

## Pressure Vessel Inspection Report - EXTERNAL

PIM Sales Order #:	133- 03	Date:	June 06 ,2024
PIM Work Order #:	IS- 01	Equipment #:	Separator A193909

Client: <b>Gunning Services</b>						
Facility: <b>Gunning Beiseker Yard, AB</b>		Vessel Name: <b>Separator</b>				
Location (LSD): <b>Beiseker, AB</b>		Equipment Number: <b>V-430</b>				
Status: In-Service Inspection on Operating Equipment <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Number: <b>Orientation: Vertical</b>				
In-Service Inspection on Non-Operating Equipment <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Remains In-Service: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Type of Inspection: <input checked="" type="checkbox"/> Baseline <input type="checkbox"/> Interval <input type="checkbox"/> Repair/Alteration						
<b>1.0 NAMEPLATE DATA</b>						
Jurisdictional Registration Number: <b>A193909</b>		CRN: <b>F8801.2</b>				
Manufacturer: <b>Thermo Design Engineering Ltd.</b>		Year Built: <b>1986</b>				
Vessel Serial Number: <b>334</b>		Size (diameter x length-estimate): <b>24" x 124"</b>				
Shell Thickness: <b>0.750 " (19.05 mm)</b>		Shell material: <b>SA-516-70</b>				
Head Thickness: <b>0.722 " (18.34 mm)</b>		Head material: <b>SA-516-70</b>				
Tube Wall Thickness: <b>n/a "</b>		Tube Material: <b>n/a</b>				
Tube diameter: <b>n/a "</b>		Tube length: <b>n/a</b>				
Channel Thickness: <b>n/a "</b>		Channel material: <b>n/a</b>				
Design Pressure:	Shell: <b>1000 psi / (6895 Kpa)</b>	Operating Pressure:	Shell: <b>0 psi</b>			
MAWP <b>psi</b>	Tubes: <b>n/a</b>		Tubes: <b>n/a</b>			
Design Temperature:	Shell: <b>100 °F / (38 °C)</b>	Operating Temperature:	Shell: <b>°F</b>			
MDMT <b>-45 °F</b>	Tubes: <b>n/a</b>		Tubes: <b>n/a</b>			
X-ray: <b>Full RT1</b>		Heat treatment: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Code Parameters: <b>ASME, SEC VIII, DIV I</b>		Code Case: <b>n/a</b>				
Corrosion Allowance: <b>0.0625" (1.59 mm)</b>		Joint efficiency (if on nameplate): <b>1.0</b>				
		Manway: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
<b>2.0 PRESSURE SAFETY VALVE NAME PLATE DATA</b>						
Manufacturer / Model/ Serial # & Code Stamp	Size (Inlet x Outlet)	Set Pressure (psi)	Capacity (scfm)	CRN	Tag Number (s)	Set Date
Manufacturer: <b>NO PSV</b>						
Model:						
Serial #:						
Code Stamp:						
Location of PRV:	<input type="checkbox"/> On Vessel	<input type="checkbox"/> In System	<input type="checkbox"/> Tube Side	<input type="checkbox"/> Open to Atmosphere	<input type="checkbox"/> Non Code	<input type="checkbox"/> Vent to Relief System
Inlet Isolation Valve:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes - Is there a procedure documented for control of lock out?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Are the Valves Locked Out?	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A	Comments:			
Is PSV capacity verified to design condition?	<input type="checkbox"/> Yes	<input type="checkbox"/> No				

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3.0 SERVICE CONDITIONS INDICATE ALL THAT APPLY					
<input type="checkbox"/> Sweet	<input type="checkbox"/> Sour	<input type="checkbox"/> Process Oil	<input type="checkbox"/> Gas	<input type="checkbox"/> Water	<input type="checkbox"/> Low Temp
<input type="checkbox"/> Amine	<input type="checkbox"/> LPG	<input type="checkbox"/> Condensate	<input type="checkbox"/> Air	<input type="checkbox"/> Glycol	<input type="checkbox"/> Thermal Fluid
Other (Describe): Unknown					
4.0 PIPING DATA					
Primary Flange Rating: 600		ASME B31.1 <input type="checkbox"/> B31.3 <input checked="" type="checkbox"/> B31.5 <input type="checkbox"/> Other Normal			
Piping Design Pressure: <input checked="" type="checkbox"/> psi <input type="checkbox"/> kpa		Piping Operation Pressure: 0 <input checked="" type="checkbox"/> psi <input type="checkbox"/> kpa			
Nearest Vessel Design Pressure: <input checked="" type="checkbox"/> psi <input type="checkbox"/> kpa		Diameters Welded:			
Comments: No Piping with vessel		Diameters Threaded: No Piping.			

Fill out all forms as completely as possible. All information is important!  
Use back of sheets to record additional information or sketch if required.

	G - Good	F - Fair	P = Poor	N/A = Not Applicable	
External Inspection Items	G	F	P	N/A	COMMENTS
<b>NDE methods</b> UT/MPI report done on vessel Chief Inspection to review methods	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See UT Report Attached
<b>External Condition</b> Assess paint, record location, size and depth of corrosion or damage.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Tell Tale Drilled <input checked="" type="checkbox"/> Not Tell Tale Drilled
<b>Nozzle</b> Assess and record paint look for leakage, and stud engagement and corrosion, verify / inspect gussets. Record any damage, deflection, etc.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3 nozzles. 6 threaded - all threads have plugs and are good.
<b>Leakage Record</b> Report leakage at flanges, threaded joints, weep holes on repads, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Saddle</b> Record corrosion, buckling, dents, etc. Look at vessel surface area near supports and attachment welds. Verify no signs of leakage at attachment to vessel and ground wire attached.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Anchor Bolts</b> Hammer tap to ensure secure. Record corrosion, cracking in threads or signs of deformation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Concrete Foundation</b> Record cracks, spalling, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Gauges</b> Verify gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>External Piping</b> Verify pipe is supported. (Clamps, supports, shoes, etc. in place). Record any structural overload, deflection, verify paint condition, external corrosion, studs and nuts, etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Light to medium rust visible.

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<b>PIM Work Order #:</b>	<b>IS- 01</b>	<b>Equipment #:</b>	Separator A193909

External Inspection Items	G	F	P	N/A	COMMENTS
<b>Valving</b> Verify/record visible leaks properly supported and CSO/CSC.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>PSV</b> Verify set is at or below vessel MAWP. Discharge piping is greater to or equal to valve outlet and is properly supported / routed. Verify PSV seals/ tags. Status of block valves, check car seal log.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>PSV</b> Verify properly installed and is supported adequately for the discharge loads.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Insulation/Cladding</b> Verify condition around appurtenances no damage present, and there is no ingress of moisture.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Ladder/Platform</b> Describe condition, supports Hazards and compliance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Recommendations or corrective actions:</b> Vessel is Fit for Service OR Describe Corrective Actions (Operations to, discuss with Chief Inspector where necessary, and get remedial action implemented)					
<b>Observations and Findings:</b> Appears to be good internal. Rust visible - extent unknown. Flange face rust present.					
<b>Recommendations:</b> <input type="checkbox"/> Replace PSV <input type="checkbox"/> Add PSV <input type="checkbox"/> Add Autodrain <input type="checkbox"/> Replace PI <input type="checkbox"/> Add PI <input type="checkbox"/> Other - Specify					
<b>Summary:</b>					
<b>Inspection Interval</b> <u>1</u> # years <b>PSV Service Interval</b> <u>1</u> # years (Determined by Chief Inspection guidelines of Peregrine Integrity Management Owner-User Inspection Program)					
<b>Vessel Scrapped - All three conditions below must be satisfied</b> Vessel has been removed from service and there is no intention to return it to pressure service. The nameplate has been removed and all other identification has been removed. The vessel is in a condition that it cannot be pressurized.    i.e. A hole has been cut in the vessel, or a nozzle has been removed, or a head has been cut off. <input type="checkbox"/> Yes <input type="checkbox"/> No    Date: _____ (yyyy-mm-dd)					
<b>Vessel sold and transferred the registration of the vessel to:</b> TO: _____ Date: _____ (yyyy-mm-dd)					

<b>Inspected By:</b>	<b>Patrick McLean</b>	<b>Date:</b>	<b>2024-06-06</b>
	API-510 # 116881, CGSB 13209		yyyy-mm-dd
<b>Verified By</b>			
<b>Chief Inspector:</b>	<b>Paul Frederick</b>	<b>Date:</b>	<b>2024-06-13</b>
	ABSA ISI # A-82133 (Cert # 000357); API-510 # 51039		yyyy-mm-dd
	TSASK Class I # 80543, National Board # 1654533		

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### ACTION ITEMS LIST

Action Item	Responsible Party	Date Resolved

Report #: Pressure Vessel Inspection Report - External  
Date: 2024-06-06  
Client: Gunning Services  
SO #: 133- 03



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Equipment Photos

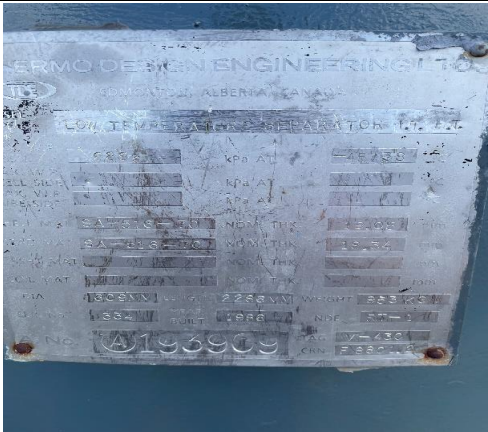


Photo 1: Nameplate

Photo 2: Vessel Overview



Photo 3: Flange Face Surface Rust

Photo 4: Internal Rust



Photo 5: Internal Rust

Photo 6: Internal Rust



Report #:	Pressure Vessel Inspection Report - External
Date:	2024-06-06
Client:	Gunning Services
SO #:	133- 03



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Equipment Photos



Photo 7: Internal Rust



Photo 8: Flange Face Surface Rust



Photo 9: Skirt



Photo 10: Overview



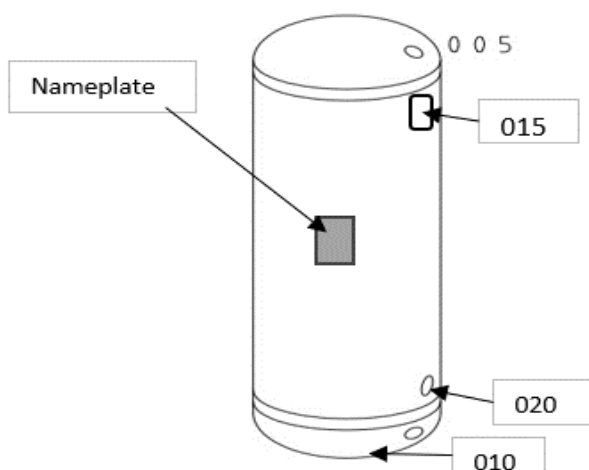
Photo 11: Overview of All

## Ultrasonic Thickness External Report

PIM Sales Order #	133- 03	Manufacturer:	Date:	June 06 ,2024
PIM Sales Order #	TE-01	Thermo Design Engineering Ltd.	Report #:	PIM-UT- 133-03-20240606-004

Client:	Gunning Services	Tag #:	Separator
Facility:	Gunning Beiseker Yard, AB	Serial #:	334
Location:	Beiseker, AB	Provincial	A193909
Equipment Description:	Separator	Registration #:	

### CONDITION MONITORING LOCATIONS (TML's)



### INFORMATION - UT EQUIPMENT DETAILS

METHOD		<input checked="" type="checkbox"/> Thickness	<input type="checkbox"/> Flaw Detection		<input type="checkbox"/> Contact		<input type="checkbox"/> Immersion	
INSTRUMENT	Olympus	MODEL	EPOCH-600	S/N	130573012	DATE	2024-08-15	
CAL. BLOCK	Step Wedge	S/N	21-2552	CABLE-TYPE	Coaxial	LENGTH	48"	
CAL. BLOCK		S/N		COUPLANT	UT-Ultra-GEL			
CAL. BLOCK		S/N		SPECIAL EQUIP				

### INFORMATION - TRANSDUCERS AND CALIBRATIONS

	TEST ANGLE	PROBE TYPE		FREQ (MHZ)	SER NO.	PROBE DIA.	TRANSFER VALUE	TEST FROM		REFERENCE REFLECTOR	REFERENCE		SCAN SENSITIVITY	RANGE
		Single	Dual					FRONT	BACK		dB	% FSH		
1	<input checked="" type="checkbox"/> 0°	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5	813564	0.500"		<input checked="" type="checkbox"/>	<input type="checkbox"/>	1st BW	Various	80	Various	2"
2	<input type="checkbox"/> 45°	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>					
3	<input type="checkbox"/> 60°	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>					
4	<input type="checkbox"/> 70°	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>					
5	<input type="checkbox"/> —°	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>					

### Peregrine UT Technician

Inspector Name:	Patrick McLean	Qualifications:	CGSB 13209: UT2, MT2, PT2
			SNT: UT2, MT3, PT3

# Ultrasonic Thickness External Report

PIM Sales Order #	<b>133- 03</b>	Manufacturer:	Date:	June 06 ,2024
PIM Work Order #	<b>TE- 01</b>	Thermo Design Engineering Ltd.	Report #:	<b>Separator</b>
			REG #:	<b>A193909</b>

TEST SURFACE AND THICKNESS READINGS											
Surface Condition:	<input checked="" type="checkbox"/> Painted	<input type="checkbox"/> As Welded	<input type="checkbox"/> Machined	<input type="checkbox"/> Shot Blasted	<input type="checkbox"/> Clean Bare Metal						
Surface Temperature:	<input type="checkbox"/> <0°C (32°F)	<input checked="" type="checkbox"/> 0° (32°F) to 120°C (250°F)	<input type="checkbox"/> 120°C (250°F) to 260°C (500°F)	<input type="checkbox"/> >260°C (500°F)							
DATA RESULTS - UT DATA											
1) TML Number	005	010	015	020							
TML Description	Top Head	Bottom Head	Top Shell	Bottom Shell							
Direction:											
Flange Rating:											
Pipe Schedule:											
Nominal Thickness:	0.722 "	0.722 "	0.750 "	0.750 "							
Mill Tolerance:	0.000 "	0.000 "	0.010 "	0.010 "							
Corr. Allowance:	0.0625 "	0.0625 "	0.0625 "	0.0625 "							
Minimum Thickness:	0.660 "	0.660 "	0.678 "	0.678 "							
Readings											
Jun 06, 2024	1)	0.750 "	0.752 "	0.742 "	0.742 "						
Jun 06, 2024	2)	0.752 "	0.755 "	0.757 "	0.749 "						
	3)										
	5)										
	6)										
	7)										
	8)										
	9)										
	10)										
	11)										
	12)										
	13)										
	14)										
	15)										
	16)										
Comments:											
1)											



## Ultrasonic Thickness External Report

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			REG #:	A193909

2) TML Number	040	045	050	055	060	065	070
TML Description							
Direction:							
Flange Rating:							
Pipe Schedule:							
Nominal Thickness:	"	"	"	"	"	"	"
Mill Tolerance:	"	"	"	"	"	"	"
Corr. Allowance:	"	"	"	"	"	"	"
Minimum Thickness:	0.000 "	0.000 "	0.000 "	0.000 "	0.000 "	0.000 "	0.000 "
<b>Readings</b>							
Jun 06, 2024 1)	"	"	"	"	"	"	"
Jun 06, 2024 2)	"	"	"	"	"	"	"
3)							
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							
16)							
<b>Comments:</b>							
2)							