Pressure Equipment Static Data

General Information

Date:	May 24, 2024	**Location:**	Surface:	12-36-056-24W5	
Client/Owner:	CNRL		UWI/DH:	12-36-056-24W5	
District/Region:	Edson	**Location Access:**		All Year	
Area:	Wild River	**Inspection Type(s):**		VE UT VI	
Facility:	Well Site				

Pressure Equipment Information

Equip Name:	Inlet Separator			**CA** (in)**:**	0.0625	mm:	
Manufacturer:	Black, Sivalls & Bryson			**MDMT:**	- 20 F		
Provincial #:	A0475230	**Unit /Skid #:**	N/A	**PWHT:**	Yes		
S/N:	011055-V100	**Equip #:**	N/A	**RT:**	RT-1		
CRN:	P6409.2	**Year Built:**	2001	**Manway:**	Yes	**Size** (in)**:**	18
NB #:	N/A	**Orientation:**	Horizontal				

Zones

	MAWP (PSI)	MAWT (F)	MAWP (KPA)	MAWT (C)	Comment
Shell Side	720	130			

Components

	Dia (OD) in.	Type	Material	Nominal (in)	Nominal (mm)	Comment
Shell	48	Plate	SA-516-70N	1.000		
Head	48	Ellipsoidal	SA-516-70N	1.063		Min thickness
Shell 2	20	Pipe	SA-516-70N	1.000		Material and nominal assumed
Head 2	20	Ellipsoidal	SA-516-70MT	1.000		Material stamped in head. Nominal assumed.

Pressure Safety Valve(s)

Zone:	**Shell Side**	
Equip #	N/A	
Location	Vessel - Flanged	
Set Press (PSI)	720	
Capacity	25908	SCFM
Set Press (KPA)		
Manufacturer	Farris	
S/N	428852-2-A10	
Model	26KA12-120	
CRN	N/A	
Inlet Size (in)	3	Locked Open?
Outlet Size (in)	4	
Inlet I/V	No	
Outlet I/V	No	
Service Co.	PowerComm	
Serv. Date	May-2009	

Service Status and Conditions

Status:	Out of Service	Service:	Sweet	Primary Contents - Shell:	Gas
		Concentration:		Primary Contents - Tube:	

Comments

Pressure Vessel External Inspection

Date:	May 24, 2024		**Equip Name:**	Inlet Separator
Inspector:	Cameron Stainton		**Prov #:**	A0475230
Client/Owner:	CNRL		**S/N:**	011055-V100
District/Region:	Edson		**Unit /Skid #:**	N/A
Area:	Wild River		**Equip #**	N/A
Facility:	Well Site	**Location:**	**Surface:**	12-36-056-24W5
			UWI/DH:	12-36-056-24W5

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 skirt is bolted to skid floor. All bolts are installed and are secure.
Ladder/Platform	N/A	
Insulation/Cladding	Acceptable	Vessel is 30% insulated and cladded. Insulation is in good overall condition. Insulation banding is all intact and secure.
Shell	Acceptable	Shell is in good condition, no concerns noted.
Heads	Acceptable	Heads are in good condition, no concerns noted. No access to west head due to insulation.
Nozzles/Threadolets	Acceptable	All nozzles are in good condition. No concerns noted with deflection, improper thread engagement or bolting (as applicable).
Piping/Valves	Acceptable	All associated piping is adequately supported and in good condition. No concerns noted with leaks, deflection, thread engagement or bolting (as applicable).
Appurtenances & Instrumentation	Acceptable	Instrumentation is in good condition, no leaks noted. Pressure/Temperature gauge(s) are in good condition and operating within design limits (as applicable).
Sight Glass/Level Gauges	Acceptable	Sight glass(es) are in good condition. Rated for current vessel service with no concerns noted.
Other	N/A	
PSV	Concern	Needs operational/maintenance. PSV is overdue for servicing. Last serviced in 2009. PSV is in good condition. Service seal is intact, no piping restrictions or other concerns noted. PSV has applicable code stamping present.
NDE Methods	Reject	UT survey performed by Avalanche. Needs Deferred Repair: Corrosion noted with the lowest RL of 0.6 years and 69% wall loss, see UT results for details.

Inspection Summary	Needs Deferred Repair: Corrosion noted with the lowest RL of 0.6 years and 69% wall loss, see UT results for details.
	Needs operational/maintenance. PSV is overdue for servicing. Last serviced in 2009.
	No other concerns noted at time of inspection.

Recommendations	NCR #
Client assess UT results and determine appropriate course of action.	NCR-CS24MAY2024A
Service PSV prior to returning to service.	

Fit for Service:	No

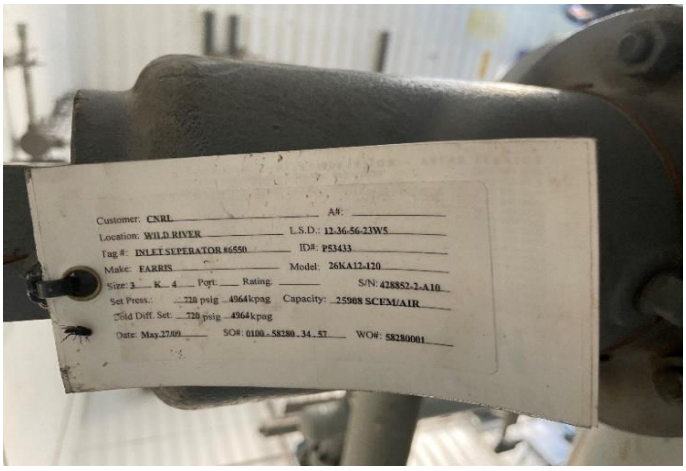
** Fit for Service is only a recommendation based on the results of the current inspection.*

Recommended Intervals:	
VE	yrs
UT	yrs
PSV	yrs

Signature of Inspector:		
Cert #	API 510:	105891
	AB/SK:	1424 / 82955

Quality Systems Manager or Delegate:		Mike Williams
		
Cert #	API 510:	24838
	AB/SK:	200

External Inspection Pictures

PHOTOS	
	
LSD Sign	**Site Overview**
	
Nameplate	**Overview**
	
PSV Nameplate	**PSV Service Tag**

External Inspection Pictures

PHOTOS

PSV Overview

Pressure Vessel Internal Inspection

Date:	May 24, 2024		**Equip Name:**	Inlet Separator	
Inspector:	Cameron Stainton		**Prov #:**	A0475230	
Client/Owner:	CNRL		**S/N:**	011055-V100	
District/Region:	Edson		**Unit /Skid #:**	N/A	
Area:	Wild River		**Equip #**	N/A	
Facility:	Well Site	**Location:**	**Surface:**	12-36-056-24W5	
			UWI/DH:	12-36-056-24W5	

Component	Condition	Comment
Shell	Acceptable	Shell was found to be in good condition and internally coated. No coating holidays or corrosion noted.
Heads	Acceptable	Heads were found to be in good condition and internally coated. No coating holidays or corrosion noted.
Manway	Acceptable	Manway was found to be in good condition, there were 5x coating disbondment/holidays noted. Coating repairs were performed at time of inspection using Devmat 142B
Nozzles	Acceptable	Accessible nozzles were found to be in good condition and internally coating. Minor residual product/sediment was noted at time of inspection.
Gasket Surfaces	Acceptable	GSS was found to be in good condition, no corrosion or mechanical damage noted.
Internals	Acceptable	Internal weir was found to be in good condition, coated and secured in place at time of inspection. Limited access to deflector plate, internal weir was blocking full access to east side of the vessel.
Welds	Acceptable	Welds were found to be in good condition and coated at time of inspection.
Coating	Acceptable	Coating was found to be in good condition, 5x coating disbondments/holidays were noted on the manway throat. Coating repairs were performed at time of inspection using Devmat 142B.
Firetube	N/A	
Tubesheet	N/A	
Tube Bundle	N/A	
Other	N/A	
NDE Methods	Acceptable	External UT was performed at time of inspection on the entire vessel with a particular focus on in-accessible areas due to internal weir. No corrosion or pitting was noted on vessel, pitting was noted on associated piping. Integrity personnel to review UT data and develop a proper course of action.

Inspection Summary	No concerns related to internal inspection noted at time of inspection.
	Limited access to east side of vessel due to weir being in place at time of inspection, additional UT was performed on in-accessible areas.

Recommendations	NCR #

Fit for Service:	Yes

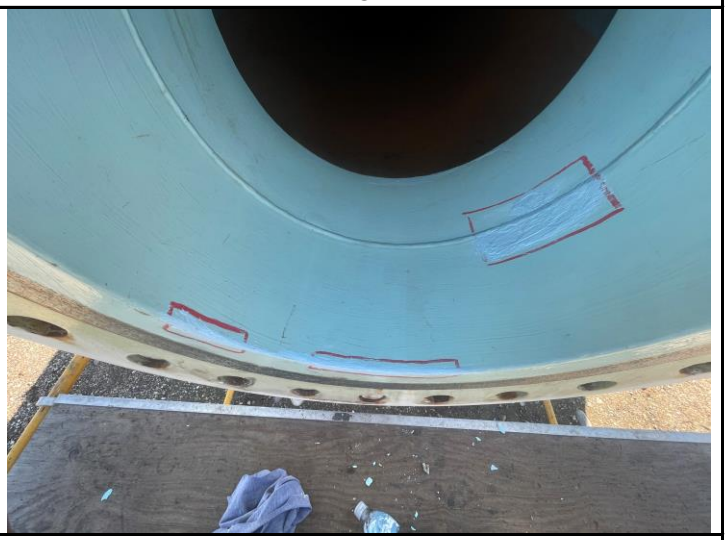
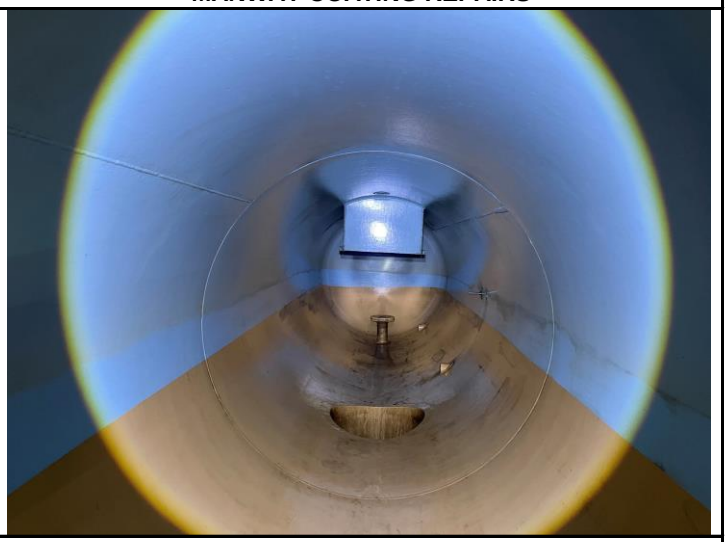
** Fit for Service is only a recommendation based on the results of the current inspection.*

Recommended Intervals:	
VI	yrs
UT	yrs
PSV	yrs

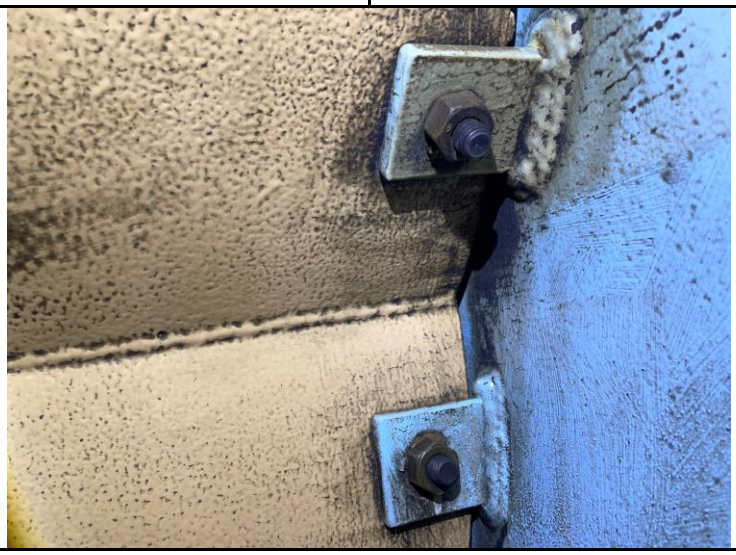
Signature of Inspector:		
Cert #	API 510:	105891
	AB/SK:	1424 / 82955

Quality Systems Manager or Delegate:		Mike Williams
		
Cert #	API 510:	24838
	AB/SK:	200

Internal Inspection Pictures

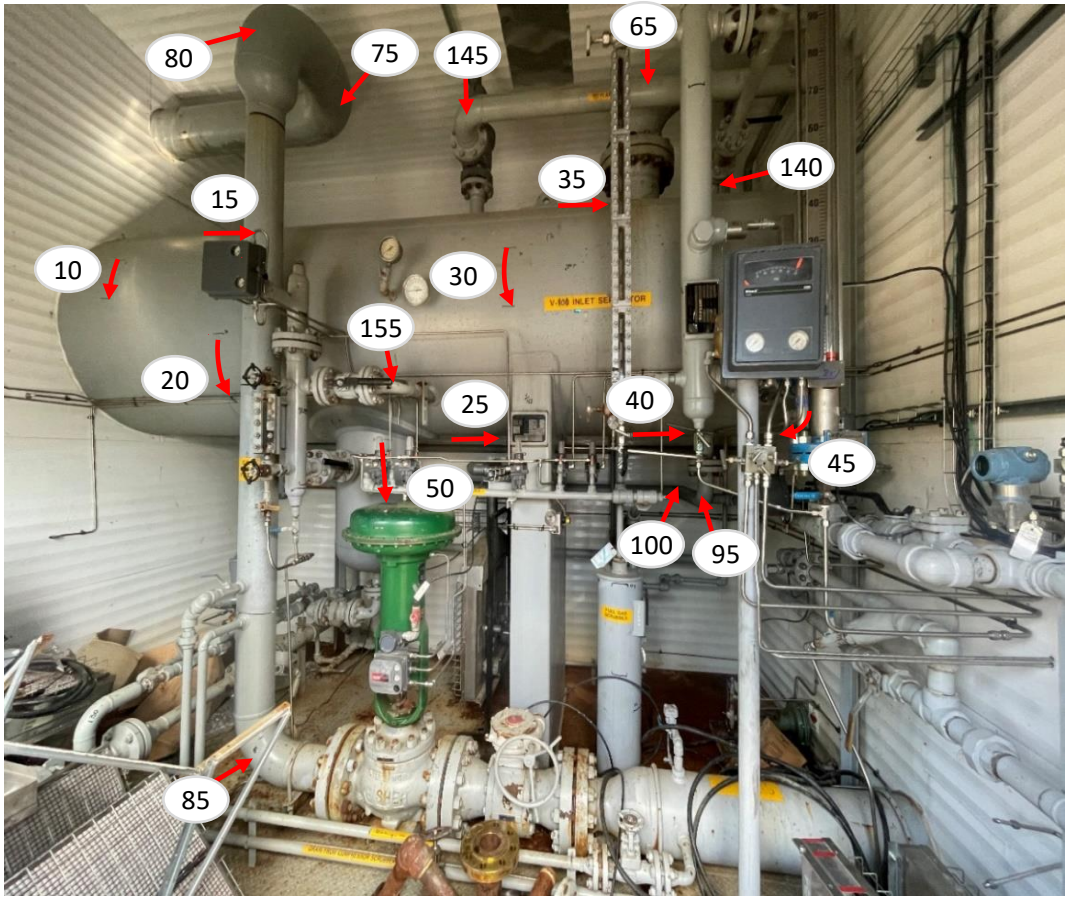
PHOTOS	
	
MANWAY COVER PLATE	MANWAY OVERVIEW
	
MANWAY COATING DISBONDMENTS	MANWAY COATING REPAIRS
	
INTERNAL OVERVIEW (FACING EAST FROM MANWAY)	INTERNAL OVERVIEW (FACING EAST)

Internal Inspection Pictures

PHOTOS	
	
INTERNAL OVERVIEW (FACING WEST FROM WEIR)	OUTLET NOZZLE OVERVIEW
	
SEDIMENT IN OUTLET NOZZLE AT TIME OF INSPECTION	INTERNAL WEIR
	
WEIR FASTENED IN PLACE	

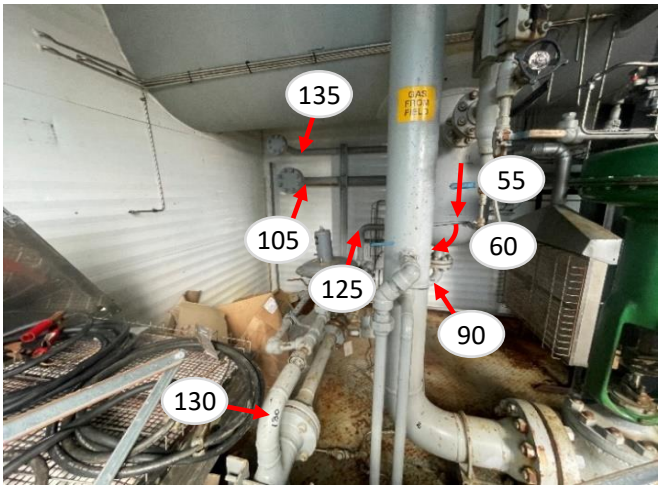
UT CORROSION SURVEY REPORT

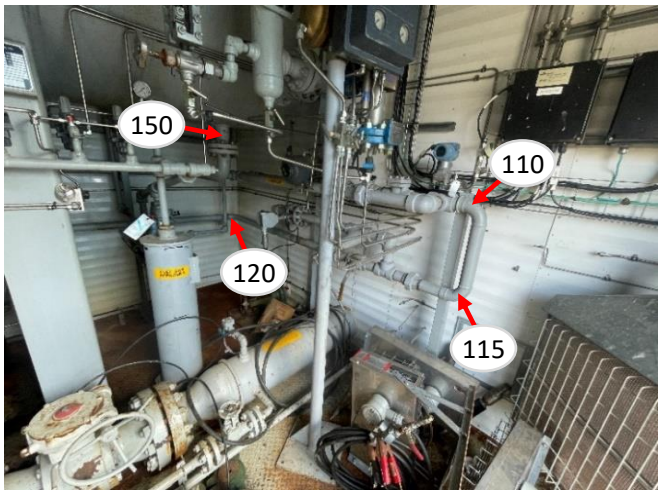
STATIC DATA							
Date:	May 24, 2024		**Equip. Name:**	Inlet Separator			
Client/Owner:	CNRL		**Provincial #:**	A0475230	**Equip #:**	N/A	
District:	Edson		**Manufacturer:**	Black, Sivalls & Bryson	**CRN:**	P6409.2	
Area:	Wild River		**Year Built:**	2001	**S/N:**	011055-V100	
Facility:	Well Site		**RT (Joint Eff):**	RT-1	**CA:**	0.0625	in
Location/LSD:	SF:	12-36-056-24W5	UWI/DH:	12-36-056-24W5			
Notes:							



UT CORROSION SURVEY REPORT







UT CORROSION SURVEY REPORT
READINGS

Date:	May 24, 2024	**Area:**	Wild River	**Equip Name:**	Inlet Separator	**Equip #:**	N/A
Client:	CNRL	**LSD:**	SF: 12-36-056-24W5 / UWI: 12-36-056-24W5	**Prov #:**	A0475230	**S/N:**	011055-V100

VESSEL TMLS

	Baseline		Previous		Current											
	01-Jan-01		01-Jan-01		24-May-24											
TML ID	**LOW**	**AVG**	**LOW**	**AVG**	**LOW**	**AVG**	**SIZE (OD)**	**NOM**	**STCR (/YR)**	**LTCR (/YR)**	**Tmin**	**ST RL (YRS)**	**LT RL (YRS)**	**% Loss**	**Zone**	**Component / Type**	
05	1.063	1.063	1.063	1.063	1.122	1.127	48.000	1.063	0.0000	0.0000	0.829	50.0	50.0	0.00%	Shell Side	Head	Ellipsoidal
10	1.000	1.000	1.000	1.000	1.034	1.038	48.000	1.000	0.0000	0.0000	0.846	50.0	50.0	0.00%	Shell Side	Shell	Plate
15	1.000	1.000	1.000	1.000	1.038	1.040	48.000	1.000	0.0000	0.0000	0.846	50.0	50.0	0.00%	Shell Side	Shell	Plate
20	1.000	1.000	1.000	1.000	1.023	1.027	48.000	1.000	0.0000	0.0000	0.846	50.0	50.0	0.00%	Shell Side	Shell	Plate
25	1.000	1.000	1.000	1.000	1.029	1.031	48.000	1.000	0.0000	0.0000	0.846	50.0	50.0	0.00%	Shell Side	Shell	Plate
30	1.000	1.000	1.000	1.000	1.027	1.030	48.000	1.000	0.0000	0.0000	0.846	50.0	50.0	0.00%	Shell Side	Shell	Plate
35	1.000	1.000	1.000	1.000	1.038	1.042	48.000	1.000	0.0000	0.0000	0.846	50.0	50.0	0.00%	Shell Side	Shell	Plate
40	1.000	1.000	1.000	1.000	1.035	1.039	48.000	1.000	0.0000	0.0000	0.846	50.0	50.0	0.00%	Shell Side	Shell	Plate
45	1.063	1.063	1.063	1.063	1.117	1.131	48.000	1.063	0.0000	0.0000	0.829	50.0	50.0	0.00%	Shell Side	Head	Ellipsoidal
50	1.000	1.000	1.000	1.000	1.025	1.033	20.000	1.000	0.0000	0.0000	0.331	50.0	50.0	0.00%	Shell Side	Shell 2	Pipe
55	1.000	1.000	1.000	1.000	0.993	1.006	20.000	1.000	0.0003	0.0003	0.331	50.0	50.0	0.70%	Shell Side	Shell 2	Pipe
60	1.000	1.000	1.000	1.000	0.956	0.974	20.000	1.000	0.0019	0.0019	0.325	50.0	50.0	4.40%	Shell Side	Head 2	Ellipsoidal

UT CORROSION SURVEY REPORT
READINGS

ATTACHMENT / PIPING / NOZZLE TMLS																		
	Baseline		Previous		Current													
	01-Jan-01		01-Jan-01		24-May-24													
TML ID	LOW	AVG	LOW	AVG	LOW	AVG	SIZE (OD)	NOM	STCR (/YR)	LTCR (/YR)	Tmin	ST RL (YRS)	LT RL (YRS)	% Loss	SCH	Zone	Shape	Type
65	0.365	0.365	0.365	0.365	0.376	0.384	10.75	0.365	0.0000	0.0000	0.191	50.0	50.0	0.00%	STD	Shell Side	90°	Piping
70	0.365	0.365	0.365	0.365	0.373	0.382	10.75	0.365	0.0000	0.0000	0.191	50.0	50.0	0.00%	STD	Shell Side	90°	Piping
75	0.365	0.365	0.365	0.365	0.356	0.362	10.75	0.365	0.0004	0.0004	0.191	50.0	50.0	2.47%	STD	Shell Side	90°	Piping
80	0.365	0.365	0.365	0.365	0.359	0.362	10.75	0.365	0.0003	0.0003	0.191	50.0	50.0	1.64%	STD	Shell Side	90°	Piping
85	0.280	0.280	0.280	0.280	0.274	0.289	6.625	0.280	0.0003	0.0003	0.118	50.0	50.0	2.14%	STD	Shell Side	90°	Piping
90	0.218	0.218	0.218	0.218	0.183	0.197	2.375	0.218	0.0015	0.0015	0.042	50.0	50.0	16.06%	XS	Shell Side	90°	Piping
95	0.216	0.216	0.216	0.216	0.066	0.168	3.5	0.216	0.0064	0.0064	0.062	0.6	0.6	69.44%	STD	Shell Side	90°	Piping
100	0.216	0.216	0.216	0.216	0.184	0.211	3.5	0.216	0.0014	0.0014	0.062	50.0	50.0	14.81%	STD	Shell Side	90°	Piping
105	0.216	0.216	0.216	0.216	0.213	0.238	3.5	0.216	0.0001	0.0001	0.062	50.0	50.0	1.39%	STD	Shell Side	90°	Piping
110	0.218	0.218	0.218	0.218	0.202	0.211	2.375	0.218	0.0007	0.0007	0.042	50.0	50.0	7.34%	XS	Shell Side	90°	Piping
115	0.218	0.218	0.218	0.218	0.185	0.199	2.375	0.218	0.0014	0.0014	0.042	50.0	50.0	15.14%	XS	Shell Side	90°	Piping
120	0.218	0.218	0.218	0.218	0.201	0.212	2.375	0.218	0.0007	0.0007	0.042	50.0	50.0	7.80%	XS	Shell Side	90°	Piping
125	0.218	0.218	0.218	0.218	0.205	0.211	2.375	0.218	0.0006	0.0006	0.042	50.0	50.0	5.96%	XS	Shell Side	90°	Piping
130	0.218	0.218	0.218	0.218	0.206	0.216	2.375	0.218	0.0005	0.0005	0.042	50.0	50.0	5.50%	XS	Shell Side	90°	Piping
135	0.218	0.218	0.218	0.218	0.209	0.215	2.375	0.218	0.0004	0.0004	0.042	50.0	50.0	4.13%	XS	Shell Side	90°	Piping
140	0.343	0.343	0.343	0.343	0.268	0.290	2.375	0.343	0.0032	0.0032	0.049	50.0	50.0	21.87%	160	Shell Side	90°	Nozzle
145	0.237	0.237	0.237	0.237	0.242	0.253	4.5	0.237	0.0000	0.0000	0.080	50.0	50.0	0.00%	STD	Shell Side	90°	Piping
150	0.600	0.600	0.600	0.600	0.584	0.597	3.5	0.600	0.0007	0.0007	0.072	50.0	50.0	2.67%	XXS	Shell Side	360°	Nozzle
155	0.343	0.343	0.343	0.343	0.264	0.295	2.375	0.343	0.0034	0.0034	0.049	50.0	50.0	23.03%	160	Shell Side	90°	Nozzle

Comments:	
	TML 95, 100,105: Pitting noted.
	TML 90, 115, 140, 155 : Erosion noted.

Disclaimer

Corrosion rates and remaining life calculations may not be accurate for any of the following reasons: i) year built and nominal used as baseline in calculations, ii) short time period between survey dates, iii) previous survey data was point readings instead of full scans. Client to perform follow up calculations as required.

Corrosion rates and remaining life calculations are not able to be performed in the following scenarios: i) baseline survey on new equipment, ii) when year built or in-service date is unknown, iii) Tmin is not able to be calculated, iv) no previous inspection history is available to provide previous date and readings needed for calculations.

If requested by client, the Tmin used for "Piping" Type is the greater of Pressure Design Thickness or API 574 – Table 7 Default Minimum Structural Thickness.

UT CORROSION SURVEY REPORT
READINGS

Notes:

**All readings are in:* inches
**Piping Tmin calculated:* Pressure Design Calcs
**RL maximum is 50 years.*
**% Wall loss is based on current low vs nominal.*
**Baseline is based off nominal if no previous readings available and started in year equipment was fabricated, unless other information is available to prove in-service date.*
**Previous readings taken from baseline if no past readings/survey data are available.*
** Day/Month used for Baseline and Previous readings is arbitrary if no dates are provided.*
** If no corrosion comments are made on piping, general low thickness was noted.*

UT EQUIPMENT & PROCEDURES					
Probe	**Wave**	**Freq.**	**Size**	**Manuf.**	**Serial #**
Dual	Long - 0°	5 Mhz	1/4"	Stresstel	22D00TW0
UT Set		**Serial #**		**Cal Date**	**Cal Block**
38 DL+		GOPLS18010127		02-Jan-2024	1" C/S Step
Procedure(s):		UT-01		AI-CR-01	

TECHNICIAN SIGN-OFF		
Inspector:	Melissa Reeves	CGSB Certifications:
		30282 UT I
Signature:	Melissa Reeves	