

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

Job# 10.113336

District: Grande Prairie AB.	Skid No.
Facility: Clear Hills Gas Gathering	Location (LSD): 15-13-88-13W6M
Vessel Name Equipment Number: Separator	
Orientation: Vertical	
Status: In Service	Regulatory Inspection

PRESSURE VESSEL NAMEPLATE DATA

"A" or "G" or "S" (Sask.) or BC Registration Number. A2842068		CRN Number: K9067.2	
Vessel serial number: 6000K-Vol		Size: 16in. X 96 in.	
Shell thickness: 16.7mm		Shell material: SA106B	
Head thickness: 15.9mm		Head material: SA 516-70N	
Tube wall thickness:		Tube material:	
Tube diameter:		Tube length:	
Channel thickness:		Channel material:	
Design pressure	Shell: 720 PSI	Operating pressure	Shell:
	Tubes:		Tubes:
Design Temp.	Shell: 120 Deg F	Operating temperature	Shell:
	Tubes:		Tubes:
X-ray: RT 1		Heat treatment: Yes	
Code parameters: ASME VIII, Div 1		Coated: no	
Manufacturer: NUSCO		Year built: 1993	
Corrosion allowance: 3.2mm		Manway: no	

PRESSURE SAFETY VALVE NAMEPLATE DATA

PSV Tag #	Manufacture / Model / Serial	Set Pressure (PSI / kPa)	Capacity (scfm)	Size	Block Valve	Location	Service Date
81783	Mercer/81-43251T23G21/173399	720PSI	5816	2X2	No	Upper Shell	06/2013

SERVICE CONDITIONS-INDICATE ALL THAT APPLY

Sweet <input checked="" type="checkbox"/> X	Sour	Oil	Gas <input checked="" type="checkbox"/> X	Water
Amine	LPG	Condensate	Air	Glycol
Other (Describe):				

Inspection Interval _____ **PSV Service Interval** _____

(Determined by MIC in conjunction with Chief Inspector following guidelines of CNRL's 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 manways, nozzles, no damage present, and there is no egress of moisture.				X	Vessel is 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 fair overall condition – exposed metal to 25percent of vessel. Some rust and light general corrosion noted.
Leakage Record any leakage at flanges, threaded joints, weep holes on repads, etc.	X				No leaks observed.
Saddle/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				Skirt: Welded directly to skid floor. Support base welded to skid floor. No buckling or dents. No corrosion at attachment welds to vessel. Ground wire attached to skid.
Anchor Bolts Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.	X				Vessel skirt welded to support base. No deformation.
Concrete foundation Check for cracks, spalling, etc.				X	
Ladder / Platform Describe general condition, ensure support is secure to vessel, describe any hazards.				X	
Nozzle Assess paint, look for leakage, and ensure stud threads are fully engaged. Record any damage, deflection, etc. Are nozzles gusseted?	X				Threaded nozzle joints are fully engaged. No damage or deflections – no leaks. Nozzles are not gusseted.
Gauges Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp.	X				Clear and clean – no leakage. Suitable for operational range of vessel. Pressure gauge 0 – 2000 PSI Reads 10PSI Temperature gauge -40 – 160 Deg F. Reads 50 Deg F
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			Piping is well supported; no deflection, all clamps and supports are in place. Paint in fair condition – exposed metal to 50 percent of piping.
Valve: Ensure no leaks are visible. Valves are properly supported and chained if necessary.	X				Valves are supported properly – no leaks.
PSV Ensure PSV is set at pressure at or below that of vessel.	X				Located: on upper shell of vessel. Set below MAWP of vessel- PSV seal in place. Discharge piping is same size as valve outlet. No block valve between vessel and PSV.
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: 3” Elbow – nominal thickness is 7.6mm / min thickness is 5.3mm / 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: 1. Grit blast and repaint vessel and piping.</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) 0.050mm per year. Retirement Date to “T”min is year 2137.</p> <p>Vessel is fit for service.</p>					

Photo Table



LSD



Overview



Data Plate



PSV



Pressure Gauge



PSV Service Tag