispensing devices are provided.	☐	☐	☑
11.	Dispensing nozzle at marine service stations shall be auto-closing without hold open device.	☐	☐	☑

12. Hose length: _____ ft.

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co, Inc	5200 Ryder Road	Eau Claire WI 54701
Company Telephone No. (include area code)	**Certified Installer Name (print)**	**Installer Certification No.**
(715) 834-9624	Brice Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Brice M Marsh Date Signed: 8/18/08

N. INSPECTOR INFORMATION

Inspection Dates: 1) 6/25/08 2) 7/14/08 3) 10/2/08 4) 5) 6)

Inspection Company Name: Chippewa Fire District

Inspector Signature: Randy Schoen Inspector #: 3567 Local Operator #: 262005

Date Signed: 10/2/08 Fire department providing coverage: Township Five Dept. FDID #: 18060

O. COMMENTS: HH

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

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commerce.wi.gov
Wisconsin Department of Commerce

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 installation of: ☑ Tank; ☑ Piping; ☐ Secondary Containment; ☐ Overfill Protection; ☐ Vapor Recovery; ☐ Leak Detection; ☐ Spill Containment; ☐ Automated Fueling (key-card-code); ☐ Lining

Tank 5

A. IDENTIFICATION: (Please Print)

1. Installation Name	2. Owner Name
WRR Environmental Services Co, Inc.	WRR Environmental Services Co, Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ☑ Town of: Washington	☐ City ☐ Village ☑ Town of: Washington
State: Wisconsin Zip Code: 54701	State: Wisconsin Zip Code: 54701
County: Eau Claire	County: Eau Claire
Telephone No. (include area code): (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 Motor Oil
☑ Hazardous Waste ☐ Chemical (Specify name & CAS#): _____ ☐ Other _____ ☐ Unknown ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ☑ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ☑ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
1. Plans have been approved. State plan number/LPO plan number is: 151072O	☑	☐	
2. Tank Capacity: 10,030 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).	☑	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☑ 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: 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. 8/4/08	☑	☐	☐

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.	☑	☐	☐

I. 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.	☑	☐	☐
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.
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. Stainless	☐	☐	☑
2. Supported and protected against physical damage and stress.	☑	☐	☐
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. 8/6/08	☑	☐	☐

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- CONTINUE ON NEXT PAGE -

derground 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.	☐	☐	☑
3. Piping trench provides at least 18 inches of compacted backfill and paving on top of piping.	☐	☐	☑
4. Pipes are separated by at least twice the pipe diameter.	☐	☐	☑
5. Pipes are separated from the trench excavation sidewalls by at least 6 inches.	☐	☐	☑
6. Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.	☐	☐	☑
7. Metal piping protected from corrosion by: ☐ cathodic protection or ☐ impressed current.	☐	☐	☑
8. Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.	☐	☐	☑
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.	☐	☐	☑
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.	☐	☐	☑
11. Test stations have been installed for monitoring cathodic protection on piping.	☐	☐	☑
12. Approved flexible connectors are used below the dispenser.	☐	☐	☑
13. Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	☐	☐	☑

K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)

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) _____	☐	☐	☐

2. Piping Leak Detection Method: used if pressurized or suction with check valve at tank: ☐ Interstitial monitoring
☐ Groundwater monitoring ☐ Tightness testing ☐ Line leak detector ☐ Vapor monitoring ☑ Not required (visual)

3. Manufacturer / Vendor: _____ Probe #: _____

4. Model Name/#: _____ Material Approval #: _____

5. Catastrophic Manufacturer Name: _____ Model: _____ Material Approval #: _____

L. LIQUID HANDLING, TRANSFER AND USE

1. Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]	☐	☐	☑
2. Check valve installed in piping at connection/disconnection for tank vehicle.	☐	☐	☑
3. Tank is provided with spill protection.	☑	☐	☐
4. Dispensing device is listed and has proper setbacks.	☐	☐	☑
5. Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]	☐	☐	☑
6. Anti-siphon device provided on tank mounted pump.	☐	☐	☑
7. Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).	☑		☐
8. Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment	☐		☐
9. Emergency shutoff clearly identified and accessible.	☑	☐	☐
10. Where required, listed emergency breakaway, hose and dispensing devices are provided.	☐	☐	☑
11. Dispensing nozzle at marine service stations shall be auto-closing without hold open device.	☐	☐	☑
12. Hose length: _____ ft.			

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co, Inc	5200 Ryder Road	Eau Claire WI 54701
Company Telephone No. (include area code)	**Certified Installer Name (print)**	**Installer Certification No.**
(715) 834-9624	Brice Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Brice W Marsh Date Signed: 8/18/08

N. INSPECTOR INFORMATION

Inspection Dates: 1) 6/25/08 2) 7/14/08 3) 10/2/08 4) 5) 6)

Inspection Company Name: Chippewa Fire District

Inspector Signature: Randy S Sem Inspector #: 3567 Local Operator #: 362008

Date Signed: 10/2/08 Fire department providing coverage: Township Five Dept. FDID #: 18060

O. COMMENTS: J

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

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

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Wisconsin Department of Commerce

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 installation of: ☑ Tank; ☑ Piping; ☐ Secondary Containment; ☐ Overfill Protection; ☐ Vapor Recovery; ☐ Leak Detection; ☐ Spill Containment; ☐ Automated Fueling (key-card-code); ☐ Lining

Tank K

A. IDENTIFICATION: (Please Print)

1. Installation Name	2. Owner Name
WRR Environmental Services Co, Inc.	WRR Environmental Services Co, Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ☑ Town of: Washington	☐ City ☐ Village ☑ Town of: Washington
State: Wisconsin Zip Code: 54701	State: Wisconsin Zip Code: 54701
County: Eau Claire	County: Eau Claire
Telephone No. (include area code): (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 Motor Oil
☑ Hazardous Waste ☐ Chemical (Specify name & CAS#): _____ ☐ Other _____ ☐ Unknown ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ☑ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ☑ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
1. Plans have been approved. State plan number/LPO plan number is: 151072O	☑	☐	
2. Tank Capacity: 10,730 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).	☑	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☑ 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: 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. 8/6/08	☑	☐	☐

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.	☑	☐	☐

I. 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.	☑	☐	☐
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.
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. Stainless	☐	☐	☑
2. Supported and protected against physical damage and stress.	☑	☐	☐
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.	☑	☐	☐

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Underground Piping

	Piping is sloped back to tank (min. 1/8 inch per foot).	☐	☐	☑
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.	☐	☐	☑
4.	Pipes are separated by at least twice the pipe diameter.	☐	☐	☑
5.	Pipes are separated from the trench excavation sidewalls by at least 6 inches.	☐	☐	☑
6.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.	☐	☐	☑
7.	Metal piping protected from corrosion by: ☐ cathodic protection or ☐ impressed current.	☐	☐	☑
8.	Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.	☐	☐	☑
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.	☐	☐	☑
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.	☐	☐	☑
11.	Test stations have been installed for monitoring cathodic protection on piping.	☐	☐	☑
12.	Approved flexible connectors are used below the dispenser.	☐	☐	☑
13.	Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	☐	☐	☑

K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)

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) _____	☐	☐	☐

2. Piping Leak Detection Method: used if pressurized or suction with check valve at tank: ☐ Interstitial monitoring
☐ Groundwater monitoring ☐ Tightness testing ☐ Line leak detector ☐ Vapor monitoring ☑ Not required (visual)

3. Manufacturer / Vendor: _____ Probe #: _____

4. Model Name/#: _____ Material Approval #: _____

5. Catastrophic Manufacturer Name: _____ Model: _____ Material Approval #: _____

L. LIQUID HANDLING, TRANSFER AND USE

1.	Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]	☐	☐	☑
2.	Check valve installed in piping at connection/disconnection for tank vehicle.	☐	☐	☑
3.	Tank is provided with spill protection.	☑	☐	☐
4.	Dispensing device is listed and has proper setbacks.	☐	☐	☑
5.	Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]	☐	☐	☑
6.	Anti-siphon device provided on tank mounted pump.	☐	☐	☑
7.	Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).	☑		☐
8.	Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment	☐		☐
9.	Emergency shutoff clearly identified and accessible.	☑	☐	☐
10.	Where required, listed emergency breakaway, hose and dispensing devices are provided.	☐	☐	☑
11.	Dispensing nozzle at marine service stations shall be auto-closing without hold open device.	☐	☐	☑
12.	Hose length: _____ ft.			

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co, Inc	5200 Ryder Road	Eau Claire WI 54701
Company Telephone No. (include area code)	**Certified Installer Name (print)**	**Installer Certification No.**
(715) 834-9624	Bruce Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Bruce W. Marsh Date Signed: 8/18/08

N. INSPECTOR INFORMATION

Inspection Dates: 1) 6/25/08 2) 7/14/08 3) 10/2/08 4) 5) 6)

Inspection Company Name: Chippewa Fire District

Inspector Signature: _____ Inspector #: 35/67 Local Operator #: 262008

Date Signed: 10/2/08 Fire department providing coverage: Township Five Dept. FDID #: 18060

O. COMMENTS: K

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

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

commerce.wi.gov
Wisconsin Department of Commerce

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 installation of: ☑ Tank; ☑ Piping; ☐ Secondary Containment; ☐ Overfill Protection; ☐ Vapor Recovery; ☐ Leak Detection; ☐ Spill Containment; ☐ Automated Fueling (key-card-code); ☐ Lining

Tank L

A. IDENTIFICATION: (Please Print)

1. Installation Name	2. Owner Name
WRR Environmental Services Co, Inc.	WRR Environmental Services Co, Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ☑ Town of: Washington	☐ City ☐ Village ☑ Town of: Washington
State: Wisconsin; Zip Code: 54701	State: Wisconsin; Zip Code: 54701
County: Eau Claire	County: Eau Claire
Telephone No. (include area code): (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 Motor Oil
☑ Hazardous Waste ☐ Chemical (Specify name & CAS#): _____ ☐ Other _____ ☐ Unknown ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ☑ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ☑ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
1. Plans have been approved. State plan number/LPO plan number is: 151072O	☑	☐	
2. Tank Capacity: 13,280 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).	☑	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☑ 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: 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. 8/4/08	☑	☒	☐

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.	☑	☐	☐

I. 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.	☑	☐	☐
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.
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. Stainless	☐	☐	☑
2. Supported and protected against physical damage and stress.	☑	☐	☐
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. 8/4/08	☑	☐	☐

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ERS 0658 (R 08/05)

- CONTINUE ON NEXT PAGE -

Underground Pipe

1.	Piping is sloped back to tank (min. 1/8 inch per foot).	☐	☐	☑
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..	☐	☐	☑
4.	Pipes are separated by at least twice the pipe diameter.	☐	☐	☑
5.	Pipes are separated from the trench excavation sidewalls by at least 6 inches.	☐	☐	☑
6.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.	☐	☐	☑
7.	Metal piping protected from corrosion by: ☐ cathodic protection or ☐ impressed current.	☐	☐	☑
8.	Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.	☐	☐	☑
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.	☐	☐	☑
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.	☐	☐	☑
11.	Test stations have been installed for monitoring cathodic protection on piping.	☐	☐	☑
12.	Approved flexible connectors are used below the dispenser.	☐	☐	☑
13.	Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	☐	☐	☑

K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)

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) _____	☐	☐	☐

2. Piping Leak Detection Method: used if pressurized or suction with check valve at tank: ☐ Interstitial monitoring
☐ Groundwater monitoring ☐ Tightness testing ☐ Line leak detector ☐ Vapor monitoring ☑ Not required (visual)

3. Manufacturer / Vendor: _____ Probe #: _____

4. Model Name/#: _____ Material Approval #: _____

5. Catastrophic Manufacturer Name: _____ Model: _____ Material Approval #: _____

L. LIQUID HANDLING, TRANSFER AND USE

1.	Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]	☐	☐	☑
2.	Check valve installed in piping at connection/disconnection for tank vehicle.	☐	☐	☑
3.	Tank is provided with spill protection.	☑	☐	☐
4.	Dispensing device is listed and has proper setbacks.	☐	☐	☑
5.	Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]	☐	☐	☑
6.	Anti-siphon device provided on tank mounted pump.	☐	☐	☑
7.	Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).	☑		☐
8.	Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment	☐		☐
9.	Emergency shutoff clearly identified and accessible.	☑	☐	☐
10.	Where required, listed emergency breakaway, hose and dispensing devices are provided.	☐	☐	☑
11.	Dispensing nozzle at marine service stations shall be auto-closing without hold open device.	☐	☐	☑
12.	Hose length: _____ ft.			

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co, Inc	5200 Ryder Road	Eau Claire WI 54701
Company Telephone No. (include area code)	**Certified Installer Name (print)**	**Installer Certification No.**
(715) 834-9624	Brice Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Brice W. Marsh Date Signed: 8/18/08

N. INSPECTOR INFORMATION

Inspection Dates: 1) 6/25/08 2) 7/14/08 3) 10/2/08 4) 5) 6)

Inspection Company Name: Chippewa Fire District

Inspector Signature: _____ Inspector #: 35167 Local Operator #: 263008

Date Signed: 10/2/08 Fire department providing coverage: Township Five Dept. FDID #: 18060

O. COMMENTS: L

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

000877

commerce.wi.gov
Wisconsin Department of Commerce
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 installation of: ☑ Tank; ☑ Piping; ☐ Secondary Containment; ☐ Overfill Protection; ☐ Vapor Recovery; ☐ Leak Detection; ☐ Spill Containment; ☐ Automated Fueling (key-card-code); ☐ Lining
Tank M

A. IDENTIFICATION: (Please Print)

1. Installation Name	2. Owner Name
WRR Environmental Services Co, Inc.	WRR Environmental Services Co, Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ☑ Town of: Washington	☐ City ☐ Village ☑ Town of: Washington
State: Wisconsin; Zip Code: 54701	State: Wisconsin; Zip Code: 54701
County: Eau Claire	County: Eau Claire
Telephone No. (include area code): (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 Motor Oil
☑ Hazardous Waste ☐ Chemical (Specify name & CAS#): ☐ Other ☐ Unknown ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ☑ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ☑ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
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).	☑	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☑ 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: 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. 8/8/08	☑	☐	☐

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.	☑	☐	☐

I. 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.	☑	☐	☐
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.
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. Stainless	☐	☐	☑
2. Supported and protected against physical damage and stress.	☑	☐	☐
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. 8/6/08	☑	☐	☐

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- CONTINUE ON NEXT PAGE -

Underground Piping

	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.	☐	☐	☑
3.	Piping trench provides at least 18 inches of compacted backfill and paving on top of piping.	☐	☐	☑
4.	Pipes are separated by at least twice the pipe diameter.	☐	☐	☑
5.	Pipes are separated from the trench excavation sidewalls by at least 6 inches.	☐	☐	☑
6.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.	☐	☐	☑
7.	Metal piping protected from corrosion by: ☐ cathodic protection or ☐ impressed current.	☐	☐	☑
8.	Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.	☐	☐	☑
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.	☐	☐	☑
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.	☐	☐	☑
11.	Test stations have been installed for monitoring cathodic protection on piping.	☐	☐	☑
12.	Approved flexible connectors are used below the dispenser.	☐	☐	☑
13.	Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	☐	☐	☑

K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)

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) _____	☐	☐	☐

2. Piping Leak Detection Method: used if pressurized or suction with check valve at tank: ☐ Interstitial monitoring
☐ Groundwater monitoring ☐ Tightness testing ☐ Line leak detector ☐ Vapor monitoring ☑ Not required (visual)

3. Manufacturer / Vendor: _____ Probe #: _____

4. Model Name/#: _____ Material Approval #: _____

5. Catastrophic Manufacturer Name: _____ Model: _____ Material Approval #: _____

L. LIQUID HANDLING, TRANSFER AND USE

1.	Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]	☐	☐	☑
2.	Check valve installed in piping at connection/disconnection for tank vehicle.	☐	☐	☑
3.	Tank is provided with spill protection.	☑	☐	☐
4.	Dispensing device is listed and has proper setbacks.	☐	☐	☑
5.	Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]	☐	☐	☑
6.	Anti-siphon device provided on tank mounted pump.	☐	☐	☑
7.	Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).	☑		☐
8.	Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment	☐		☑
9.	Emergency shutoff clearly identified and accessible.	☑	☐	☐
10.	Where required, listed emergency breakaway, hose and dispensing devices are provided.	☐	☐	☑
11.	Dispensing nozzle at marine service stations shall be auto-closing without hold open device.	☐	☐	☑
12.	Hose length: _____ ft.			

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co, Inc	5200 Ryder Road	Eau Claire WI 54701
Company Telephone No. (include area code)	**Certified Installer Name (print)**	**Installer Certification No.**
(715) 834-9624	Brice Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Brice W. Marsh Date Signed: 8/18/08

N. INSPECTOR INFORMATION

Inspection Dates: 1) 6/25/08 2) 7/14/08 3) 10/2/08 4) 5) 6)

Inspection Company Name: Chippewa Fire District

Inspector Signature: _____ Inspector #: 35767 Local Operator #: 262008

Date Signed: 10/2/08 Fire department providing coverage: Township Five Dept. FDID #: 18060

O. COMMENTS: M

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

000879

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

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Wisconsin Department of Commerce

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 installation of: ☑ Tank; ☑ Piping; ☐ Secondary Containment; ☐ Overfill Protection; ☐ Vapor Recovery; ☐ Leak Detection; ☐ Spill Containment; ☐ Automated Fueling (key-card-code); ☐ Lining

Tank N

A. IDENTIFICATION: (Please Print)

1. Installation Name	2. Owner Name
WRR Environmental Services Co, Inc.	WRR Environmental Services Co, Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ☑ Town of: Washington	☐ City ☐ Village ☑ Town of: Washington
State: Wisconsin	State: Wisconsin
Zip Code: 54701	Zip Code: 54701
County: Eau Claire	County: Eau Claire
	Telephone No. (include area code): (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 Motor Oil
☑ Hazardous Waste ☐ Chemical (Specify name & CAS#): _____ ☐ Other _____ ☐ Unknown ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ☑ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ☑ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
1. Plans have been approved. State plan number/LPO plan number is: 151072O	☑	☐	
2. Tank Capacity: 13,280 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)	☑	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☑ 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: 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. 8/1/08	☑	☐	☐

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	☑	☐	☐

I. 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	☑	☐	☐
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.
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. Stainless	☐	☐	☑
2. Supported and protected against physical damage and stress	☑	☐	☐
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. 8/6/08	☑	☐	☐

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ERS 0658 (R 08/05)

- CONTINUE ON NEXT PAGE -

Underground Pipe

1.	Piping is sloped back to tank (min. 1/8 inch per foot).	☐	☐	☑
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.	☐	☐	☑
4.	Pipes are separated by at least twice the pipe diameter.	☐	☐	☑
5.	Pipes are separated from the trench excavation sidewalls by at least 6 inches.	☐	☐	☑
6.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.	☐	☐	☑
7.	Metal piping protected from corrosion by: ☐ cathodic protection or ☐ impressed current.	☐	☐	☑
8.	Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.	☐	☐	☑
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.	☐	☐	☑
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.	☐	☐	☑
11.	Test stations have been installed for monitoring cathodic protection on piping.	☐	☐	☑
12.	Approved flexible connectors are used below the dispenser.	☐	☐	☑
13.	Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	☐	☐	☑

K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)

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) _____	☐	☐	☐

2. Piping Leak Detection Method: used if pressurized or suction with check valve at tank: ☐ Interstitial monitoring

☐ Groundwater monitoring ☐ Tightness testing ☐ Line leak detector ☐ Vapor monitoring ☑ Not required (visual)

3. Manufacturer / Vendor: _____ Probe #: _____

4. Model Name/#: _____ Material Approval #: _____

5. Catastrophic Manufacturer Name: _____ Model: _____ Material Approval #: _____

L. LIQUID HANDLING, TRANSFER AND USE

1.	Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]	☐	☐	☑
2.	Check valve installed in piping at connection/disconnection for tank vehicle.	☐	☐	☑
3.	Tank is provided with spill protection.	☑	☐	☐
4.	Dispensing device is listed and has proper setbacks.	☐	☐	☑
5.	Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]	☐	☐	☑
6.	Anti-siphon device provided on tank mounted pump.	☐	☐	☑
7.	Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).	☑		☐
8.	Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment	☐		☑
9.	Emergency shutoff clearly identified and accessible.	☑	☐	☐
10.	Where required, listed emergency breakaway, hose and dispensing devices are provided.	☐	☐	☑
11.	Dispensing nozzle at marine service stations shall be auto-closing without hold open device.	☐	☐	☑
12.	Hose length: _____ ft.			

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co, Inc	5200 Ryder Road	Eau Claire WI 54701
Company Telephone No. (include area code)	**Certified Installer Name (print)**	**Installer Certification No.**
(715) 834-9624	Brice Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Brice W. Marsh Date Signed: 8/18/08

N. INSPECTOR INFORMATION

Inspection Dates: 1) 6/25/08 2) 7/14/08 3) 10/2/08 4) 5) 6)

Inspection Company Name: Chippewa Fire District

Inspector Signature: Randy Sidewey Inspector #: 3567 Local Operator #: 267008

Date Signed: 10/2/08 Fire department providing coverage: Township Five Dept. FDID #: 18060

O. COMMENTS: N

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

000881

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

commerce.wi.gov
Wisconsin Department of Commerce

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 installation of: ☑ Tank; ☑ Piping; ☐ Secondary Containment; ☐ Overfill Protection; ☐ Vapor Recovery; ☐ Leak Detection; ☐ Spill Containment; ☐ Automated Fueling (key-card-code); ☐ Lining

Tank 0

A. IDENTIFICATION: (Please Print)

1. Installation Name	2. Owner Name
WRR Environmental Services Co, Inc.	WRR Environmental Services Co, Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ☑ Town of: Washington	☐ City ☐ Village ☑ Town of: Washington
State: Wisconsin	State: Wisconsin
Zip Code: 54701	Zip Code: 54701
County: Eau Claire	County: Eau Claire
Telephone No. (include area code): (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 Motor Oil
☑ Hazardous Waste ☐ Chemical (Specify name & CAS#): _____ ☐ Other _____ ☐ Unknown ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ☑ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ☑ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
1. Plans have been approved. State plan number/LPO plan number is: 1510720	☑	☐	
2. Tank Capacity: 10,730 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).	☑	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☑ 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: 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. 8/7/08	☑	☐	☐

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.	☑	☐	☐

I. 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.	☑	☐	☐
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.
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. Stainless	☐	☐	☑
2. Supported and protected against physical damage and stress.	☑	☐	☐
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. 8/6/08	☑	☐	☐

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ERS 0658 (R 08/05)

- CONTINUE ON NEXT PAGE -

Underground Pipe

1.	Piping is sloped back to tank (min. 1/8 inch per foot).	☐	☐	☑
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.	☐	☐	☑
4.	Pipes are separated by at least twice the pipe diameter.	☐	☐	☑
5.	Pipes are separated from the trench excavation sidewalls by at least 6 inches.	☐	☐	☑
6.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.	☐	☐	☑
7.	Metal piping protected from corrosion by: ☐ cathodic protection or ☐ impressed current.	☐	☐	☑
8.	Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.	☐	☐	☑
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.	☐	☐	☑
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.	☐	☐	☑
11.	Test stations have been installed for monitoring cathodic protection on piping.	☐	☐	☑
12.	Approved flexible connectors are used below the dispenser.	☐	☐	☑
13.	Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	☐	☐	☑

K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)

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) _____	☐	☐	☐

2. Piping Leak Detection Method: used if pressurized or suction with check valve at tank: ☐ Interstitial monitoring
☐ Groundwater monitoring ☐ Tightness testing ☐ Line leak detector ☐ Vapor monitoring ☑ Not required (visual)

3. Manufacturer / Vendor: _____ Probe #: _____

4. Model Name/#: _____ Material Approval #: _____

5. Catastrophic Manufacturer Name: _____ Model: _____ Material Approval #: _____

L. LIQUID HANDLING, TRANSFER AND USE

1.	Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]	☐	☐	☑
2.	Check valve installed in piping at connection/disconnection for tank vehicle.	☐	☐	☑
3.	Tank is provided with spill protection.	☑	☐	☐
4.	Dispensing device is listed and has proper setbacks.	☐	☐	☑
5.	Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]	☐	☐	☑
6.	Anti-siphon device provided on tank mounted pump.	☐	☐	☑
7.	Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).	☑		☐
8.	Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment	☐		☐
9.	Emergency shutoff clearly identified and accessible.	☑	☐	☐
10.	Where required, listed emergency breakaway, hose and dispensing devices are provided.	☐	☐	☑
11.	Dispensing nozzle at marine service stations shall be auto-closing without hold open device.	☐	☐	☑
12.	Hose length: _____ ft.			

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co, Inc	5200 Ryder Road	Eau Claire WI 54701
Company Telephone No. (include area code)	**Certified Installer Name (print)**	**Installer Certification No.**
(715) 834-9624	Brice Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Brice W. Marsh Date Signed: 8/18/08

N. INSPECTOR INFORMATION

Inspection Dates: 1) 6/25/08 2) 7/14/08 3) 10/2/08 4) 5) 6)

Inspection Company Name: Chippewa Fire District

Inspector Signature: _____ Inspector #: 35167 Local Operator #: 26200

Date Signed: 10/2/08 Fire department providing coverage: Township Five Dept. FDID #: 18060

O. COMMENTS: 0

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

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

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Wisconsin Department of Commerce

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 installation of: ☑ Tank; ☑ Piping; ☐ Secondary Containment; ☐ Overfill Protection; ☐ Vapor Recovery; ☐ Leak Detection; ☐ Spill Containment; ☐ Automated Fueling (key-card-code); ☐ Lining

Tank 9

A. IDENTIFICATION: (Please Print)

1. Installation Name	2. Owner Name
WRR Environmental Services Co, Inc.	WRR Environmental Services Co, Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ☑ Town of: Washington	☐ City ☐ Village ☑ Town of: Washington; State: Wisconsin; Zip Code: 54701
State: Wisconsin; Zip Code: 54701; County: Eau Claire	County: Eau Claire; Telephone No. (include area code): (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 Motor Oil
☑ Hazardous Waste ☐ Chemical (Specify name & CAS#): _____ ☐ Other _____ ☐ Unknown ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ☑ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ☑ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
1. Plans have been approved. State plan number/LPO plan number is: 151072O	☑	☐	
2. Tank Capacity: 10,730 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).	☑	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☑ 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: 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. 8/6/08	☑	☐	☐

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.	☑	☐	☐

I. 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.	☑	☐	☐
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.
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. Stainless	☐	☐	☑
2. Supported and protected against physical damage and stress.	☑	☐	☐
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. 8/6/08	☑	☐	☐

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Underground Piping

	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.	☐	☐	☑
3.	Piping trench provides at least 18 inches of compacted backfill and paving on top of piping.	☐	☐	☑
4.	Pipes are separated by at least twice the pipe diameter.	☐	☐	☑
5.	Pipes are separated from the trench excavation sidewalls by at least 6 inches.	☐	☐	☑
6.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.	☐	☐	☑
7.	Metal piping protected from corrosion by: ☐ cathodic protection or ☐ impressed current.	☐	☐	☑
8.	Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.	☐	☐	☑
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.	☐	☐	☑
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.	☐	☐	☑
11.	Test stations have been installed for monitoring cathodic protection on piping.	☐	☐	☑
12.	Approved flexible connectors are used below the dispenser.	☐	☐	☑
13.	Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	☐	☐	☑

K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)

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) _____	☐	☐	☐

2. Piping Leak Detection Method: used if pressurized or suction with check valve at tank: ☐ Interstitial monitoring
☐ Groundwater monitoring ☐ Tightness testing ☐ Line leak detector ☐ Vapor monitoring ☑ Not required (visual)

3. Manufacturer / Vendor: _____ Probe #: _____

4. Model Name/#: _____ Material Approval #: _____

5. Catastrophic Manufacturer Name: _____ Model: _____ Material Approval #: _____

L. LIQUID HANDLING, TRANSFER AND USE

1.	Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]	☐	☐	☑
2.	Check valve installed in piping at connection/disconnection for tank vehicle.	☐	☐	☑
3.	Tank is provided with spill protection.	☑	☐	☐
4.	Dispensing device is listed and has proper setbacks.	☐	☐	☑
5.	Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]	☐	☐	☑
6.	Anti-siphon device provided on tank mounted pump.	☐	☐	☑
7.	Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).	☑		☐
8.	Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment	☐		☐
9.	Emergency shutoff clearly identified and accessible.	☑	☐	☐
10.	Where required, listed emergency breakaway, hose and dispensing devices are provided.	☐	☐	☑
11.	Dispensing nozzle at marine service stations shall be auto-closing without hold open device.	☐	☐	☑
12.	Hose length: _____ ft.			

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co, Inc	5200 Ryder Road	Eau Claire WI 54701
Company Telephone No. (include area code)	**Certified Installer Name (print)**	**Installer Certification No.**
(715) 834-9624	Brice Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Brice W. Marsh Date Signed: 8/18/08

N. INSPECTOR INFORMATION

Inspection Dates: 1) 6/25/08 2) 7/14/08 3) 10/2/08 4) 5) 6)

Inspection Company Name: Chippewa Fire District

Inspector Signature: _____ Inspector #: 3567 Local Operator #: 262005

Date Signed: 10/2/08 Fire department providing coverage: Township Five Dept. FDID #: 18060

O. COMMENTS: Q

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

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Wisconsin Department of Commerce
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 installation of: ☑ Tank; ☑ Piping; ☐ Secondary Containment; ☐ Overfill Protection; ☐ Vapor Recovery; Tank R ☐ Leak Detection; ☐ Spill Containment; ☐ Automated Fueling (key-card-code); ☐ Lining

A. IDENTIFICATION: (Please Print)

1. Installation Name	2. Owner Name
WRR Environmental Services Co, Inc.	WRR Environmental Services Co, Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ☑ Town of: Washington	☐ City ☐ Village ☑ Town of: Washington
State: Wisconsin; Zip Code: 54701	State: Wisconsin; Zip Code: 54701
County: Eau Claire	County: Eau Claire
Telephone No. (include area code): (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 Motor Oil
☑ Hazardous Waste ☐ Chemical (Specify name & CAS#): _____ ☐ Other _____ ☐ Unknown ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ☑ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ☑ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
1. Plans have been approved. State plan number/LPO plan number is: 151072O	☑	☐	
2. Tank Capacity: 10,030 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).	☑	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☑ 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: 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. 8/5/08	☑	☐	☐

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.	☑	☐	☐

I. 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.	☑	☐	☐
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.
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. Stainless	☐	☐	☑
2. Supported and protected against physical damage and stress.	☑	☐	☐
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.	☑	☐	☐

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- CONTINUE ON NEXT PAGE -

rground Pipe

	iping 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.	☐	☐	☑
4.	Pipes are separated by at least twice the pipe diameter.	☐	☐	☑
5.	Pipes are separated from the trench excavation sidewalls by at least 6 inches.	☐	☐	☑
6.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.	☐	☐	☑
7.	Metal piping protected from corrosion by: ☐ cathodic protection or ☐ impressed current.	☐	☐	☑
8.	Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.	☐	☐	☑
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.	☐	☐	☑
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.	☐	☐	☑
11.	Test stations have been installed for monitoring cathodic protection on piping.	☐	☐	☑
12.	Approved flexible connectors are used below the dispenser.	☐	☐	☑
13.	Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	☐	☐	☑

K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)

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) _____	☐	☐	☐

2. Piping Leak Detection Method: used if pressurized or suction with check valve at tank: ☐ Interstitial monitoring
☐ Groundwater monitoring ☐ Tightness testing ☐ Line leak detector ☐ Vapor monitoring ☑ Not required (visual)

3. Manufacturer / Vendor: _____ Probe #: _____

4. Model Name/#: _____ Material Approval #: _____

5. Catastrophic Manufacturer Name: _____ Model: _____ Material Approval #: _____

L. LIQUID HANDLING, TRANSFER AND USE

1.	Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]	☐	☐	☑
2.	Check valve installed in piping at connection/disconnection for tank vehicle.	☐	☐	☐
3.	Tank is provided with spill protection.	☑	☐	☐
4.	Dispensing device is listed and has proper setbacks.	☐	☐	☑
5.	Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]	☐	☐	☑
6.	Anti-siphon device provided on tank mounted pump.	☐	☐	☑
7.	Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).	☑		☐
8.	Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment	☐		☐
9.	Emergency shutoff clearly identified and accessible.	☑	☐	☐
10.	Where required, listed emergency breakaway, hose and dispensing devices are provided.	☐	☐	☑
11.	Dispensing nozzle at marine service stations shall be auto-closing without hold open device.	☐	☐	☑
12.	Hose length: _____ ft.			

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co, Inc	5200 Ryder Road	Eau Claire WI 54701
Company Telephone No. (include area code)	**Certified Installer Name (print)**	**Installer Certification No.**
(715) 834-9624	Brice Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Brice V. Marsh Date Signed: 8/18/08

N. INSPECTOR INFORMATION

Inspection Dates: 1) 6/25/08 2) 7-14-08 3) 10/2/08 4) 5) 6)

Inspection Company Name: Chippewa Fire District

Inspector Signature: _____ Inspector #: 35167 Local Operator #: 2602005

Date Signed: 10-2-08 Fire department providing coverage: Township Five Dept. FDID #: 18060

O. COMMENTS: R

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

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commerce.wi.gov
Wisconsin Department of Commerce

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 installation of: ☑ Tank; ☑ Piping; ☐ Secondary Containment; ☐ Overfill Protection; ☐ Vapor Recovery; Tank 5 ☐ Leak Detection; ☐ Spill Containment; ☐ Automated Fueling (key-card-code); ☐ Lining

A. IDENTIFICATION: (Please Print)

1. Installation Name	2. Owner Name
WRR Environmental Services Co, Inc.	WRR Environmental Services Co, Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ☑ Town of: Washington	☐ City ☐ Village ☑ Town of: Washington
State: Wisconsin; Zip Code: 54701	State: Wisconsin; Zip Code: 54701
County: Eau Claire	County: Eau Claire
Telephone No. (include area code): (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 Motor Oil
☑ Hazardous Waste ☐ Chemical (Specify name & CAS#): _____ ☐ Other _____ ☐ Unknown ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ☑ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ☑ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
1. Plans have been approved. State plan number/LPO plan number is: 151072O	☑	☐	
2. Tank Capacity: 10,930 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).	☑	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☑ 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: 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. 8/5/08	☑	☐	☐

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.	☑	☐	☐

I. 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.	☑	☐	☐
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.
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. Stainless	☐	☐	☑
2. Supported and protected against physical damage and stress.	☑	☐	☐
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.	☑	☐	☐

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- CONTINUE ON NEXT PAGE -

Underground Pipe

1.	Piping is sloped back to tank (min. 1/8 inch per foot).	☐	☐	☑
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..	☐	☐	☑
4.	Pipes are separated by at least twice the pipe diameter.	☐	☐	☑
5.	Pipes are separated from the trench excavation sidewalls by at least 6 inches.	☐	☐	☑
6.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.	☐	☐	☑
7.	Metal piping protected from corrosion by: ☐ cathodic protection or ☐ impressed current.	☐	☐	☑
8.	Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.	☐	☐	☑
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.	☐	☐	☑
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.	☐	☐	☑
11.	Test stations have been installed for monitoring cathodic protection on piping.	☐	☐	☑
12.	Approved flexible connectors are used below the dispenser.	☐	☐	☑
13.	Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	☐	☐	☑

K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)

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) _____	☐	☐	☐

2. Piping Leak Detection Method: used if pressurized or suction with check valve at tank: ☐ Interstitial monitoring
☐ Groundwater monitoring ☐ Tightness testing ☐ Line leak detector ☐ Vapor monitoring ☑ Not required (visual)

3. Manufacturer / Vendor: _____ Probe #: _____

4. Model Name/#: _____ Material Approval #: _____

5. Catastrophic Manufacturer Name: _____ Model: _____ Material Approval #: _____

L. LIQUID HANDLING, TRANSFER AND USE

1.	Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]	☐	☐	☑
2.	Check valve installed in piping at connection/disconnection for tank vehicle.	☐	☐	☑
3.	Tank is provided with spill protection.	☑	☐	☐
4.	Dispensing device is listed and has proper setbacks.	☐	☐	☑
5.	Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]	☐	☐	☑
6.	Anti-siphon device provided on tank mounted pump.	☐	☐	☑
7.	Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).	☑		☐
8.	Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment	☐		☐
9.	Emergency shutoff clearly identified and accessible.	☑	☐	☐
10.	Where required, listed emergency breakaway, hose and dispensing devices are provided.	☐	☐	☐
11.	Dispensing nozzle at marine service stations shall be auto-closing without hold open device.	☐	☐	☑
12.	Hose length: _____ ft.			

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co, Inc	5200 Ryder Road	Eau Claire WI 54701
Company Telephone No. (include area code)	**Certified Installer Name (print)**	**Installer Certification No.**
(715) 834-9624	Brice Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Brice V Marsh Date Signed: 8/18/08

N. INSPECTOR INFORMATION

Inspection Dates: 1) 6/25/08 2) 7-14-08 3) 10-2-08 4) 5) 6)

Inspection Company Name: Chippewa Fire Dept.

Inspector Signature: _____ Inspector #: 35167 Local Operator #: 262008

Date Signed: 10/2/08 Fire department providing coverage: Township Five Dept. FDID #: 18060

O. COMMENTS: S

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

000889

commerce.wi.gov
Wisconsin Department of Commerce

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 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	2. Owner Name
WRR Environmental Services Co, Inc.	WRR Environmental Services Co, Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ☑ Town of: Washington	☐ City ☐ Village ☑ Town of: Washington
State: Wisconsin Zip Code: 54701	State: Wisconsin Zip Code: 54701
County: Eau Claire	County: Eau Claire
Telephone No. (include area code): (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 Motor Oil
☑ Hazardous Waste ☐ Chemical (Specify name & CAS#): _____ ☐ Other _____ ☐ Unknown ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ☑ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ☑ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
1. Plans have been approved. State plan number/LPO plan number is: 151072O	☑	☐	
2. Tank Capacity: 300 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)	☑	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☑ 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: 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. 8/8/08	☑	☐	☐

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.	☑	☐	☐

I. 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.	☑	☐	☐
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.
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. Stainless	☐	☐	☑
2. Supported and protected against physical damage and stress.	☑	☐	☐
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.	☑	☐	☐

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ERS 0658 (R 08/05)

- CONTINUE ON NEXT PAGE -

Underground Pipe

1.	Piping is sloped back to tank (min. 1/8 inch per foot).	☐	☐	☑
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..	☐	☐	☑
4.	Pipes are separated by at least twice the pipe diameter.	☐	☐	☑
5.	Pipes are separated from the trench excavation sidewalls by at least 6 inches.	☐	☐	☑
6.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is wrapped or coated.	☐	☐	☑
7.	Metal piping protected from corrosion by: ☐ cathodic protection or ☐ impressed current.	☐	☐	☑
8.	Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.	☐	☐	☑
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.	☐	☐	☑
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.	☐	☐	☑
11.	Test stations have been installed for monitoring cathodic protection on piping.	☐	☐	☑
12.	Approved flexible connectors are used below the dispenser.	☐	☐	☑
13.	Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	☐	☐	☑

K. SECONDARY CONTAINMENT/LEAK DETECTION (Check which applies under both TANK and PIPING)

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) _____	☐	☐	☐

2. Piping Leak Detection Method: used if pressurized or suction with check valve at tank: ☐ Interstitial monitoring
☐ Groundwater monitoring ☐ Tightness testing ☐ Line leak detector ☐ Vapor monitoring ☑ Not required (visual)

3. Manufacturer / Vendor: _____ Probe #: _____

4. Model Name/#: _____ Material Approval #: _____

5. Catastrophic Manufacturer Name: _____ Model: _____ Material Approval #: _____

L. LIQUID HANDLING, TRANSFER AND USE

1.	Fill pipe shall be capable of being locked, is labeled and color coded. [Comm 10.415 (11)]	☐	☐	☑
2.	Check valve installed in piping at connection/disconnection for tank vehicle.	☐	☐	☑
3.	Tank is provided with spill protection.	☑	☐	☐
4.	Dispensing device is listed and has proper setbacks.	☐	☐	☑
5.	Electrically operated solenoid valve provided for vehicle fueling. [Comm 10.415 (10)]	☐	☐	☑
6.	Anti-siphon device provided on tank mounted pump.	☐	☐	☑
7.	Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).	☑		☐
8.	Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment	☐		☑
9.	Emergency shutoff clearly identified and accessible.	☑	☐	☐
10.	Where required, listed emergency breakaway, hose and dispensing devices are provided.	☐	☐	☑
11.	Dispensing nozzle at marine service stations shall be auto-closing without hold open device.	☐	☐	☑

12. Hose length: _____ ft.

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co Inc	5200 Ryder Road	Eau Claire WI 54701
Company Telephone No. (include area code)	**Certified Installer Name (print)**	**Installer Certification No.**
(715) 834-9624	Brice Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Brice W. Marsh Date Signed: 8/18/08

N. INSPECTOR INFORMATION

Inspection Dates: 1) 6/25/08 2) 7-14-08 3) 10/2/08 4) 5) 6)

Inspection Company Name: Chippewa Fire District

Inspector Signature: _____ Inspector #: 35/67 Local Operator #: 2 62 08 A

Date Signed: 10/2/08 Fire department providing coverage: Township Five Dept. FDID #: 18060

O. COMMENTS: Overflow

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

000891

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 J, K, M, O, Q, R, S, Z AND HH 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

August 12, 2008
Date Stamped & Certified

WISCONSIN
WILLIAM L.
HABLE
E-9778
BLOOMER
WI
8-12-08
PROFESSIONAL ENGINEER

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 L, N, V, W, X, And 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

August 5, 2000
Date Stamped & Certified

WISCONSIN
WILLIAM L.
HABLE
E-9778
BLOOMER
WI
8-5-00
PROFESSIONAL ENGINEER

WRR www.wrres.com
WRR Environmental Services Co., Inc.
715-834-9624 FAX 715-836-8785 EMAIL wrrstaff@wrres.com
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 jsmit@wrres.com or call me at (715) 852-1630.

Sincerely,

Jan Smit

Jan 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

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)].

Reg Obj #: For Office Use Only

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 checklist covers installation of: ■ **Tank;** ☐ **Piping;** ☐ **Secondary Containment;** ■ **Overfill Protection;** ☐ **Vapor Recovery;** ☐ **Leak Detection;** ☐ **Spill Containment;** ☐ **Automated Fueling (key-card-code);**

Tank Q

A. IDENTIFICATION: (Please Print)

1. Installation Name	2. Owner Name
WRR Environmental Services Co., Inc.	WRR Environmental Services Co., Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ■ Town of: Washington	☐ City ☐ Village ■ Town of: Washington
State: WI	State: WI
Zip Code: 54701	Zip Code: 54701
County: Eau Claire	County: Eau Claire
Telephone No. (include area code): (715) 834-9624	

B. TANK CONTENTS (Current, or previous product if tank now empty)

☐ Diesel ☐ Biodiesel ☐ B100 ☐ Unleaded ☐ E85 ☐ Ethanol ☐ Aviation Fuel ☐ Premix ☐ Fuel Oil ☐ Kerosene ☐ New Oil
☐ Waste/Used Motor Oil ■ Hazardous Waste ☐ Chemical (Specify name & CAS#): _____ ☐ Other _____ ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ■ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ■ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
1. Plans have been approved. State plan number/LPO plan number is: _____	☐	☐	
2. Tank Capacity: 10,730 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 10.400].	☐	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☐ 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: Morrison	☐	☐	☐
5. All normal and emergency vents terminate outside where required	☐	☐	☐
6. Overfill protection provided? [Comm 10.410] Make/Model: _____	☐	☐	☐
7. Tank gauge is provided.	☐	☐	☐
8. Tank mounted pump ☐ Remote pump / dispenser independent of tank ☐			

G. TANK HANDLING AND PRE-TESTING

1. Tank was tested after set in place for leakage per the manufacturer's recommendations.	☐	☐	☐

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 22.4.2.1)	☐	☐	☐
3. Tank in bulk plant facility is spaced a minimum of 2 feet from the toe of the dike wall.	☐	☐	☐
4. Tank (s) meet Comm 10.615 setbacks	☐	☐	☐
5. Tank markings per Comm 10.400(7)	☐	☐	☐

I. PROJECT SITE

1. Collision protection provided. ☐ Cement filled pipe ☐ Traffic bollards ☐ Other _____	☐	☐	☐
2. Storage tank for vehicle fueling Comm 10.615(7) compliant	☐	☐	☐
3. Warning signs posted for dispensing area.	☐	☐	☐
4. 80 B:C rated fire extinguisher provided if motor vehicle fueling & within 100 ft travel distance.	☐	☐	☐
5. NFPA 704 emergency response hazard rating signage provided on tank	☐	☐	☐

J. PIPING

Pipe construction material: ☐ **Fiberglass;** ■ **Steel;** ☐ **Poly type material;** ☐ **Other (type):** _____

Pipe installation is: ☐ **single wall** ☐ **double wall.**

Piping system is: ■ Aboveground only ☐ Underground only ☐ Combination of aboveground and underground

Piping system Type: ☐ Pressurized piping with ⇨ A). ☐ Pump auto shutoff - ELLD B.) ☐ Flow restrictor – MLLD;
ELLD serves as catastrophic: ☐ Yes ☐ No; MLLD serves as catastrophic: ☐ Yes ☐ No;

Make/Model: _____

☐ Suction piping with ⇨ ☐ anti-siphon ☐ Solenoid valve; ☐ AST Gravity/Head pressure

Piping leak detection method: ☐ Interstitial monitoring ☐ Tightness testing ☐ Aboveground visual ☐ Not required
☐ Electronic line monitor – ELLD ☐ Electronic interstitial monitoring – sump sensor or leak sensing cable

- CONTINUE ON NEXT PAGE -

Aboveground Pipe:

1.	Coated to inhibit corrosion.	☐	☐	☐
2.	Supported and protected against physical damage and stress.	☐	☐	☐
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.	☐	☐	☐

Underground Pipe

1.	Piping is sloped to a sump (min. 1/8 inch per foot).	☐	☐	☐
2.	Metal piping is at least schedule 40 black steel or galvanized pipe, and is protected or coated.	☐	☐	☐
3.	Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better.	☐	☐	☐
4.	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.	☐	☐	☐
5.	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.	☐	☐	☐
6.	Test stations have been installed for monitoring cathodic protection on piping.	☐	☐	☐
7.	Approved flexible connectors are installed below dispenser.	☐	☐	☐
8.	Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping.	☐	☐	☐

Underground pipe corrosion protection: ☐ cathodic protection ☐ impressed current ☐ corrosion resistant construction material

K. SECONDARY CONTAINMENT

1. Tank secondary containment: ☐ Double Wall ■ Diked ☐ Remote impounding
2. Dike material: ■ Concrete ☐ Steel ☐ Engineered clay ☐ Engineered clay with liner ☐ Earthen with Liner ☐ Other: _____
3. Dike capacity: Weather protected meets 100% ☐ Yes ☐ No Unprotected meets 125% ☐ Yes ☐ No;
4. Motor fuel dispenser has liquid tight sump with a sensor ☐ Yes ☐ Not required
5. Pipe run is a combination of aboveground and underground pipe ☐ Yes ☐ No If "yes" there is a transition sump ☐ Yes ☐ No

L. LIQUID HANDLING, TRANSFER AND USE

1.	Check valve installed in piping at connection/disconnection for tank vehicle.	☐	☐	☐
2.	Tank is provided with minimum 5 gal. spill protection.	☐	☐	☐
3.	Dispensing device is listed.	☐	☐	☐
4.	Anti-siphon protection with pressure relief.	☐	☐	☐
5.	Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70).	☐		☐
6.	Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment	☐	☐	☐
7.	Emergency shutoff installed for motor vehicle fueling and clearly identified and accessible.	☐	☐	☐
8.	Emergency electrical shutoff installed for bulk transfers (Comm10.370), identified and accessible			
9.	Where required, listed emergency breakaway, hose and dispensing devices are provided.	☐	☐	☐
10.	Dispensing nozzle at marine service stations shall be auto-closing without hold open device.	☐	☐	☐
11.	Hose length: _____ ft.			

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co., Inc.	5200 Ryder Road	Eau Claire, WI 54701

Company Telephone No. (include area code)	Certified Installer Name (print)	Installer Certification No.
(715) 834-9624	Brice Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Brice N. Marsh Date Signed: 8/3/11

N. INSPECTOR INFORMATION

Inspection Dates: 1) 2) 3) 4) 5) 6)

Inspection Company Name: Chippewa Fire District

Inspector Signature: _____ Inspector #: 35167 Local Operator #: 262008

Date Signed: _____ Fire department providing coverage: Township Fire Department FDID #: 18061

O. COMMENTS: Tank Q

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

CHECKLIST FOR ABOVEGROUND STORAGE 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)].

Reg Obj #: For Office Use Only

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 checklist covers installation of: ■ **Tank;** ☐ **Piping;** ☐ **Secondary Containment;** ■ **Overfill Protection;** ☐ **Vapor Recovery;** ☐ **Leak Detection;** ☐ **Spill Containment;** ☐ **Automated Fueling (key-card-code);**

Tank R

A. IDENTIFICATION: (Please Print)

1. Installation Name	2. Owner Name
WRR Environmental Services Co., Inc.	WRR Environmental Services Co., Inc.
Installation Street Address (not P.O. Box)	Owner Street Address
5200 Ryder Road	5200 Ryder Road
☐ City ☐ Village ■ Town of: Washington	☐ City ☐ Village ■ Town of: Washington
State: WI; Zip Code: 54701	State: WI; Zip Code: 54701
County: Eau Claire	County: Eau Claire
Telephone No. (include area code): (715) 834-9624	

B. TANK CONTENTS (Current, or previous product if tank now empty)

☐ Diesel ☐ Biodiesel ☐ B100 ☐ Unleaded ☐ E85 ☐ Ethanol ☐ Aviation Fuel ☐ Premix ☐ Fuel Oil ☐ Kerosene ☐ New Oil
☐ Waste/Used Motor Oil ■ Hazardous Waste ☐ Chemical (Specify name & CAS#): _____ ☐ Other _____ ☐ Empty

C. LAND OWNER TYPE (check one)

☐ State ☐ County ☐ Municipal ☐ Federal Owned ☐ Federal Leased ☐ Tribal Nation ☐ Other Government ☐ Utility
☐ Residential ■ Private

D. OCCUPANCY TYPE (check one)

☐ Gas/Retail Sales ☐ Bulk Storage ☐ Terminal Storage ■ Industrial ☐ Mercantile/Commercial ☐ Backup or Emergency Generator
☐ Agricultural (Crop or livestock production) ☐ Government ☐ School ☐ Utility ☐ Residential ☐ Other (specify): _____

E. PLAN APPROVAL

	Installer Verified	Inspector Verified	NA
1. Plans have been approved. State plan number/LPO plan number is: _____	☐	☐	
2. Tank Capacity: 10,730 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 10.400].	☐	☐	☐
2. Tank is used and has been tested for leaks. ☐ Air ☐ 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: Morrison	☐	☐	☐
5. All normal and emergency vents terminate outside where required	☐	☐	☐
6. Overfill protection provided? [Comm 10.410] Make/Model: _____	☐	☐	☐
7. Tank gauge is provided.	☐	☐	☐
8. Tank mounted pump ☐ Remote pump / dispenser independent of tank ☐			

G. TANK HANDLING AND PRE-TESTING

1. Tank was tested after set in place for leakage per the manufacturer's recommendations.	☐	☐	☐

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 22.4.2.1)	☐	☐	☐
3. Tank in bulk plant facility is spaced a minimum of 2 feet from the toe of the dike wall.	☐	☐	☐
4. Tank (s) meet Comm 10.615 setbacks	☐	☐	☐
5. Tank markings per Comm 10.400(7)	☐	☐	☐

I. PROJECT SITE

1. Collision protection provided. ☐ Cement filled pipe ☐ Traffic bollards ☐ Other _____	☐	☐	☐
2. Storage tank for vehicle fueling Comm 10.615(7) compliant	☐	☐	☐
3. Warning signs posted for dispensing area.	☐	☐	☐
4. 80 B:C rated fire extinguisher provided if motor vehicle fueling & within 100 ft travel distance.	☐	☐	☐
5. NFPA 704 emergency response hazard rating signage provided on tank	☐	☐	☐

J. PIPING

Pipe construction material: ☐ **Fiberglass;** ■ **Steel;** ☐ **Poly type material;** ☐ **Other (type):** _____

Pipe installation is: ☐ **single wall** ☐ **double wall.**

Piping system is: ■ Aboveground only ☐ Underground only ☐ Combination of aboveground and underground

Piping system Type: ☐ Pressurized piping with ⇨ A). ☐ Pump auto shutoff - ELLD B.) ☐ Flow restrictor – MLLD;
ELLD serves as catastrophic: ☐ Yes ☐ No; MLLD serves as catastrophic: ☐ Yes ☐ No;

Make/Model: _____

☐ Suction piping with ⇨ ☐ anti-siphon ☐ Solenoid valve; ☐ AST Gravity/Head pressure

Piping leak detection method: ☐ Interstitial monitoring ☐ Tightness testing ☐ Aboveground visual ☐ Not required
☐ Electronic line monitor – ELLD ☐ Electronic interstitial monitoring – sump sensor or leak sensing cable

- CONTINUE ON NEXT PAGE -

Aboveground Pipe:

1. Coated to inhibit corrosion. ☐ ☐ ☐
2. Supported and protected against physical damage and stress. ☐ ☐ ☐
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. ☐ ☐ ☐

Underground Pipe

1. Piping is sloped to a sump (min. 1/8 inch per foot). ☐ ☐ ☐
2. Metal piping is at least schedule 40 black steel or galvanized pipe, and is protected or coated. ☐ ☐ ☐
3. Fittings and couplings are extra-heavy malleable iron screw-type, schedule 40 or better. ☐ ☐ ☐
4. 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. ☐ ☐ ☐
5. 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. ☐ ☐ ☐
6. Test stations have been installed for monitoring cathodic protection on piping. ☐ ☐ ☐
7. Approved flexible connectors are installed below dispenser. ☐ ☐ ☐
8. Dispensers, pumps, check valves, etc., not cathodically protected are electrically isolated from metallic piping. ☐ ☐ ☐

Underground pipe corrosion protection: ☐ cathodic protection ☐ impressed current ☐ corrosion resistant construction material

K. SECONDARY CONTAINMENT

1. Tank secondary containment: ☐ Double Wall ■ Diked ☐ Remote impounding
2. Dike material: ■ Concrete ☐ Steel ☐ Engineered clay ☐ Engineered clay with liner ☐ Earthen with Liner ☐ Other: _____
3. Dike capacity: Weather protected meets 100% ☐ Yes ☐ No Unprotected meets 125% ☐ Yes ☐ No;
4. Motor fuel dispenser has liquid tight sump with a sensor ☐ Yes ☐ Not required
5. Pipe run is a combination of aboveground and underground pipe ☐ Yes ☐ No If "yes" there is a transition sump ☐ Yes ☐ No

L. LIQUID HANDLING, TRANSFER AND USE

1. Check valve installed in piping at connection/disconnection for tank vehicle. ☐ ☐ ☐
2. Tank is provided with minimum 5 gal. spill protection. ☐ ☐ ☐
3. Dispensing device is listed. ☐ ☐ ☐
4. Anti-siphon protection with pressure relief. ☐ ☐ ☐
5. Electric equipment and wiring is installed in accordance with Comm 16 (NFPA 70). ☐ ☐
6. Aircraft fueling system provides bonding mechanism between aircraft and fueling equipment ☐ ☐ ☐
7. Emergency shutoff installed for motor vehicle fueling and clearly identified and accessible. ☐ ☐ ☐
8. Emergency electrical shutoff installed for bulk transfers (Comm10.370), identified and accessible
9. Where required, listed emergency breakaway, hose and dispensing devices are provided. ☐ ☐ ☐
10. Dispensing nozzle at marine service stations shall be auto-closing without hold open device. ☐ ☐ ☐
11. Hose length: _____ ft.

M. INSTALLER CERTIFICATION

Installation Company Name (print)	Installation Company Mailing Address	City/State/Zip Code
WRR Environmental Services Co., Inc.	5200 Ryder Road	Eau Claire, WI 54701

Company Telephone No. (include area code)	Certified Installer Name (print)	Installer Certification No.
(715) 834-9624	Brice Marsh	41034

I certify that the tank system and related components have been installed according to the manufacturer's instructions, conditionally approved plans, and comply with Comm 10.

Installer Signature: Brice W. Marsh Date Signed: 8/3/11

N. INSPECTOR INFORMATION

Inspection Dates: 1) 2) 3) 4) 5) 6)

Inspection Company Name: Chippewa Fire District

Inspector Signature: _____ Inspector #: 35167 Local Operator #: 262008

Date Signed: _____ Fire department providing coverage: Township Fire Department FDID #: 18061

O. COMMENTS: Tank R

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

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,s R 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

Aug. 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.

William L. Hable

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

MAY 18, 1995
Date Stamped & Certified

P.E. Stamp

WISCONSIN
DEPT. OF NATURAL RESOURCES
George E. Meyer
Secretary

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

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 certifcation 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.

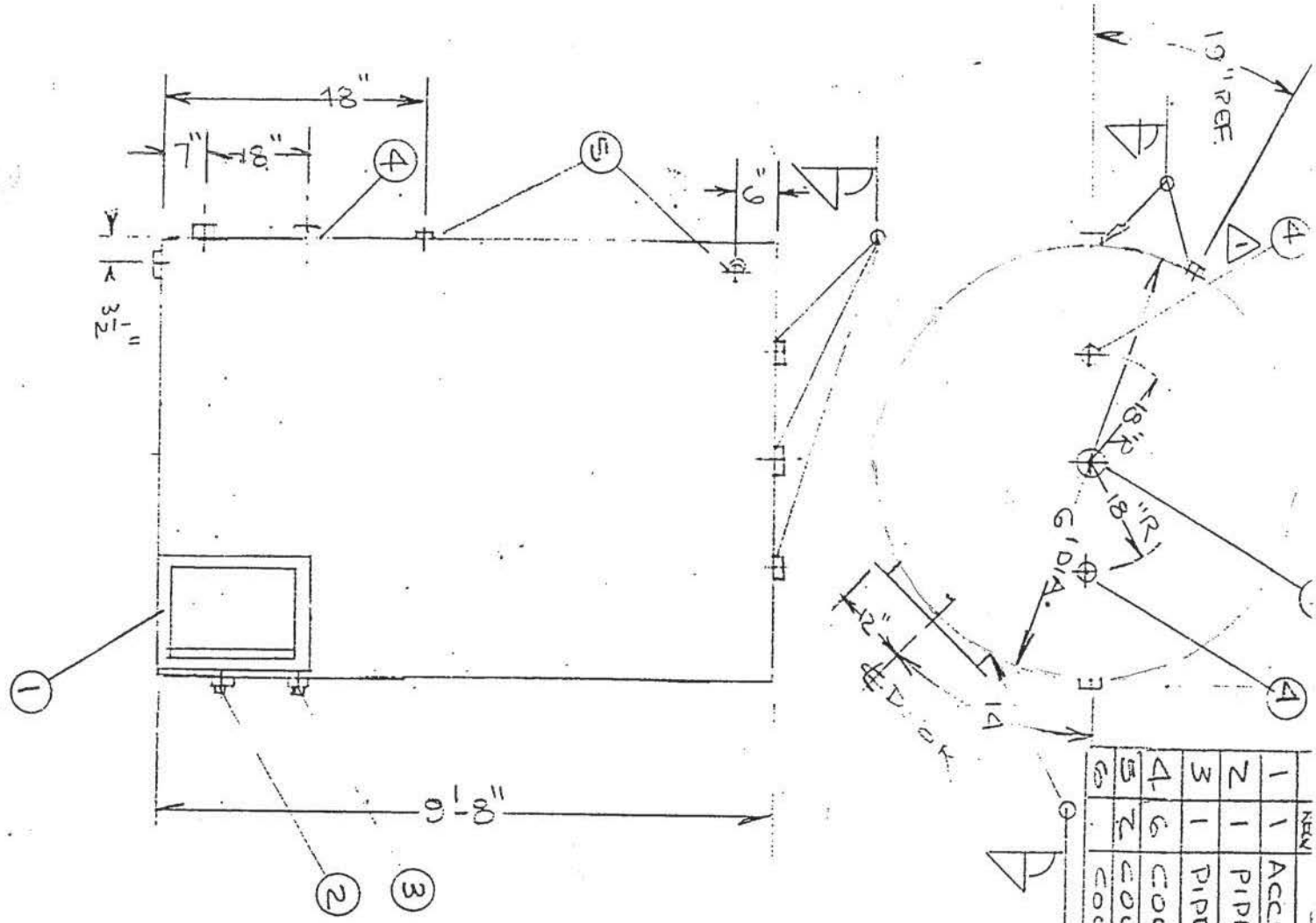
If you have any questions regarding this letter, please call me.

Sincerely,

Ginger K. Hooper

Ginger K. Hooper, CHMM
Hazardous Waste Specialist

c: Aggie Cook - SW/3 Lundberg



NEW			
1	1	ACCESS HATCH ASSY.	A-393
2	1	PIPE PLUG 3" BLKSTL	
3	1	PIPE PLUG 2" BLKSTL	
4	6	COUPLING 2" BLKSTL	
5	2	COUPLING 1" BLKSTL	
6		COUPLING BLKSTL.	

	NOW D		
A.	⑤ WAS 1-REQ. ④ WAS 4-REQ ⚠ ADDED.	EAS.	10-24-75
	ISSUED		
REV.	DESCRIPTION	ECO	DATE

BLANK SIZE	MAT'L.	FINISH

WASTE, RESEARCH & RECLAMATION CO
RT 3. EAU CLAIRE, WISC.

TOLERANCE	WHERE USED

TANK WELDING ASSEMBLY TANK "D"

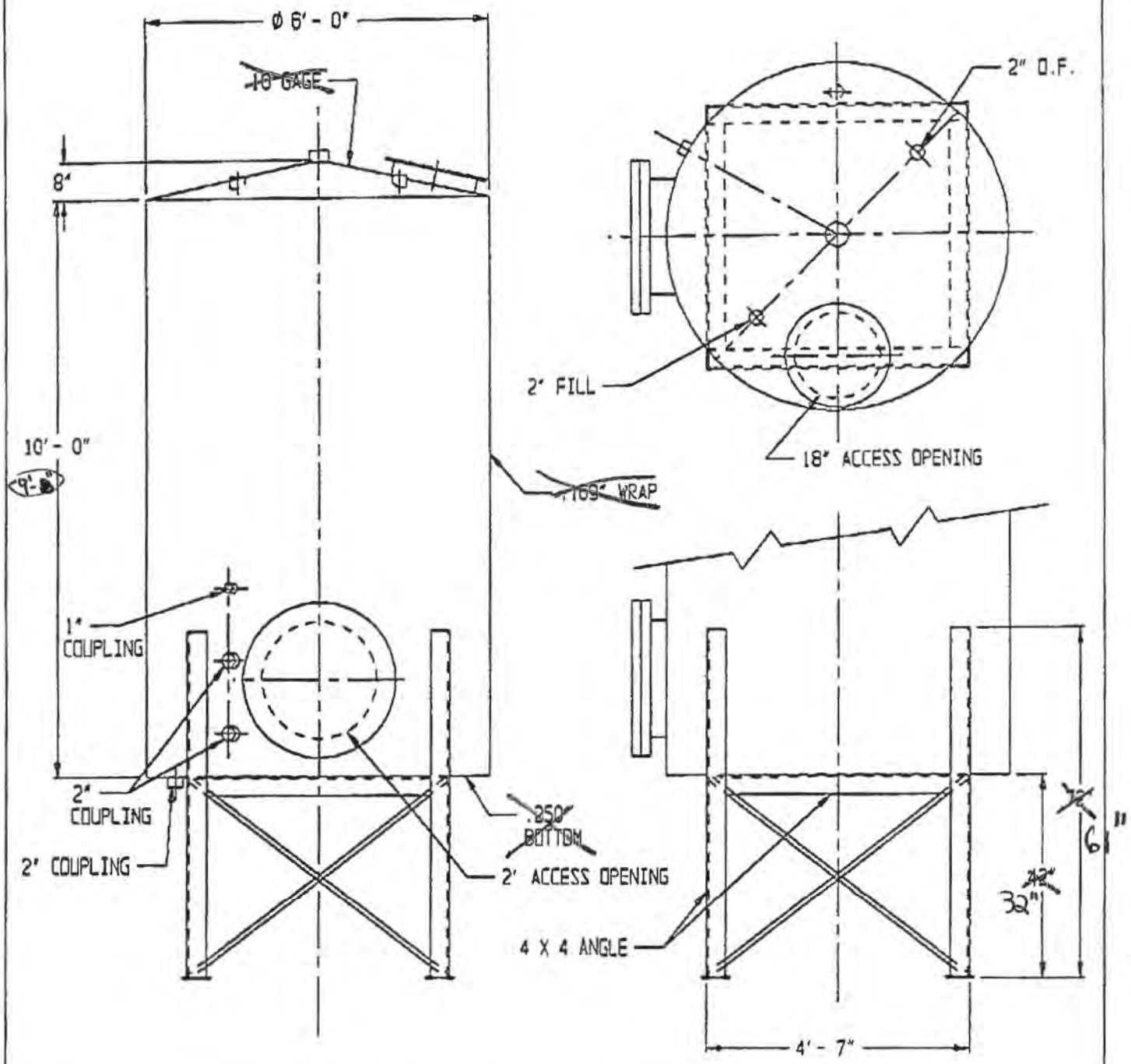
JOB NO	P. O. NO.

DRAWN	SCALE
ERB	NTS
DATE	DWG. NO.
8-29-75	A-396

000906

~~D-56~~ D-81 D.28(9)

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



REV	DESCRIPTION	ECO	DATE

WASTE RESEARCH & RECLAMATION CO., INC.
Route 7 EAU CLAIRE, WISCONSIN 54701 PHONE: (715) 834-9824

TANK "D" ASSEMBLY

SCALE: NONE DRAWN BY: J.L.D. DRAWING NUMBER 000907 REV

DATE: 3/27/95 APPROVED BY:

WRR™
Waste Research & Reclamation Co. Inc.
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 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:

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 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.

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.

George 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. D 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.
Plant Engineering & Environmental Consultant
P.E. Number 9778

MARCH 22, 1995
Date Stamped & Certified

P.E. Stamp

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. E 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.
Plant Engineering & Environmental Consultant
P.E. Number 9778

July 20 1994
Date Stamped & Certified

P.E. Stamp

WRR™

715-834-9624 FAX 715-836-8785

Printed on recycled paper

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.

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.

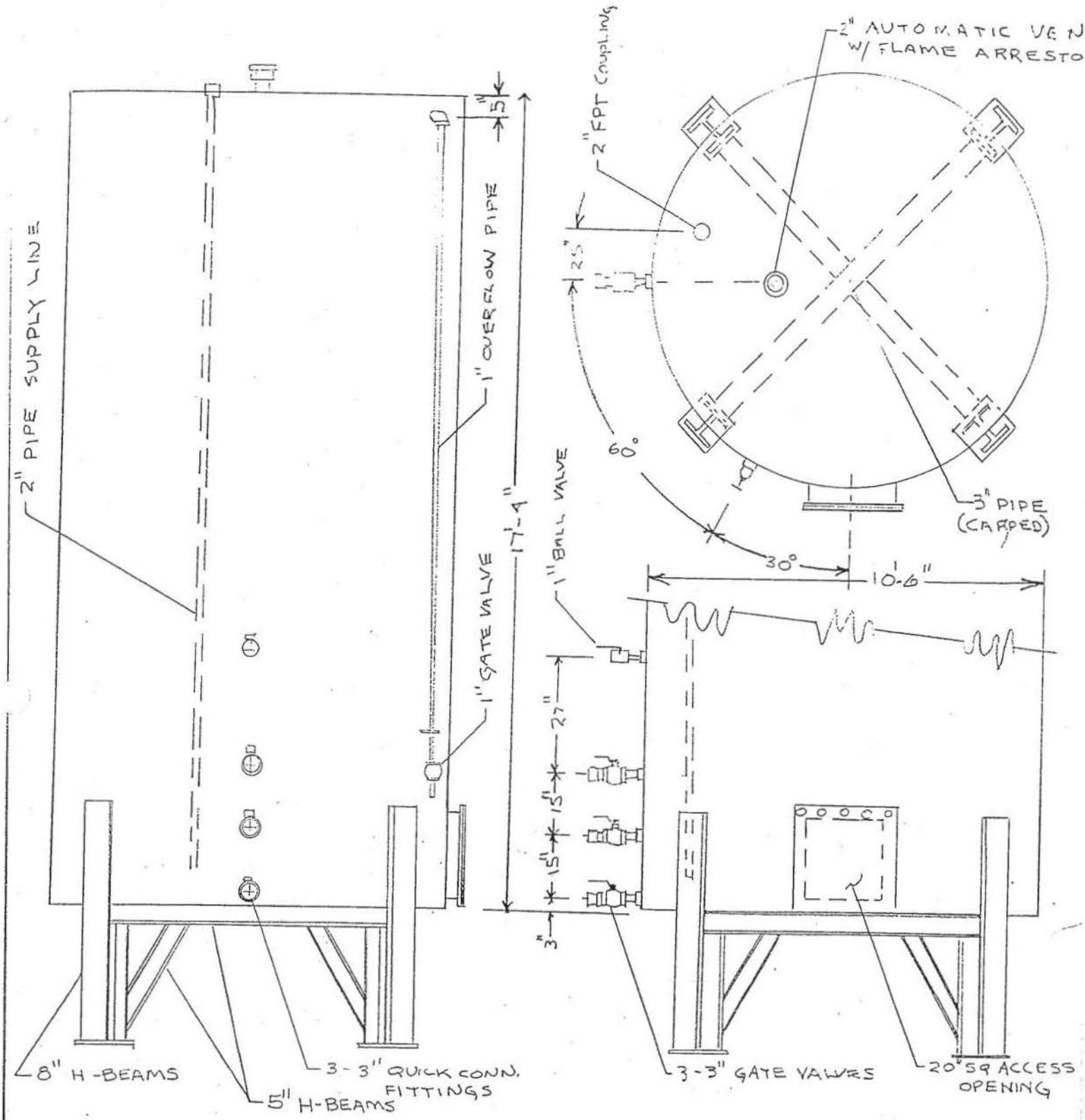
Protection against internal corrosion will continue to be provided by analyzing each waste prior to pumping into the tank system. Wastes corrosive to carbon steel are not in WRR's permit and are not accepted for storage. One-hundred percent of all wastes in tanks and containers accepted by WRR are analyzed 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

enclosures

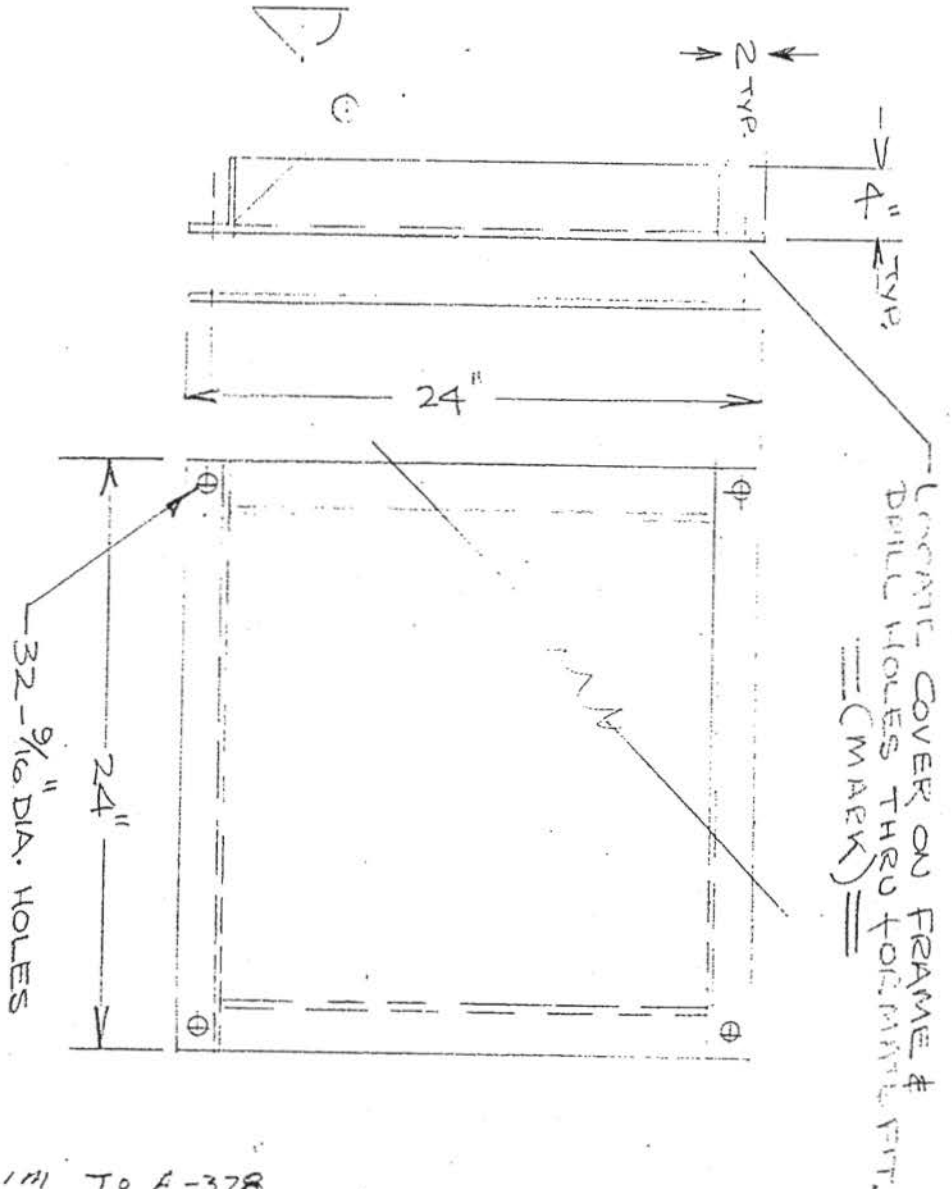


WASTE RESEARCH & RECLAMATION CO., INC.		
Route 7 EAU CLAIRE, WISCONSIN 54701 PHONE: (715) 834-9624		
WRR	RESIDUE HOLDING TANK ASSEMBLY "E"	
SCALE: NTS	DRAWN BY E R B	DRAWING NUMBER: A-379
DATE: 7-25-75	APPROVED BY:	

~~D-61~~ D-86

D.28(14)

000917



ITEM	NO REQ	DESCRIPTION	PART NO
1	1	COVER PLATE 2'X2'X 1/4"	STL.
2	2	ANGLE 2"X4"X1/4" X24" LG. STL.	
3	2	ANGLE 2"X4"X1/4"X20" LG. STL	
4	32	HX. HD. BOLTS 1/2"-12X1 1/4"	SAE GRADE 5 PLT.
5	32	HX. HX NUTS 1/2"-12	SAE GRADE 5 PLT.

SIMI TO A-378

WASTE, RESEARCH & RECLAMATION CO.
RT 3. EAU CLAIRE, WISC.

REV.	DESCRIPTION	ECO	DATE
	NOW D		
	ISSUED		

CLANK DIE | MAT'L. | FINISH

TOLERANCE | WHERE USED

ACCESS HATCH. WELDING ASSEMBLY — TANK "D" & "E"

DRAWN ERB. | SCALE NTS

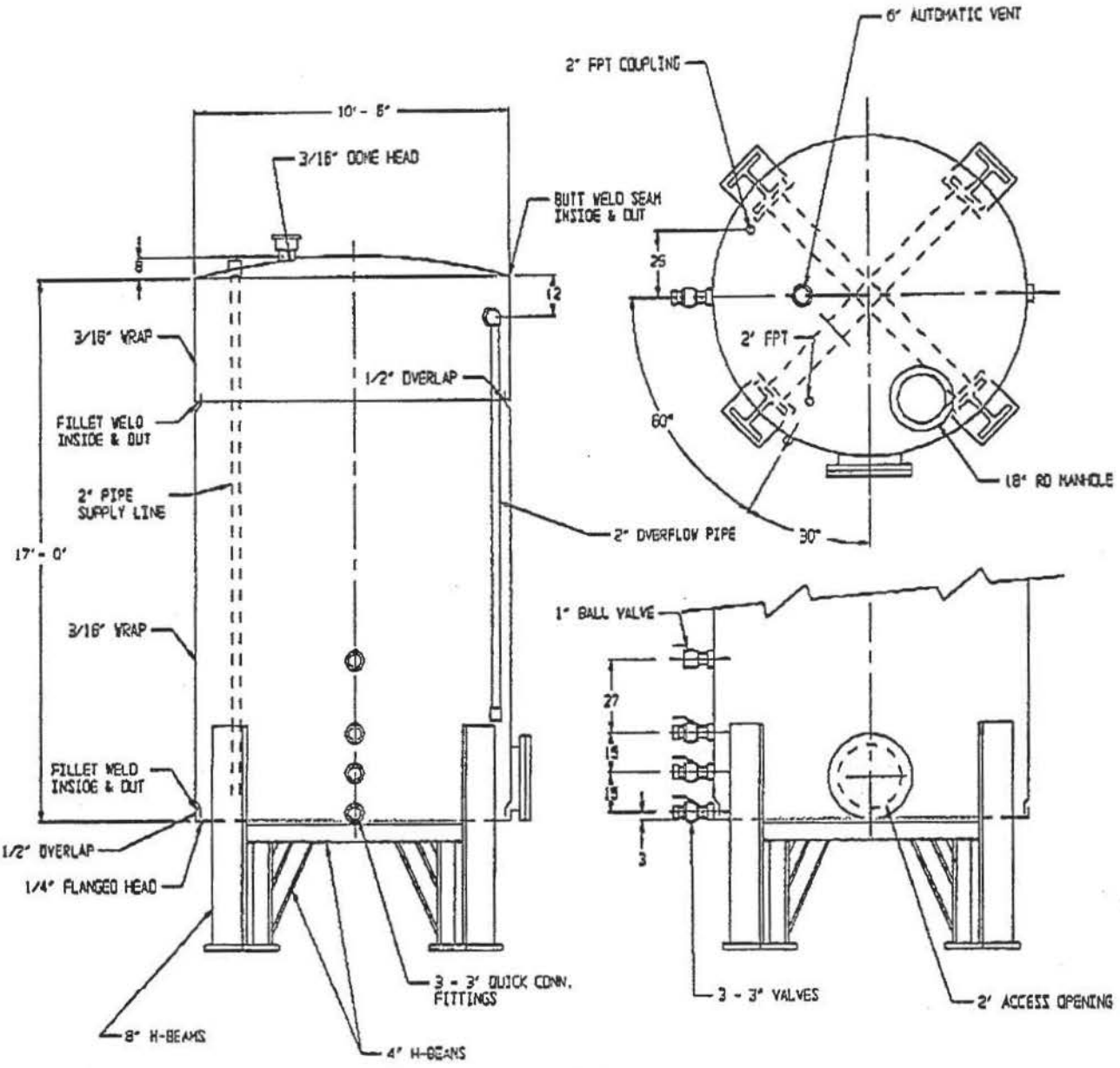
JOB NO | P.O. NO. | DATE -75 | DWG. NO. 93

000918

D-58 D-83 D. 28(11)

BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	

M. J. Hubbl
5-31-94



MATERIAL: A36 UL APPROVED

REV	DESCRIPTION	ECO	DATE

WASTE RESEARCH & RECLAMATION CO., INC.
5200 State Rd 93 EAU CLAIRE, WISCONSIN 54701 PHONE: (715) 834-0624

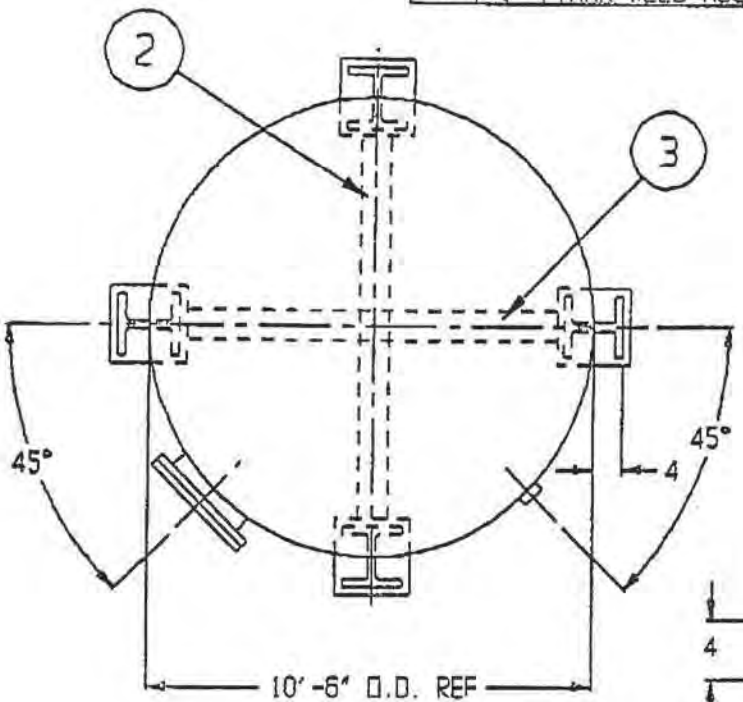
WRR RESIDUE HOLDING TANK ASSEMBLY

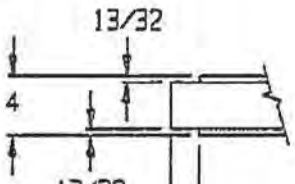
SCALE: NONE	DRAWN BY: J.L.D.	DRAWING NUMBER	REV
DATE: 5/27/94	APPROVED BY:		

000919

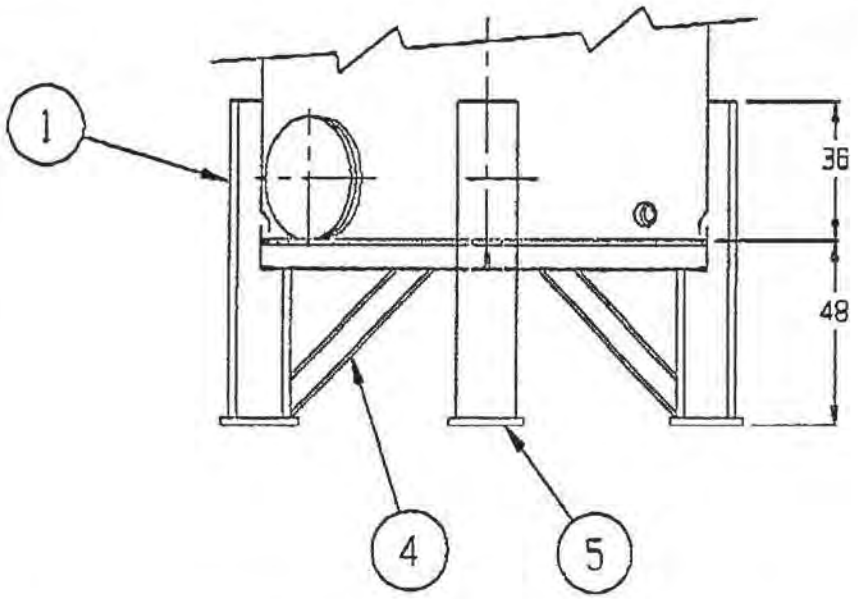
BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	
1	4	H-BEAM 8 X 8 X 7' (31#/FT)	
2	2	H-BEAM 4 X 4 X	
3	1	H-BEAM 4 X 4 X 10'-6	
4	4	H-BEAM	A-462
5	4	STL PLATE 10" X 10" X 1/2" THK	
6	1	TANK WELD ASS'Y	

Mike Zulli
5-31-94





ITEM 2 NOTCH DETAIL - (1 END)



				WASTE RESEARCH & RECLAMATION CO., INC.		
				5200 State Rd 93 EAU CLAIRE, WISCONSIN 54701 PHONE: (715) 834-9624		
				H-BEAM SUPPORT BASE WELD ASSEMBLY - TANK		
				SCALE: NONE	DRAWN BY: J.L.D.	DRAWING NUMBER / REV
REV	DESCRIPTION	ECO	DATE	DATE: 5/27/94	APPROVED BY:	

000920

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. F. 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

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

MAY 18 1995
Date Stamped & Certified

P.E. Stamp

WISCONSIN
DEPT. OF NATURAL RESOURCES
George E. Meyer
Secretary

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

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 certifcation 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.

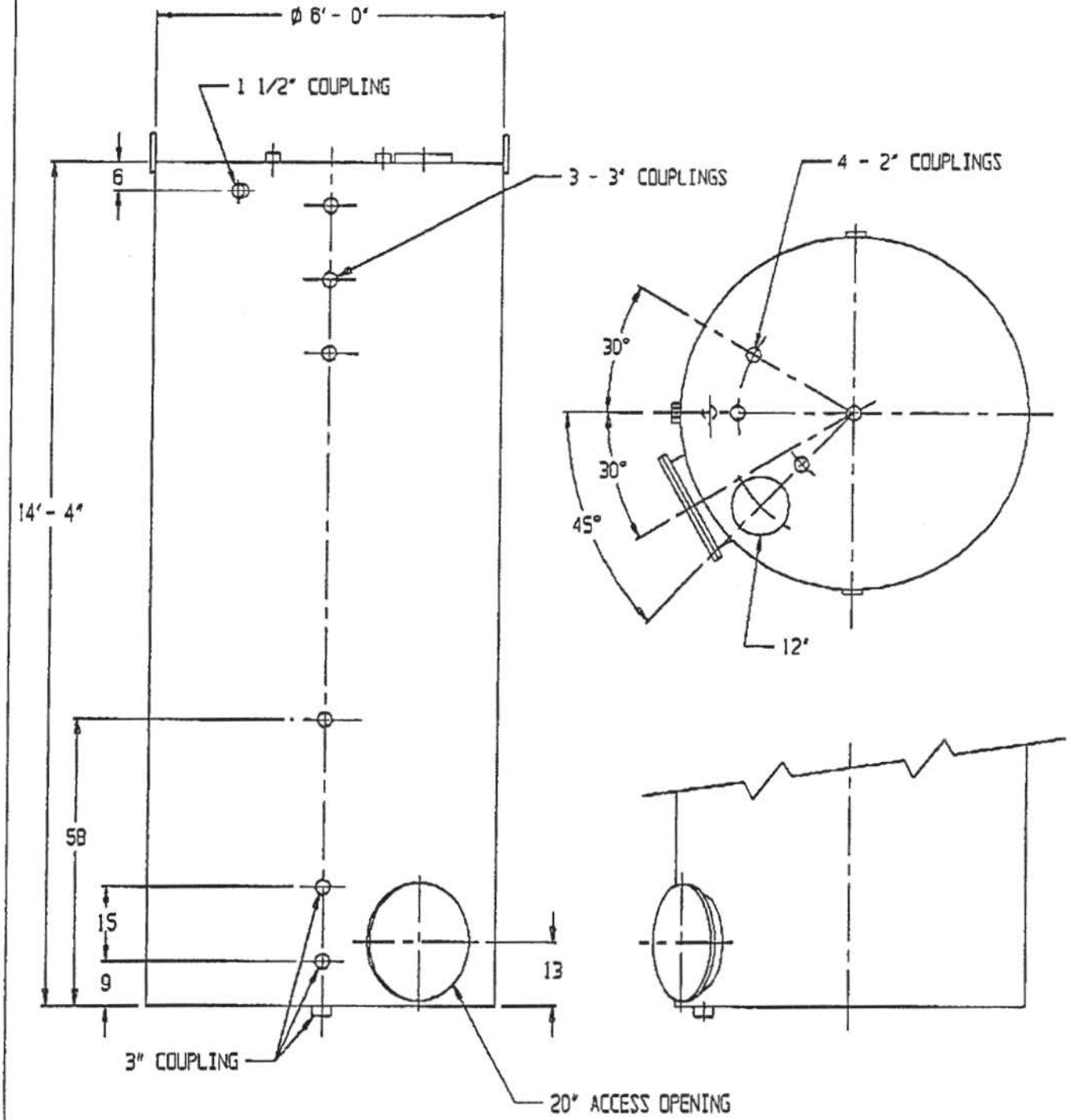
Sincerely,

Ginger K. Hooper

Ginger K. Hooper, CHMM
Hazardous Waste Specialist

c: Aggie Cook - SW/3 Lundberg

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



REV	DESCRIPTION	ECO	DATE

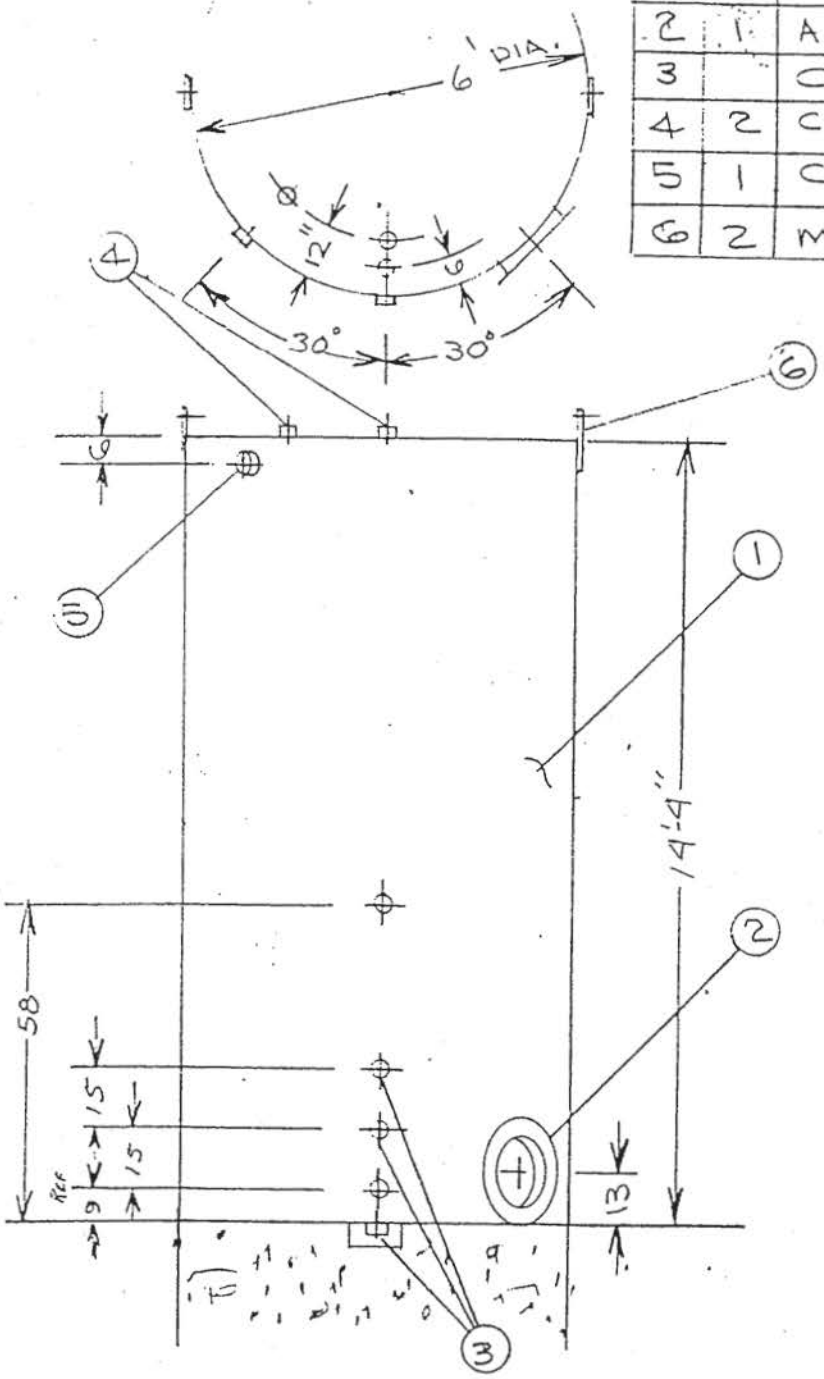
WASTE RESEARCH & RECLAMATION CO., INC.
Route 7 EAU CLAIRE, WISCONSIN 54701 PHONE: (715) 834-9684

SLUDGE TANK "F" ASSEMBLY

SCALE: NONE DRAWN BY: J.L.D. DRAWING NUMBER 009223 REV

DATE: 3/27/95 APPROVED BY:

ITEM	NO REQ	DESCRIPTION	PART NO
1	1	TANK 6' DIA X 14'-4" (3,000 GAL.)	
2	1	ACCESS HATCH 20" DIA.	P+
3		COUPLING 3" BLK STL	PU
4	2	COUPLING 2" BLK STL	PU
5	1	COUPLING 1½" BLK STL	PU
6	2	MOUNTING EARS ½" STL PLT. AS RE	



				WASTE, RESEARCH & RECLAMATION CO. RT 3. EAU CLAIRE, WISC.	
				TOLERANCE	WHERE USED
	ISSUED				
REV.	DESCRIPTION	ECO	DATE		
BLANK SIZE	MAT'L.	FINISH		APPROVED	
				JOB NO	P. O. NO.

SLUDGE TANK "E" WELDING ASSEMBLY EII AREA

DRAWN	SCALE
ERB	NTS
DATE	DWG. NO.

000924

D-64 D-89

D.28(17)

Waste Research & Reclamation Co. Inc.
715-834-9624 FAX 715-836-8785
5200 State Road 93, Eau Claire, Wisconsin 54701

Printed on recycled paper

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:

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 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.

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.

George 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. 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 system was covered, enclosed or placed in use.

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

MARCH 22, 1995
Date Stamped & Certified

P.E. Stamp

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. G. 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

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

May 18, 1995
Date Stamped & Certified

P.E. Stamp

WISCONSIN
DEPT. OF NATURAL RESOURCES
George E. Meyer
Secretary

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

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 certifcation 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.

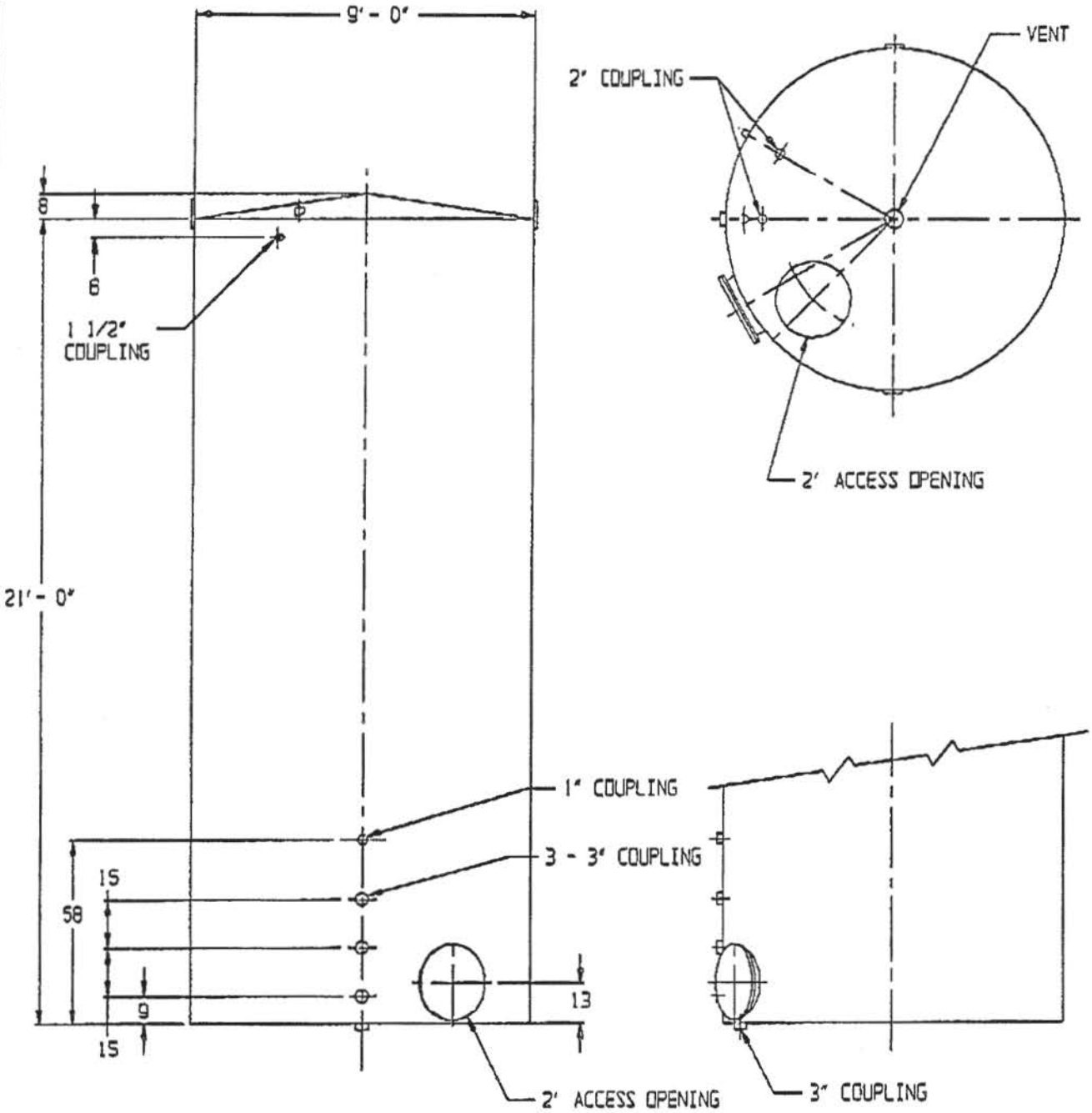
Sincerely,

Ginger K. Hooper

Ginger K. Hooper, CHMM
Hazardous Waste Specialist

c: Aggie Cook - SW/3 Lundberg

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



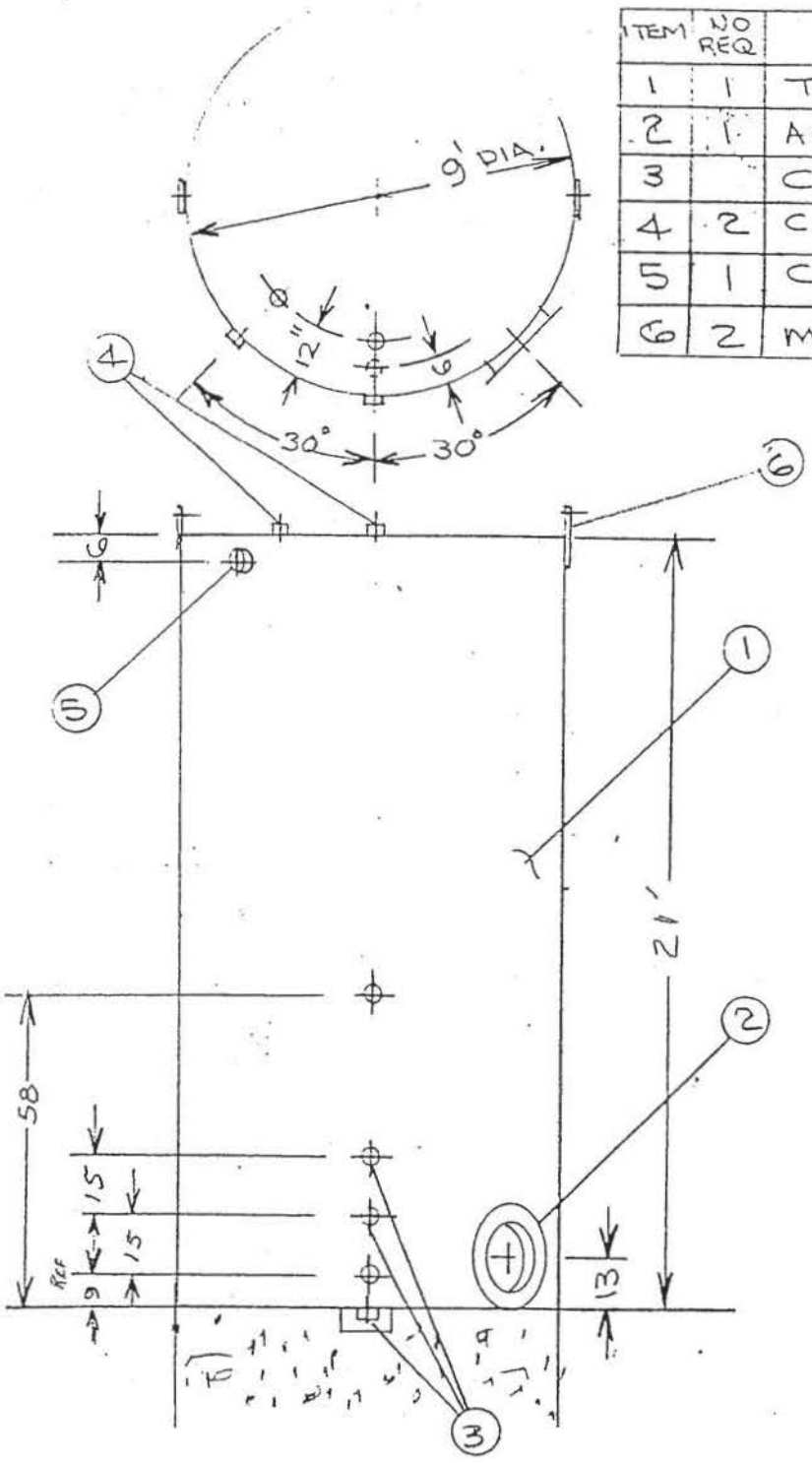
WASTE RESEARCH & RECLAMATION CO., INC.
Route 7 EAU CLAIRE, WISCONSIN 54701 PHONE: (715) 834-9024

SLUDGE TANK "G" ASSEMBLY

SCALE:	DRAWN BY: J.L.D.	DRAWING NUMBER 000932 REV
DATE: 3/29/95	APPROVED BY:	

REV	DESCRIPTION	ECO	DATE

ITEM	NO REQ	DESCRIPTION	PART NO
1	1	TANK 9 DIA x 21 HI (10000 GAL)	
2	1	ACCESS HATCH 20" DIA.	P+
3		COUPLING 3" BLK STL	PU
4	2	COUPLING 2" BLK STL	PU
5	1	COUPLING 1½" BLK STL	PU
6	2	MOUNTING EARS ½" STL PLT. AS REQ	



NO.	DESCRIPTION	ECO	DATE
	ISSUED		

BLANK SIZE | MAT'L. | FINISH

WASTE, RESEARCH & RECLAMATION CO.
RT 3. EAU CLAIRE, WISC.

TOLERANCE | WHERE USED | APPROVED | JOB NO | P. O. NO.

SLUDGE TANK "G"
WELDING ASSEMBLY
E II AREA

DRAWN: ERB | SCALE: NTS | DATE | DWG. NO.

000933

D-65 D-90

D.28(18)

Waste Research & Reclamation Co. Inc.
715-834-9624 FAX 715-836-8785
5200 State Road 93, Eau Claire, Wisconsin 54701

Printed on recycled paper

March 22, 1995

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

REASON: Maintenance Replacement of Storage Tank G

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:

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 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.

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.

George 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. G 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.
Plant Engineering & Environmental Consultant
P.E. Number 9778

March 22, 1995
Date Stamped & Certified

P.E. Stamp

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.

WRR™
WRR Environmental Services Co., Inc.
715-834-9624 FAX 715-836-8785
5200 State Road 93, Eau Claire, Wisconsin 54701

Printed on recycled paper

"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.

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.

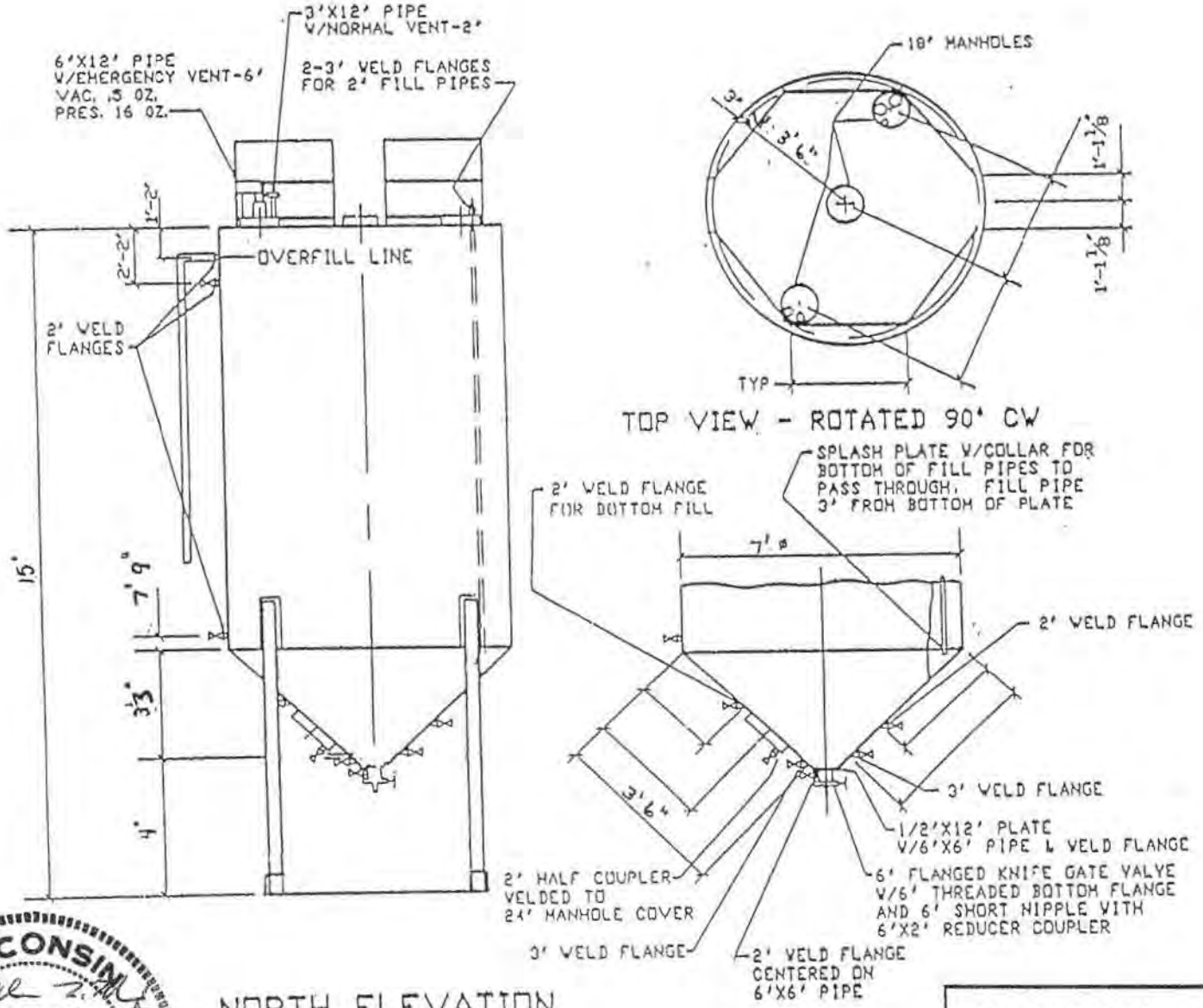
As per our earlier discussions, the Tank Assessment Report, Overflow Protection Report, and the Replacement Thickness Report submitted with our May 30, 1996 request covering Tanks L, N, and J would also apply to Tank H. Please refer to these for this submittal.

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

George Anderson, CHMM
Corporate Director of Compliance



NORTH ELEVATION

WISCONSIN
WILLIAM L. HABLE
E-9778
BLOOMER
WI
10-22-91
PROFESSIONAL ENGINEER

WRR ENVIRONMENTAL SERVICES CO., INC
5200 State Road 93, Eau Claire, Wisconsin
SLUDGE TANK H Welding Assembly
Revised 9/9/97

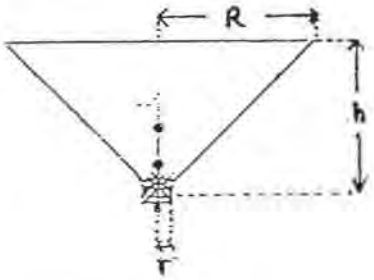
WRR ENVIRONMENTAL SERVICES CO., INC
DESIGN REVIEW CALCULATIONS
FOR TANK H

October 21, 1997

TANK VOLUME CALCULATIONS:

$= \frac{\pi}{4}$ (Inside Tank Diameter)^2 x Tank Height
$= \frac{\pi}{4}$ (6.96 ft.)^2 x 7.75 ft.
$= 294.9$ ft.^{3}

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



Cone volume $= \frac{\pi}{3} R^2 h[1 + (\frac{r}{R}) + (\frac{r}{R})^2]$
$= \frac{\pi}{3}$ (3.48 ft.)^2 x (3.25 ft.)$[1 + (\frac{.479 \text{ ft.}}{3.48 \text{ ft.}}) + (\frac{.479 \text{ ft.}}{3.48 \text{ ft.}})^2]$
$= 47.7$ ft.^{3} 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:

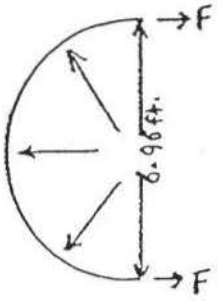
A conservative value of 1.5 will be used for the density of the liquid stored in the tanks.

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) ft.3 x $62.4 \frac{\text{lbs.}}{\text{ft.}^3}$ x 1.5
= 32067 lbs.

TANK HOOP AND PARTING STRESS CALCULATIONS:

Maximum hoop stress will be at base of cone.

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



For a 1" wide hoop:

Area = (6.96 ft.) x $12\frac{\text{in.}}{\text{ft.}}$ x 1" = 83.5 in.^{2}

2F = 83.5 in.^{2} x 5.04 psi = 420.8 lbs.

F = $\frac{420.8 \text{ lbs.}}{2}$ = 210.4 lbs.

Hoop stress of 1/4" thick shell = $\frac{\text{internal stress}}{\text{shell thickness x 1}}$

= $\frac{210.4 \text{ lbs.}}{1/4" \text{ x } 1"}$ = 841.6 psi

One quarter inch steel has a yield point of 36,000 psi (ASTM A36 Steel Plate)

Safety Factor (Yield) = $\frac{36{,}000 \text{ psi}}{841.6 \text{ psi}}$ = 42.8

* 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 = π x height x conversion factor x shell thickness

= π x 7 ft. x 12 $\frac{\text{in.}}{\text{ft.}}$ x 1/4" = 66 in.^{2}

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

S = $\frac{27600 \text{ lbs}}{66 \text{ in.}^2}$ = 418 psi

* Exceeds the required strength

TANK WEIGHT CALCULATIONS:

Shell steel area = π x diameter x height

= π x 7 ft. x 7.75 ft.

= 170.4 ft.^{2}

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

Weight of shell = 170.4 ft.^{2} x 10.20 $\frac{\text{lbs.}}{\text{ft.}^2}$ = 1738 lbs.

Tank top area = $\frac{\pi}{4}$ (7 ft.^{2}) = 38.5 ft.^{2}

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

Bottom cone area = π (3.5 ft. + .5 ft.) $\sqrt{(3.25)2 + (3.5 - 0.5.)^2}$
= 55.6 ft.^{2}

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

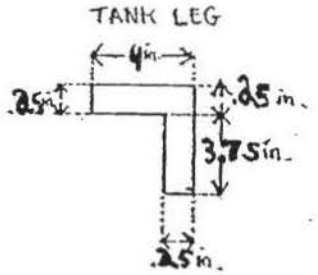
Estimated weight of miscellaneous steel and fittings = 302 lbs.

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



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

Column stress = $\frac{\text{weight per leg}}{\text{area of leg}} = \frac{8{,}750 \text{ lbs.}}{1.9375 \text{ in.}^2}$ = 4516 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 4" x 4" x 1/4" angle = 0.795 in.

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

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.

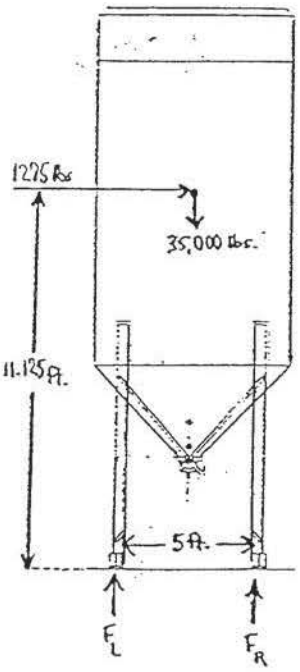
WIND LOAD CALCULATIONS:

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

$$= 1.0 \times \left[(7.25 \text{ ft.} \times 7 \text{ ft.}) + \frac{(7 \text{ ft.} + 1 \text{ ft.} \times 3.25 \text{ ft.})}{2}\right] \times 20 \text{ psf}$$

$$= 1275 \text{ lbs.}$$



Couple around at right leg:

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

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

$$F_L = \frac{73{,}320}{5} = 14{,}664 \text{ lbs}$$

$$F_R = 35{,}000 \text{ lbs} - 14{,}664 \text{ lbs} = 20{,}326 \text{ lbs.}$$

$$\text{Force on each left leg} = \frac{14{,}664 \text{ lbs}}{2} = 7{,}332 \text{ lbs}$$

$$\text{Force on each right leg} = \frac{20{,}336 \text{ lbs}}{2} = 10{,}168 \text{ lbs}$$

$$\text{Right leg column stress} = \frac{10{,}168 \text{ lbs}}{1.875 \text{ in.}^2} = 5{,}423 \text{ psi}$$

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

90 mph Wind Loading on Empty Tank:

Couple force around F_R:

$$(1275 \text{ lbs} \times 11.125 \text{ ft.}) - (3000 \text{ lbs} \times 2.5 \text{ ft.}) + 5F_L = 0$$

$$14{,}180 \text{ lbs} - 7{,}500 \text{ lbs} + 5F_L = 0$$

$$5F_L = -6{,}680 \text{ lbs}$$

$$F_L = -1{,}336 \text{ lbs.}$$

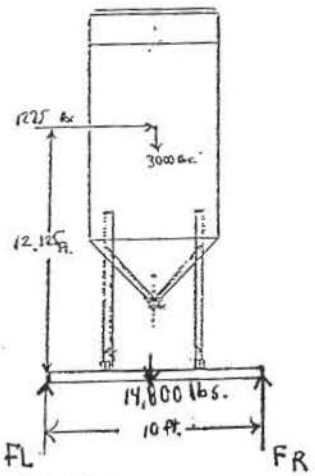
Tanks are bolted to slabs with (2) 3/4" diameter bolts per leg. Bolts have safe load of 2070 lbs each at 60,000 psi ultimate strength.

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 ft. x 10 ft. x 10 ft. x 148 $\frac{\text{lbs.}}{\text{ft.}^3}$

= 14,800 lbs.

Coupling force at F_R:

(1275 lbs x 12.125 ft.) - [(3000 lbs + 14,800 lbs) x 5.0 ft.] + 10 F_L = 0

15,460 lbs - 89,000 lbs + 10 F_L = 0

10 F_L = 73,540 lbs

F_L = 7,354 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') x (18.92' - 2') = 880 ft.^{2}

C = 21.0' x 42.75' = 898 ft.^{2}

D = (53.33' - 1.33') x (16.25' - .67') = 810 ft.^{2}

E = (22.42' - 1.33') x 42.75' - 1/2[(42.75' - 24.58') x (22.42' - 1.33')] = 710 ft.^{2}

F = 1.5' x (55.58' - 53.33') + 1/2[1.5' x 1.5'] = 5 ft.^{2}

Total gross area = 3303 ft.^{2}

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

B = 1 x 11' dia.	=	95 ft.^{2}
1 x 6' dia.	=	28 ft.^{2}
1 x 5'4" dia.	=	22 ft.^{2}
2 x (3' x 4')	=	24 ft.^{2}
1 x 9' dia.	=	64 ft2
C = 2 x 11' dia.	=	190 ft.^{2}
1 x 10' dia.	=	79 ft.^{2}
D = 1 x 10' dia.	=	79 ft.^{2}
1 x 9' dia.	=	64 ft.^{2}
1 x 8' dia.	=	50 ft.^{2}
E = 1 x 10' dia.	=	79 ft.^{2}
Total =		774 ft.^{2}

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

Area B:

Net containment area = 880 ft.^{2} - 233 ft.^{2}
= 647 ft.^{2}
Dike height = 18" = 1.5 ft.
Containment volume = 647 ft.^{2} x 1.5 ft.
= 970.5 ft.^{3}
= 7,259 gal.

Area C:

Net containment area = 898 ft.^{2} - 269 ft.^{2}
= 629 ft.^{2}
Dike height = 18" = 1.5 ft.
Containment volume = 629 ft.^{2} x 1.5 ft.
= 944 ft.^{3}
= 7,061 gal.

Area D:

Net containment area = 810 ft.^{2} - 193 ft.^{2}
= 617 ft.^{2}
Dike height = 18" = 1.5 ft.
Containment volume = 617 ft.^{2} x 1.5 ft.
= 923 ft.^{3}
= 6,904 gal.

Area E:

Net containment area = 710 ft.^{2} - 79 ft.^{2}
= 631 ft.^{2}

Dike height = 18" = 1.5 ft.
Containment volume = 631 ft.^{2} x 1.5 ft.
= 947 ft.^{3}
= 7,084 gal.

Area F:

Net containment area = 5 ft.^{2} - 0
= 5 ft.^{2}
Dike height = 18" = 1.5 ft.
Containment volume = 5 ft.^{2} x 1.5 ft.
= 8 ft.^{3}
= 60 gal.

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

B = 7,259 gal
C = 7,061 gal
D = 6,904 gal
E = 7,084 gal
F = 60 gal
28,368 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."

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.

I INSPECTED THIS TANK BEFORE IT WAS INSTALLED. THE ORIGINAL CERTIFICATION CANNOT BE LOCATED.

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

Feb 18, 2014
Date Stamped & Certified

WISCONSIN
WILLIAM L.
HABLE
E-9778
BLOOMER
WI
2-18-14
PROFESSIONAL ENGINEER

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. 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

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

May 18 1995
Date Stamped & Certified

P.E. Stamp

WISCONSIN
DEPT. OF NATURAL RESOURCES
George E. Meyer
Secretary

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

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 certifcation 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,

Ginger K. Hooper

Ginger K. Hooper, CHMM
Hazardous Waste Specialist

c: Aggie Cook - SW/3 Lundberg

Waste Research & Reclamation Co. Inc.
715-834-9624 FAX 715-836-8785
5200 State Road 93, Eau Claire, Wisconsin 54701

Printed on recycled paper

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:

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 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.

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.

George Anderson, CHMM
Corporate Director of Compliance

enclosures

WISCONSIN
DEPT. OF NATURAL RESOURCES
George E. Meyer
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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

September 7, 1994

File Ref: 618026530
Eau Claire
HW/LIC

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.

Sincerely,

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

cc: E. Lynch - SW/3
G. Hooper - WD
W. 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,

William L. Hable P.E.
Consulting Engineer

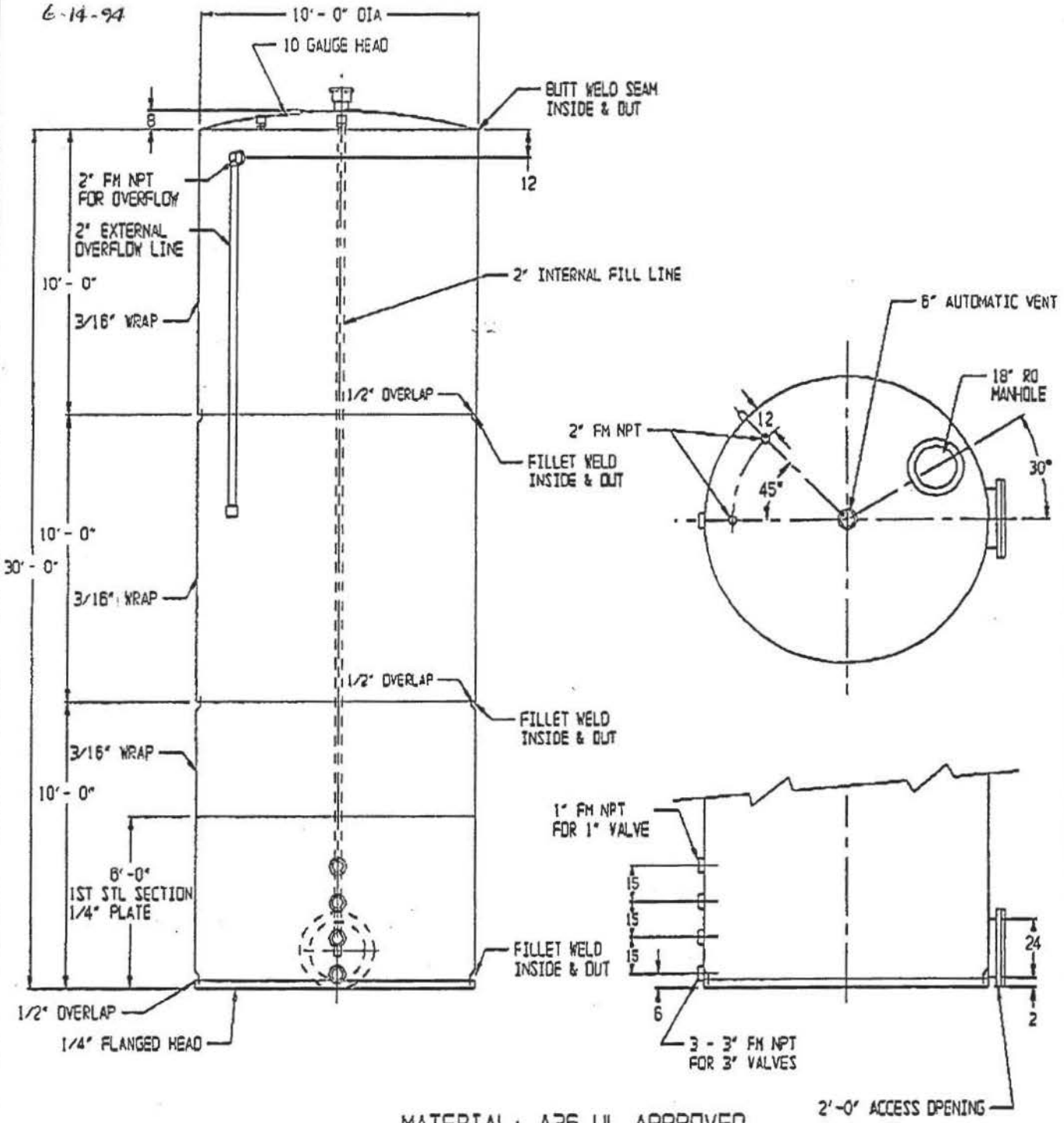
cc: George Anderson

Enclosure

BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	

WDE 2466

6-14-94



MATERIAL: A36 UL APPROVED

REV	DESCRIPTION	ECO	DATE

WASTE RESEARCH & RECLAMATION CO., INC.
5200 State Rd 93 EAU CLAIRE, WISCONSIN 54701 PHONE: (715) 834-9024

SLUDGE TANK ZZ ASSEMBLY
E-1 AREA

SCALE: NONE	DRAWN BY: J.L.D.	DRAWING NUMBER	REV
DATE: 6/8/94	APPROVED BY:		

000961

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. 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.

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. 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.

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

May 18 1995
Date Stamped & Certified

P.E. Stamp

WISCONSIN
DEPT. OF NATURAL RESOURCES
George E. Meyer
Secretary

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

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 certifcation 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,

Ginger K. Hooper

Ginger K. Hooper, CHMM
Hazardous Waste Specialist

c: Aggie Cook - SW/3 Lundberg

Waste Research & Reclamation Co. Inc.
715-834-9624 FAX 715-836-8785
5200 State Road 93, Eau Claire, Wisconsin 54701

Printed on recycled paper

March 22, 1995

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

REASON: Maintenance Replacement of Storage Tank CC

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:

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 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.

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.

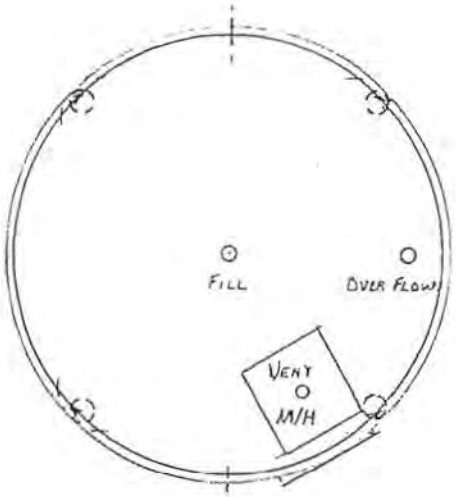
Protection against internal corrosion will continue to be provided by analyzing each waste prior to pumping into the tank system. Wastes corrosive to carbon steel are not in WRR's permit and are not accepted for storage. One-hundred percent of all wastes in tanks and containers accepted by WRR are analyzed 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.

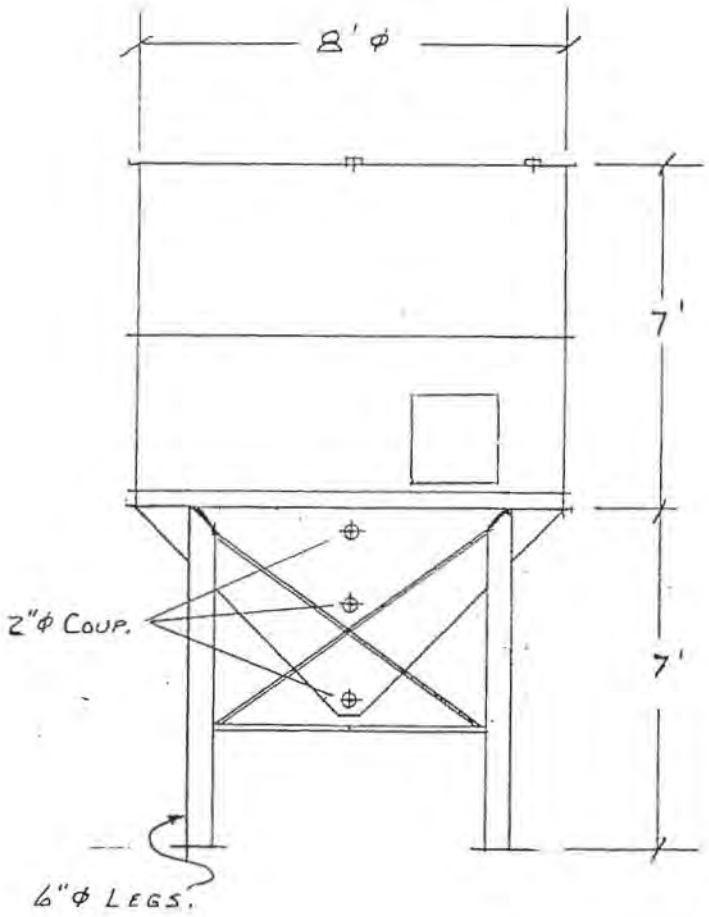
If any additional information is required by the Department please contact me at: (715) 834-9624.

WRR ENVIRONMENTAL SERVICES CO., INC.

George Anderson
Corporate Director of Compliance

enclosures



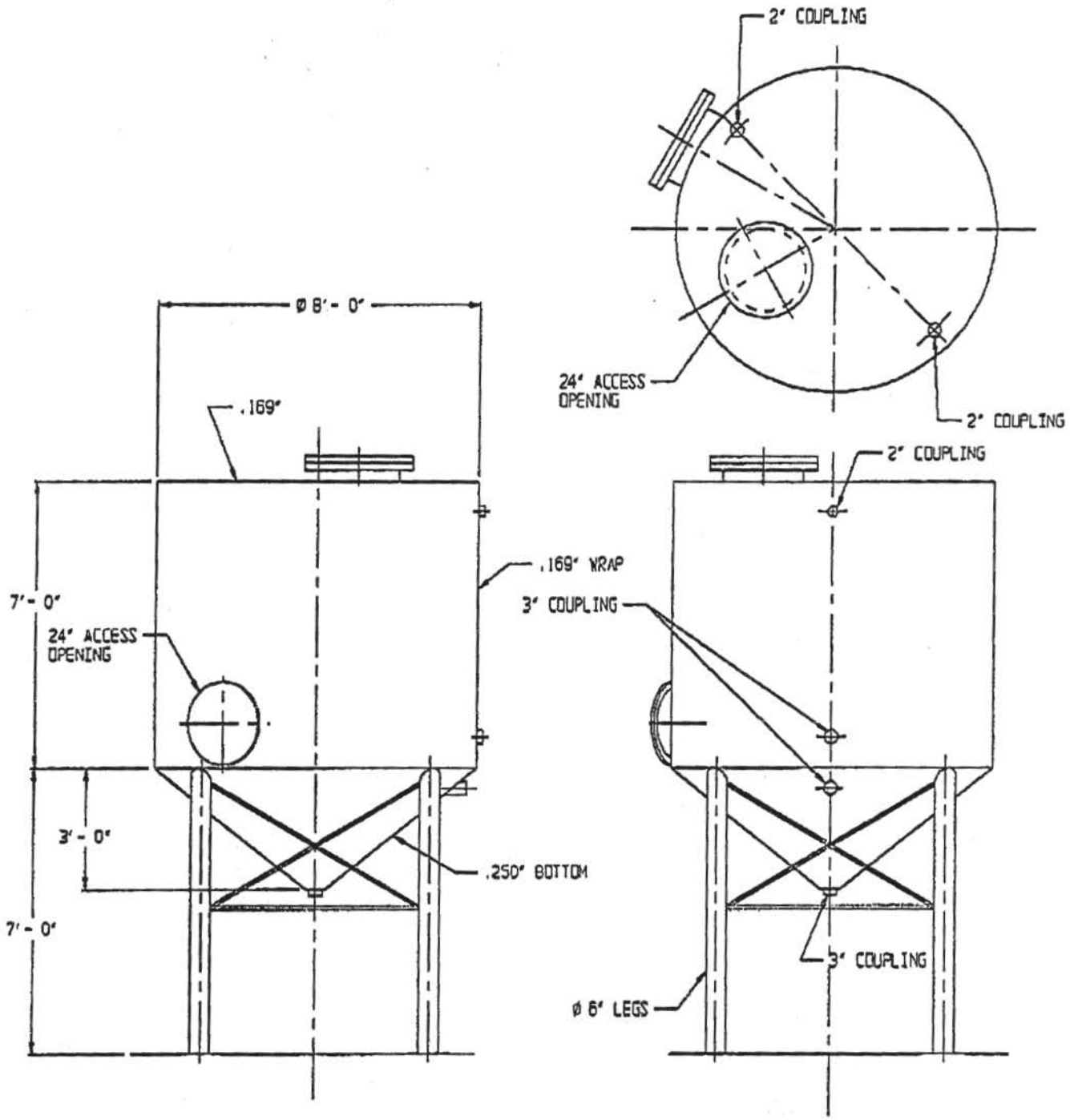


WASTE RESEARCH & RECLAMATION CO., INC.		
Route 7 EAU CLAIRE, WISCONSIN 54701 PHONE: (715) 834-9624		
WRR	SLUDGE TANK "C-C"	
SCALE: N.T.S.	DRAWN BY RM	DRAWING NUMBER: D-28 (22)
DATE: 1-29-83	APPROVED BY:	

000969

~~D-69~~ D-94

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



DH 4-12-95

				WASTE RESEARCH & RECLAMATION CO., INC.		
				Route 7 EAU CLAIRE, WISCONSIN 54701 PHONE: (715) 834-9624		
				WRR SLUDGE TANK "CC"		
				SCALE:	DRAWN BY: J.L.D.	DRAWING NUMBER D-28 (22) REV
REV	DESCRIPTION	ECO	DATE	DATE: 3/24/95	APPROVED BY:	

000970

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.

On 9-22-94 Vern Miller issued a Fire Permit for dismantling Tank CC. 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. 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 system was covered, enclosed or placed in use.

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

MARCH 22, 1995
Date Stamped & Certified

P.E. Stamp

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. 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

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

May 18, 1995
Date Stamped & Certified

P.E. Stamp

WISCONSIN
DEPT. OF NATURAL RESOURCES
George E. Meyer
Secretary

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

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 certifcation 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,

Ginger K. Hooper

Ginger K. Hooper, CHMM
Hazardous Waste Specialist

c: Aggie Cook - SW/3 Lundberg

Waste Research & Reclamation Co. Inc.
715-834-9624 FAX 715-836-8785
5200 State Road 93, Eau Claire, Wisconsin 54701

Printed on recycled paper

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:

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 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.

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.

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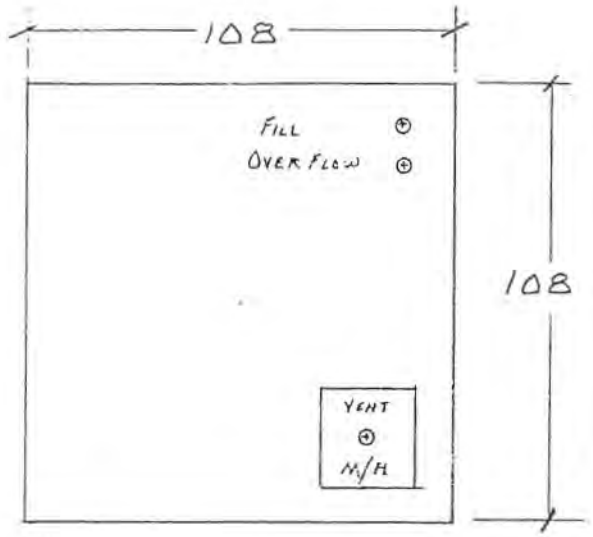
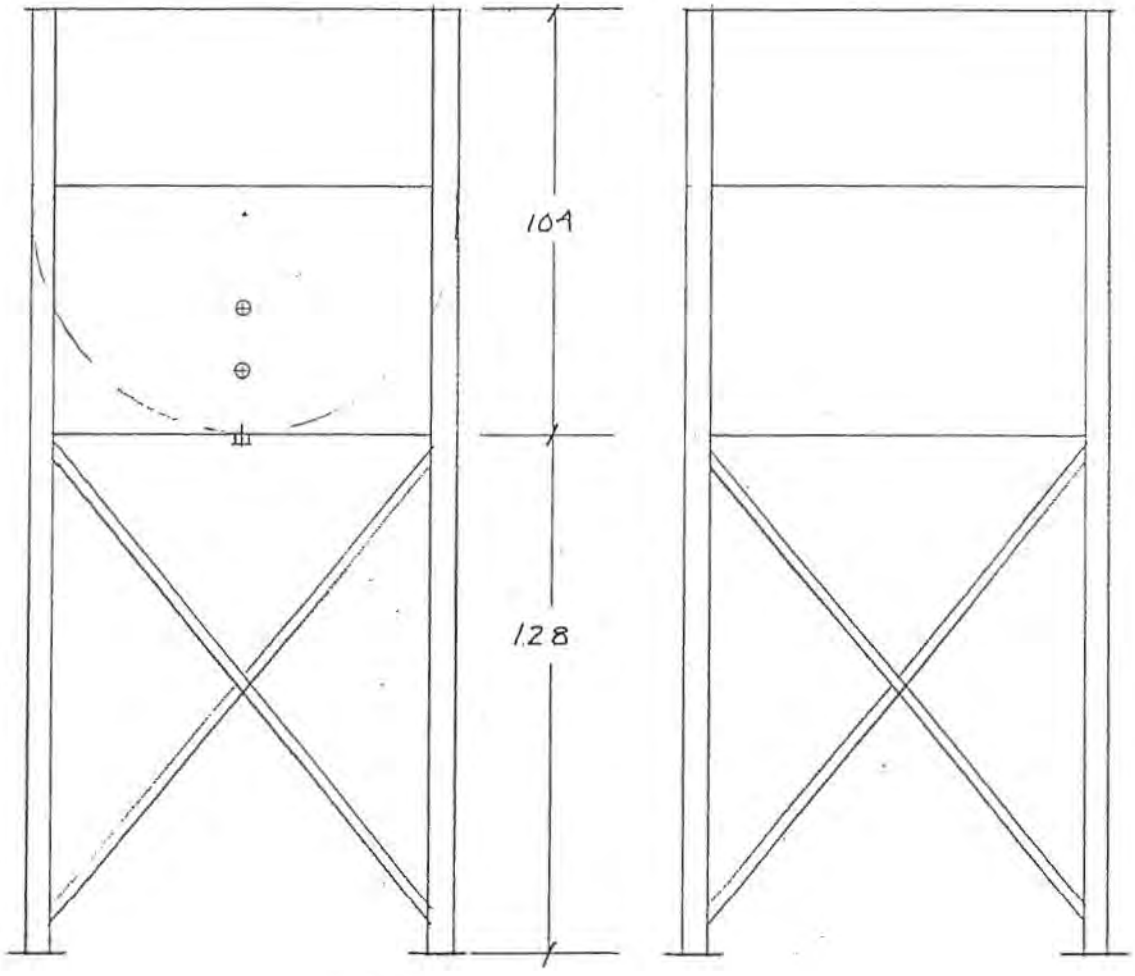
If any additional information is required by the Department please contact me at: (715) 834-9624.

WRR ENVIRONMENTAL SERVICES CO., INC.

George Anderson
Corporate Director of Compliance

enclosures





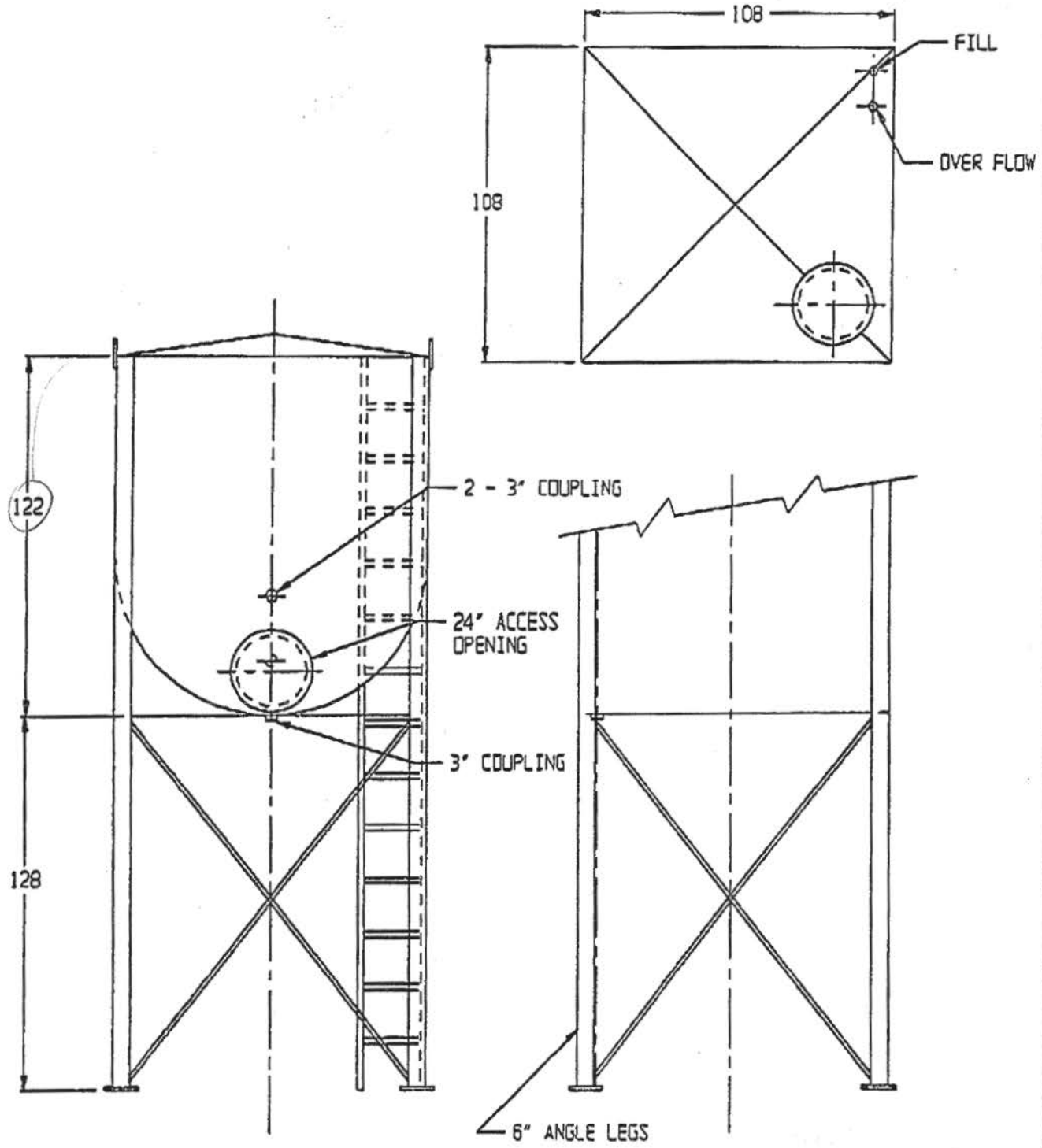
6"L LEGS

WASTE RESEARCH & RECLAMATION CO., INC.		
Route 7 EAU CLAIRE, WISCONSIN 54701 PHONE: (715) 834-9624		
WRR SLUDGE TANK DD (4500 GAL)		
SCALE: N.T.S.	DRAWN BY TM	DRAWING NUMBER D.28(23)
DATE: 1-29-83	APPROVED BY:	

000978

~~A-70~~ D-95

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



WASTE RESEARCH & RECLAMATION CO., INC.

Route 7 EAU CLAIRE, WISCONSIN 54701 PHONE: (715) 834-3624

SLUDGE TANK "DD" ASSEMBLY

(4500 GAL.)

SCALE: | DRAWN BY: J.L.D. | DRAWING NUMBER 000979 | REV

REV DESCRIPTION ECO DATE

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.

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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 tank system located at Waste Research & Reclamation, 5200 State Road 93, Eau Claire, WI which they designate as their tank system no. DD 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.
Plant Engineering & Environmental Consultant
P.E. Number 9778

March 22, 1995
Date Stamped & Certified

P.E. Stamp
W 24

"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."

William L. Hable
P.E. Number 9778

WRR™
WRR Environmental Services Co., Inc.
715-834-9624 FAX 715-836-8785
5200 State Road 93, Eau Claire, Wisconsin 54701

Printed on recycled paper

"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

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:

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.

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".

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.

George Anderson, CHMM
Corporate Director of Compliance

WRR ENVIRONMENTAL SERVICES CO., INC.

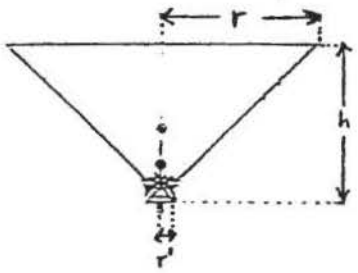
DESIGN REVIEW CALCULATIONS
FOR REPLACEMENT TANK EE

November 20, 1991

TANK VOLUME CALCULATIONS: $\pi \frac{\text{Inside Tank Diameter}}{4} \times \text{Tank Height} =$

$$\pi \frac{(9.96 \text{ ft.})^2}{4} \times 17 \text{ ft.}^2 = 1324 \text{ ft.}^3$$

$$\text{Capacity in Gallons} = 1324 \text{ ft}^3 \times 7.48 \frac{\text{gallons}}{\text{ft}^3} = 9904 \text{ Gallons}$$



$$\text{Cone Volume} = 1/3 \pi r^2 h \left[1 + \left(\frac{r'}{r}\right) + \left(\frac{r'}{r}\right)^2\right] =$$

$$1/3 \pi (4.98 \text{ ft.})^2 \times 5 \text{ ft.} \left[1 + \left(\frac{0.479 \text{ ft.}}{4.98 \text{ ft.}}\right)^2 + \left(\frac{0.479 \text{ ft.}}{4.98 \text{ ft.}}\right)^2\right] = 143 \text{ ft}^3$$

$$143 \text{ ft.}^3 \times 7.48 \text{ gal/ft}^3 = 1070 \text{ Gallons}$$

Total Capacity = Cone Volume + Tank Volume =

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

WEIGHT OF TANK CONTENTS:

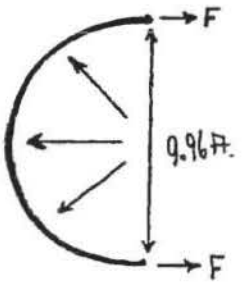
Flammable liquids are stored in these tanks. The average density of materials is about 1.0. However, a conservative density of 1.5 for a chlorinated hydrocarbon will be used.

Maximum weight of contents at a density of 1.5 = Volume of Tanks x Conversion factor to water weight x density = 1467 ft^3 x 62.4 lbs/$ft.^3$ 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 = $\frac{62.4 \text{ ft.} \times 1.5}{144} \times 17 \text{ ft.} = 11.05 \text{ PSI}$



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

Hoop stress of 1/4" thick shell = $\frac{\text{internal stress}}{\text{shell thickness x 1}}$ =

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

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 PSI

- Exceeds required strength

TANK WEIGHT CALCULATIONS:

Shell steel area = ¶ x diameter x height =
¶ x 10 ft. x 17 ft. = 533.8 ft.^{2}

1/4" plate steel weight = 10.20 lbs/ft.^{2}
Weight of shell = 533.8 ft.^{2} x 10.20 lbs/ft.^{2} = 5445 lbs.

Tank top area = ¶ $\frac{10 \text{ ft.}^2}{4}$ = 78.5 ft.^{2}

Weight of tank top = 78.5 ft.^{2} x 10.20 lbs/ft.^{2} = 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.^{2} 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.

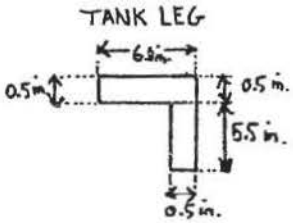
Maximum weight of tank plus contents = 137,311 lbs. + 8113 lbs. = 145,424 lbs.

TANK BASE LEG LOADING:

$\frac{\text{Total weight}}{\text{Number of legs}}$ = weight per leg

$\frac{145{,}424 \text{ lbs.}}{4 \text{ legs}}$ = 36,356 lbs/leg

Leg Area = length x width =
(6.0 in. x 0.5 in.) + (5.5 in. x 0.5 in.) = 5.75 in.^{2}



Column stress = $\frac{\text{weight per leg}}{\text{area of leg}} = \frac{36{,}356 \text{ lbs.}}{5.75 \text{ in}^2}$

= 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 =
$1.0 \times [(17 \text{ ft.} \times 10 \text{ ft.}) + (\frac{10 \text{ ft.} + 1 \text{ ft.}}{2} \times 5 \text{ ft.})] 20 \text{ lbs/ft}^2 = 3950 \text{ lbs.}$

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

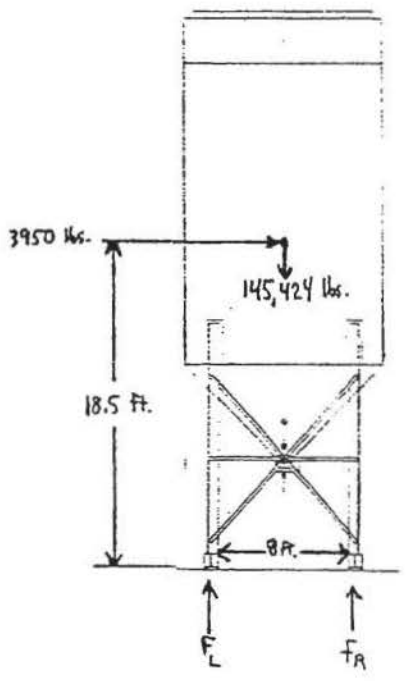
$F_R = 145{,}424 \text{ lbs.} - 63{,}578 \text{ lbs.} = 81{,}846 \text{ lbs.}$

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

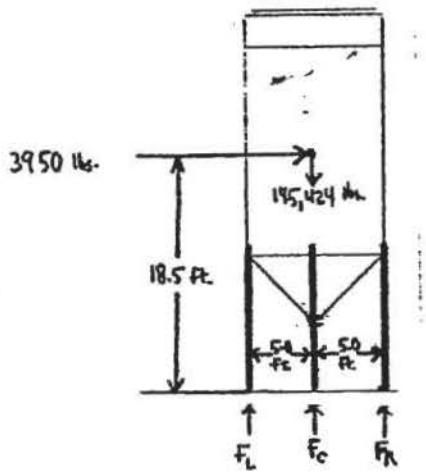
Force on each right leg = $\frac{81{,}846 \text{ lbs.}}{2} = 40{,}923 \text{ lbs.}$

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

*This is within allowable limits for no leg bracing.



COLUMN LOADING WITH 45° WIND CHANGE



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

$$\frac{11\ F_L + 5.5\ F_C}{5.0} = \frac{654,045}{5.0}$$

$$2\ F_L + F_C = 130,809 \text{ lbs.}$$

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

$$F_C = \frac{145,424}{2} = 72,712 \text{ lbs.}$$

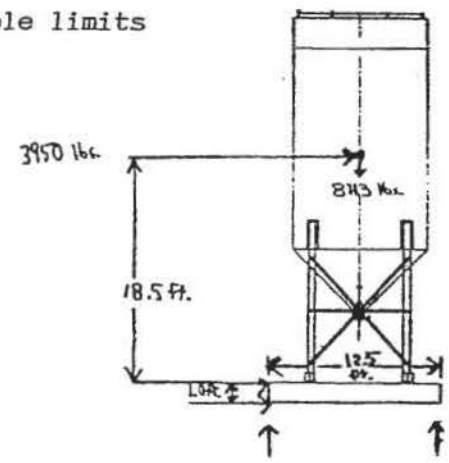
$$F_L + F_R = 72,712 \text{ lbs.}$$

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.

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

*Right leg column stress within acceptable limits

90 MPH Wind Loading on Empty Tank:

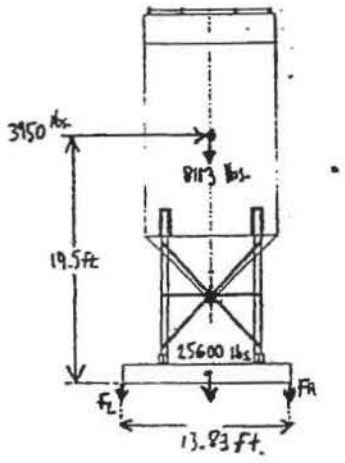


Couple force at F_R =
(3950 lbs. x 18.5) - (8113 lbs. x 6.25) + 12.5 F_L = 0
73,075 lbs. - 50,706 lbs. + 12.5 F_L = 0
12.5 F_L = - 22,369 lbs.
F_L = 1790 lbs.

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/ft^3 x 173 ft^3 = 25,600 lbs.



Couple force at F_R =
(3950 lbs. x 19.5) - [(8113 lbs. + 25,600 lbs.)6.915 ft.] + 13.83 ft. F_L = 0
77,025 lbs. - 239,259 lbs. + 13.83 F_L = 0
13.83 F_L = 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.

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. 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.

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

May 12, 1999
Date Stamped & Certified

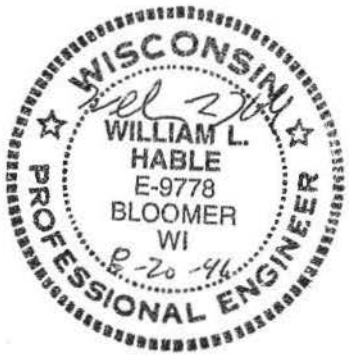
P.E. Stamp

"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



WRR™
WRR Environmental Services Co., Inc.
715-834-9624 FAX 715-836-8785
5200 State Road 93, Eau Claire, Wisconsin 54701

Printed on recycled paper

"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:

1) 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.

2) 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

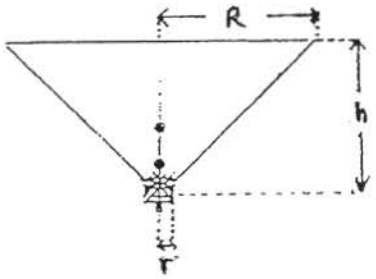
WRR ENVIRONMENTAL SERVICES CO., INC
DESIGN REVIEW CALCULATIONS
FOR REPLACEMENT TANKS FF & VV

August 1, 1996
Revised August 19, 1996

TANK VOLUME CALCULATIONS:

$= \frac{\pi}{4}$ (Inside Tank Diameter)^2 x Tank Height
$= \frac{\pi}{4}$ (10.96 ft.)^2 x 17 ft.
$= 1603$ ft.^{3}

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



Cone volume $= \frac{\pi}{3} R^2h[1 + (\frac{r}{R}) + (\frac{r}{R})^2]$
$= \frac{\pi}{3}$ (5.479 ft.)^2 x (5 ft.)$[1 + (\frac{.479 \text{ ft.}}{5.479 \text{ ft.}}) + (\frac{.479 \text{ ft.}}{5.479 \text{ ft.}})^2]$
$= 172$ ft.^{3} 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:

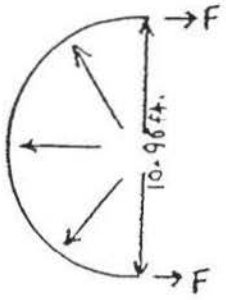
A conservative value of 1.5 will be used for the density of the liquid stored in the tanks.

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 $\frac{\text{lbs.}}{\text{ft.}^3}$ 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 = $\frac{62.4 \text{ ft.} \times 1.5 \times 17 \text{ ft.}}{144}$ = 11.05 psi



For a 1" wide hoop:

Area = (10.96 ft.) x $12\frac{\text{in.}}{\text{ft.}}$ x 1" = 131.5 in.^{2}

2F = 131.5 in.^{2} x 11.05 psi = 1453 lbs.

F = $\frac{1453 \text{ lbs.}}{2}$ = 726.5 lbs.

Hoop stress of 1/4" thick shell = $\frac{\text{internal stress}}{\text{shell thickness x 1}}$

= $\frac{726.5 \text{ lbs.}}{1/4" \text{ x } 1"}$ = 2906 psi

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 = π x height x conversion factor x shell thickness

= π x 11 ft. x 12 $\frac{\text{in.}}{\text{ft.}}$ x 1/4" = 103.7 in.^{2}

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

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

* Exceeds the required strength

TANK WEIGHT CALCULATIONS:

Shell steel area = π x diameter x height

= π x 11 ft. x 17 ft.

= 587.5 ft.^{2}

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

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

Tank top area = $\frac{\pi}{4}$ (11 ft.^{2}) = 95 ft.^{2}

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

Bottom cone area = π (5.5 ft. + .5 ft.) $\sqrt{(5.5 \text{ ft.} + .5 \text{ ft}) + (5 \text{ ft.})^2}$
= 133 ft.^{2}

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

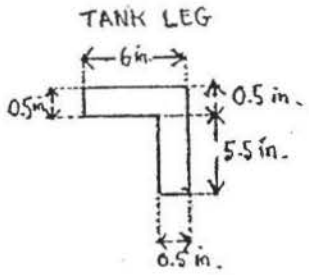
Estimated weight of miscellaneous steel and fittings = 684 lbs.

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



Leg area = length x width
= (6.0" + .5") + (5.5" + .5")
= 5.75 in.^{2}

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

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

* 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.

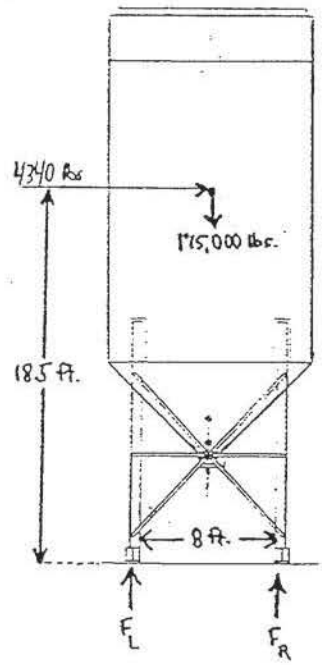
WIND LOAD CALCULATIONS:

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

$$= 1.0 \times \left[(17 \text{ ft.} \times 11 \text{ ft.}) + \frac{(11 \text{ ft.} + 1 \text{ ft.} \times 5 \text{ ft.})}{2}\right] \times 20 \text{ psf}$$

$$= 4340 \text{ lbs.}$$



Couple stress at right leg:

$(4340 \text{ lbs} \times 18.5 \text{ ft.}) - (175{,}000 \text{ lbs} \times 4 \text{ ft.}) + (F_L \times 8 \text{ ft.}) = 0$

$80{,}290 \text{ ft-lbs} - 700{,}000 \text{ lbs} + 8F_L = 0$

$8F_L = 619{,}710 \text{ lbs}$

$F_L = 77{,}463.75 \text{ lbs}$

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

Force on each left leg = $\frac{77{,}463.75 \text{ lbs}}{2} = 38{,}732 \text{ lbs}$

Force on each right leg = $\frac{97{,}536.25 \text{ lbs}}{2} = 48{,}768 \text{ lbs}$

Right leg column stress = $\frac{48{,}768 \text{ lbs}}{5.75 \text{ in.}^2} = 8481 \text{ psi}$

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

COLUMN LOADING WITH 45° WIND CHANGE:

Couple force at F_R:

$(4340 \text{ lbs} \times 18.5 \text{ ft}) - (175{,}000 \text{ lbs} \times 5.5 \text{ ft.}) + 11F_L + 5.5F_C = 0$

$80{,}290 \text{ lbs} - 962{,}500 \text{ lbs} + 11F_L + 5.5F_C = 0$

$\frac{11F_L + 5.5F_C}{5.5} = \frac{882{,}210}{5.5}$

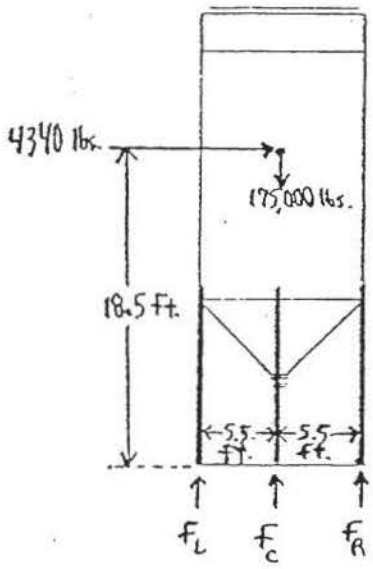
$2F_L + F_C = 160{,}402 \text{ lbs}$

Couple force at F_C:

$(4340 \text{ lbs} \times 18.5 \text{ ft.}) + 5.5F_L - 5.5F_R = 0$

$80{,}290 \text{ lbs} + 5.5F_L - 5.5F_R = 0$

$F_L - F_R = -14{,}598 \text{ lbs}$



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_C is:

$F_L = F_R - 14{,}598 \text{ lbs}$

$F_R - 14{,}598 \text{ lbs} + F_R = 87{,}500 \text{ lbs}$

$2F_R = 87{,}500 \text{ lbs} + 14{,}598 \text{ lbs}$

$F_R = 51{,}049 \text{ lbs.}$

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:

$(4340 \text{ lbs} \times 18.5 \text{ ft.}) - (9000 \text{ lbs} \times 6.25 \text{ ft.}) + 12.5F_L = 0$

$80{,}290 \text{ lbs} - 56{,}250 \text{ lbs} + 12.5F_L = 0$

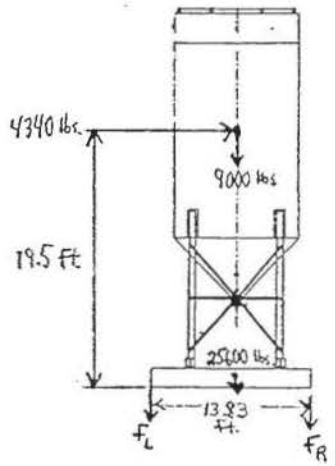
$12.5F_L = -24{,}040 \text{ lbs}$

$F_L = 1923 \text{ lbs.}$

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

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

$= 25{,}600 \text{ lbs.}$

Coupling force at F_R:

$(4340 \text{ lbs} \times 19.5 \text{ ft.}) - [(9000 \text{ lbs} + 25{,}600 \text{ lbs}) \times 6.915 \text{ ft.}] + 13.83F_L = 0$

$84{,}630 \text{ lbs} - 239{,}259 \text{ lbs} + 13.83 F_L = 0$

$13.83 F_L = 166{,}044 \text{ lbs}$

$F_L = 11{,}181 \text{ lbs}$

* 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)

$A = 7 \times 11' \text{ dia.} = 665 \text{ ft.}^2$

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:

$= 1159 \text{ ft.}^2 \times 3.875 \text{ ft.}$

$= 4491 \text{ ft.}^3$

$= 33{,}594 \text{ gallons}$

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

Total gross area = 3303 ft.^{2}

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

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

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

Area B:

Net containment area = 880 ft.^{2} - 198 ft.^{2}
= 682 ft.^{2}
Dike height = 18" = 1.5 ft.
Containment volume = 682 ft.^{2} x 1.5 ft.
= 1023 ft.^{3}
= 7,652 gal.

Area C:

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

Area D:

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

Area E:

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

Area F:

Net containment area = 5 $ft.^2$ - 0
= 5 $ft.^2$
Dike height = 18" = 1.5 ft.
Containment volume = 5 $ft.^2$ x 1.5 ft.
= 8 $ft.^3$
= 60 gal.

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

B = 7,652 gal
C = 7,061 gal
D = 6,904 gal
E = 7,084 gal
F = 60 gal
28,761 gal

Total containment available = 28,761 gallons

Secondary containment required:

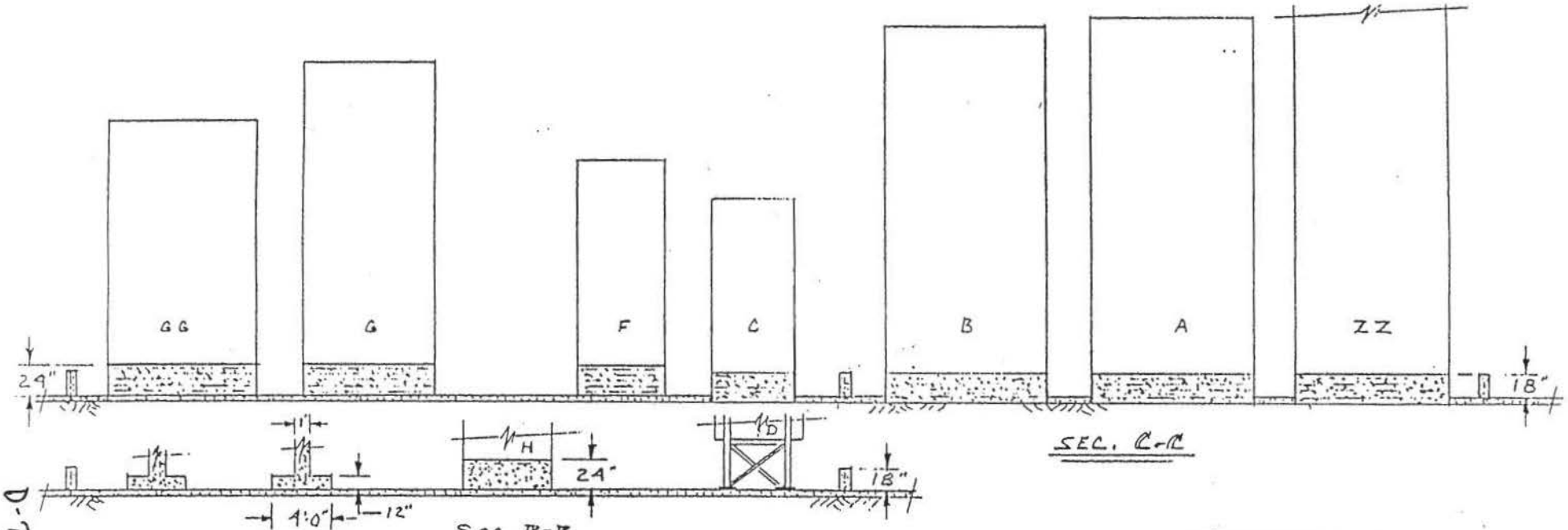
The secondary containment required was calculated by adding 10% of the total tank capacities or 100% of the largest tank capacity to the rainfall accumulated during a 24 hour 25 year storm.

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

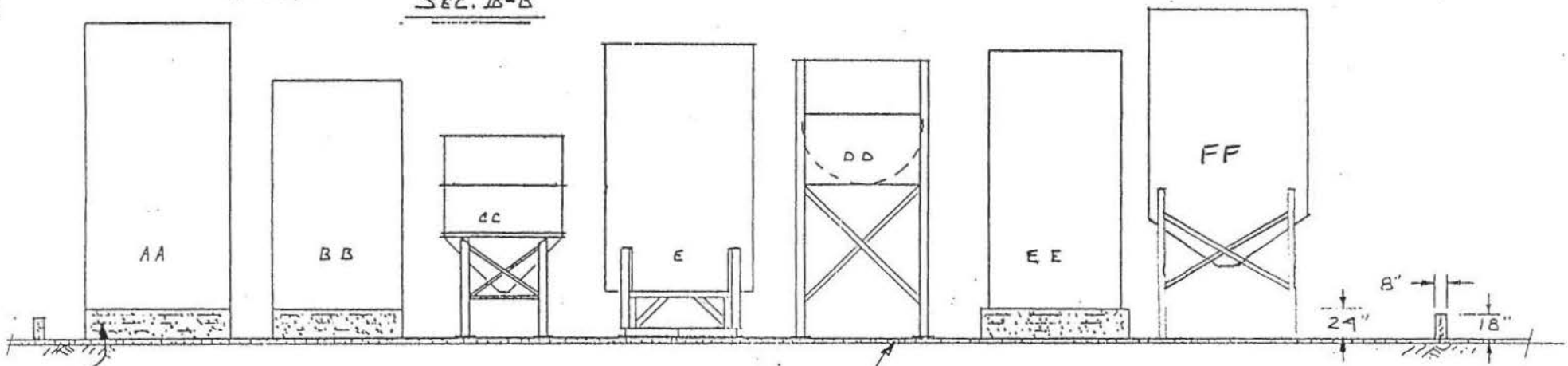
Total containment required:

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

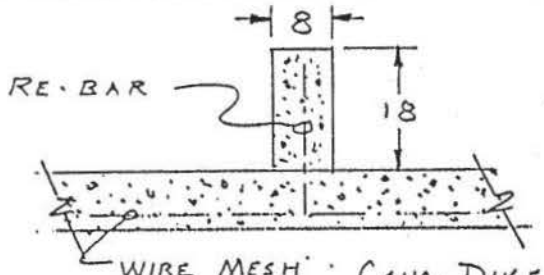
The E-I East tank containment system exceeds the secondary containment requirements by 1,996 gallons.



D-74



CIRCULAR TANK PADS ARE REINFORCED CONC. 24" THICK



CONC. DIKE DETAILS

WISCONSIN
WILLIAM L. HABLE
E-9778
BLOOMER
WI
PROFESSIONAL ENGINEER

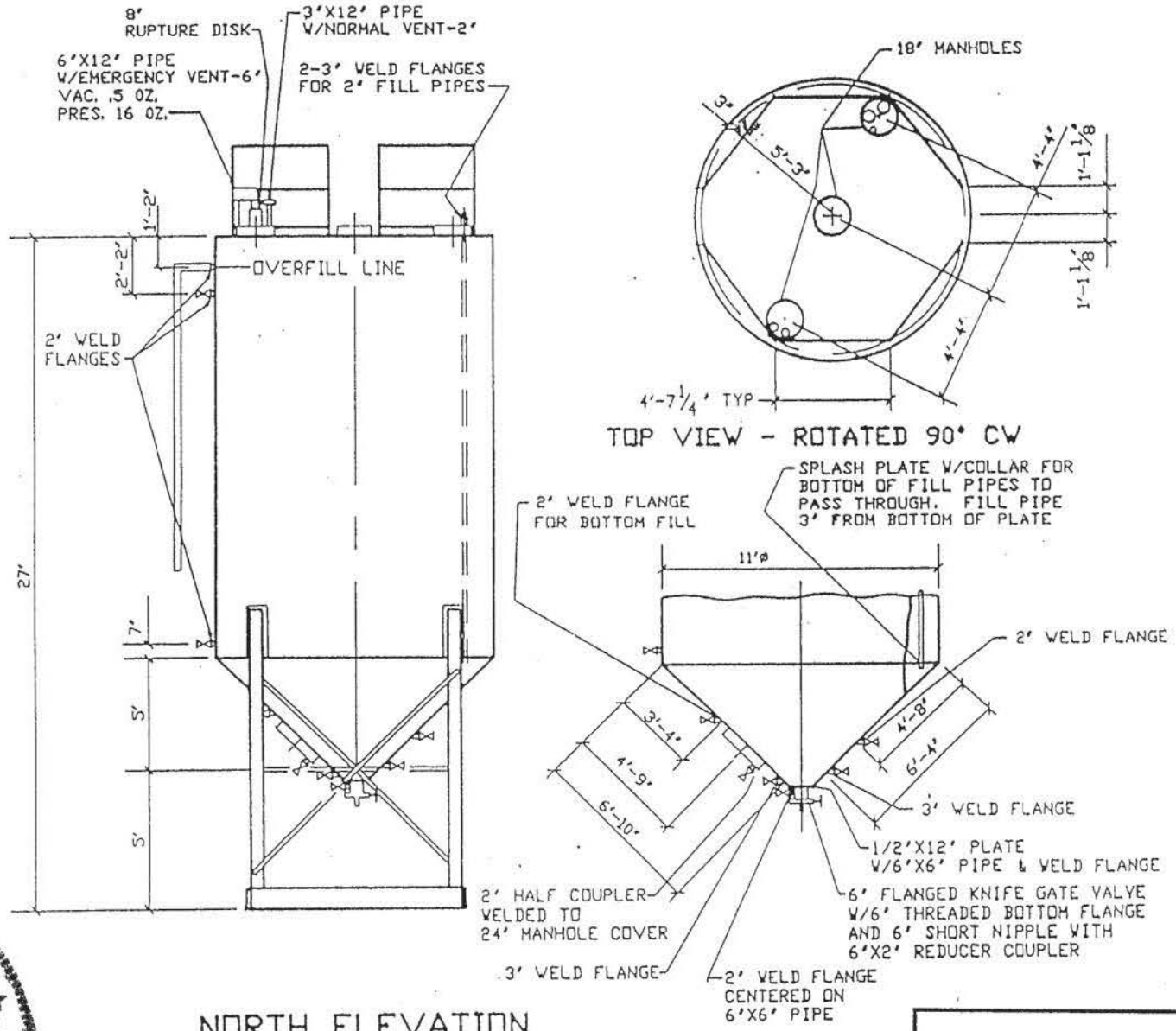
WRR ENVIRONMENTAL SERVICES CO., INC

5200 State Road 93, Eau Claire, Wisconsin

E-I Sludge Dike Sections
& Concrete Tank Pads

revised 08/19/96

001008



NORTH ELEVATION

D-97

WISCONSIN
WILLIAM L. HABLE
E-9778
BLOOMER
WI
8-20-96
PROFESSIONAL ENGINEER

WRR ENVIRONMENTAL SERVICES CO., INC
5200 State Road 93, Eau Claire, Wisconsin
SLUDGE TANK F F Welding Assembly
Revised August 9, 1996

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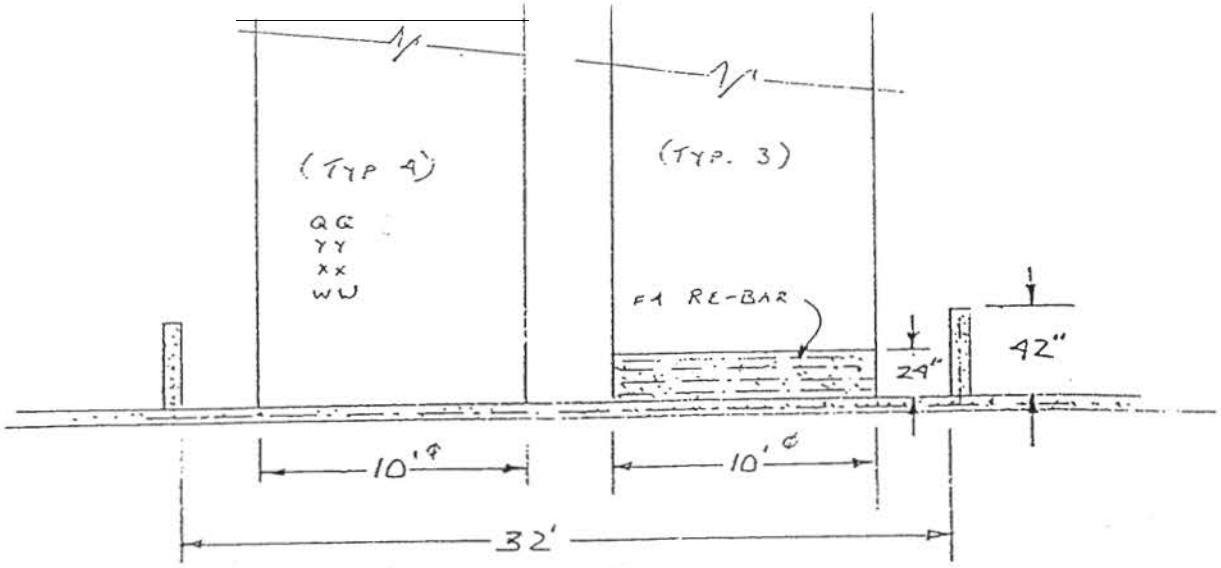
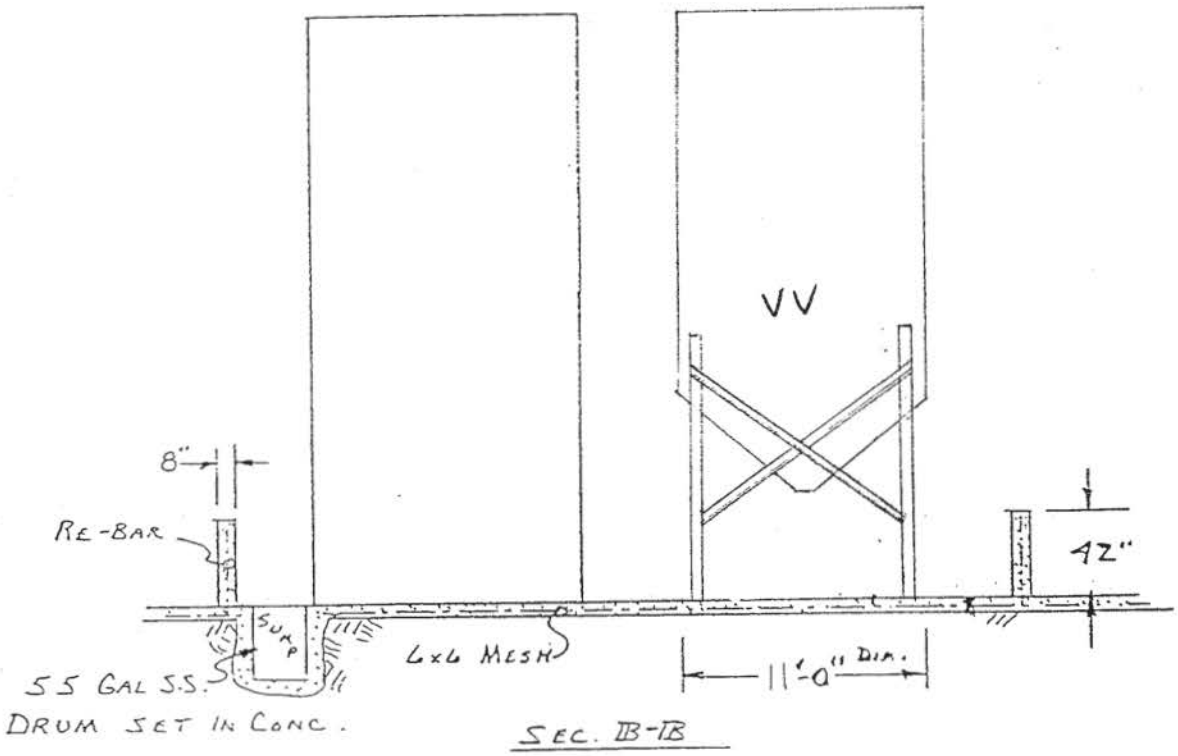


SEC. A-A



SEC. B-B

NOTE:
PIPING IS ABOVE GROUND AND OVER SECONDARY CONTAINMENT

WISCONSIN
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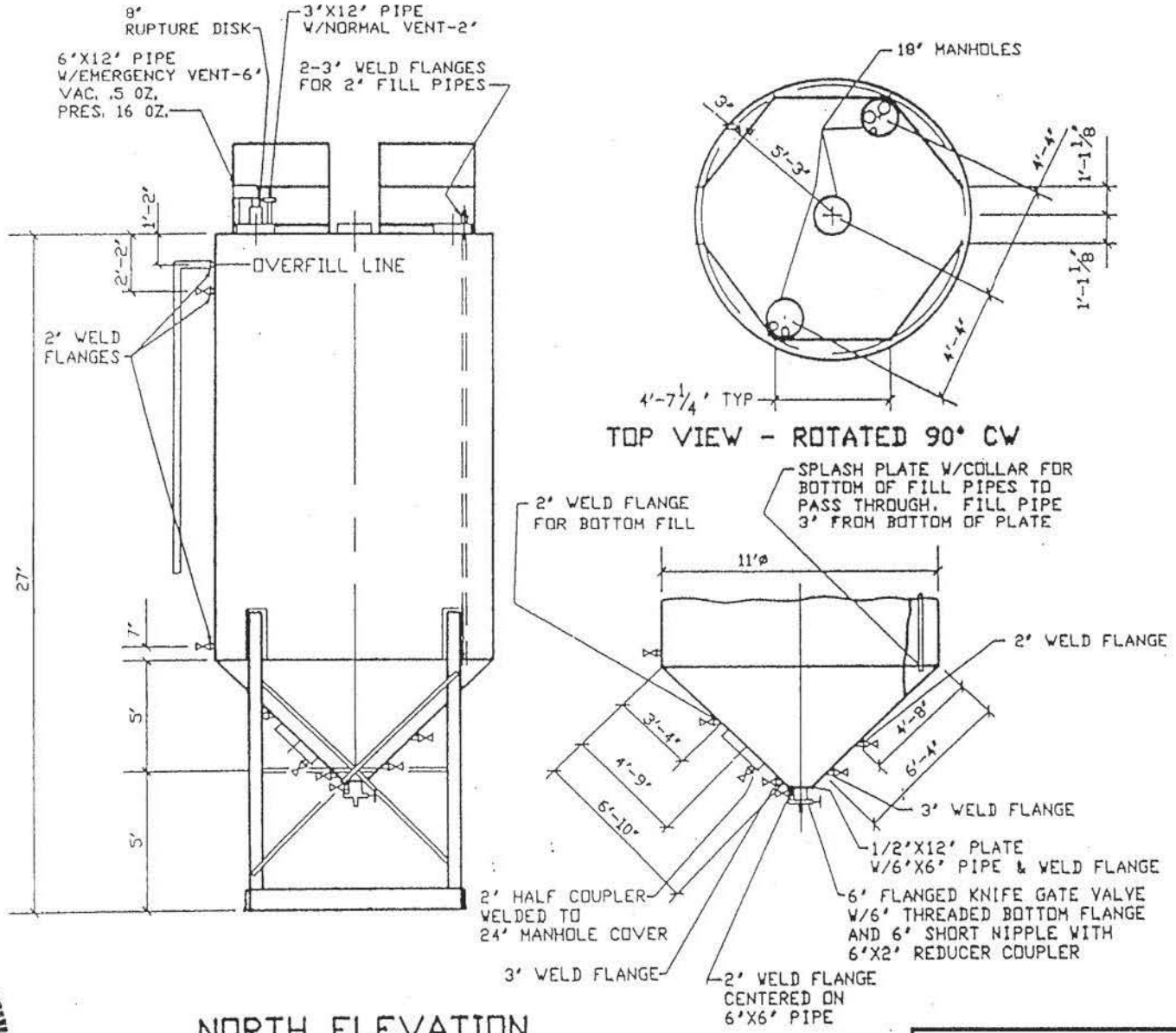
E-9778
BLOOMER
WI
8-20-96
PROFESSIONAL ENGINEER

WRR ENVIRONMENTAL SERVICES CO., INC
5200 State Road 93, Eau Claire, Wisconsin
Sludge Tank Dike South of E-I
Revised 08/19/96

001010



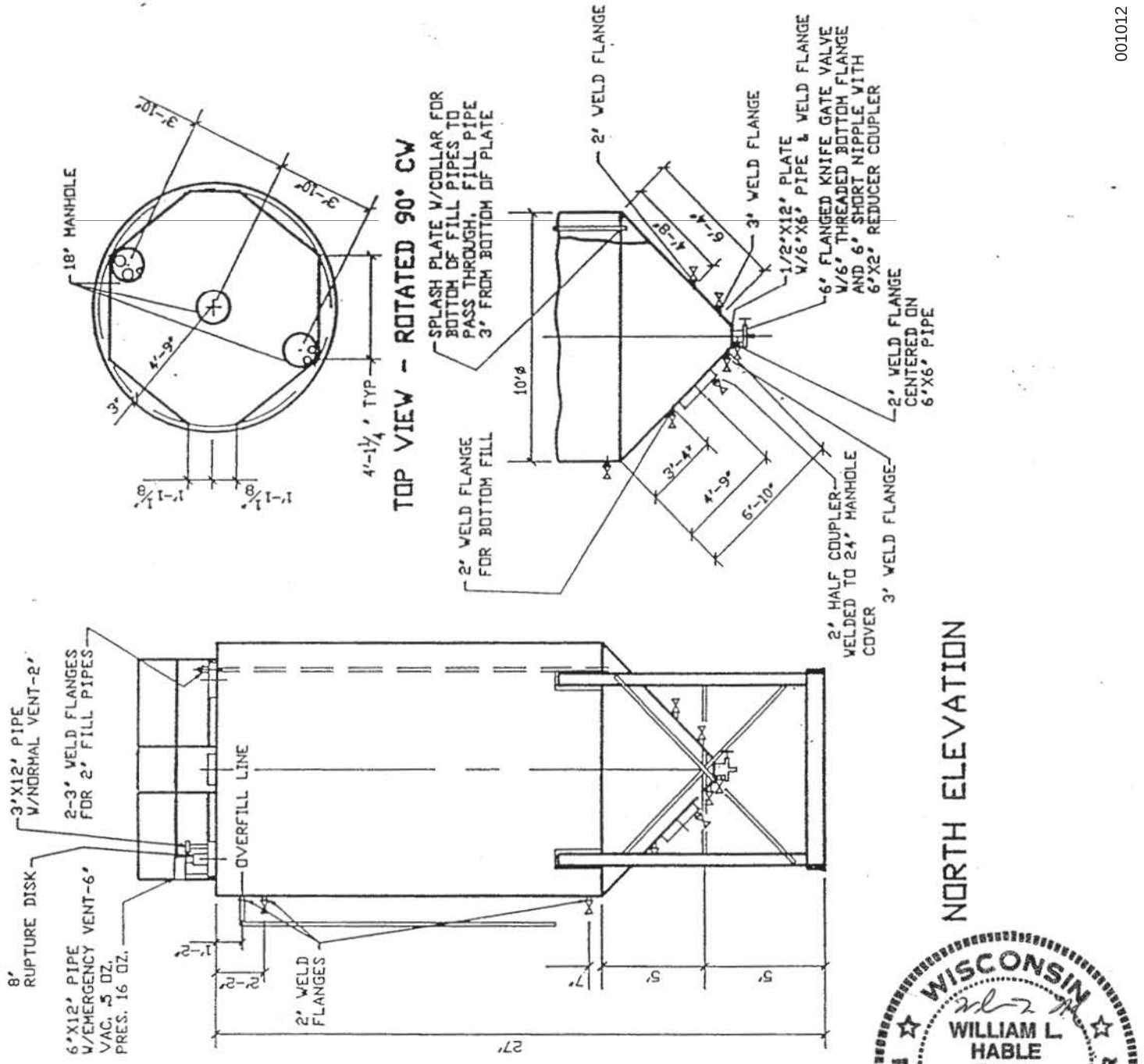
NORTH ELEVATION

D-112

WISCONSIN
WILLIAM L. HABLE
E-9778
BLOOMER
WI
8-20-96
PROFESSIONAL ENGINEER

WRR ENVIRONMENTAL SERVICES CO., INC
5200 State Road 93, Eau Claire, Wisconsin
SLUDGE TANK V V Welding Assembly
Revised August 9, 1996

001011



				WRR ENVIRONMENTAL SERVICES CO., INC			
				PIPING ASSEMBLY RESIDUE HOLDING E-2 TANK VV			
B	REDRAWN		09APR92	SCALE: NONE	DRAWN BY: GEN	DRAWING NUMBER: A-486	REV: B
REV	DESCRIPTION	ECO	DATE	DATE: 09APR92	APPROVED BY:		

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 FF 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.

I Inspected This Tank Before It Was Installed. The Original Certification Cannot Be Located

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

Feb 14, 2014
Date Stamped & Certified

WISCONSIN
WILLIAM L.
HABLE
E-9778
BLOOMER
WI
2-12-14
PROFESSIONAL ENGINEER

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. VV 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.
Plant Engineering & Environmental Consultant
P.E. Number 9778

Aug 28, 1991
Date Stamped & Certified

P.E. William L.

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

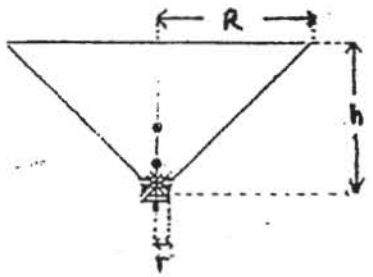
October 23, 2000

WISCONSIN
WILLIAM L HABLE
E-9778
BLOOMER
WI
10-25-00
PROFESSIONAL ENGINEER

TANK VOLUME CALCULATIONS:

$= \frac{\pi}{4}$ (Inside Tank Diameter)^2 x Tank Height
$= \frac{\pi}{4}$ (10.96 ft.)^2 x 17 ft.
$= 1603$ ft.^{3}

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



Cone volume $= \frac{\pi}{3} R^2 h[1 + (\frac{r}{R}) + (\frac{r}{R})^2]$
$= \frac{\pi}{3}$ (5.479 ft.)^2 x (5 ft.)$[1 + (\frac{.479 \text{ ft.}}{5.479 \text{ ft.}}) + (\frac{.479 \text{ ft.}}{5.479 \text{ ft.}})^2]$
$= 172$ ft.^{3} 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:

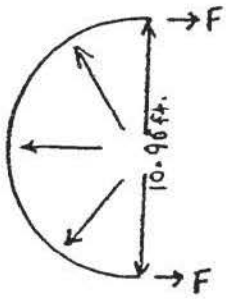
A conservative value of 1.5 will be used for the density of the liquid stored in the tanks.

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 $\frac{\text{lbs.}}{\text{ft.}^3}$ 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 = $\frac{62.4 \text{ ft.} \times 1.5 \times 17 \text{ ft.}}{144}$ = 11.05 psi



For a 1" wide hoop:

Area = (10.96 ft.) x $12\frac{\text{in.}}{\text{ft.}}$ x 1" = 131.5 in.^{2}

2F = 131.5 in.^{2} x 11.05 psi = 1453 lbs.

F = $\frac{1453 \text{ lbs.}}{2}$ = 726.5 lbs.

Hoop stress of 1/4" thick shell = $\frac{\text{internal stress}}{\text{shell thickness x 1}}$

= $\frac{726.5 \text{ lbs.}}{1/4" \text{ x } 1"}$ = 2906 psi

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 = π x height x conversion factor x shell thickness

= π x 11 ft. x 12 $\frac{\text{in.}}{\text{ft.}}$ x 1/4" = 103.7 in.^{2}

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

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

* Exceeds the required strength

TANK WEIGHT CALCULATIONS:

Shell steel area = π x diameter x height

= π x 11 ft. x 17 ft.

= 587.5 ft.^{2}

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

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

Tank top area = $\frac{\pi}{4}$ (11 ft.^{2}) = 95 ft.^{2}

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

Bottom cone area = π (5.5 ft. + .5 ft.) $\sqrt{(5.5 \text{ ft.} + .5 \text{ ft}) + (5 \text{ ft.})^2}$
= 133 ft.^{2}

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

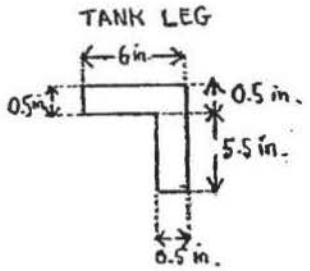
Estimated weight of miscellaneous steel and fittings = 684 lbs.

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



Leg area = length x width
= (6.0" + .5") + (5.5" + .5")
= 5.75 in.^{2}

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

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

* 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.

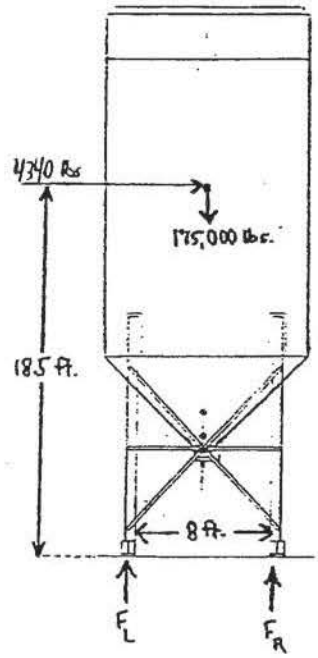
WIND LOAD CALCULATIONS:

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

$$= 1.0 \times \left[(17 \text{ ft.} \times 11 \text{ ft.}) + \frac{(11 \text{ ft.} + 1 \text{ ft.} \times 5 \text{ ft.})}{2}\right] \times 20 \text{ psf}$$

$$= 4340 \text{ lbs.}$$



Couple stress at right leg:

$(4340 \text{ lbs} \times 18.5 \text{ ft.}) - (175{,}000 \text{ lbs} \times 4 \text{ ft.}) + (F_L \times 8 \text{ ft.}) = 0$

$80{,}290 \text{ ft-lbs} - 700{,}000 \text{ lbs} + 8F_L = 0$

$8F_L = 619{,}710 \text{ lbs}$

$F_L = 77{,}463.75 \text{ lbs}$

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

Force on each left leg $= \frac{77{,}463.75 \text{ lbs}}{2} = 38{,}732 \text{ lbs}$

Force on each right leg $= \frac{97{,}536.25 \text{ lbs}}{2} = 48{,}768 \text{ lbs}$

Right leg column stress $= \frac{48{,}768 \text{ lbs}}{5.75 \text{ in.}^2} = 8481 \text{ psi}$

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

COLUMN LOADING WITH 45° WIND CHANGE:

Couple force at F_R:

$(4340 \text{ lbs} \times 18.5 \text{ ft}) - (175{,}000 \text{ lbs} \times 5.5 \text{ ft.}) + 11F_L + 5.5F_C = 0$

$80{,}290 \text{ lbs} - 962{,}500 \text{ lbs} + 11F_L + 5.5F_C = 0$

$\frac{11F_L + 5.5F_C}{5.5} = \frac{882{,}210}{5.5}$

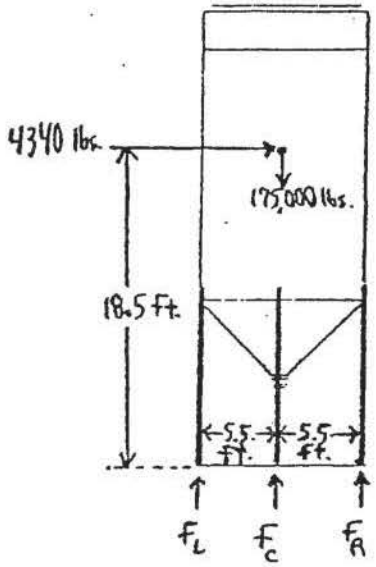
$2F_L + F_C = 160{,}402 \text{ lbs}$

Couple force at F_C:

$(4340 \text{ lbs} \times 18.5 \text{ ft.}) + 5.5F_L - 5.5F_R = 0$

$80{,}290 \text{ lbs} + 5.5F_L - 5.5F_R = 0$

$F_L - F_R = -14{,}598 \text{ lbs}$



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_C is:

$F_L = F_R - 14{,}598 \text{ lbs}$

$F_R - 14{,}598 \text{ lbs} + F_R = 87{,}500 \text{ lbs}$

$2F_R = 87{,}500 \text{ lbs} + 14{,}598 \text{ lbs}$

$F_R = 51{,}049 \text{ lbs.}$

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:

$(4340 \text{ lbs} \times 18.5 \text{ ft.}) - (9000 \text{ lbs} \times 6.25 \text{ ft.}) + 12.5F_L = 0$

$80{,}290 \text{ lbs} - 56{,}250 \text{ lbs} + 12.5F_L = 0$

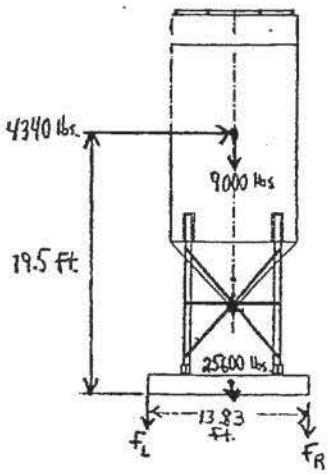
$12.5F_L = -24{,}040 \text{ lbs}$

$F_L = 1923 \text{ lbs.}$

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

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

$= 25{,}600 \text{ lbs.}$

Coupling force at F_R:

$(4340 \text{ lbs} \times 19.5 \text{ ft.}) - [(9000 \text{ lbs} + 25{,}600 \text{ lbs}) \times 6.915 \text{ ft.}] + 13.83F_L = 0$

$84{,}630 \text{ lbs} - 239{,}259 \text{ lbs} + 13.83 F_L = 0$

$13.83 F_L = 166{,}044 \text{ lbs}$

$F_L = 11{,}181 \text{ lbs}$

* 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:

1) 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.

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.

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.

6) 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.

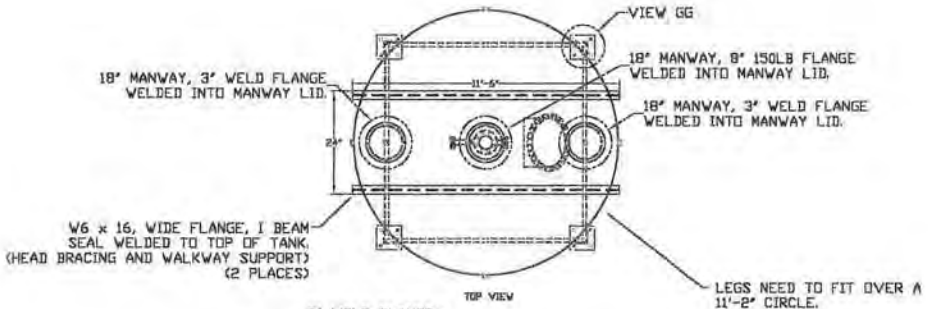
I would ask that you refer to our May 30, 1996 submittal covering the replacement of Tanks L, N, and J and subsequent replacement of Tank EE for the Tank Assessment Report,

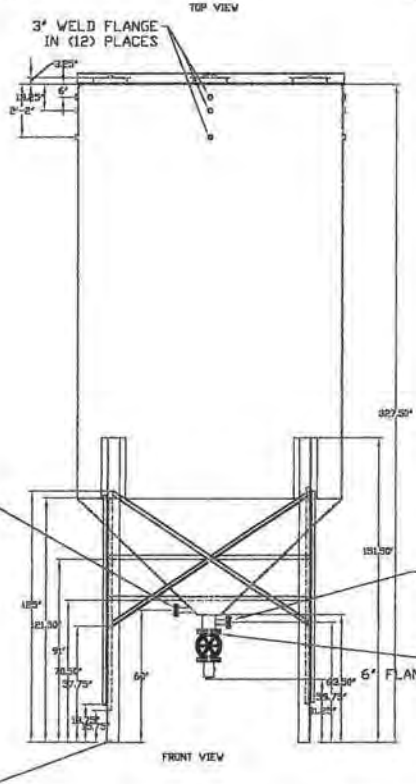
Overflow Protection Report, and the Replacement Thickness Report if necessary to fulfill your review of this request.

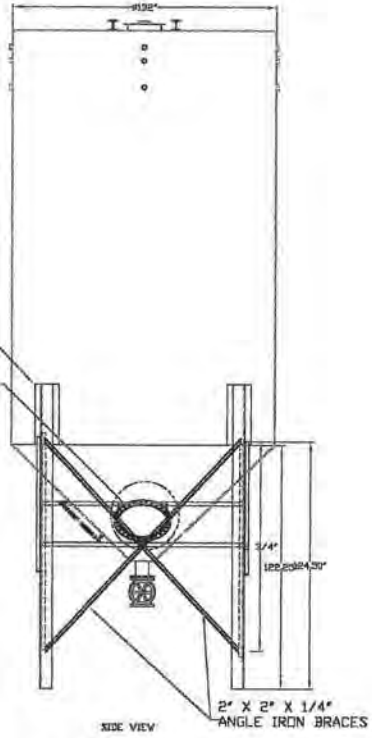
The replacement of Tanks V, W, and XX are of the same design and specifications of Tanks which have been previously requested and approved. Should you have any questions or if I may be of any further assistance, please do not hesitate to contact me at (715) 834-9624. Thank you for your attention in this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

Sincerely,

STEVEN P. STOKKE
Vice President - Operations Support







NOTE:
1. MAT'L IS A-36 CARBON STEEL.
2. LEGS NEED TO BE POSITIONED TO FIT OVER A 11'-2" PAD.
3. BUILT TO U.L. 142 SPECIFICATIONS.
4. GRIND ALL SHARP EDGES.
5. CAP LEG TOPS TO PREVENT FALL THROUGH.
6. NO PRIME, NO PAINT.
7. DO NOT WELD BASE PADS TO LEGS, THIS WILL BE DONE ON SITE.
8. SEAL WELD ALL FIXTURES.

WRR Environmental Services Co., Inc. 5200 State Rd. 93, Eau Claire, WI 54701 715-834-9624

Date	8-12-99	Title	VERTICAL TANK			
Dwg. No.	NEW XX	By	DBS	Scale	NTS	

001025

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 XX. 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

March 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

JAN 9, 2014
Date Stamped & Certified

I KNOW THAT I INSPECTED THIS TANK BEFORE IT WAS PLACED INTO USE. ORIGINAL CERTIFICATION DOCUMENTS CANNOT BE FOUND

WISCONSIN
WILLIAM L.
HABLE
E-9778
BLOOMER
WI
1-9-14
PROFESSIONAL ENGINEER

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 T-T OUT OF SERVICE
IT HAS A VERY SMALL LEAK

SK4 STILL OUT OF SERVICE

SK3 IS BACK IN SERVICE

NOTE: ALL TANKS WERE CLEANED AND PAINTED DURING 2013

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

DEC 19, 2013
Date Stamped & Certified

WISCONSIN
WILLIAM L HABLE
E-9778
BLOOMER
WI
12-19-13
PROFESSIONAL ENGINEER

Part 2

Section G – Tank Standards: New Tanks

Appendix G-3
Tank Coating MSDS and Technical Data Sheet

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

========== SECTION I - MANUFACTURER IDENTIFICATION ==========

MANUFACTURER'S NAME: HALLMAN/LINDSAY PAINTS
ADDRESS: P.O. BOX 109
SUN PRAIRIE, WI 53590

DATE PRINTED: 3/30/2009
NAME OF PREPARER: DON CHAPELLE
INFORMATION PHONE: (608) 834-8844
EMERGENCY PHONE: 1-800-688-4005

========== SECTION II - HAZARDOUS INGREDIENTS/SARA III INFORMATION ==========

REPORTABLE COMPONENTS	CAS NUMBER	VAPOR PRESSURE MM HG @ TEMP	WEIGHT 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		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 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
VAPOR DENSITY: HEAVIER THAN AIR
COATING V.O.C.: 495 g/l
COATING V.O.C.: 4.13 lb/gl
SOLUBILITY IN WATER: INSOLUBLE
APPEARANCE AND ODOR: LIQUID WITH MILD ODOR

SPECIFIC GRAVITY (H2O=1): 1.2
EVAPORATION RATE: SLOWER THAN ETHER
DENSITY: 9.95 lb/gl
MATERIAL V.O.C.: 493 g/l
MATERIAL V.O.C.: 4.12 lb/gl

========== SECTION IV - FIRE AND EXPLOSION HAZARD DATA ==========

FLASH POINT: 105 deg F METHOD USED: T.C.C.
FLAMMABLE LIMITS IN AIR BY VOLUME- LOWER: 1 UPPER: 6
EXTINGUISHING MEDIA:
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.

========== SECTION V - REACTIVITY DATA ==========

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

materials.

HAZARDOUS POLYMERIZATION: Will Not Occur

========== SECTION VI - HEALTH HAZARD DATA ==========

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.

========== SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE ==========

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.

========== SECTION VIII - CONTROL MEASURES ==========

RESPIRATORY PROTECTION

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

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)

========== SECTION IX - DISCLAIMER ==========

This M.S.D.S. is furnished without charge to responsible persons who use it at their discretion and risk. Although the information and suggestions contained herein have been compiled, as of the issue date above, from sources believed to be reliable, there is no warranty of any kind, express or implied, as to the completeness and accuracy thereof.

PRODUCT DATA SHEET

DURAGUARD

ALKYD EGGSHELL ENAMEL

276

Products of Hallman/Lindsay Paints
Sun Prairie, WI 53590

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 DATA

- ✓ Color/Tinting:
  White and tint bases.
- ✓ Vehicle Type:
  Alkyd
- ✓ Gloss: Satin
  20-30 units @ 60°
- ✓ Percent Solids by Weight:
  58% ± 2
- ✓ Percent Solids by Volume:
  37% ± 2
- ✓ Pigment by Weight:
  36% ± 2
- ✓ Vehicle Solids by Weight:
  23% ± 2
- ✓ Recommended Spreading Rate:
  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.
- ✓ Drying Time at 77° F 50% R.H.:
  To touch: 30 minutes
  Recoat: 12 hours
- ✓ Thinning:
  Do not thin.
- ✓ Cleanup:
  VM&P Naptha.
- ✓ VOC:
  495 g/L 4.13 lb./gal.

TECHNICAL SERVICES

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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 231
Rough Masonry/Concrete Block:	One coat 181 or 184
Smooth Masonry/Brick/Plaster:	One coat 215 or 231
Metal, Ferrous (Steel):	One coat 330 or 338
Metal, Non-Ferrous (Galvanized):	One coat 231
Drywall:	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: ¼" – ½ " nap shed-resistant synthetic cover
- ✓ Brush: Natural china bristle or synthetic blend

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