

**Canadian Natural Resources Limited
GENERAL PRESSURE VESSEL INFORMATION**

RTD 10.116282

District: Fort St. John, BC		Skid No.					
Facility: Lady Fern Compressor Station		Location (LSD): b-17-I/94-H-01					
Vessel Name & Equipment Number: LPG Storage Bullet							
Orientation: Horizontal							
Status: Operating				Regulatory Inspection			
PRESSURE VESSEL NAMEPLATE DATA							
Registration Number A0571773				CRN Number T 3671.23451			
Vessel serial number: S0700031				Size: 9 ft x 64 ft 7 in			
Shell thickness: 17.4mm				Shell material: SA 516 70N			
Head thickness: 10.2mm				Head material: SA 516 70N			
Tube wall thickness:				Tube material:			
Tube diameter:				Tube length:			
Channel thickness:				Channel material:			
Design pressure	Shell: 250 PSI			Operating pressure	Shell:		
	Tubes:				Tubes:		
Design Temp.	Shell: 125 deg F			Operating temperature	Shell:		
	Tubes:				Tubes:		
X-ray: RT-4				Heat treatment: Nil			
Code parameters: ASME VIII / Div 1				Coated: No			
Manufacturer: Trinity Containers LLC				Built: 2007			
Corrosion allowance: Not Stated				Man way: Yes			
PRESSURE SAFETY VALVE NAMEPLATE DATA							
PSV Tag no.	Manufacture / Model / Serial #	Set Pressure (PSI / KPA)	Capacity (scfm / usgpm)	Size	Block Valve	Location	Serv by / Date
12552F	Fisher // H541-250// 382M	250 PSI	25479 scfm	4in x 4 2in	Yes, locked open	Top Shell	UVL 11/08/07
SERVICE CONDITONS-INDICATE ALL THAT APPLY							
Sweet X	Sour	Oil			Gas	Water	
Amine	LPG X	Condensate			Air	Glycol	
Other (Describe):							

Inspection Interval _____ **PSV Service Interval** _____

(Determined by MIC in conjunction with Chief Inspector following guidelines of Canadian Natural Resources Limited Owner-User Inspection Program)

Reports reviewed and accepted by:

Mechanical Integrity Coordinator _____ **Date** _____

Fill out all forms as completely as possible. All information is important! Use back of sheets to record additional information or sketch if required. Copy of report to be filed by MIC at site, and copy sent to Chief Inspector

External Inspection Items	G	F	P	N/A	Comments
Insulation Verify sealed around man ways, nozzles, no damage present, and there is no egress of moisture.				X	Not insulated.
External Condition Assess paint condition, areas peeling, record any corrosion, damage, etc (record location, size and depth of corrosion or damage)	X				Paint is in good condition. Minor paint chipping to less than 5%. Exposed metal – minor surface corrosion present. No pitting noted.
Leakage: Record any leakage at flanges, threaded joints, weep holes on repads, etc.	X				No leaks detected.
Skirt: Assess condition of paint, fire protection, concrete. Look for corrosion, buckling, dents, etc. Look at vessel surface area near supports. Verify no signs of leakage at attachment to vessel and attachment welds are acceptable. Ground wire attached?	X				Saddle: Paint is in good condition. No corrosion buckling or dents. All welds are acceptable. No leakage at the attachment welds. Ground wire attached.
Anchor Bolts Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.	X				All bolts in place tight and secure. No deflection or cracking noted.
Concrete foundation Check for cracks, spalling, etc.				X	Vessel is mounted to pilings
Ladder / Platform Describe general condition. Ensure support is secure to vessel, describe any hazards.				X	No ladder or platform.
Nozzle Assess paint, look for leakage, and ensure stud threads are fully engaged. Record any damage, deflection, etc. Are nozzles gusseted?	X				Good condition, no distortion, no leaking detected. No gussets. All studs fully engaged to nuts – no short bolts.
Gauges Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp.				X	No gauge.
External Piping Ensure pipe is well supported. All clamps, supports, shoes, etc. in place. Look for evidence of structural overload, deflection, etc. Paint condition, external corrosion?	X				Firmly supported, all clamps in place, no distortion or deflection. Paint is in good condition. Minor surface corrosion present to approx. 5%. No pitting noted.
Valving Ensure no leaks are visible. Valves are properly supported and chained if necessary.	X				Well supported – no leaking.
PSV Ensure PSV is set at pressure at or below that of vessel. Discharge piping is same size as inlet to valve and is properly supported and routed. Ensure no block valves between psv and vessel or if there are they are locked open.	X				Located on top shell – set to MAWP of vessel. Seal intact – block valve, locked open – discharge piping is not the same size as orifice.
NDE methods Was UT/ MPI done on vessel (MI coordinator to review results)	X				Ultrasonic corrosion survey carried out – pipe metal thickness detected below nominal minus corrosion allowance. Thickness calculations carried out: UT point 250 (2" elbow) – nominal thickness is 5.5mm / min thickness is 4.6mm / T min thickness is 1.6mm
<p>Recommendations or corrective actions : (Vessel is Fit for Service or describe corrective actions required) (MIC to review corrective actions with Operations, discuss with Chief Inspector where necessary, and get remedial action implemented)</p> <p>Recommendations: Service PSV, last serviced in 2007.</p> <p>Summary: This vessel is in good condition, visual external and ultrasonic thickness inspection carried out – pipe metal thickness detected below nominal minus corrosion allowance. Thickness calculations carried out to ensure sufficient metal exists for safe operation.</p> <p>Corrosion rate based on greatest thickness loss (shell) 0.040mm per year. Retirement Date to “T”min is year 2033. Vessel is fit for service.</p>					

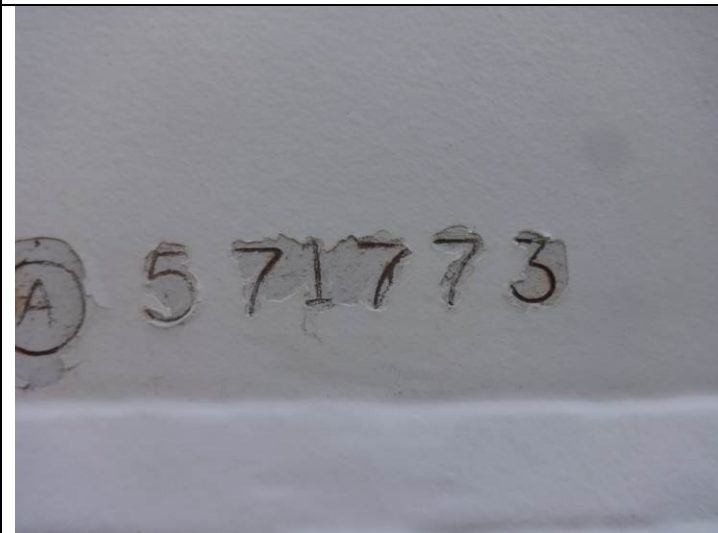
Photo Table



LSD



Data Plate



Overview



Overview

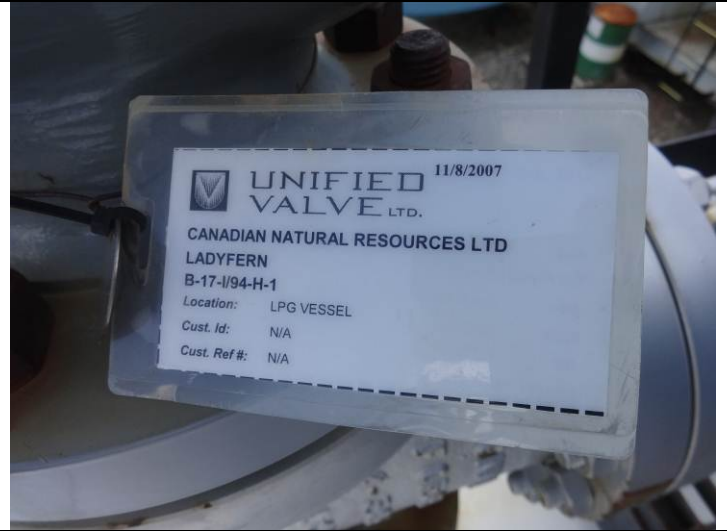


Saddle

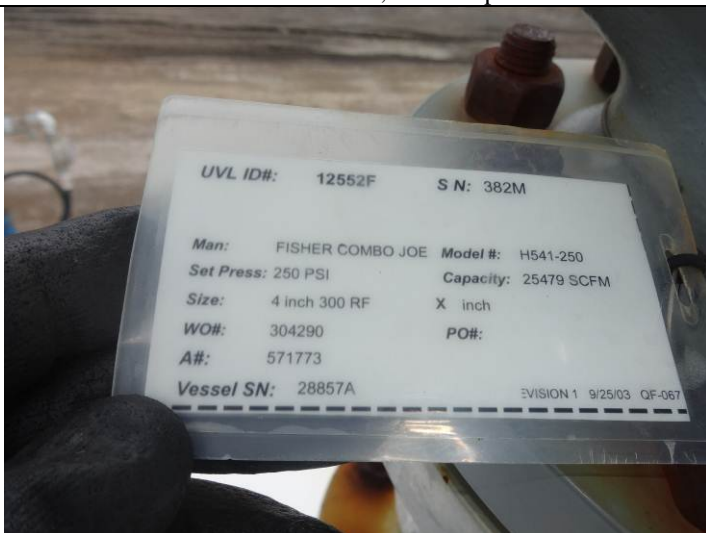


PSV Block Valve, locked open

PSV Overview



PSV Service Tag



PSV Service Tag

UVL ID#: 12552F **S N:** 382M

Man: FISHER COMBO JOE **Model #:** H541-250
Set Press: 250 PSI **Capacity:** 25479 SCFM
Size: 4 inch 300 RF X inch
WO#: 304290 **PO#:**
A#: 571773
Vessel SN: 28857A EVISION 1 9/25/03 QF-067

11/8/2007
UNIFIED VALVE LTD.
 CANADIAN NATURAL RESOURCES LTD
 LADYFERN
 B-17-I/94-H-1
 Location: LPG VESSEL
 Cust. Id: N/A
 Cust. Ref #: N/A