

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

**Job # 10.111452**

<b>District: Grande Prairie AB</b>	Skid No.
<b>Facility: Spring Lake Gas Gathering</b>	<b>Location (LSD): 03-17-76-11W6M</b>
<b>Vessel Name Equipment Number: Line Heater</b>	
<b>Orientation: Horizontal</b>	
<b>Status: In Service</b>	<b>Regulatory Inspection</b>

**PRESSURE VESSEL NAMEPLATE DATA**

"A" or "G" or "S" (Sask.) or BC Registration Number. <b>A0573076</b>		CRN Number: U 0408.2	
Vessel serial number: REG-02-03		Size: 36 in. X 10 ft.	
Shell thickness: 9.5 mm		Shell material: SA 36	
Head thickness: 9.5 mm		Head material: SA 36	
Tube wall thickness:		Tube material: SA 106-B	
Tube diameter:		Tube length:	
Channel thickness:		Channel material:	
Design pressure	1 <sup>st</sup> Pass: 3125 PSI	Operating pressure	Shell:
	2 <sup>nd</sup> Pass: 1622 PSI		Tubes:
Design Temp.	1 <sup>st</sup> Pass: 200 Deg F.	Operating temperature	Shell: 0 – 250 Deg F.
	2 <sup>nd</sup> Pass: 200 Deg F.		Tubes:
X-ray: RT 1		Heat treatment: HT	
Code parameters: ASME B31.3		Coated: no	
Manufacturer: Propipe Manufacturing		Year built: 2007	
Corrosion allowance		Manway: no	

**PRESSURE SAFETY VALVE NAMEPLATE DATA**

PSV Tag #	Manufacture	Model #	Serial #	Set Pressure (kPa)	Capacity (scfm)	Service Date
CRN #	Service By	Block Valve	Location	Size	Code Stamp	

**SERVICE CONDITIONS-INDICATE ALL THAT APPLY**

Sweet	Sour X	Oil	Gas X	Water X
Amine	LPG	Condensate XX	Air	Glycol X

Other (Describe):

**Inspection Interval** \_\_\_\_\_ **PSV Service Interval** \_\_\_\_\_

(Determined by MIC in conjunction with Chief Inspector following guidelines of CNRL 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
<b>Insulation</b> Verify sealed around manways, nozzles, no damage present, and there is no egress of moisture.	X				<b>No open or torn sections- Sealed around saddles, nozzles and skid building.</b>
<b>External Condition</b> Assess paint condition, areas peeling, record any corrosion, damage, etc (record location, size and depth of corrosion or damage)	X				<b>Paint in good overall condition – No exposed metal.</b>
<b>Leakage</b> Record any leakage at flanges, threaded joints, weep holes on repads, etc.	X				<b>No leaks observed.</b>
<b>Saddle/Skirt</b> 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				<b>Saddles: Welded directly to skid floor. No buckling or dents. No corrosion at attachment welds to vessel. Ground wire attached to skid.</b>
<b>Anchor Bolts</b> Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.				X	<b>Saddles welded to skid frame - No deformation.</b>
<b>Concrete foundation</b> Check for cracks, spalling, etc.				X	
<b>Ladder / Platform</b> Describe general condition, ensure support is secure to vessel, describe any hazards.				X	
<b>Nozzle</b> Assess paint, look for leakage, and ensure stud threads are fully engaged. Record any damage, deflection, etc. Are nozzles gusseted?	X				<b>Flanged and threaded nozzle are fully engaged. No damage or deflections – no leaks. Nozzles are not gusseted.</b>
<b>Gauges</b> Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp.	X				<b>Within operational range for service – temperature gauge 0 – 250 Deg F.</b>
<b>External Piping</b> 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				<b>Piping is well supported; no deflection, all clamps and supports are in place. Paint in good condition – no exposed metal.</b>
<b>Valve:</b> Ensure no leaks are visible. Valves are properly supported and chained if necessary.	X				<b>Valves are supported properly – no leaks.</b>
<b>PSV</b> Ensure PSV is set at pressure at or below that of vessel.				X	<b>No PSV.</b>
<b>NDE methods</b> Was UT/ MPI done on vessel (MI coordinator to review results)	X				<b>Ultrasonic corrosion survey carried out – pipe metal thickness detected below nominal minus corrosion allowance. Thickness calculations carried out: UT point 145 (3” Elbow) – nominal thickness is 7.6mm / min thickness is 6.5mm / T min thickness is 3.5mm.</b>
<b>Other</b>					
<p><b>Recommendations or corrective actions : Vessel is Fit for Service or describe corrective actions required)</b>  (MIC to review corrective actions with Operations, discuss with Chief Inspector where necessary, and get remedial action implemented)  <b>Recommendations: No recommendations.</b>  <b>Summary:</b> Vessel is in overall good condition, visual external inspection and ultrasonic corrosion survey performed – pipe metal thickness detected below nominal minus corrosion allowance. Thickness calculations carried out to ensure sufficient metal exists for safe operation.  <b>Vessel is fit for service.</b></p>					

Inspected By: Gerry Avery/ D. Wiedman

Date: February 27, 2012

Photo Table



LSD

Vessel data plate



Temperature gauge

Vessel overview



Vessel overview