



## Pressure Equipment Static Data

General Information									
Date:	July 11, 2021			Location:	Surface:	B-17-I/94-H-1			
Client/Owner:	CNRL			UWI/DH:	B-17-I/94-H-1				
District/Region:	Fort St John			Location Access:	All Year				
Area:	Ladyfern			Inspection Type:	<input type="checkbox"/> Inventory <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External <input type="checkbox"/> UT <input type="checkbox"/> MT				
Facility:	Compressor								
Pressure Equipment Information									
Equip Name:	Bullet				CA (in):	N/A	mm:		
Manufacturer:	Trinity Containers				MDMT:	- 20 F			
Provincial #:	A0571773	Unit /Skid #:	N/A		PWHT:	N/A			
S/N:	S0700031	Equip #:	N/A		RT:	RT-4			
CRN:	T3671.23451	Year Built:	2007		Manway:	Yes	Size (in):	24	
NB #:	N/A	Orientation:	Horizontal						
Zones									
	MAWP (PSI)	MAWT (F)	MAWP (KPA)	MAWT (C)	Comment				
Shell Side	260	125							
Tube Side									
Components									
	Dia (OD) in.	Type	Material	Nominal (in)	Nominal (mm)	Comment			
Shell	109	Plate	SA-516-70	0.680					
Head	109	Hemispherical	SA-516-70N	0.403		Min thickness			
Pressure Safety Valve(s)									
Zone:	Shell Side								
Equip #	N/A								
Location	Vessel - Threaded								
Set Press (PSI)	250								
Capacity	9724	SCFM							
Set Press (KPA)									
Manufacturer	Fisher								
S/N	12553F								
Model	H5112-250								
CRN	N/A								
Inlet Size (in)	2	Locked Open?							
Outlet Size (in)	3								
Inlet I/V	No								
Outlet I/V	No								
Service Co.	Unified								
Serv. Date	Nov-2007								
Service Status and Conditions									
Status:	Out of Service			Service:		Primary Contents - Shell:			
				Concentration:		Primary Contents - Tube:			
Comments									
- Vessel is not in-use at the time of inspection, but is still connected.									
- PSV manifold S/N: 382M									
- PSV above typical S/N's: 12531F, 12554F, 12555F									



## Pressure Vessel External Inspection

<b>Date:</b>	July 11, 2021	<b>Equip Name:</b>	Bullet
<b>Inspector:</b>	Curtis Graham	<b>Prov #:</b>	A0571773
<b>Client/Owner:</b>	CNRL	<b>S/N:</b>	S0700031
<b>District/Region:</b>	Fort St John	<b>Unit /Skid #:</b>	N/A
<b>Area:</b>	Ladyfern	<b>Equip #:</b>	N/A
<b>Facility:</b>	Compressor	<b>Location:</b>	<b>Surface:</b> B-17-I/94-H-1
			<b>UWI/DH:</b> B-17-I/94-H-1
Component	Condition	Comment	
Nameplate	Acceptable	Good condition. Securely attached, legible and all required information is present.	
Grounding	Acceptable	Vessel is grounded through skid.	
Foundation/Supports	Acceptable	Vessel is well supported on saddles, no concerns noted.	
Ladder/Platform	Acceptable	Ladder is in good condition and safe for use. Platform is in good condition and safe for use.	
Insulation/Cladding	N/A		
Shell	Acceptable	Shell is in good condition, no concerns noted.	
Heads	Acceptable	Heads are in good condition, no concerns noted.	
Nozzles/Threadolets	Acceptable	All nozzles are in good condition. No deflection, short bolting or other concerns noted.	
Piping/Valves	Acceptable	All associated piping is in good condition. All bolting is properly installed and secure. No leaks or other concerns noted.	
Appurtenances & Instrumentation	Acceptable	Instrumentation is in good condition, no leaks noted.	
Sight Glass/Level Gauges	Acceptable	All sight glasses are in good condition. Rated for current vessel service with no concerns noted.	
Other	N/A		
PSV	Acceptable	PSV's have applicable code stamping present.	
NDE Methods	Acceptable	UT survey and AUT performed by Avalanche. No concerns at this time.	
<b>Inspection Summary</b>	No concerns noted at time of inspection.		
Recommendations		NCR #	
Service PSV's prior putting vessel back into service.			

<b>Fit for Service:</b>	Yes	<b>Signature of Inspector:</b>	
<small>* Fit for Service is only a recommendation based on the results of the current inspection.</small>		<b>Cert #</b>	API 510: 51479
			AB/SK: 785
<b>Recommended Intervals:</b>		<b>Technical Manager or Delegate:</b> Curtis Graham	
VE	yrs	<b>Cert #</b>	API 510: 51479
UT	yrs		AB/SK: 785
PSV	yrs		

PHOTOS



LSD Sign



Site Overview



Nameplate



A#



Overview



Manway Overview

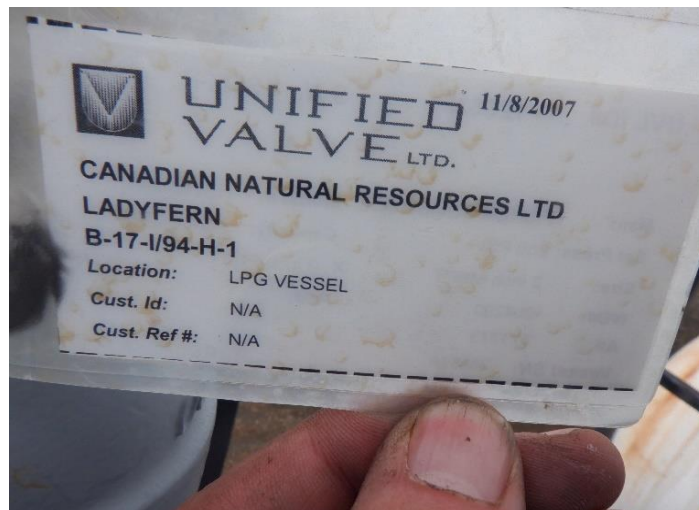
PHOTOS



PSV Nameplate




PSV Overview



PSV Service Tag



# AUT CORROSION MAPPING EXAMINATION REPORT

GENERAL INFORMATION									
DATE:	July 07, 2021			REPORT #:	AUT-CG07JUL2021A				
CLIENT/OWNER:	CNRL			AVALANCHE JOB #:	20-448		CLIENT JOB #:		
DISTRICT/REGION:	Fort St John			PROJECT:	AUT Inspections		CLIENT PO #:		
AREA:	Ladyfern			LOCATION:	SURFACE:	b-17-I/94-H-1			
FACILITY:	Plant				UWI/DH:	b-17-I/94-H-1			
ITEMS EXAMINED:	LPG Bullet A0571773 (V-201)								
METHOD(S) / SURFACE CONDITION									
MATERIAL / THICKNESS:	CARBON STEEL			PROCEDURE:	AUT-01				
SURFACE CONDITION:	Painted			ACCEPTANCE CRITERIA:	CLIENT EVALUATION				
SCANNING FROM / TEMP:	OD		24	SPECIFICATION(S):	AS PER CLIENT SPEC.				
AUT EQUIPMENT DETAILS									
MANUFACTURER:	AUT SOLUTIONS			CAL BLOCK(S):	1" - 10 STEP - C/S				
MODEL:	BANDIT			CAL BLOCK SN(S):	15-1857				
RASTER LENGTH:	24"			REFLECTOR:	BACKWALL				
SERIAL #:	1005			CAL RANGE:	0 - 1.000"				
CAL DATE:	08-Jul-21			SIG RESP (FSH):	80%				
SOFTWARE:	PROSCAN			COUPLANT:	Water				
TRANSDUCERS					ENCODER				
MFG	TYPE	FREQ	SIZE	SERIAL #	MODEL	RESOLUTION	CAL DISTANCE		
AUT SOLUTIONS	DUAL	5MHz	0.500"	JBA158	BSP-A+	5 MHz	1.000"		
MANUAL UT EQUIPMENT									
EQUIPMENT TYPE:	DMS GO	SERIAL #:	SOPLS2012010	CAL DATE:	04-Jan-21		CABLE LENGTH/TYPE:	3' / DUAL LEMO	
REF REFLECTOR:	TYPE:	COUPLANT:	UT-X	CAL BLOCKS:	1" - 10 STEP - C/S				
PROBE TYPE	ANGLE	WAVE	FREQ	SIZE	MFG	SERIAL #	RANGE	REF LVL	SCAN LEVEL (DB)
DUAL	0	LONG	5MHz	0.250"	STRESSTEL	21A0CL0	1.000"	56	62
SINGLE									
TEST RESULTS									
<b>SCOPE:</b>									
<p>A ZERO DEGREE AUT MAP SCAN WAS CONDUCTED ON AREAS OF THE 109" O.D. LPG BULLET SHELL. INSPECTION WAS DONE ON 25% OF THE SHELL AREA AS REQUESTED BY THE CLIENT. ALL ACCESSIBLE SECTIONS WERE INSPECTED FROM THE EXTERNAL SURFACE TO MAP OUT POSSIBLE WALL LOSS AND CORRODED AREAS OF THE SCANNED LOCATIONS. ALL AREAS IDENTIFIED WITH CORROSION ARE TO BE VERIFIED WITH MANUAL ZERO DEGREE UT.</p> <p>8 SCANS WERE UTILIZED TO OBTAIN COVERAGE OF THE SHELL AREAS.</p> <p>A ZERO DEGREE UT INSPECTION OF THE NORTH AND SOUTH HEADS WERE ALSO DONE AS REQUESTED BY THE CLIENT.</p>									
<b>RESULTS:</b>									
<p>NO INTERNAL CORROSION LOCATED IN THE AUT SCANNED AREAS.</p> <p>NO INTERNAL CORROSION LOCATED IN THE NORTH &amp; SOUTH HEADS. SEE PG-2 FOR HEAD READINGS AND DESCRIPTIONS.</p> <p>SEE PAGE 3 FOR SCAN TEST RESULTS</p> <p>SEE PAGES 5 THROUGH TO 12 FOR C-SCANS, SCAN LOCATIONS AND DESCRIPTIONS.</p>									
TECHNICIAN:	Curtis Graham			ASSISTANT:	Darrin Robak				
SIGNATURE:				CLIENT:					
CGSB/SNT CERTS:	6560 UT II / MT II / PT II			SIGNATURE:					

**TEST RESULTS / PHOTOS**



EAST HEAD



WEST HEAD

TML	NOM	LOW	AVG	COMMENT
05	0.403" (Min)	0.529"	0.535"	NO CONCERNS LOCATED
10	0.403" (Min)	0.523"	0.532"	NO CONCERNS LOCATED



**AUT CORROSION MAPPING  
DETAILED  
SCAN RESULTS**

SCAN #	X START	X STOP	Y START	Y STOP	X-Incr.	Y-Incr	Readings	AVERAGE READING	MINIMIM THICKNESS	NOMINAL	% Wall Loss	Comments / Corrosion Mechanism
1	0	342	0	24	0.5	0.25	66445	0.722	0.701	0.686	0.0%	No concerns
2	0	342	0	24	0.5	0.25	66445	0.717	0.696	0.686	0.0%	No concerns
3	0	342	0	24	0.5	0.25	66445	0.721	0.690	0.686	0.0%	No concerns
4	0	342	0	24	0.5	0.25	66445	0.717	0.693	0.686	0.0%	No concerns
5	0	342	0	24	0.5	0.25	66445	0.715	0.693	0.686	0.0%	No concerns
6	0	342	0	24	0.5	0.25	66445	0.721	0.685	0.686	0.1%	No concerns
7	0	342	0	24	0.5	0.25	66445	0.725	0.702	0.686	0.0%	No concerns
8	0	171	0	24	0.5	0.25	33271	0.723	0.705	0.686	0.0%	No concerns

\*NOTE: ALL READINGS ARE IN INCHES.

WALL LOSS COLORING:

- 20%-34%
- 35%-49%
- 50%+

PHOTOS



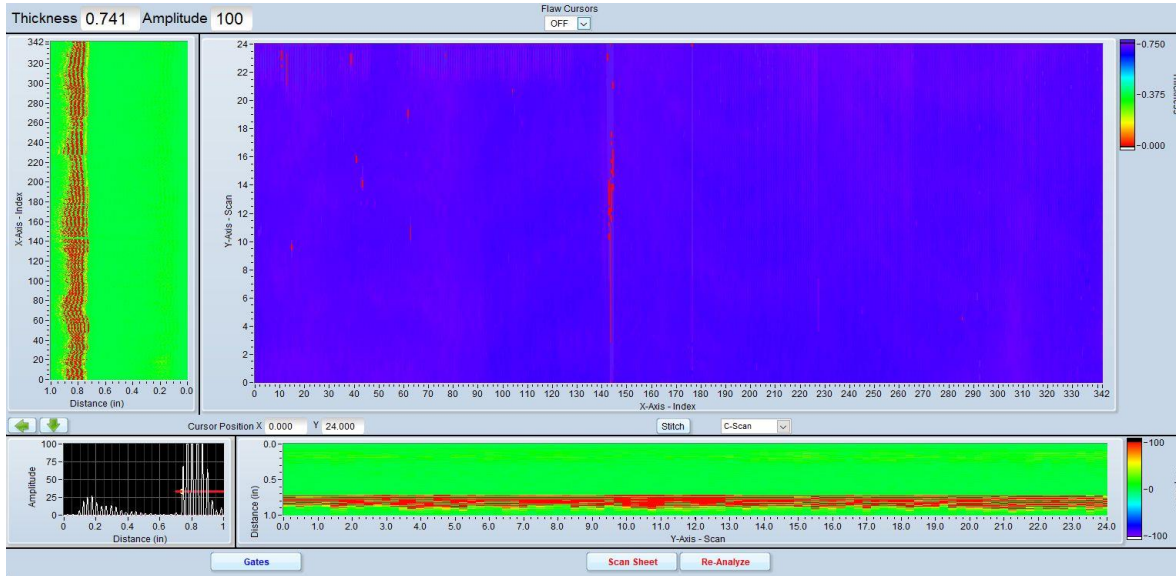
NAMEPLATE



OVERVIEW

SCAN 1 START LOCATION: 26" SOUTH OF 2ND CIRC WELD (FROM SOUTH END), AND 10" UP FROM SOUTH WEST SADDLE TO SHELL FILLET WELD.

NOTE: RED SECTIONS ARE DUE TO PROBE LIFTOFF (NRI'S).

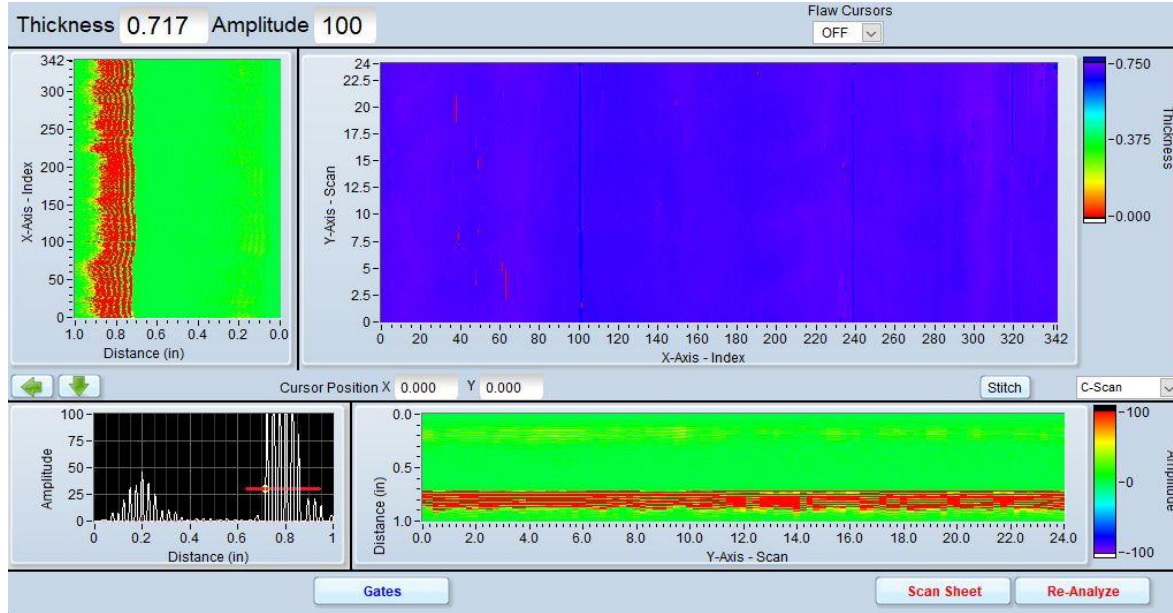


SCAN 1 (C SCAN)



SCAN 1 LOCATION

SCAN 2 START LOCATION: 12" NORTH OF 2ND CIRC WELD (FROM SOUTH END), AND 10" UP FROM SOUTH WEST SADDLE TO SHELL FILLET WELD.

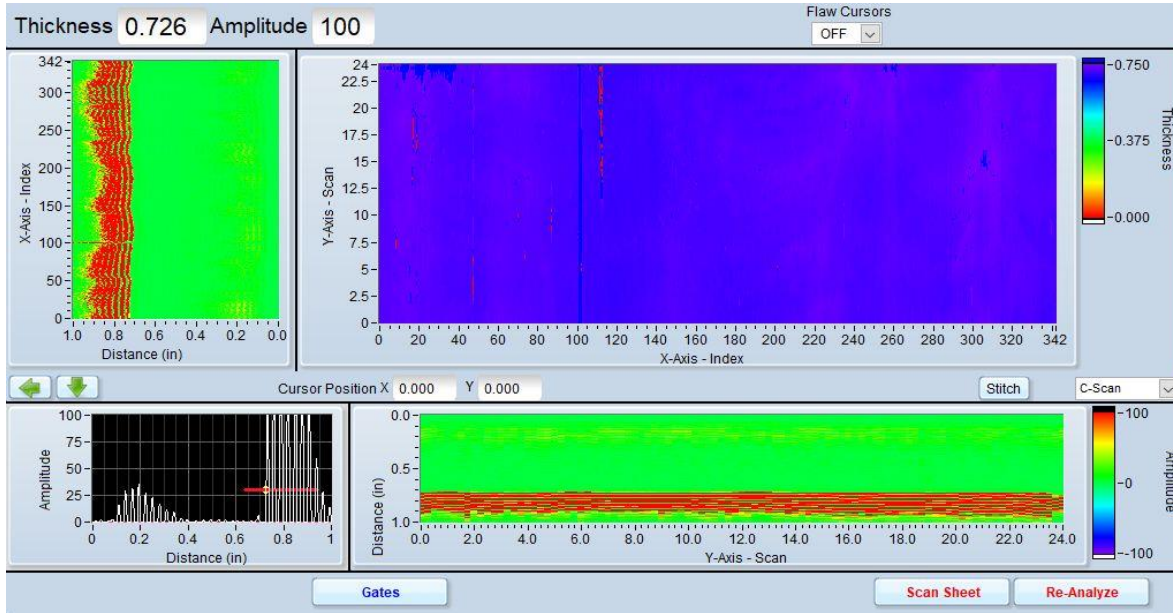


SCAN 2 (C SCAN)



SCAN 2 LOCATION

SCAN 3 START LOCATION: 36.5" NORTH OF 2ND CIRC WELD (FROM SOUTH END), AND 10" UP FROM SOUTH WEST SADDLE TO SHELL FILLET WELD.

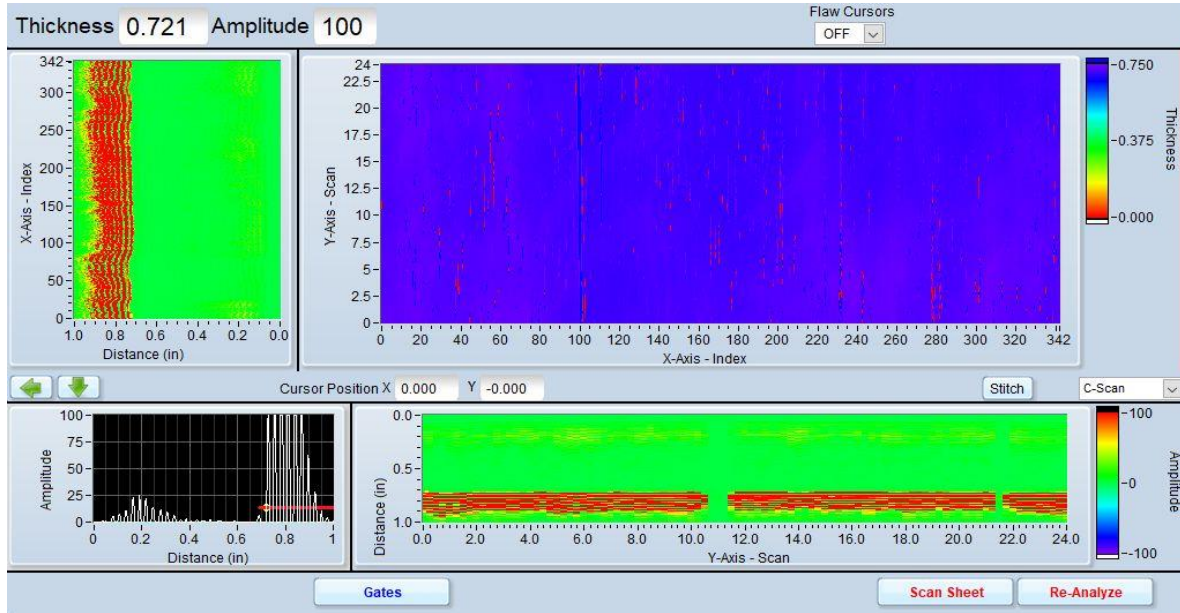


SCAN 3 (C SCAN)



SCAN 3 LOCATION

SCAN 4 START LOCATION: 61" NORTH OF 2ND CIRC WELD (FROM SOUTH END), AND 10" UP FROM SOUTH WEST SADDLE TO SHELL FILLET WELD.

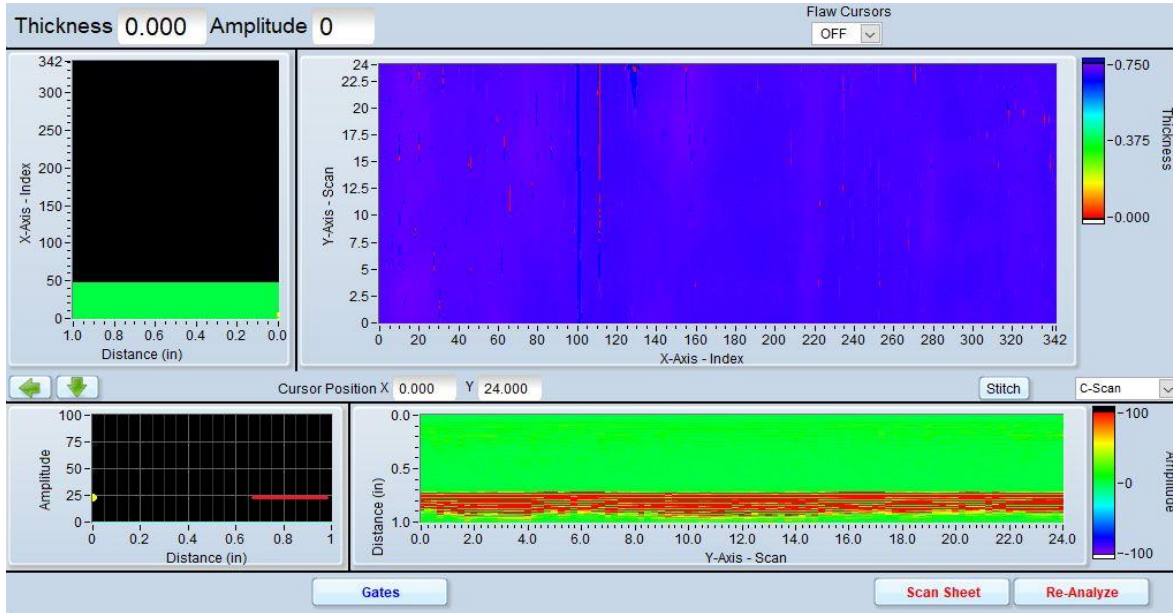


SCAN 4 (C SCAN)



SCAN 4 LOCATION

SCAN 5 START LOCATION: 68" NORTH OF 2ND CIRC WELD (FROM SOUTH END), AND 10" UP FROM SOUTH WEST SADDLE TO SHELL FILLET WELD.

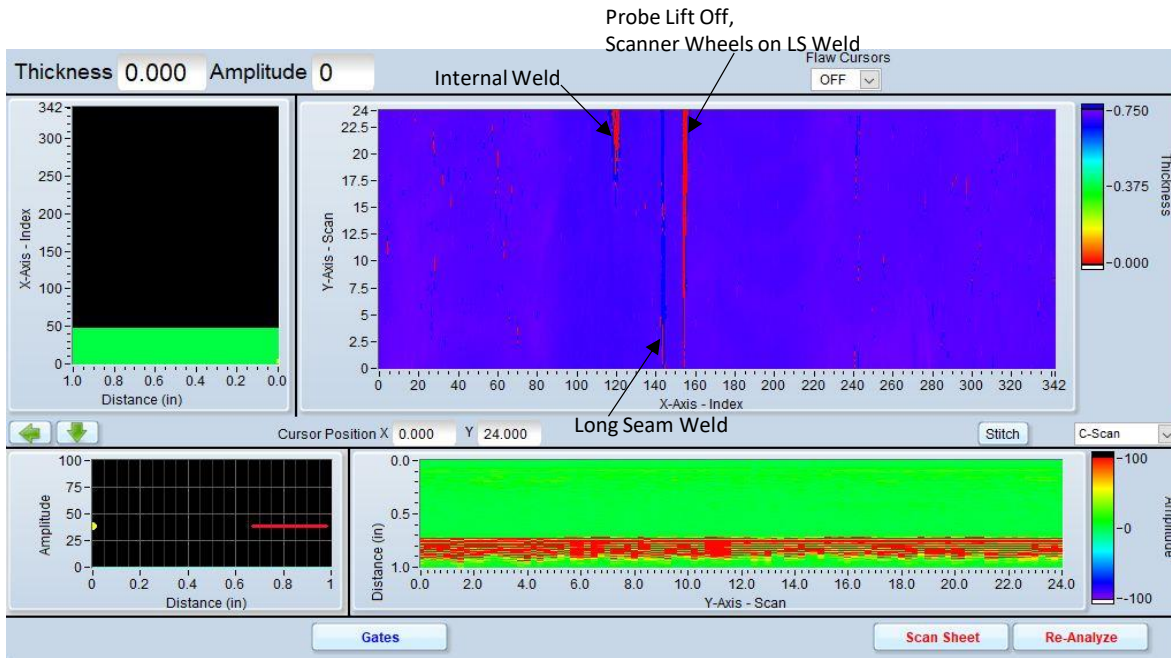


SCAN 5 (C SCAN)



SCAN 5 LOCATION

SCAN 6 START LOCATION: 9" NORTH OF 3RD CIRC WELD (FROM SOUTH END), AND 10" UP FROM SOUTH WEST SADDLE TO SHELL FILLET WELD.

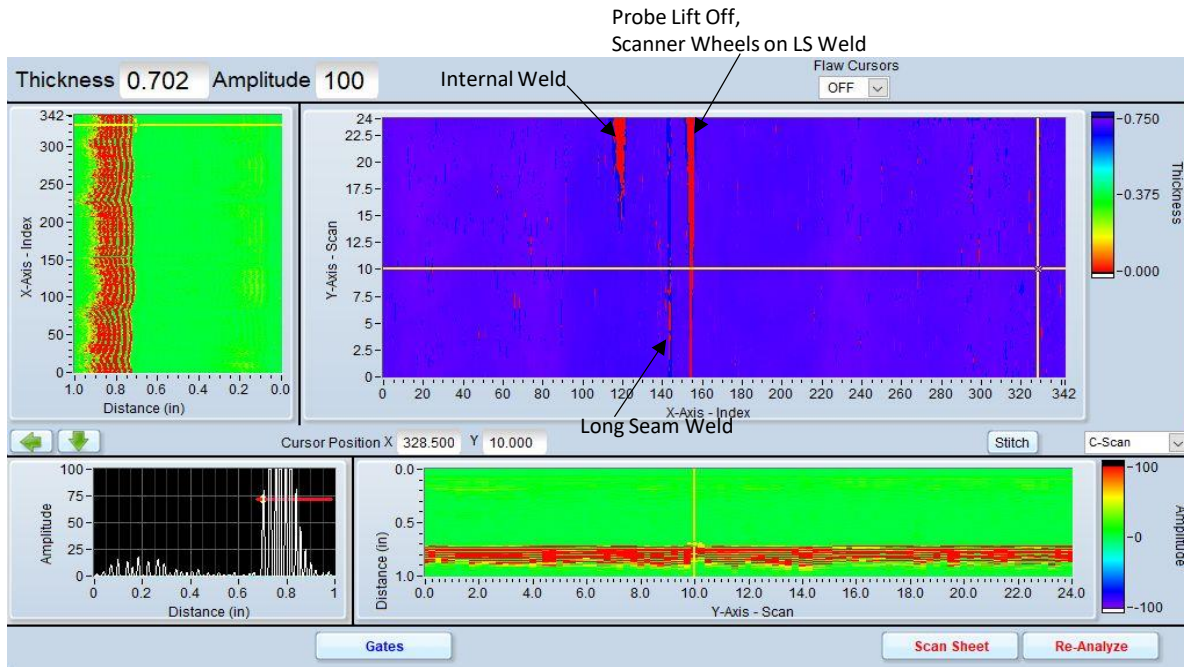


SCAN 6 (C SCAN)



SCAN 6 LOCATION

SCAN 7 START LOCATION: 31" NORTH OF 3RD CIRC WELD (FROM SOUTH END), AND 10" UP FROM SOUTH WEST SADDLE TO SHELL FILLET WELD.

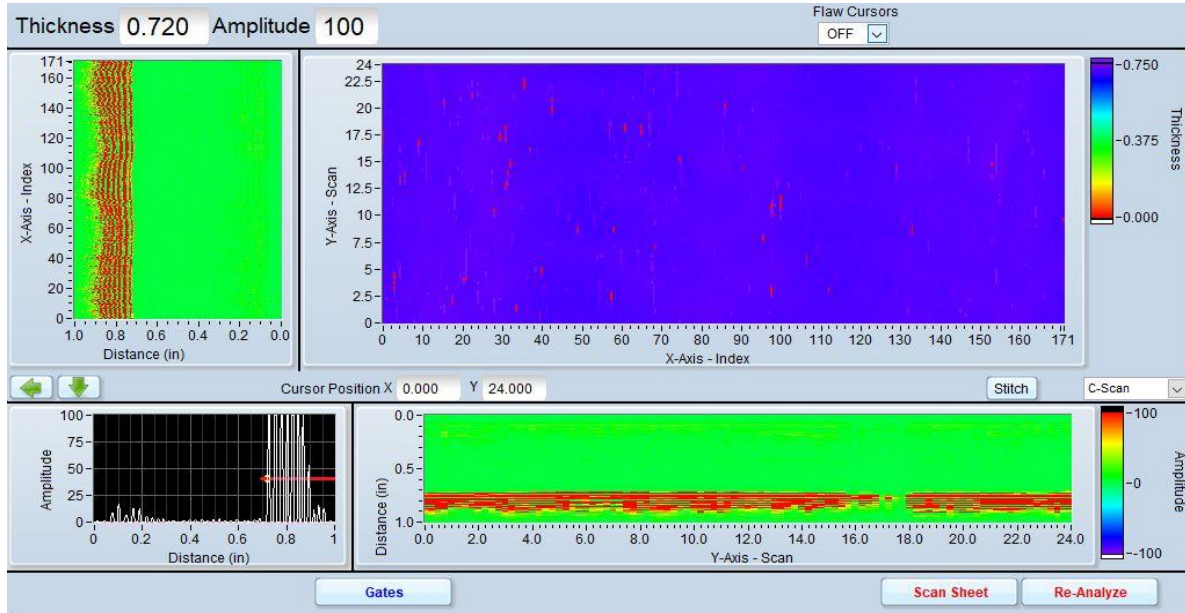


SCAN 7 (C SCAN)



SCAN 7 LOCATION

SCAN 8 START LOCATION: 80" NORTH OF 3RD CIRC WELD (FROM SOUTH END), AND 3" DOWN FROM SOUTH WEST SADDLE TO SHELL FILLET WELD.



SCAN 8 (C SCAN)



SCAN 8 LOCATION



# NON-DESTRUCTIVE EXAMINATION REPORT

GENERAL INFORMATION									
DATE:	July 07, 2021			REPORT #:	UT-CG07JUL2021B				
CLIENT/OWNER:	CNRL			AVALANCHE JOB #:	20-448		CLIENT JOB #:		
DISTRICT/REGION:	Fort St John			PROJECT:	SW/UT Insp		CLIENT PO #:		
AREA:	Ladyfern			LOCATION:	SURFACE:	b-17-I/94-H-1			
FACILITY:	Plant				UWI/DH:	b-17-I/94-H-1			
ITEMS EXAMINED:	LPG Bullet A0571773 (V-201), 18" Manway								
METHOD(S) / SURFACE CONDITION									
INSPECTION METHOD(S):	<input type="checkbox"/> MT <input type="checkbox"/> PT <input checked="" type="checkbox"/> UT <input type="checkbox"/> HT <input type="checkbox"/> VT			ACCEPTANCE CRITERIA:	CLIENT EVALUATION				
PROCEDURE(S):	UT-01			UT-02	SPECIFICATION(S):	AS PER CLIENT SPEC.			
SURFACE CONDITION:	<input type="checkbox"/> Clean Base Metal <input type="checkbox"/> As Ground <input type="checkbox"/> Wire Wheel Cleaned <input type="checkbox"/> As Welded <input type="checkbox"/> Machined <input type="checkbox"/> Sand Blast								
<input checked="" type="checkbox"/> Other:	Painted			MATERIAL / THICKNESS:	CARBON STEEL				
MT/PT									
					MINIMUM LIGHT INTENSITY: $\geq 100$ fc Visible, $\geq 1000$ $\mu$ W/cm <sup>2</sup>				
LIGHTING TYPE:	<input type="checkbox"/> Ambient Lighting <input type="checkbox"/> Flashlight <input type="checkbox"/> 100W Flood Light <input type="checkbox"/> Halogen Light <input type="checkbox"/> Blacklight								
EQUIPMENT TYPE	SERIAL #	CALIBRATION DATE			MT CONSUMABLES			APPLICATION:	
BLACKLIGHT					MEDIUM:		CONTRAST:	<input type="checkbox"/> SPRAY	
LIGHT METER					<input type="checkbox"/> BWMPI	<input type="checkbox"/> WFMPI	<input type="checkbox"/> DRY / COLOR:	<input type="checkbox"/> PUFFER	
YOKE					<input type="checkbox"/> AC	<input type="checkbox"/> CONTINUOUS	<input type="checkbox"/> 120V	LEG SPACING: 3" - 8"	
PRODUCT	MANUFACTURER / TYPE	BATCH #			DWELL (MIN)	APPLICATION METHOD		METHOD TYPE	
PENETRANT:									
CLEANER:									
DEVELOPER:									
UT									
EQUIPMENT TYPE:	Epoch 650	SERIAL #:	160252309	CAL DATE:	04-Jan-21		CABLE LENGTH/TYPE:	3' / DUAL LEMO	
<input checked="" type="checkbox"/> 0°	<input checked="" type="checkbox"/> Shearwave	COUPLANT:	UT-X	CAL BLOCKS:	1" - 10 STEP - C/S				
REF REFLECTOR:	TYPE:	SIZE:		DEPTH:		SIG RESP (FSH):			
PROBE TYPE	ANGLE	WAVE	FREQ	SIZE	MFG	SERIAL #	RANGE	REF LVL	SCAN LEVEL (DB)
DUAL	0	LONG	5MHz	0.250"	STRESSTEL	21A00CL0	1.000"	54	60
SINGLE	45	SHEAR	2.25MHz	0.375"	OLYMPUS	1063722	10.000"	48	54
SINGLE	60	SHEAR	2.25MHz	0.375"	OLYMPUS	1063722	10.000"	46	52
HT									
EQUIPMENT TYPE	SERIAL #	CALIBRATION DATE			UNIT	MIN HARDNESS VALUE		MAX HARDNESS VALUE	
LEEB HL200									
TEST RESULTS									
<b>SCOPE:</b>									
A SWUT WAS CONDUCTED ON ALL ACCESSIBLE MANWAY TO SHELL WELDS OF THE LPG BULLET A0571773 AS REQUESTED BY THE CLIENT.									
<b>RESULTS:</b>									
NO RELEVANT INDICATIONS WERE LOCATED WITH SWUT. WELDS EXAMINED ARE ACCEPTABLE AS PER CODE.									
TECHNICIAN:	Curtis Graham				ASSISTANT:	Darrin Robak			
SIGNATURE:					CLIENT:				
CGSB/SNT CERTS:	6560 UT II / MT II / PT II				SIGNATURE:				

