

Repor	ting Ma	arks		UT	LX 95	4193			Ι	OOT Spe	cificatio	n	112J34	40W		
Date v first ol	vhen da bservec	amage 1:		04/	27/24				L d o	ocation amaged bserved	where first (City/St	ate):	Manue	elito, NI	М	
NDT I	Method	l:		Pro	cedure	e(s)/Rev	ision(s))	C	Driginal t	hicknes	s of				
МТ	РТ	UT		Use	ed:				c	oupon/te	est area		608			
	_ · ·			N/	A								.000			
UII	A VI	Λ														
Equip GE PC	ment u DCKET	sed: MIKE	35900	Equ befo	uip. cal	l. date (i	f applio	cable):	C d _ a	Cal block ue date (pplicable	ID and (if e):	Cal.	FLAW	/TECH	26705	
Cable applic	type/le able):	ength (if		N/A	A				S (1	can tech if applica	niques/p able):	olans	DOIN	г		
Search	Unit(s	s) (if		An	ole /M	Hz			S	ize:			Serial	1 #		
applic	able):	5) (11		7 111	510 / 101	112.				120.			Seriar			
PULSE	-ECHO/I	DUAL EL	LEM	N	/A	5 MHz			.4	475			5191			
Coupl	ant/Per	netrant/F	Particles	8					E	xam dat	e/time:		Specia	al equip.	(if app	licable):
manuf	acturer	/type (if	f	GE	REF ()102790)		5	/24/24			N/A			
Counc	able). m Loca	ntion - R	ing #	Rin	o #1				(lock Po	sition To	on =	1 O'cl	ock		
B or A	Head				8.11				1	2, Botto	m = 6, f	acing				
									tl	ne B hea	d:	-				
Surfac	e cond	itions, S	Surface	Sur	face: c	lean and	d free o	of	I	ndication	n(s)	. 、	Therm	al tear/	8 inches	5
from:	and si	de(s) ex	amined	1 mo	isture 1	[D0	DХ		(I ype/Siz	e/Locat	10n):	long/R	Ring 1/1	o'clocl	κ.
nom.				Sur	face T	emp: N/	'A									
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E29	614	K15	580	L15	568	M8	574	M28	545	N22	519	018	489	P21	580	
F17	606	K17	562	L16	567	M9	560	M29	547	N23	539	019	269	P22	584	
I28	566	K18	569	L17	562	M10	548	M30	576	N24	552	O20	506	P23	590	
I29	566	K19	563	L18	554	M11	543	M31	561	N25	563	O21	531	Q28	606	
J21	564	K20	558	L19	545	M12	539	M32	562	N26	569	O22	546	T5	612	
J22	559	K21	549	L20	535	M13	538	N7	585	N27	568	023	562	V14	623	
J23	550	K22	535	L21	521	M14 M15	540	N8 N0	5/3	N28	576	P/	596	X30	617	
J24 125	545	K23	500	L22	494	M15	534	N10	547	N30	559	F O PQ	586	Z4	019	
J25	540	K25	512	L23	481	M17	539	N11	541	07	585	P10	580			
J27	535	K26	494	L25	486	M18	529	N12	514	08	577	P11	577			
J28	537	K27	494	L26	487	M19	510	N13	488	09	565	P12	579			
J29	528	K28	499	L27	494	M20	505	N14	487	O10	543	P13	580			
J30	542	K29	502	L28	274	M21	493	N15	483	011	533	P14	582			
J31	534	K30	505	L29	515	M22	496	N16	534	012	515	P15	581			
J32	546	K31	509	L30	529	M23	496	N17	539	013	509	P16	585			
K12	582	K32	513	L31	533	M24	517	NI8 NIC	529	014	488	P17	577			
K13	571	L12	566	L32	501	M25	530	N19	210	015	484	P18	580			
17.14	5/1	ப்	500	1410	571	11/120	559	1120	207	010	500	117	200	1		





*Readings reported by alphabet vertically A-JJ. Recorded by numeral horizontally 1-36 or however many inches of test area. (Example: A1 upper left/JJ36 lower right. *See tank car damage assessment form with corresponding reporting marks for additional info.



Narrative:

Defect is a jagged thermal tear located in the center of a blister at N12 and O12 through N18 and O18. This defect goes completely through the tank and has a ¹/₄" width in some places. Defect is a ¹/₄" crack located at N19. It is separated approximately 1" from the large tear described above. It is visible from the ID of the tank and has several low UTT readings in adjoining grids. Defect is a ¹/₄" crack located at L28. The L28 crack is not visible from the ID of the tank but does have a low UTT reading (.274) consistent with the other larger crack.

There are also several stretch cracks as indicated in the diagram that move toward the A-end of the ring that are not visible from the ID of the tank while performing direct visual inspection.

Technician:	Vernon L Walker	Level: AWS/CWI Cert:N/A
Signature:		
Assisted by:		
LCMD form	Page 1 of 2	Orig: VLW/RMK/LHS 05-06-24



Reporting Marks		Gal	lup Dera	ilment Pa	anel #1		D	OT Speci	ification					
Date when damage first observed:		09-	JUL-24				Lo da ot	ocation w amaged fi	vhere irst City/State	e):	Pue	eblo, CO	(TTC)	
NDT Method:		Pro	cedure(s))/Revisio	n(s)			``````````````````````````````````````	2	/				
MT_X_PTUT		Use	ed:											
UTT VT		SO	P-MT-01	R0										
Equipment used:		Equ	up. cal. c	late (if ap	oplicable)	:	Ca du	al block I ie date (if	D and Ca	al.				
AC Yoke S/N 29238		09-	JUL-24				ap	plicable)):		QÇ	QI shim		
Cable type/length (if applicable):		N/A	4				Sc (if	can techn f applicat	iques/pla ole):	ns	N/.	А		
Search Unit(s) (if		N/A	4				Si	ze:	,		Ser	rial #		
applicable):							Ν	/A			N/.	А		
Couplant/Penetrant/Par manufacturer/type (if	ticles	C	ircle Sys	tems Dry Red	Powder	63	Ex 07	xam date 7/09/24 0	/time: 8:30 - 14	:30	Spe	ecial equ	ip. (if apj	plicable):
Coupon Location - Rin	σ#.						C	lock Posi	7.30 - 14 tion Top	=				
B or A Head:	<i>Б</i> "',						12 th	2, Bottom e B head	n = 6, faci	ng				
Surface conditions, Sur	face	Sur	face				In	dication((s)		M	Γ detection	on on insi	ide surface
Temp. and side(s) exan	nined	ID	X OD	Х			(T)	Sype/Size	/Location	ı):	inh	ibited du	e to emb	edded
from:		Sur	face Ten	n. Amhi	ent			racking o Irface sur	n OD rounding		car	bon. surface (exhibited	corrosion
		Sui		ip. Amoi	1 1		ru	pture is v	isually		on	areas of	cracking	(ID surface
			chanical surface	grooves	observed	on ns	ev	vident wit	thout MT		cra	cking wa	as detecte	d with
		wit	h rupture	. Photog	raphs	115	Lo	ocation o	f OD		PA	.UT).		
		atta	ched.	-	-		cr gr	acking de av cells i	n attache	d	Pho	otograph	s attached	1.
							di	agram.				orograph		
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As	sist	ted	by	:																															





OD surface prior to MT



OD surface prior to MT





OD surface prior to MT



OD surface prior to MT





Mechanical Grooves on OD Surface



Mechanical Grooves on OD Surface





Mechanical Grooves on OD Surface



OD surface prior to MT





OD surface with MT



OD surface with MT





OD surface with MT



OD surface with MT





OD surface with MT



OD surface with MT





OD surface with MT



OD surface with MT





Unprepared ID Surface



Unprepared ID Surface





Unprepared ID Surface





ID Surface with MT



ID Surface with MT



MT Inspection Report

MT Examination Date	Technician	Certificate No.	Examination	Organization / Ins	pection Authority
10-Jul-24	Brian Wood	67827	Sound Analys	sis, LLC	
Client			Location		
ENSCO, Inc.			Transportatio	n Technology Cente	er - Pueblo, CO
Component Description	n		Component	Serial No.	Drawing no. / Rev. No.
Damaged <mark>t</mark> ank car spec	imen (Gallup derailn	nent)	Panel 1		N/A
Examination Procedur	e		Acceptance	Criteria	
SOP-MT-01			SOP-MT-01		
Precleaning					
None 🗸 Liquid Sol	vent 🗌 Rinsing E	Bath 🛛 🗸 Mechanica	al 🗌 Ot	her Other cleaning ty	/pe:
Magnetizing Source		Inspection Medium		Background I	Lighting
AC Yoke DC Yoke	9			_	_
	Dead Weight Test	✓ Dry/red		White	✓ White
ন দ দ	QQI Shim			Ground	
ଅ₄₅,≝ ৢ	max = 8 in			Non-treated	
Reg. No.: 29238		Batch No.: 2	1511		Intensity: 100 fc
Magnetized for					
Longitudinal indications	;	Transverse indication	IS	✓ Indicatio	ons in any direction
Extent of Examination					
Coverage area includes	area surrounding th	rough-wall rupture on	outside and in	side surfaces	
Results of Examinatio	n				
1) Surface cracking d	etected on outside	surface surroundin	g and paralle	el with rupture and	extending toward end of
panel.					
2) Inside surface insp	ection impeded by	embedded carbon.	Indications	only detected nea	ar rupture where cracks
have wide opening.					
MT acceptable			Page	echnician (Signature/D	Date)
					. 10-Jul-24
I MT not acceptable			1 OL 1		e de la companya de la compa



Reporti	ng Marks	5	Ga	allup Dera	ilment P	anel #1		D	OT Speci	fication					
Date wh first obs	nen dama served:	ige	09	9-JUL-24				Lo da ot	ocation w maged fi oserved ((here rst City/State	e):	Pue	eblo, CO	(TTC)	
NDT M MT F UTT	lethod: PT PA VT	UT <u>X</u>	Pr Us SC	ocedure(s sed:)P-PAUT)/Revisio -03 R0	on(s)		PA 10 10	AUT Scar)L32 0 Li)L32 40-7	n Plans: near 70 Sector	ial				
Equipm	ent used	:	Ec	uip. cal. o	late (if ap	oplicable)	:	Ca	al block I	D and Ca	al.	MA S/N	B Block	:-1018 St	eel
Evident	OmniSc	an X3 64	06	5-DEC-23	3			ap	plicable)	:		Ve	rified 15-	Mar-21	
Cable ty applicat	ype/lengt ble):	h (if			2.5 m			Sc (if	can techn f applicab	iques/pla le):	ns	1) L 2)Se	inear: 32 e ectorial: 16	lement, 0 de element 40	egrees -70 degrees
Search	Unit <mark>(s)</mark> (i	f	Aı	ngle /MHz	Z:			Si	ze:			Ser	ial #		
10L32-	A10		0.0	legrees/40)-70 degr	ees/10 M	Hz	5	x 7 mm			Y3	850		
Couplan manufa applicat	nt/Penetra cturer/typ ble):	ant/Partic pe (if	les	UΤΣ	K Gel Co	uplant		Ex 07 07	kam date/ 7/09/24 08 7/10/24 07	(time: 8:30 - 14 7:30 - 14	:30 :30	Spe	ecial equi	ip. (if app	licable):
Coupon B or A	Location Head:	n - Ring ‡	ŧ,					Cl 12 th	lock Posi 2, Bottom e B head:	tion Top = 6, faci	= ng				
Surface Temp. a from:	conditio and side(ns, Surfa s) examin	ce Su led ID Su	rface <u></u> OD <u>X</u> OD rface Ten	_ <u>X</u> _ np: Ambi	ent		In (T 1)	dication('ype/Size Cracking and ID s surround rupture. of OD cr denoted cells in a diagram images a	s) /Locatior g on OD urface ling Location racking as gray uttached . Scan da uttached.	n):	2) 3)	Suspector segregat Location outlined diagram attached Thickne cells tha labeled internal	ed centerl ion detec ns denote cells in a . Scan da ss reading t were or with dept reflectors	ine ted. d as uttached ata images gs taken in iginally h to
In	spection	Results:	L=Loo	ation/T=	Thickne	ss readin	g		_		_			_	
L	T	L	Т	L	Т	L	Т		L	Т	L	,	Т	L	Т
019 N10	0.494														
N20	0.478														
L28	0.513														

L28	0.513						



п	ΗH	GG	FF	EE	DD	CC	BB	AA	Z	Y	x	W	v	U	Т	S	R	Q	P	0	N	M	L	K	J	Ι	H	G	F	E	D	С	B	Α	
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As	sist	ted	by	:																															



Straight Beam Scans 6-32 (Rupture located between N and O, 14 through 18)



LCMD form

Orig: VLW/RMK/LHS 05-06-24.



Straight Beam Scans 6-32 (Rupture located between N and O, 14 through 18)



Orig: VLW/RMK/LHS 05-06-24.



J Κ L М Ν

Angle Beam Sectorial B-Scans – PAUT Skew 90 at 40 Degrees



Angle Beam Sectorial B-Scans – PAUT Skew 270 at 40 Degrees



Page 6 of 7

Angle Beam Sectorial Merged B-Scans – PAUT Skew 90 L-M-N & Skew 270 O-P-Q



LCMD form

Orig: VLW/RMK/LHS 05-06-24.



Project

PAUT Inspection Report

inoject					
Client	ENSCO, Inc,	Inspection No.	PAUT 24-0710-01	Contact	Sean Woods
Project	Gallup Derailment	Description	Damaged Tank Car	Inspector Name	Brian Wood
Project No.	FRA-24-0710	Location	TTC - Pueblo, CO	Inspector License	67827
Instrument Sp	ecifications				
Instrument	OmniScan X3	Report Soft. Ver.	5.17.1		
Instrument Serial	QC-0090052	Inspection Soft. Ve	er. MXU 5.17.1		
Model	OmniScan X3 64 - 64:128	BPR			

Inspection Summary

Data File Name	TTC TK Sample 1 0 I6-32.nde
Inspection Date	07/10/2024 10:31
Report Date	07/13/2024 13:14
Procedure / Code	SOP-PAUT-03 R0 / ASTM E2700
Remark	Variations in wall thickness (thinning) and s

Variations in wall thickness (thinning) and suspected centerline segregation coincide with location of damage and surface cracking.

Part

Material	Steel, Mild	Part Type	Flat Plate
Thickness	0.600 in.	Length	11.811 in.
Width	11.811 in.	Angular Opening	-
Outside Diameter	- in.		
Pri. Axis Reference	0.000 in.	Sec. Axis Reference	0.000 in.
Pri. Axis Name	Length	Sec. Axis Name	Width
Weld Type	-	Symmetry Type	-





Inspector Signature

PAUT Inspection Report

Scan Parameters

Analysis

Sound

Scanner : Wire encoder

Scanning Pattern	One-Line Encoded	Scan Encoder	
Scan Start	6.00 in.	Encoder Type	Quadrature
		Encoder Resolution	1257.3007 step/in.
Scan End	33.01 in.	Polarity	Normal
Scan Increment	0.02 in.	Input	1

Notes

B-Scan data images attached.



PA-1

Probe Characteristics

Probe Model	10L32-A10	Scan Offset	0.000 in.
Serial	A10	Index Offset	2.500 in.
Frequency	10.00 MHz	Probe Skew	90.0 °
Probe Aperture	32		
Wedge Model	SA10-0L L32	Wedge Profiled	Yes
Wedge Angle	0.00 °	Wedge Diameter	-
First Element Height	0.790 in.	Wedge Gap	in.

Setup	Group: GR-1				Calibrations: -
Law Config.	PA	Averaging Factor	1	Gain	38.0 dB
Beam Delay	17.30 µs	Compression	1	Mode	PE (Pulse-Echo)
Start True Depth	0.000 in.	Effect. Digit. Frequency	100 MHz	Video Filter	Off
Wave Type	Longitudinal	Net Digit. Frequency	100 MHz	Range True Depth	0.659 in.
Rectification	Absolute	Velocity	0.2319 in./µs	Acq. Rate	120.0 Hz
Filter	None	Pulse Width	50.0 ns	Voltage	80 Vpp
Gates	Start	Width	Threshold	Synchro	Peak Selection
Gates A	Start 0.133 in.	Width 0.298 in.	Threshold 25 %	Synchro Pulse	Peak Selection Highest
Gates A Calculator	Start 0.133 in.	Width 0.298 in.	Threshold 25 %	Synchro Pulse	Peak Selection Highest
Gates A Calculator Law Configuration	Start 0.133 in. Linear	Width 0.298 in. Element Step	Threshold 25 %	Synchro Pulse Angle Resolution	Peak Selection Highest
Gates A Calculator Law Configuration Element Qty Used	Start 0.133 in. Linear 32	Width 0.298 in. Element Step Start Angle	Threshold 25 % 1.0 0.0 °	Synchro Pulse Angle Resolution Focus Depth	Peak Selection Highest - 1.969 in.
Gates A Calculator Law Configuration Element Qty Used First Element	Start 0.133 in. Linear 32 1	Width 0.298 in. Element Step Start Angle Stop Angle	Threshold 25 % 1.0 0.0 °	Synchro Pulse Angle Resolution Focus Depth Focusing Type	Peak Selection Highest - 1.969 in. True Depth



PAUT Inspection Report

Project					
Client	ENSCO, Inc,	Inspection No.	PAUT 24-0710-01	Contact	Sean Woods
Project	Gallup Derailment	Description	Damaged Tank Car	Inspector Name	Brian Wood
Project No.	FRA-24-0710	Location	TTC - Pueblo, CO	Inspector License	67827
Instrument Sp	ecifications				
Instrument	OmniScan X3	Report Soft. Ver.	5.17.1		
Instrument Serial	QC-0090052	Inspection Soft. Ve	er. MXU 5.17.1		
Model	OmniScan X3 64 - 64:128	BPR			

Inspection Summary

Data File Name	TTC TK Sample1 H16-H32 90.nde
Inspection Date	07/09/2024 15:54
Report Date	07/13/2024 13:20
Procedure / Code	SOP-PAUT-03 R0 / ASTM E2700
Remark	Surface cracking detected on the OD and ID consistent with that detected with the PT method.

Part

Material	Steel, Mild	Part Type	Flat Plate
Thickness	0.600 in.	Length	11.811 in.
Width	11.811 in.	Angular Opening	-
Outside Diameter	- in.		
Pri. Axis Reference	0.000 in.	Sec. Axis Reference	0.000 in.
Pri. Axis Name	Length	Sec. Axis Name	Width
Weld Type	-	Symmetry Type	-





Inspector Signature

PAUT Inspection Report

Scan Parameters

Analysis

Sound

Scanner : Wire encoder

Scanning Pattern	One-Line Encoded	Scan Encoder	
Scan Start	16.00 in.	Encoder Type	Quadrature
		Encoder Resolution	1257.3007 step/in.
Scan End	33.01 in.	Polarity	Normal
Scan Increment	0.02 in.	Input	1

Notes

B-Scan data images attached.



PA-1

Probe Characteristics

Probe Model	10L32-A10	Scan Offset	2.000 in.
Serial	A10	Index Offset	1.000 in.
Frequency	10.00 MHz	Probe Skew	90.0 °
Probe Aperture	32		
Wedge Model	SA10-N55S L32	Wedge Profiled	Yes
Wedge Angle	36.30 °	Wedge Diameter	-
First Element Height	0.267 in.	Wedge Gap	in.

Setup	Group: GR-1				Calibrations: S
Law Config.	РА	Averaging Factor	1	Gain	35.3 dB
Beam Delay	8.30 µs	Compression	8	Mode	PE (Pulse-Echo)
Start True Depth	0.000 in.	Effect. Digit. Frequency	100 MHz	Video Filter	Off
Wave Type	Shear	Net Digit. Frequency	12 MHz	Range True Depth	1.975 in.
Rectification	Absolute	Velocity	0.1276 in./µs	Acq. Rate	120.0 Hz
Filter	None	Pulse Width	50.0 ns	Voltage	80 Vpp
Gates	Start	Width	Threshold	Synchro	Peak Selection
Gates A	Start 0.183 in.	Width 0.998 in.	Threshold 25 %	Synchro Pulse	Peak Selection Highest
Gates A Calculator	Start 0.183 in.	Width 0.998 in.	Threshold 25 %	Synchro Pulse	Peak Selection Highest
Gates A Calculator Law Configuration	Start 0.183 in. Sectorial	Width 0.998 in. Element Step	Threshold 25 %	Synchro Pulse	Peak Selection Highest 1.0 °
Gates A Calculator Law Configuration Element Qty Used	Start 0.183 in. Sectorial 16	Width 0.998 in. Element Step Start Angle	Threshold 25 % - 40.0 °	Synchro Pulse Angle Resolution Focus Depth	Peak Selection Highest 1.0 ° 0.250 in.
Gates A Calculator Law Configuration Element Qty Used First Element	Start 0.183 in. Sectorial 16 1	Width 0.998 in. Element Step Start Angle Stop Angle	Threshold 25 % - 40.0 ° 70.0 °	Synchro Pulse	Peak Selection Highest 1.0 ° 0.250 in. True Depth



Phased Array Scan Plan: 10L32 0° Linear

Part and Coverage



Piece

Material	Thickness	HAZ Width	Shear Velocity	Compression Velocity
Steel 1020	0.600 in.	N/A	0.1276 in./µs	0.2319 in./µs

Phased Array Probe: 10L32-A10

Wedge: SA10-0L Transducer: 5L32-A10								
Velocity	Primary Offset	Height 1 st Element	Length	Width	Angle	Num. of Elements	Element Pitch	Total Aperture
0.0917 in./µs	0.78 in.	0.79 in.	1.18 in.	1.57 in.	0°	32	0.0012 in.	0.3906 in.

Linear Beamset

Element Qty	First Element	Last Element	Number of Beams	Refracted Angle	Focus
32	1	32	1	0°	None



Phased Array Scan Plan: 10L32 40-70 Sectorial

Part and Coverage



Piece

Material	Thickness	HAZ Width	Shear Velocity	Compression Velocity
Steel 1020	0.600 in.	N/A	0.1276 in./µs	0.2319 in./µs

Phased Array Probe: 10L32-A10

Wedge: SA10	-N55S		Tra	Transducer: 5L32-A10											
Velocity	Primary Offset	Height 1 st Element		h Width	Angle	Nu Ele	ım. of ments	Element Pitch	Total Aperture						
0.0917 in./µs	s -0.800 in. 0.267 in. 0.90			n. 0.905 in	. 36.3º	7 —	32	0.0012 in.	0.3906 in.						
Sectori	Sectorial Beamset														
Law Config	g.: Sectorial Element	Wave Type: S Qty	Shear	First Element	Last Element	Min. Angle	Max Angle	Angle Steps	Focus Depth						
	32			1	32	40°	70°	1º	None						



Reporti	ng Mark	8	G	allup Dera	ailment Pa	anel #1		DOT Specification											
Date wl first obs	hen dama served:	ige	09	9-JUL-24	Ļ			Lo da ot	ocation wanaged fi	here rst City/State	e):	Pueblo, CO (TTC)							
NDT M	lethod:		Pr	ocedure(s	s)/Revisio	on(s)													
MTI	PT <u>X</u> (J T			DO														
UTT	VT	-	SC)P-PT-01	R0														
Equipm	ient used	:	Ec	quip. cal. o	date (if ap	oplicable)):	Ca du	al block I ie date (if	D and Ca f	al.								
AC Yo	oke	1 (16		/ •				ap	opricable)			NT (
applical	ype/lengt ble):	n (11	IN.	/A				Sc (if	can techn f applicat	iques/pla ole):	ns	N/A							
Search	Unit <mark>(s)</mark> (i	if	N	/A				Si	ze:			Serial #							
applical	ble):							Ν	/A			N/A							
Couplan	nt/Penetr	ant/Partic	les	Radnor	materials	: Visible	,	Ez	xam date	time:		Special equip. (if applicable):							
manufa applical	cturer/tyj	pe (11		Solver	it remova	ble with		07	7/10/24 0	7.30 - 14	.30								
Coupon	Locatio	n - Ring #	ŧ.	nonaq	ucous uc	veloper.		C											
B or A	Head:	8	,					12	2, Bottom	= 6, faci	ing								
								th	e B head	:									
Surface	conditio	ns, Surfac	e Su	irface				In	dication(s)		PT detection on inside surface							
Temp. a	and side(s) examin	ed ID	<u>X</u> OD	<u>X</u>				Sype/Size	/Location	n):	carbon.							
nom.			SI	urface Ter	np: Ambi	ent			irface. L	ocation o	f	ID surface exhibited corrosion							
			M			- 1	~ ~	0	D crackii	ng denote	ed	on areas of cracking (ID surface							
				echanicai	grooves	observed	OI	as	gray cel	ls in		cracking was detected with							
			w	ith rupture	e. Photog	raphs	,115	at	tached di	agram.		PAUT).							
			at	tached.		F		Distographs attached											
	Inspec	tion Resu	ılts: L=	-Location	/T=Thic	kness rea	ading					1 110	nographa	s attached	1.				
L	Т	L	Т	L	Т	L	T		L	Т	Ι		Т	L	Т				



п	HH	GG	FF	EE	DD	CC	BB	AA	Z	Y	х	w	v	U	Т	S	R	Q	Р	0	N	M	L	K	J	I	H	G	F	E	D	С	В	A	
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*R	*Readings reported by alphabet vertically A-JJ. Recorded by numeral horizontally 1-36. (Example														le:																				
A1 *S	uj ee 1	ppe tan	er le k e	eft/ sar	JJ: JJ:	56 mg	10W	ver as	rig ses	ght. sm/	ent	fo	rm	wi	th	CO 1	Te	sne	md	ine	7 F4	eno	rti	nø	ma	rk	s fa	or «	add	liti	ons	al i	nfo		
Te	chr	nici	an:		Br	ian	W	000	1			10				2.01		110			,		_ I	.ev	el:		III	_(Cer	t_	67	82	7	<u> </u>	
Sig	gna	tur	e: _									į																							
As	sist	ted	by	:																															





OD surface prior to MT



OD surface prior to MT





OD surface prior to MT



OD surface prior to MT





Mechanical Grooves on OD Surface



Mechanical Grooves on OD Surface





Mechanical Grooves on OD Surface



OD surface prior to MT





OD surface with PT



OD surface with PT





OD surface with PT



OD surface with PT





OD surface with PT



OD surface with PT





Unprepared ID Surface



Unprepared ID Surface





Unprepared ID Surface



Unprepared ID Surface





ID surface with PT



ID surface with PT



PT Inspection Report

PT Examination Date	Technicia	an	Certificate	Examination Organization / Inspection Authority												
10-Jul-24	Brian Wo	67827	Sound Analysis, LLC													
Client				Location												
ENSCO, Inc.				Transportation Technology Center - Pueblo, CO												
Component Description	on			Comp	Component Serial No. Drawing no. / Rev. I											
Damaged tank car spec	imen (Gal	lup derailme	ent)		Panel	1		N	I/A							
Examination Procedur	e				Acceptance Criteria											
SOP-PT-01					SOP-PT-01											
Precleaning																
None 🗸 Liquid Sol	lvent	_ Rinsing Ba	th 🔽 I	Mechanica	al		Other Other cleanir	ng type	0							
Penetrant Type		Manufa	cturer			Prod	luct		Bat	tch Numbers						
✓ II. Color Contrast		Rad	nor	Per	netrant	Solve	ent Removable		LO	T 202250315						
Cleaning of Excess Pe	enetrant	Manufa	cturer			Prod	luct		Bat	tch Numbers						
C. Solvent		Rad	nor		Clea	ner-F	Remover		LO	T 202250315						
Developer		Manufa	cturer			Prod	luct		Bat	tch Numbers						
✓ d. Solvent-based		Rad	nor	De	evelope	er Sta	indard Grade		LO	OT 202250315						
Penetrant Dwell	Time						Developing Ti	ime		Test Piece Temp.						
10	minutes						10	minu	ites	~70 °F						
Lighting										Photometer S/N						
✓ White Light 100	fc															
Extent of Examination										-						
Coverage area includes	area surr	ounding thro	ough-wall rup	oture on	outside	and	inside surfaces									
		•														
Results of Examinatio	n															
1) No relevent MT inc	licationa	detected of	thar than th	ana da	tootob	le wi	th the uneided o									
				iose de	leciab	e wi		ye.								
2) Inside surface insp	ection in	peded by	embedded	carbon	. Indic	atior	ns only detected	near	ruptui	re where cracks						
have wide opening.																
PT acceptable					Pac	le	Technician (Signatu	ure/Dat	e)							
					1					10-Jul-24						
I PT not acceptable					1 01	1										

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