

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

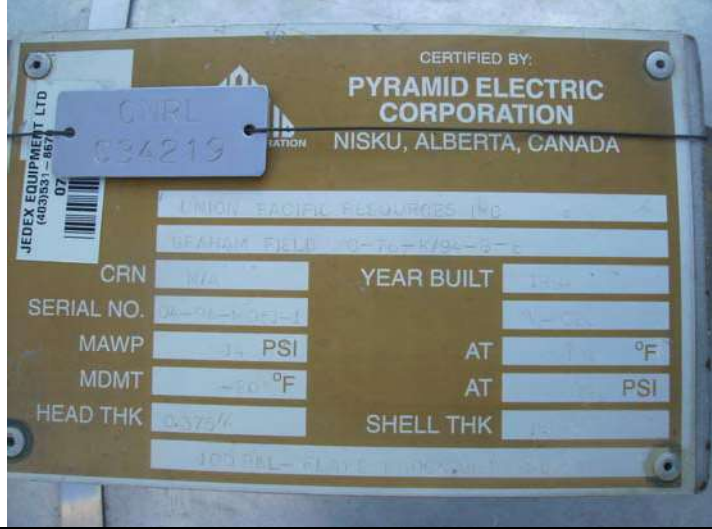
District: Fort St John, BC		Skid No.				
Facility: Graham Compressor Station		Location (LSD): C-76-K/94-B-8				
Vessel Name & Equipment Number: H.P. Flare Knockout						
Orientation: Horizontal						
Status: In service		Regulatory Inspection				
PRESSURE VESSEL NAMEPLATE DATA						
Registration Number C 34219		CRN Number P-6164.2				
Vessel serial number: 04-94-M051-1		Size: 6 ft x 20 ft				
Shell thickness: 9.5 mm		Shell material: SA 516 70				
Head thickness: 9.5 mm		Head material: SA 516 70				
Tube wall thickness:		Tube material:				
Tube diameter:		Tube length:				
Channel thickness:		Channel material:				
Design pressure	Shell: 14 PSI	Operating pressure	Shell:			
	Tubes:		Tubes:			
Design Temp.	Shell: 150 deg F	Operating temperature	Shell:			
	Tubes:		Tubes:			
X-ray: NIL		Heat treatment: NIL				
Code parameters: ASME VIII Div I		Coated: n/s				
Manufacturer: Pyramid		Built: 1994				
Corrosion allowance: NIL		Manway: No				
PRESSURE SAFETY VALVE NAMEPLATE DATA						
PSV Tag no.	Manufacture	Model	Serial number	Set Pressure	Capacity	Size
*No PSV Present						
SERVICE CONDITIONS-INDICATE ALL THAT APPLY						
Sweet	Sour X	Oil	Gas X	Water X		
Amine	LPG	Condensate X	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** _____

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				Damage to outlet piping insulation and head of vessel.
External Condition Assess paint condition, areas peeling, record any corrosion, damage, etc (record location, size and depth of corrosion or damage)	X				Exposed areas of vessel show paint in good condition. No exposed metal.
Leakage: Record any leakage at flanges, threaded joints, weep holes on repads, etc.	X				No leakages at flanges or threaded joints.
Saddle: 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 is securely bolted to supports Paint in good condition No Buckling or dents present. No signs of leaking. Ground is connected to skid.
Anchor Bolts Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.	X				Vessel secured firmly to crosshead. 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				No Stud threads present. No leaks-damage or deflections. Nozzles are not gusseted Paint in good condition.
Gauges Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp.				X	No gauges present
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 – all clamps and supports are in place. No structural overloads or deflections. Paint in good condition no corrosion present.
Valving Ensure no leaks are visible. Valves are properly supported and chained if necessary.				X	No leaks detected Valves are properly supported.
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	No PSV present.
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. Critical thickness calculations carried out to ensure sufficient metal exists for safe operation.
<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) Repair damaged areas of cladding</p> <p>Summary: This Vessel is in overall good condition, visual external inspection and ultrasonic corrosion survey performed, pipe metal thickness detected below nominal. Critical thickness calculations carried out to ensure sufficient metal exists for safe operation.</p> <p>Vessel is fit for service.</p>					



Data Plate



Overview



Damaged cladding



Overview



Outlet Line