Union Tank Car Company
Fleet Repair Engineering

UTC FORM RES028-1
10/02 REV. E - Page 1 of 2

TANK CORROSION INSPECTION REPORT

Car Reporting Mark and Number UTLX 209301 Location Forth Worth, TX (FRA & NTSB)

Check One Date 06/18/19

Interior Corrosion Report [X] Check if Engineering Evaluation Required [ ]

Exterior Corrosion Report [ ]

Tank Information

Tank Specification DOT111A100W Build Date 9/07 Commodity Ethanol

Original Appropriation 005920 O Original Thickness: Head 0.4688

Tank Material Head ASTM A516, GR. 70 Shell AAR TC128, GR. B Shell 0.4375

Type of Corrosion

(Check Appropriate Block)

Smooth – No Visible Corrosion	[ ]	Roughened – Specific Area	[ ]
Pitted – Group Pits	[ ]	Roughened – Uniformly Throughout Tank	[X]
Pitted – Random Pits	[ ]	Other – Describe on Sketch	[X]

Minimum Allowable Thickness

Uniform Corrosion Minimum Allowable Thickness

Top Shell: 0.313 Bottom Shell: 0.375

Tank Head: 0.313

Local Corrosion Minimum Allowable

Top Shell: 0.250 Bottom Shell: 0.313

Tank Head: 0.250

Remarks

General Corrosion from 4-5 & 7-8 O'clock Positions from Head to Head. Spot checks made with UTT after grinding

	Please Print Or Type Name	Level	Signature	Date
Inspector	Alec D. Canal	II	[redacted]	06/18/19
Inspector	N/A	N/A	N/A	N/A

Car No. UTLX 209301

Date 06/18/19

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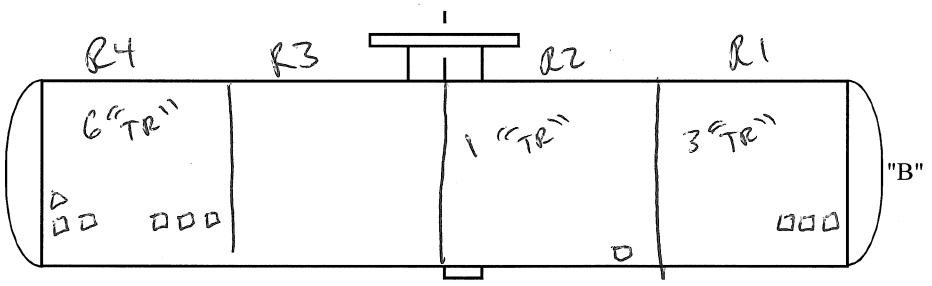
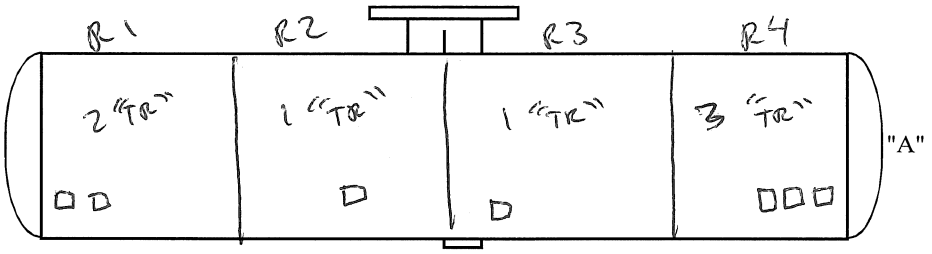
Left Side View "A"



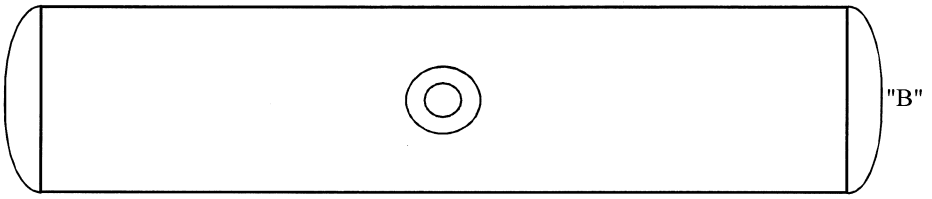
"B"

Right Side View "B"



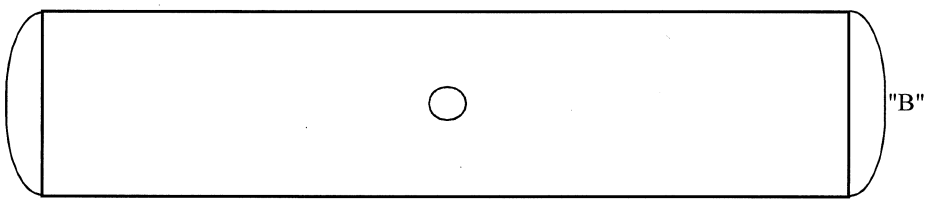
"A"

Top View "A"

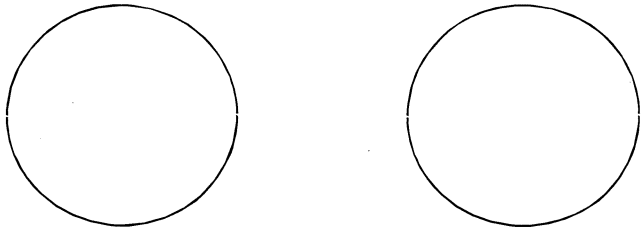


"B"

Bottom View "A"



"B"



"A" End

"B" End

UTT Meter Serial No.	#05061654 & #05060392
Transducer Frequency	5.0 MHz
Calibration Block SN	SN# 00-8089
Calibration Block Due Date	10 / 23 / 19

TR = Total Readings

Note:
1. Use ☐ for Ultrasonic Values.
2. Use • for Depth Gauge Values.

UTLX
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UNION TANK CAR COMPANY
TANK CAR UTT REPORT

Car Reporting Marks and Number UTLX 209301

Stenciled Specification DOT117R100W **Date:** 06/18/19

Shop Location Forth Worth, TX (NTSB & FRA Joint Inspection)

Shop Address 3250 Yuma Dr.

Technicians Name Alec D. Canal
(Print or Type)

UTT Procedure Number ALL APPLY
RES-028, RES-029, RES-185* - * All Apply
NA
(Other)

Equipment information;
Manufacturer: Danatronics **Meter I.D.or Serial number** Echo 8 FD
Calibration Due: 5-13-20 / 6-13-20 #05061654 & #05060392

Transducer; 3/8" Size 5.0 MHz Frequency **Cal. Block I.D. number** SN# 00-8089

Couplant information:

Manufacturer; **Sonotech**
Type; **Soundsafe**

Map of thickness reading locations; See RES-028-3 Form Attached.

Initial Test Results

Indicate reason if not acceptable: (x)*

Below minimum thickness
Exceeds corrosion limits (X)

*If left blank, no defects were found.

Final Test Results

Below minimum area(s) repaired; N/A (Yes, No, N/A)

Corrosion repaired; N/A (Yes, No, N/A)

Ultrasonic Thickness Test is acceptable; YES (Yes, No)

[redacted]
Technician's Signature

II
UTT Level

06/18/19
Date

UTC Form RES 185-1
8/9/2004

Union Tank Car Company
Fleet Repair Engineering

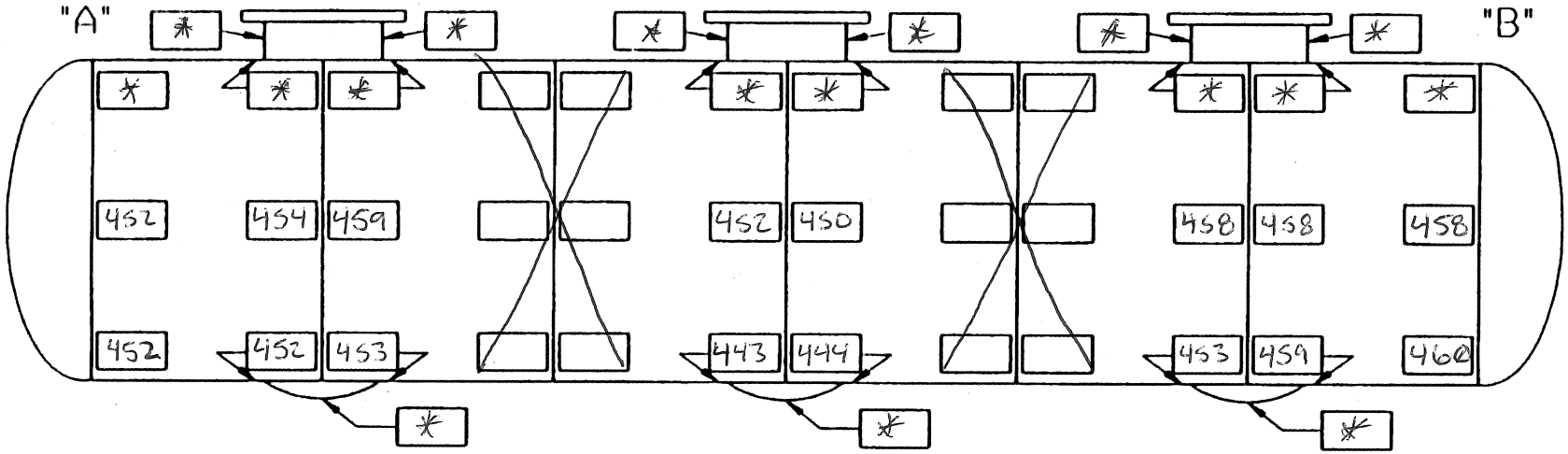
UTC FORM RES028-3
Rev. A 01/98

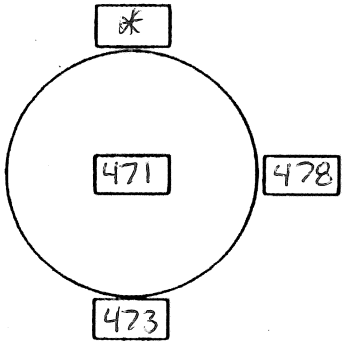
STANDARD ULTRASONIC THICKNESS PATTERN

(NTSB & FRA Joint Inspection)

Car reporting Mark And Number UTLX 209301 Location Fort Worth, TX

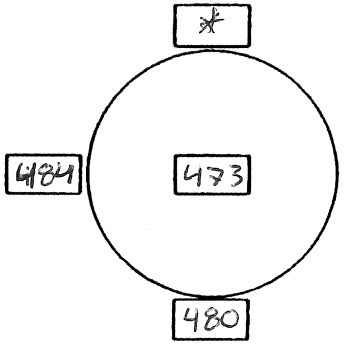
Received At Shop 6 / 18 / 19 / (Derailed Tank car)
Mo Day Yr.





"A" END

4 Ring Tank
* No Reading taken on all nozzles, Sump or 12 o'clock positions.



"B" END

Inspector Alec D. Canal	II	[redacted]	6/18/19
Please Print Or Type Name	Level	Signature	Date
Inspector N/A	N/A	N/A	N/A
Please Print Or Type Name	Level	Signature	Date

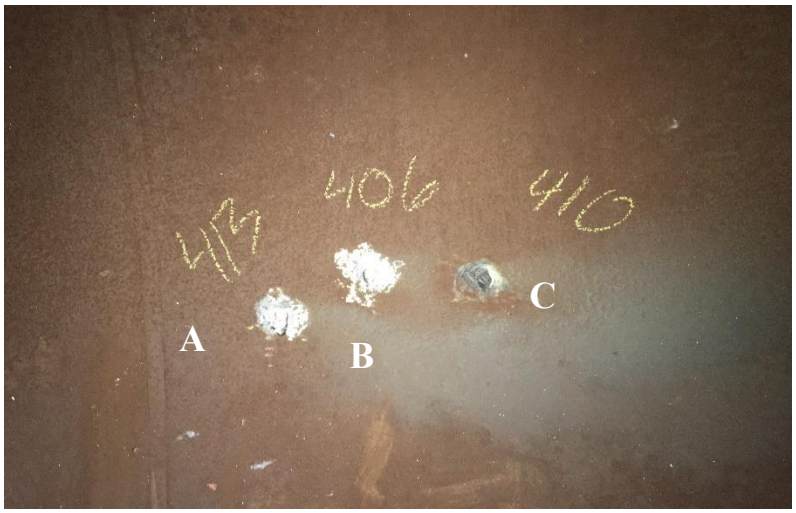


Figure 1. Ring 1 left side UTLX 209301

Table 1. UT measurements Ring 1

	Location from A-side Seam 1	**UT (inches)**
A	7”; 29” above BCL	0.413
B	12”; 32” above BCL	0.406
C	18”; 30” above BCL	0.410

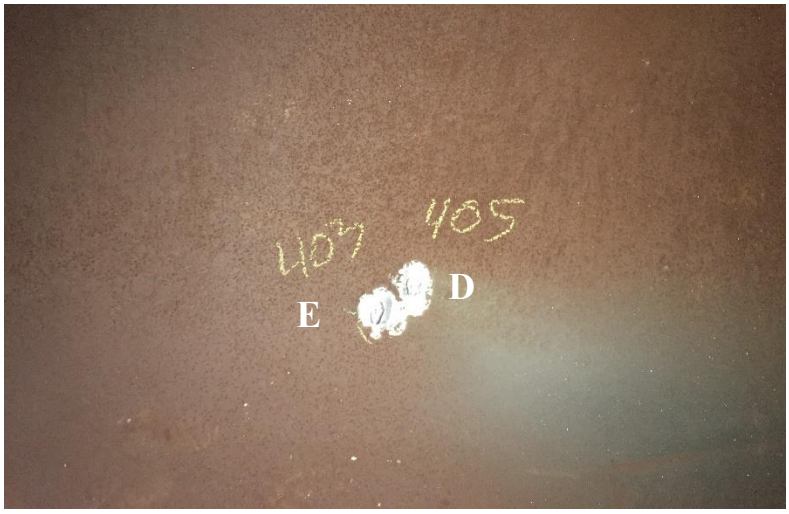


Figure 2. Ring 1 right side UTLX 209301

Table 2. UT measurements Ring 1

	Location from A-side Seam 1	**UT (inches)**
D	28”; 41” above BCL	0.405
E	30”; 39” above BCL	0.403

Figure 3. Ring 2 left side UTLX 209301

Table 3. UT measurement Ring 2

	Location from A-side Seam 2	UT (inches)
F	28”; 16” above BCL	0.412

Figure 4. Ring 2, right side UTLX 209301

Table 4. UT measurement Ring 2

	Location from A-side Seam 2	UT (inches)
G	41”; 30” above BCL	0.400

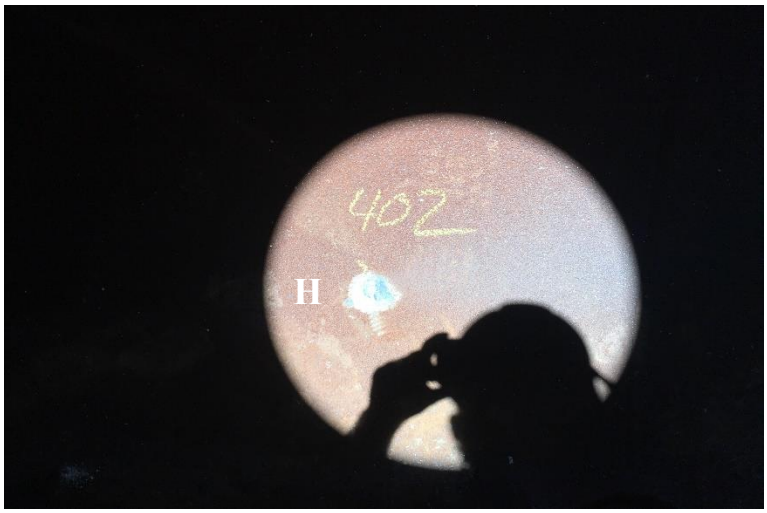


Figure 5. Ring 3, right side UTLX 209301

Table 5. UT measurement Ring 3

	Location from A-side Seam 3	**UT (inches)**
H	15”; 15” above BCL	0.402

Figure 6, 7 & 8. Ring 4, left side UTLX 209301

Table 6. UT measurements Ring 4

	Location from A-side Seam 4	**UT (inches)**
I	3”; 23” above BCL	0.401
J	11”; 25” above BCL	0.406
K	57”; 27” above BCL	0.399
L	24”; 37” above BCL (ref. from B-side Seam 5)	0.390
M	16”; 38” above BCL (ref. from B-side Seam 5)	0.392
N	9”; 45” above BCL (ref. from B-side Seam 5)	0.393

Figure 9. Ring 4, right side UTLX 209301

Table 7. UT measurements Ring 4

	Location from B-side Seam 5	**UT (inches)**
O	27”; 32” above BCL	0.400
P	21”; 34” above BCL	0.384
Q	10”; 37” above BCL	0.372

Union Tank Car Company
Fleet Repair Engineering

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10/02 REV. E - Page 1 of 2

TANK CORROSION INSPECTION REPORT

Car Reporting Mark and Number UTLX 209403 Location Forth Worth, TX (FRA & NTSB)

Check One Date 06/18/19

Interior Corrosion Report [X] Check if Engineering Evaluation Required [ ]

Exterior Corrosion Report [ ]

Tank Information

Tank Specificatior DOT111A100W Build Date 10/07 Commodity Ethanol

Original Appropriation 005920 G Original Thickness: Head 0.4688

Tank Material Head ASTM A516, GR. 70 Shell AAR TC128, GR. B Shell 0.4375

Type of Corrosion

(Check Appropriate Block)

Smooth – No Visible Corrosion	[ ]	Roughened – Specific Area	[ ]
Pitted – Group Pits	[ ]	Roughened – Uniformly Throughout Tank	[X]
Pitted – Random Pits	[ ]	Other – Describe on Sketch	[X]

Minimum Allowable Thickness

Uniform Corrosion Minimum Allowable Thickness

Top Shell: 0.313 Bottom Shell: 0.375

Tank Head: 0.313

Local Corrosion Minimum Allowable

Top Shell: 0.250 Bottom Shell: 0.313

Tank Head: 0.250

Remarks

General corrosion from 4-5 & 7-8 O'clock positions from Head to Head. Spot Checks made with UTT after grinding

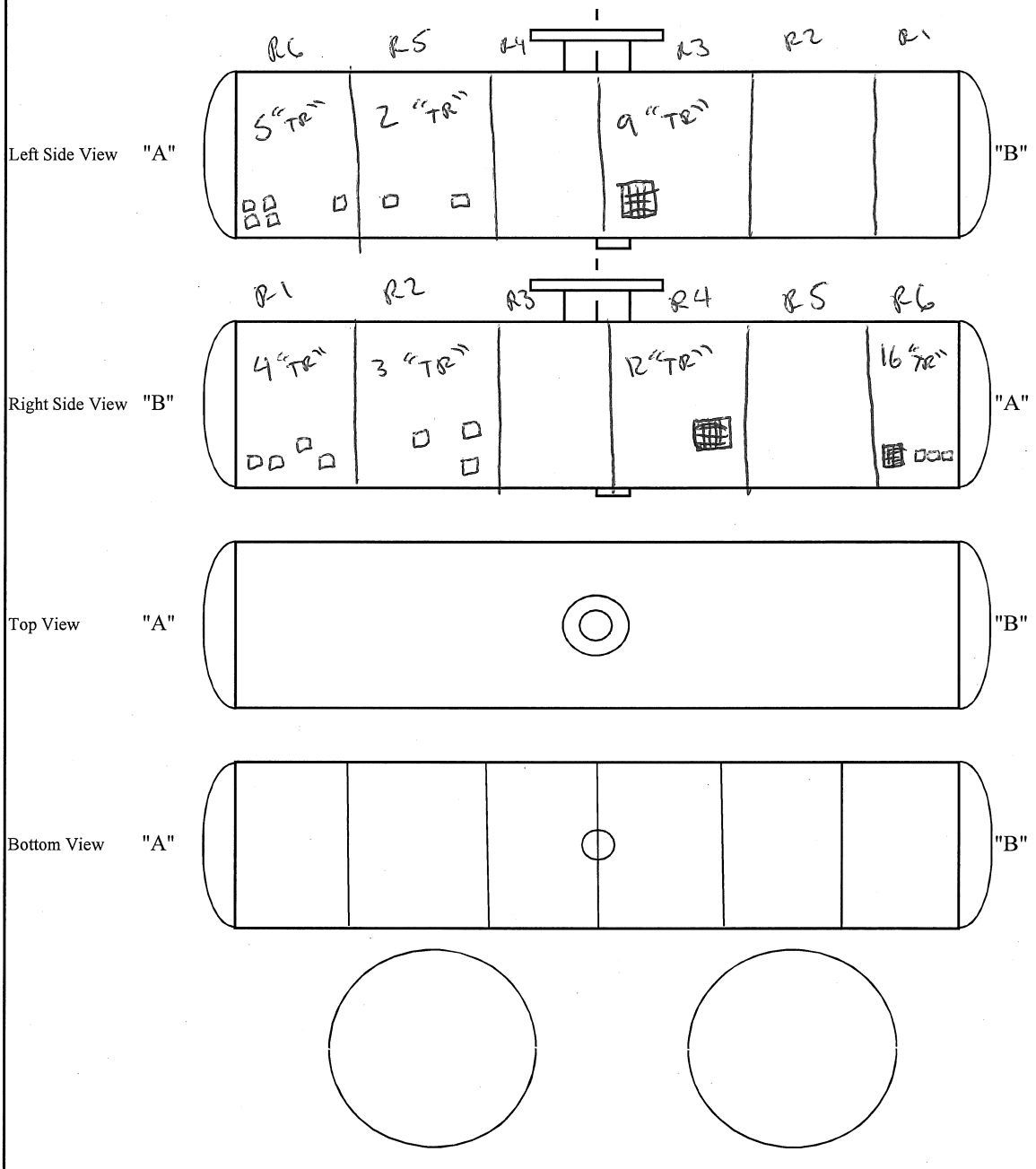
	Please Print Or Type Name	Level	Signature	Date
Inspector	Alec D. Canal	II	[redacted]	06/18/19
Inspector	N/A	N/A	N/A	N/A

Car No. UTLX 209403

Date 06/18/19

UTC FORM RES028-1

10/02 REV. E - Page 2 of 2



"A" End

"B" End

UTT Meter Serial No.	#05061654 & #05060392
Transducer Frequency	5.0 MHz
Calibration Block SN	SN# 00-8089
Calibration Block Due Date	10 / 23 / 19

TR = Total Readings

Note:

1. Use ☐ for Ultrasonic Values.
2. Use • for Depth Gauge Values.

UTLX
THE TANK CAR PEOPLE

UNION TANK CAR COMPANY
TANK CAR UTT REPORT

Car Reporting Marks and Number UTLX 209403

Stenciled Specification DOT117R100W **Date:** 06/18/19

Shop Location Forth Worth, TX (NTSB & FRA Joint Inspection)

Shop Address 3250 Yuma Dr.

Technicians Name Alec D. Canal
(Print or Type)

UTT Procedure Number ALL APPLY (RES-028, RES-029, RES-185* - * All Apply) NA (Other)

Equipment information;
Manufacturer: Danatronics **Meter I.D.or Serial number** Echo 8 FD #05061654 & #05060392
Calibration Due: 5-13-20 / 6-13-20

Transducer; 3/8" (Size) 5.0 MHz (Frequency) **Cal. Block I.D. number** SN# 00-8089

Couplant information:

Manufacturer; Sonotech
Type; Soundsafe

Map of thickness reading locations; See RES-028-3 Form Attached.

Initial Test Results	**Final Test Results**
Indicate reason if not acceptable: (x)*	Below minimum area(s) repaired; N/A (Yes, No, N/A)
Below minimum thickness ____	Corrosion repaired; N/A (Yes, No, N/A)
Exceeds corrosion limits ____ (X)	
*If left blank, no defects were found.	

Ultrasonic Thickness Test is acceptable; YES (Yes, No)

[redacted] **Technician's Signature**

II **UTT Level**

06/18/19 **Date**

UTC Form RES 185-1
8/9/2004

Union Tank Car Company
Fleet Repair Engineering

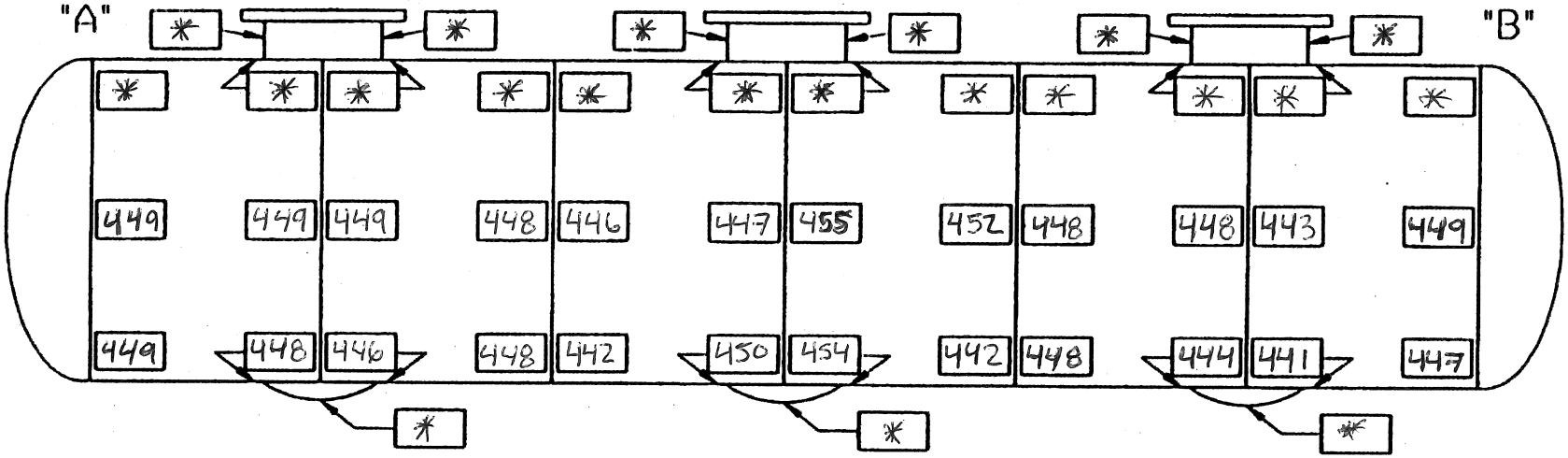
UTC FORM RES028-3
Rev. A 01/98

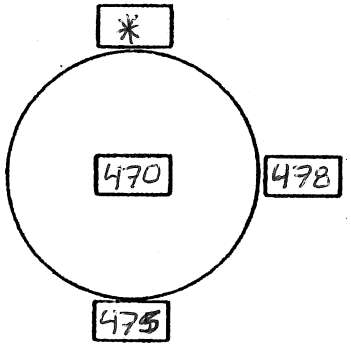
STANDARD ULTRASONIC THICKNESS PATTERN

(NTSB & FRA Joint Inspection)

Car reporting Mark And Number UTLX 209403 Location Fort Worth, TX

Received At Shop 6 / 18 / 19 / (Derailed tank car)
Mo / Day / Yr.

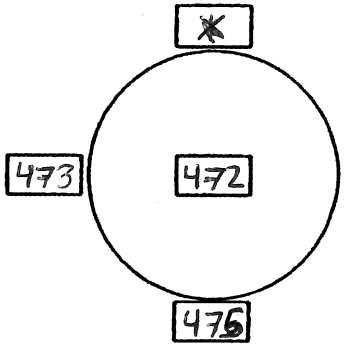




"A" END

6 Ring Tank

* No Readings taken on all nozzles, sump, or 12° o'clock Position.



"B" END

Inspector Alec D. Canal	IT	[redacted]	6/18/19
Please Print Or Type Name	Level	Signature	Date
Inspector N/A	N/A	N/A	N/A
Please Print Or Type Name	Level	Signature	Date

1. Ring 6, right side. Grid pattern 26” Longitudinal, 24” transverse. The lowest end was 24” above bottom center line, the right side was 8” toward A-end from Seam 6.

Figure 1. Ring 6, right side UTLX 209403

Table 1. UT measurements Ring 6, right side, inches.

	0.415		0.411	
		0.400		
	0.403		0.401	
0.444	0.430		0.427	
0.446	0.433	0.439	0.436	0.433

2. Ring 4, right side. Grid pattern 24” longitudinal, 32” transverse. The lowest end was 26” above bottom center line, the left side bordered Seam 5.

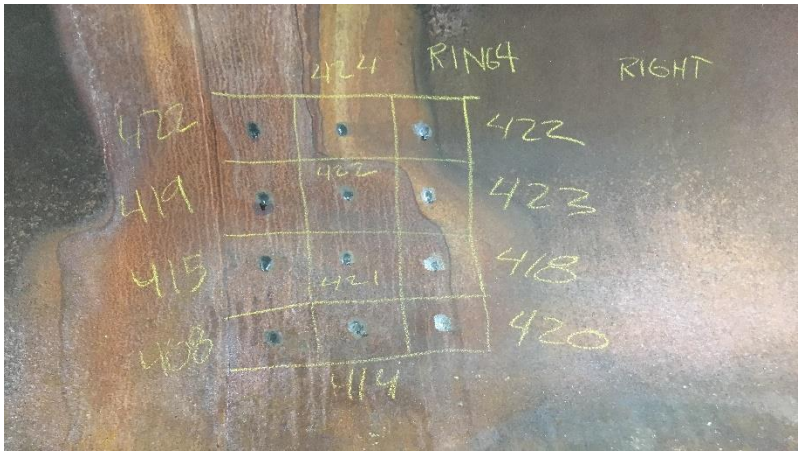


Figure 2. Ring 4, right side UTLX 209403

Table 2. UT measurements Ring 4, right side, inches.

0.422	0.424	0.422
0.419	0.422	0.423
0.415	0.421	0.418
0.408	0.414	0.420

3. Ring 3, left side. Grid pattern 24” longitudinal, 28” transverse. The lowest end was 30” above bottom center line, the right side was 31” toward the B-end from Seam 4.

Figure 3. Ring 3, left side UTLX 209403

Table 3. UT measurements Ring 3, left side, inches.

0.415	0.413	0.416
0.414	0.405	0.409
0.404	0.404	0.393

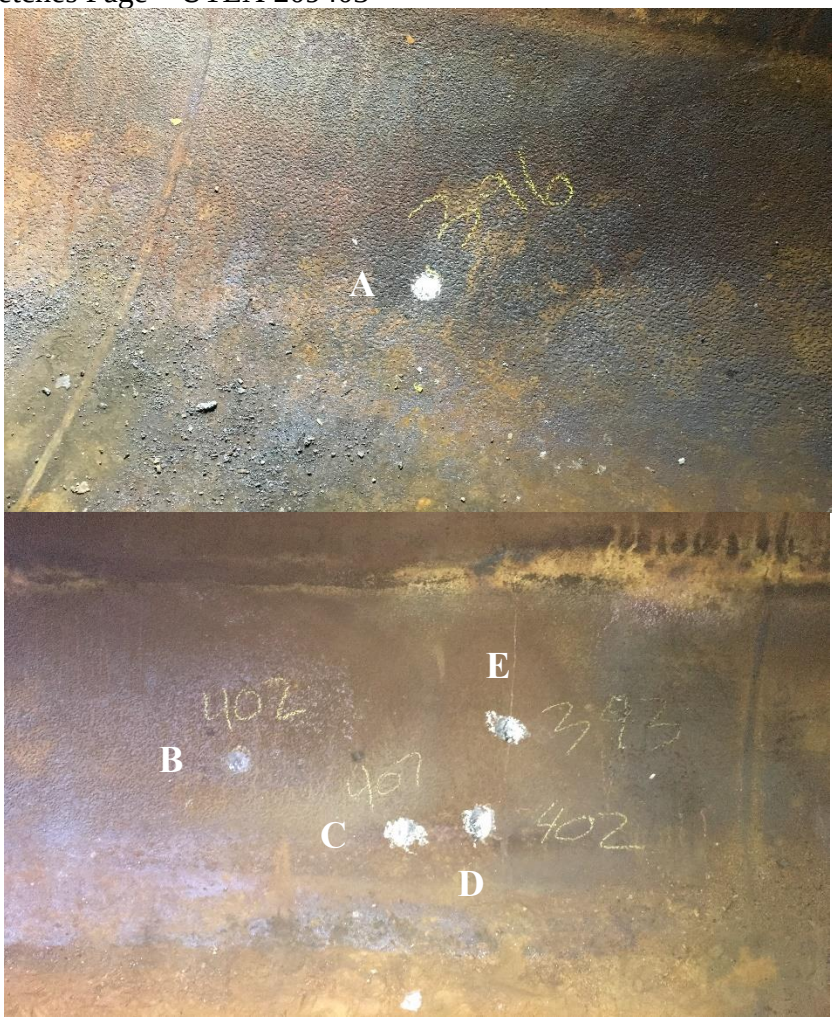


Figure 4 & 5. Ring 6, left side UTLX 209403

Table 4. UT measurements Ring 6, left side spot checks.

	Location from A-side Seam 6	**UT (inches)**
A	18”; 24” above BCL	0.396
B	58”; 42” above BCL	0.402
C	72”; 33” above BCL	0.407
D	78”; 33” above BCL	0.402
E	80”; 44” above BCL	0.393

Figure 6. Ring 6, right side UTLX 209403

Table 5. UT measurements Ring 6, right side spot checks.

	Location from B-side Seam 7	UT (inches)
F	7”; 34” above BCL	0.373
G	10”; 34” above BCL	0.377
H	12”; 34” above BCL	0.383

No images were recorded for table 6

Table 6. UT measurements Ring 5, left side spot checks.

	Location from A-side Seam 5	UT (inches)
I	7”; 39” above BCL	0.403
J	22”; 36” above BCL	0.409

Figure 7 & 8. Ring 2, right side UTLX 209403

Table 7. UT measurements Ring 2, right side spot checks.

	Location from B-side Seam 3	**UT (inches)**
K	13”; 22” above BCL	0.387
L	33”; 27” above BCL	0.376
M	13”; 26” above BCL (ref. from A-side Seam 2)	0.372

Figure 8. Ring 1, right side UTLX 209403

Table 8. UT measurements, Ring 1, right side spot checks.

	Location from B-side Seam 2	UT (inches)
N	4”; 28” above BCL	0.387
O	17”; 31” above BCL	0.384
P	24”; 24” above BCL (ref. from A-side Seam 1)	0.398
Q	21”; 24 above BCL (ref. from A-side Seam 1)	0.404

No images were recorded for table 8 (P & Q)