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Ultrasonic Inspection Report

UT_A 0228762_aug2024

LSD: NW-32-38-19 w4m				Item(s) Inspected: NGL Bullet		Date: Aug. 2, 2024	
Material: Carbon Steel / Stainless Steel				Thickness Range: 0 to 75mm		Job #: 12169	
Procedure: UT-01 Rev. 9				Ref. Code: ASME VIII & ASME B31.3		WO #: n/a	
UT Equipment: Asset# FD-12				Olympus Epoch XT		Surf. Temp: -20° to 20° C	
Transducer 1: Asset# T-237				Technisonic Research		Surf. Prep: Painted	
Transducer 2: Asset# T-127				Olympus pulse echo		Cal. Due: Aug. 2, 2025	
Transducer 3: Asset# T-91				Panametrics D-790-SM		Serial #: 22326	
Cal. Block 1: Asset# CB-86 (1018)				Carbon Steel 6-step wedge		Serial Number: 1097767	
Cal. Block 2: Asset# CB-59				Stainless Steel Step Wedge		Serial Number: 944346	
Couplant: Magnaflux UTX				Cable 1: 2m Dual BNC to Microdot		Cable 2: 2m Single BNC to Microdot	

Job Scope: To perform a baseline ultrasonic thickness survey on the requested NGL bullet A# 0228762.

Results: See attached UTS drawing and data sheets for all point locations and recorded thickness measurements.

Client Representative:	
Technician(s): Kaedyn Schmidt (CGSB UT-1, MT-2, PT-2 #27732) (SNT-TC-1A UT-I, MT-II, PT-II)	
Assistant(s): Zachery Bower	
Reviewed and Approved By: Lance Smith (CGSB MT-2, UT-2, PT-2, RT-1 #8052) (SNT-TC-1A MT-II, UT-II, PT-II)	



ULTRASONIC THICKNESS SURVEY

“UTS”

Report Summary

The accompanying UTS report provides representation and data of equipment requested for inspection as accessible. The UTS drawing(s) show condition monitoring locations (CMLs) with identification numbers that correlate with the ultrasonic thickness readings recorded on the following pages. All CML locations identified on the UTS drawing(s) are inspected to locate the minimum thickness and determine an average thickness. CMLs that have thickness readings less than the calculated flagged thickness are coloured **BLUE** on the UTS drawings and data pages for quick reference purposes. CMLs with unusual wall thicknesses are given descriptive comments to aid future trending.

UTS Procedure

All CML locations identified on the UTS drawing are scanned completely by continuously coupling an ultrasonic transducer to the item being tested. The average scan location on vessel heads and shells includes a 2” wide by 16” long test band. The average scan location on piping and fittings is a 2” wide band at critical areas, such as the outside radius of elbows, the neck of tees, the back of tees, or any other areas of concern.

Equipment

All equipment used for each UTS is listed on the ultrasonic report and is in accordance with Lance Inspections Inc. procedure UT-01 (Rev. 9). All ultrasonic machine calibrations, field calibrations, and performance of ultrasonic thickness surveys are completed in accordance with Lance Inspections Inc. procedure UT-01 (Rev. 9)

Flag Values

Client Review

Lance Inspections does not deem CMLs acceptable or rejectable. The flag values in the attached report are provided for ease of client review only.

Vessels

Flag thicknesses are determined by subtracting the corrosion allowances from the nominal thickness as stated on a vessel data plate or a client-provided MDR or U1A form for the vessel.

Regarding vessel and nozzle points that have a known Nominal Thickness but no stated corrosion allowance, Lance Inspections has adopted a “TRF” Thickness Reduction Flag value. This value is 1.5mm (0.059”) less than the known nominal thickness. Vessel and Nozzle points without known nominals, will be given a 1.5mm (0.059”) corrosion allowance from the initial minimum thickness reading.

Piping

Flag thicknesses for piping are determined by subtracting 12.5% (mill tolerance) from the nominal thickness. The 12.5% is input as the corrosion allowance on the UTS report. Piping and fitting points without known nominals will have a 1.5mm corrosion allowance from the initial minimum thickness reading.

Sincerely,

Lance Smith,
Lance Inspections Inc.



LANCE

INSPECTIONS INC.

Reg A#: 0228762

Location: NW-32-38-19 W4M

Serial #: 28159A

Drawing#: 1

CRN #: C4936.214

Manufacturer: WESTERN ROCK BIT CO. LTD.

Unit #: N/A

Year Built: 1986

Shell MAWP: 1724 kPa

Shell MAWT: 66°C

Shell Material: SA 516 70N

Nominal: 21.4mm

CA: 0.00mm

Tube "A" MAWP: _____

Tube "A" MAWT: _____

Head Material: SA 516 70N

Nominal: 21.2mm

CA: 0.00mm

Tube "B" MAWP: _____

Tube "B" MAWT: _____

Tube Material: _____

Nominal: _____

CA: _____

Size: 108in x 49ft

Manway: 20in

MDMT: N/S

Boot Shell Mat: _____

Nominal: _____

CA: _____

Insulated: NO

C Stamp: U

RT: 2

PWHT: NO

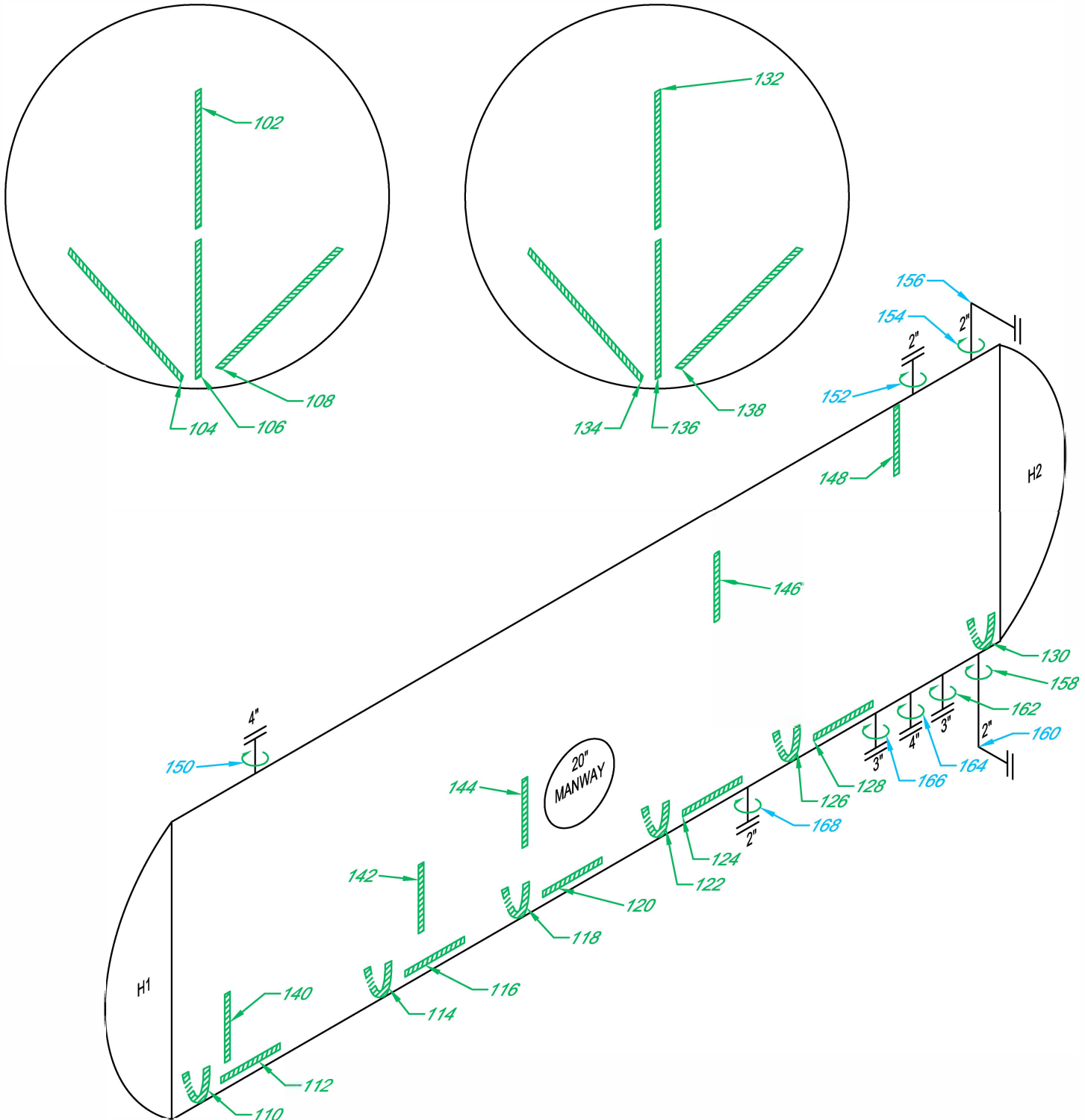
Boot Head Mat: _____

Nominal: _____

CA: _____

H1

H2



Vessel Overview



Data Plate





UTS Data Sheet

	Nominal Thickness (mm)	Corrosion Allowance (mm)	Flag Thickness (mm)
102 Description: Upper Head Date: Aug. 2, 24 Minimum: 24.0 Average: 24.2 Comments:	21.2	0.0	21.2
104 Description: Lower Head Date: Aug. 2, 24 Minimum: 23.2 Average: 23.8 Comments:	21.2	0.0	21.2
106 Description: Lower Head Date: Aug. 2, 24 Minimum: 23.2 Average: 23.9 Comments:	21.2	0.0	21.2
108 Description: Lower Head Date: Aug. 2, 24 Minimum: 23.4 Average: 24.0 Comments:	21.2	0.0	21.2
110 Description: Bottom Shell Date: Aug. 2, 24 Minimum: 22.1 Average: 22.2 Comments:	21.4	0.0	21.4
112 Description: Bottom Shell Date: Aug. 2, 24 Minimum: 22.2 Average: 22.3 Comments:	21.4	0.0	21.4
114 Description: Bottom Shell Date: Aug. 2, 24 Minimum: 21.9 Average: 22.0 Comments:	21.4	0.0	21.4
116 Description: Bottom Shell Date: Aug. 2, 24 Minimum: 22.0 Average: 22.1 Comments:	21.4	0.0	21.4



UTS Data Sheet

	Nominal Thickness (mm)	Corrosion Allowance (mm)	Flag Thickness (mm)
118 Description: Bottom Shell Date: Aug. 2, 24 Minimum: 22.3 Average: 22.4 Comments:	21.4	0.0	21.4
120 Description: Bottom Shell Date: Aug. 2, 24 Minimum: 22.4 Average: 22.5 Comments:	21.4	0.0	21.4
122 Description: Bottom Shell Date: Aug. 2, 24 Minimum: 21.7 Average: 21.9 Comments:	21.4	0.0	21.4
124 Description: Bottom Shell Date: Aug. 2, 24 Minimum: 21.9 Average: 22.0 Comments:	21.4	0.0	21.4
126 Description: Bottom Shell Date: Aug. 2, 24 Minimum: 21.7 Average: 21.9 Comments:	21.4	0.0	21.4
128 Description: Bottom Shell Date: Aug. 2, 24 Minimum: 22.0 Average: 22.1 Comments:	21.4	0.0	21.4
130 Description: Bottom Shell Date: Aug. 2, 24 Minimum: 21.8 Average: 22.0 Comments:	21.4	0.0	21.4
132 Description: Upper Head Date: Aug. 2, 24 Minimum: 24.0 Average: 24.3 Comments: Aug 2024_Laminations noted throughout.	21.2	0.0	21.2



UTS Data Sheet

	Nominal Thickness (mm)	Corrosion Allowance (mm)	Flag Thickness (mm)
134 Description: Lower Head Date: Aug. 2, 24 Minimum: 23.1 Average: 23.6 Comments: Aug 2024_Laminations noted throughout.	21.2	0.0	21.2
136 Description: Lower Head Date: Aug. 2, 24 Minimum: 23.1 Average: 23.3 Comments: Aug 2024_Laminations noted throughout.	21.2	0.0	21.2
138 Description: Lower Head Date: Aug. 2, 24 Minimum: 23.1 Average: 23.6 Comments: Aug 2024_Laminations noted throughout.	21.2	0.0	21.2
140 Description: Lower Shell Date: Aug. 2, 24 Minimum: 22.3 Average: 22.4 Comments:	21.4	0.0	21.4
142 Description: Lower Shell Date: Aug. 2, 24 Minimum: 22.1 Average: 22.2 Comments:	21.4	0.0	21.4
144 Description: Mid Shell Date: Aug. 2, 24 Minimum: 22.2 Average: 22.3 Comments:	21.4	0.0	21.4
146 Description: Upper Shell Date: Aug. 2, 24 Minimum: 21.9 Average: 22.1 Comments:	21.4	0.0	21.4
148 Description: Upper Shell Date: Aug. 2, 24 Minimum: 21.7 Average: 21.8 Comments:	21.4	0.0	21.4



UTS Data Sheet

	Nominal Thickness (mm)	Corrosion Allowance (mm)	Flag Thickness (mm)
150 Description: Circ on 4" Nozzle Date: Aug. 2, 24 Minimum: 5.6 Average: 6.0 Comments:	6.0	0.0	6.0
152 Description: Circ on 2" Nozzle Date: Aug. 2, 24 Minimum: 3.8 Average: 4.0 Comments:	3.9	0.0	3.9
154 Description: Circ on 2" Nozzle Date: Aug. 2, 24 Minimum: 3.8 Average: 4.1 Comments:	3.9	0.0	3.9
156 Description: 2" 90° Nozzle Date: Aug. 2, 24 Minimum: 3.7 Average: 4.0 Comments:	3.9	0.0	3.9
158 Description: Circ on 2" Nozzle Date: Aug. 2, 24 Minimum: 4.2 Average: 4.5 Comments:	3.9	0.0	3.9
160 Description: 2" 90° Nozzle Date: Aug. 2, 24 Minimum: 3.8 Average: 4.2 Comments:	3.9	0.0	3.9
162 Description: Circ on 3" Nozzle Date: Aug. 2, 24 Minimum: 5.7 Average: 6.1 Comments:	5.5	0.0	5.5
164 Description: Circ on 4" Nozzle Date: Aug. 2, 24 Minimum: 6.0 Average: 6.3 Comments:	6.0	0.0	6.0



UTS Data Sheet

	Nominal Thickness (mm)	Corrosion Allowance (mm)	Flag Thickness (mm)
166 Description: Circ on 3" Nozzle Date: Aug. 2, 24 Minimum: 5.5 Average: 5.9 Comments:	5.5	0.0	5.5
168 Description: Circ on 2" Nozzle Date: Aug. 2, 24 Minimum: 3.6 Average: 4.0 Comments:	3.9	0.0	3.9