



Client	Tara Energy Services	Inspection Date	Mar 14, 2024		
Prov. Reg. #	AB 0543257	Inspection Type	VE / VI / PSV / UT		
Equipment Type	Horizontal Separator	Location	Portable, Clairmont Yard		
Tag/Equip.		LSD	AB		
Status	In Service	Downhole LSD			
Manufacturer	Dynacorp Fabricators Inc	Area	Grande Prairie		
Serial Number	2J50594	Year Built	2005		
CRN #	T2246.213	Service	Sour		
Comp/Unit Id	SS-287	Manway	Yes		
Nat.Board #		Coating			
Interim Insp'n		Interim Type			
Next Thorough Insp	2027	Next Insp Type	VE / VI / PSV / UT		
Length		Height			
Volume	658 ft³	Client Reference			
Owner	Tara Energy Services	RT	1	HT	YES
Foreman	Jeff Warr	RAE Job No.	PR0002839		
ABSA	Plant: H Vessel: P Process: W Special: W	ASME	Sec. VIII div. 1		
History Log	AB-25 - entered March 10, 2021 PSV Service Report - dated February 25, 2021 - entered March 10, 2021 Vessel previously owned by Lyon's Production - bought by Tara as per Oct.2023 ESR - entered November 30, 2023 Inspection Report Complete - Inspection Date: 2024-March-14 Inspection Type: VE/VI/PSV/UT				

Component	Shell				
MAWP	285.0 PSI @ 100 °F		MDMT	-49 °F @ 285.0 PSI	
Material	SA-516-70N		Material Thickness	0.625 in	
Diameter	78 in		Length	216 in	
Corrosion Allowance	0.062 in				



Valve Tag No	24710-2	Relief Type	Pressure Relief Valve
Manufacturer	Taylor	Set Pressure	285.000 PSI
Serial Number	24710-2	Capacity	6958 SCFM
Model	83J7811341-60-60-0	Last Service	Feb 26, 2021
CRN	0G1316.2C	Next Service	2024
Service Co.	Unified	Service Interval	36 Months
Service Co. Tag	32656G	Inlet Size	3 in
ASME Stamp	UV	Outlet Size	3 in
NB Stamp	YES	Connection	Flanged
Relief Dest.	To Flare	Valve Loc.	On Vessel
Comments		Client Reference	

Component	Heads		
Material	SA-516-70N	Material Thickness	0.688 in
Corrosion Allowance	0.062 in		

Comments

The following RAE Procedure(s) was/were used in inspecting this vessel:

INS-645B PRV Inspection Procedure

INS-670B Separator Inspection Procedure

NDE-701B UT-1 Ultrasonic Thickness Measurement Procedure



Figure: 1



Unit Overview

Building Observations

Number of Access Doors:1 Building Supported by: Skid
Gas test port: No Gas Detection: No
Fire eye: No Catalytic Heater: Yes
Lighting: Good Floors : Checker plate steel
Drainage/Condition: Acceptable
Equipment placed ergonomically: Yes

The building is generally in good condition and well supported. The floor was clean and was steel plate. The building is well lit, the windows were in good condition and the doors function well. There were no combustibles in the building. There was generally good access to the equipment in the building.

Figure: 2



Building



Piping Observations

General condition: Acceptable

Mechanical connections acceptable for service?: Acceptable

Clad: No Painted: Yes Insulated: No

Are there any dead legs: No

Support type: U-Bolt

Supported adequately: Yes

There is no damage, distortion or stress evident on piping. The piping is painted. There was no significant surface corrosion on the piping. The piping is well supported and anchored.

Figure: 3



Inlet Piping

Figure: 4



Drain Piping 1

Figure: 5



Drain Piping 2

Figure: 6



Meter Run Piping



PSV Observations

Drainage : Acceptable Supports : Acceptable
Bolting : Acceptable Seal wire : Acceptable
Gasket : Acceptable Service tag : Acceptable
CRN : Acceptable Set pressure : Acceptable
Installation vertical : Yes Required Capacity : Value not available
PSV block valves : No
PSV service report available : No

The PSV was in good condition, and was mounted in the vertical position. The vent size was adequate and vent lines were positioned safely. The outlet piping provided positive drainage for the PSV. The PSV is due for service therefore the PSV needs to be serviced and service report needs to be sent to RAE Engineering and Inspection Ltd. for data entry.

Figure: 7



PSV

Figure: 8



PSV Service Tag - Front

Figure: 9



PSV Service Tag - Back



External Observations

Installation : Partial
Grounded : Yes
Drains : Manual
Attachments : No
CUI checked : N/A
Vessel Orientation : Horizontal
Manway : Yes
Manway davit arms:
 Free to move : Yes
 Lubricated : Yes
Carry bolt with washer and double Nutted : Yes
Certificate of inspection permit : No
Nameplate attached and legible : Yes

Support Structure : Saddles
Securement Type : N/A
Securement Condition : Acceptable
Ladders/Platforms : N/A
External Covering : Coated

The vessel is partially located inside a building. The nameplate was legible and securely mounted to the vessel. The head and shell appeared to be in serviceable condition. The vessel is not insulated. The vessel was fully painted and the paint was in serviceable condition. There was scattered corrosion visible on the vessel surfaces. There was no damage, distortion, or stress evident on piping connections. The vessel was adequately supported. There are no structural attachments on vessel.

Figure: 10





Figure: 12



Vessel Overview 2

Figure: 13



Vessel Overview 3

Internal Observations

Access for Inspection

The vessel was accessed via the shell mounted man way. Access for thorough internal inspection was not limited.

Cleanliness

There was some product scaling; however, was easily scraped away to reveal only minor surface corrosion..

Components Inspected

- Heads
- Shell
- Nozzle attachments and sparger
- Inlet nozzle
- Weir
- Heat Coil
- Demister
- Man way/Davit Arm/Cover

Inspection Observations

The components inspected appeared to be in serviceable condition with no relevant indications of corrosion/erosion or mechanical defects and exhibited no areas of fabrication defects, distortion, or evidence of overheating.



Figure: 14



Manway

Figure: 15



Inlet Nozzle

Figure: 16



Inlet End Overview

Figure: 17



Weir

Figure: 18



Outlet End Overview

Figure: 19



Demister



UT1 Observations

See attached appendices for ultrasonic testing (UT) report.

At the time of inspection multiple TML noted to be below minimum nominal thickness, but above corrosion allowance, therefore no concern.

At the time of inspection TML210 noted to be below minimum nominal thickness and below corrosion allowance by 0.4mm, therefore this needs to be addressed.

Recommendations

1. At the time of inspection TML210 noted to be below minimum nominal thickness and below corrosion allowance by 0.4mm, therefore this needs to address. Option are to have the bottom section of vessel coated as soon as possible.

2. The PSV is due for service therefore the PSV needs to be serviced and service report needs to be sent to RAE Engineering and Inspection Ltd. for data entry.

Based on the scope and results of this inspection the vessel appears suitable for continued service.

Ken McNeil


Alberta IBPV #A-75085
API 510 #39628, API 570 #66961
API 653 #47993, CWB Level III #483

Marnes du Plessis

Alberta IBPV #A-74773
TSASK Pressure Equipment Class I #250
CWB Level II #8117

Inspector : Ken McNeil

Reviewed By: Marnes du Plessis

 RAE Engineering and Inspection Ltd 4810 - 93 Street Edmonton, AB, T6E 5M4 ph: 780-469-2401 fx: 780-468-2422				Inspection Date: 22-Mar-24 Report Date: 8-Apr-24 Page: 1 of 6		Ultrasonic Thickness Examination							
Client:		TARA Energy Services		Report Number:		24-PR0002839-EE-UT-01							
Facility:		9526 81 AVE, Clairmont, AB T8X0M2		Location/LSD:		Grande Prairie							
Equipment Number:		A0543257 / SS-287		Client Representative:		NA							
Equipment Description:		Horizontal Separator		Client Contact:		NA							
JOB DESCRIPTION													
Procedure:		NDE Technical Manual Rev. 2 (NDE-701B)		Surface		<input type="checkbox"/> Coated <input type="checkbox"/> Bare Steel <input checked="" type="checkbox"/> Painted							
Acceptance Code:		ASME Sec. VIII Div. 1 / ASME B31.3		Condition:		<input type="checkbox"/> Ground <input type="checkbox"/> Blasted <input type="checkbox"/> Buffed							
Material:		Carbon Steel		Surface Temp:		<input checked="" type="checkbox"/> < 0 °C <input type="checkbox"/> 0 - 120 °C <input type="checkbox"/> 120 - 260 °C <input type="checkbox"/> > 260 °C							
EQUIPMENT, TECHNIQUE & CALIBRATION													
Instrument 1 Mfr:		Waygate		Model:		DSMGO+		S/N: GOPLS21120043		Cal. Due: 5-Dec-24			
Instrument 2 Mfr:				Model:				S/N:		Cal. Due:			
Cal Block 1 S/N:		09-1475		1 or 2 Point Cal:		<input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2		Calibrated Range: 0.250"-1.000"		Couplant: UTX			
Cal Block 2 S/N:		15-1096		1 or 2 Point Cal:		<input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2		Calibrated Range: 1.000"-4.000"		Couplant: UTX			
	Probe Model	Freq MHz	Angle	Dia. (in)	Probe Type		Manufacturer	Serial #	Cable Length	Vel. (m/sec)	Ref dB	Scan dB+BU17:CJ5	Range (in)
					Single	Dual							
1	FH2E	5.0	0°	0.25	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Stresstel	22F01YMK	4'	5850	62	As Needed	5
2					<input type="checkbox"/>	<input type="checkbox"/>							

Scope: Conduct 0° straight beam ultrasonic testing on *Horizontal Separator* assessing the *components* for any signs of wall thinning due to corrosion, erosion, laminations, or inclusions.

Results: The measurements obtained from the inspection locations show the thickness of all the components inspected to be at or around nominal with the exceptions of **CML 210, 215, 216, 217, 220, 235, 240, N1 & N2** which were found to be lower than nominal minus ASME tolerance. (Refer to flag summary page)

Please see the following pages for the pictures of the nameplate and the overall view, the isometric drawings, and the thickness measurements.



- 1) Black – Within ASME Tolerance
- 2) Blue – ≤ Nominal minus ASME Tolerance
- 3) Red – ≤ Nominal minus ASME Tolerance minus CA or ≤ Nominal minus ASME Tolerance (if CA = N/S)
- 4) Orange – Nominal Not Specified (N/S)

1 ST Technician	Efe Erhigbare		CGSB#:	27134	CGSB Level:	1
	PRINT	SIGNATURE	SNT#:	710B-059	SNT Level:	1
2 ND Technician	Stuart Ashman		CGSB#:	18886	CGSB Level:	2
	PRINT	SIGNATURE	SNT#:		SNT Level:	



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Ultrasonic Thickness Examination

Client:	TARA Energy Services	Report Number:	24-PR0002839-EE-UT-01
Facility:	9526 81 AVE, Clairmont, AB T8X0M2	Location/LSD:	Grande Prairie
Equipment Number:	A0543257 / SS-287	Client Representative:	NA
Equipment Description:	Horizontal Separator	Client Contact:	NA

FLAGGED CMLs

CML #	CML Description	Nom. [mm]	Mil. [mm]	CA [mm]	Ave. [mm]	Min. [mm]
210	Lower Shell	15.90	0.25	1.60	14.37	13.69
215	Lower Shell	15.90	0.25	1.60	15.93	15.34
216	Lower Shell	15.90	0.25	1.60	14.97	14.61
217	Lower Shell	15.90	0.25	1.60	15.63	15.14
220	Lower Shell	15.90	0.25	1.60	15.24	14.76
235	Upper Shell	15.9	0.25	1.60	15.94	15.75
240	Upper Shell	15.90	0.25	1.60	15.67	15.44
N1	4 XXH Nozzle	17.12	2.14	1.58	15.33	14.94
N2	4 XXH Nozzle	17.12	2.14	1.60	15.68	14.96

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Equipment Description:	Horizontal Separator	Client Contact:	NA	

PHOTOGRAPHS



View of Nameplate & Unit Number



Overall View of Equipment



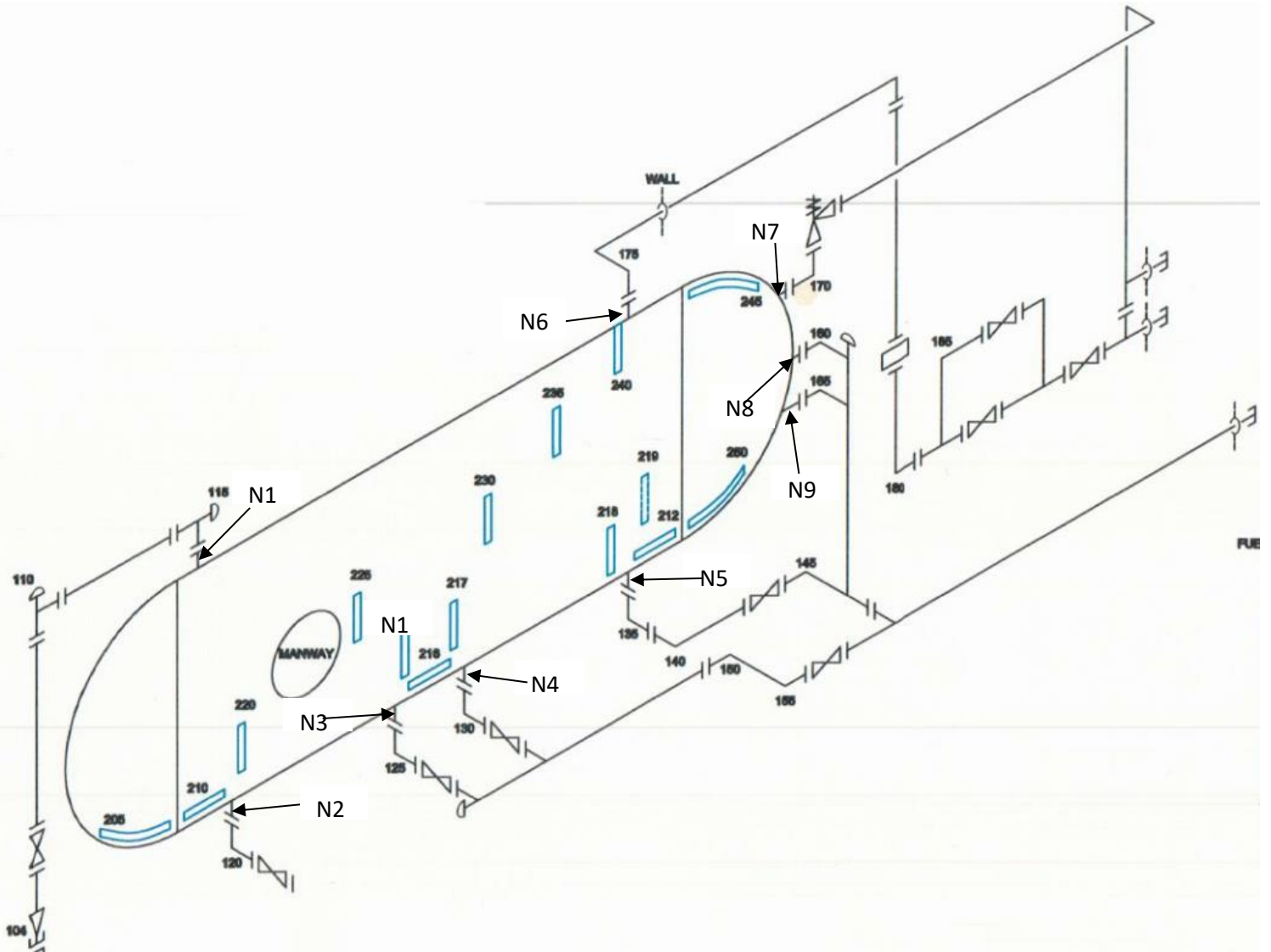
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EQUIPMENT CML ISO DRAWING





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Equipment Description:	Horizontal Separator	Client Contact:	NA

CML DATA

Units: millimeters																	
CML	Description					01	02	03	04	05	06	07	08	09	10	11	12
N1	4 XXH Nozzle													Min. =	14.9	Ave. =	15.3
	Nom:	17.1	Mil:	2.1	CA:	1.6	14.9	15.5	15.1	15.7							
N2	4 XXH Nozzle													Min. =	15.0	Ave. =	15.7
	Nom:	17.1	Mil:	2.1	CA:	1.6	16.4	16.0	15.4	15.0							
N3	3 XXH Nozzle													Min. =	13.5	Ave. =	14.1
	Nom:	15.2	Mil:	1.9	CA:	1.6	14.5	14.7	13.5	13.8							
N4	3 XXH Nozzle													Min. =	14.1	Ave. =	14.6
	Nom:	15.2	Mil:	1.9	CA:	1.6	14.1	14.7	15.2	14.6							
N5	3 XXH Nozzle													Min. =	14.6	Ave. =	14.9
	Nom:	15.2	Mil:	1.9	CA:	1.6	15.6	14.8	14.6	14.6							
N6	3 XXH Nozzle No Access													Min. =		Ave. =	
	Nom:	15.2	Mil:	1.9	CA:	1.6											
N7	3 XXH Nozzle													Min. =	13.9	Ave. =	14.3
	Nom:	15.2	Mil:	1.9	CA:	1.6	14.0	14.5	14.7	13.9							
N8	3 XXH Nozzle													Min. =	13.7	Ave. =	14.4
	Nom:	15.2	Mil:	1.9	CA:	1.6	13.7	14.6	14.4	14.9							
N9	3 XXH Nozzle													Min. =	13.6	Ave. =	14.4
	Nom:	15.2	Mil:	1.9	CA:	1.6	15.6	14.8	13.6	13.7							
	</																