

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

Job # 05.001539

District: Ft. St. John B.C.	Skid No.
Facility: Halfway Battery	Location (LSD): 05-12-87-25-W6M.
Vessel Name Equipment Number: Group Separator	
Orientation: Horizontal	
Status: In Service	Regulatory Inspection

PRESSURE VESSEL NAMEPLATE DATA

"A" or "G" or "S" (Sask.) or BC Registration Number. A# 439359		CRN Number: L 2812, 213	
Vessel serial number: 012941-1		Size: 46 in OD X 175 in. S/S	
Shell thickness: 50.8 mm		Shell material: SA 516 70 N	
Head thickness: 50.4 mm		Head material: SA 516 70 N	
Tube wall thickness:		Tube material:	
Tube diameter:		Tube length:	
Channel thickness:		Channel material:	
Design pressure	Shell: 1345 psi	Operating pressure	Shell:
	Tubes:		Tubes:
Design Temp.	Shell: 200 deg. F	Operating temperature	Shell:
	Tubes:		Tubes:
X-ray: RT-1		Heat treatment: Yes	
Code parameters: ASME VIII Div. 1		Coated: No	
Manufacturer: Opasco		Year built: 1998	
Corrosion allowance: 3.2 mm		Manway: Yes	

PRESSURE SAFETY VALVE NAMEPLATE DATA

PSV Tag #	Manufacture	Model #	Serial #	Set Pressure	Capacity (scfm)	Set Date
8242F	Farris	27FA45-1720/S7	CE-403771-3-KE	1345 psi	8410	06/24/05
CRN #	Service By	Block Valve	Location	Size	Code Stamp	
OGO386.9C	UFL	No	Top Shell	1.5 in X 2 in	UV	

SERVICE CONDITIONS-INDICATE ALL THAT APPLY

Sweet	<u>Sour</u>	<u>Oil</u>	<u>Gas</u>	<u>Water</u>
Amine	<u>LPG</u>	<u>Condensate</u>	<u>Air</u>	<u>Glycol</u>

Other (Describe):

Inspection Interval _____ PSV Service Interval _____

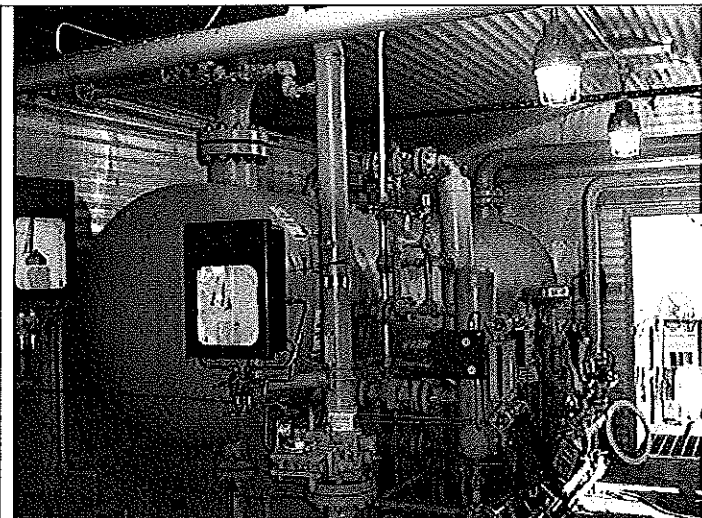
(Determined by MIC in conjunction with Chief Inspector following guidelines of CNRL's Owner-User Inspection Program)

Reports reviewed and accepted by:

Mechanical Integrity Coordinator _____ Date _____

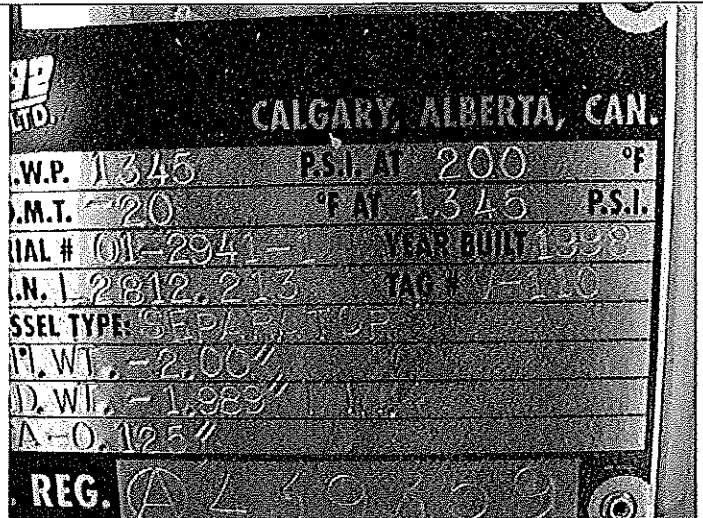
Fill out all forms as completely as possible. All information is important! Use back of sheets to record additional information or sketch if required.
Copy of report to be filed by MIC at site, and copy sent to Chief Inspector

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	Non insulated vessel.
External Condition Assess paint condition, areas peeling, record any corrosion, damage, etc (record location, size and depth of corrosion or damage)	X				Paint loose at the 7:00 and 4:00 o'clock positions with slight surface corrosion occurring at these areas – no pitting.
Leakage Record any leakage at flanges, threaded joints, weep holes on repads, etc.	X				Oil outlet piping – gasket seating face at vessel is seeping product.
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				No distortion to saddles – no Mechanical damage noted – no leaks at saddle to shell welds. Slight surface corrosion occurring at the floor to saddle interface – no pitting. Skid package is grounded.
Anchor Bolts Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.	X				- All bolts firmly attached.
Concrete foundation Check for cracks, spalling, etc.				X	Steel skid.
Ladder / Platform Describe general condition, ensure support is secure to vessel, describe any hazards.				X	- No ladders or platforms required.
Nozzle Assess paint, look for leakage, and ensure stud threads are fully engaged. Record any damage, deflection, etc. Are nozzles gusseted?	X				Slight corrosion occurring at the nozzle bolts and flange area – no pitting. - No damage or deflection noted, no gussets. - No leakage noted.
Gauges Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp.	X				Temperature and pressure gauge attached – within range for operation.
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 evidence of overload or deflection. Paint is fair with slight surface corrosion occurring at the clamp areas on the inlet piping – no pitting.
Valving Ensure no leaks are visible. Valves are properly supported and chained if necessary.	X				All valves supported, no leaks noted. No chains required
PSV Ensure PSV is set at pressure at or below that of vessel.	X				- Located on top shell – set at MAWP of vessel. - Seal intact – no block valve – discharge piping same size as outlet orifice.
NDE methods Was UT/ MPI done on vessel (MI coordinator to review results)	X				Ultrasonic thickness survey carried out, piping metal thickness detected below nominal minus corrosion allowance – Calculations carried out to ensure sufficient metal exists for safe operation. No change from 2005 corrosion survey.
<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. Re seal leaking flange on oil outlet nozzle.</p> <p>Summary: This vessel is in good overall condition, ultrasonic thickness survey carried out, piping metal thickness detected below nominal minus corrosion allowance – Calculations carried out to ensure sufficient metal exists for safe operation.</p> <p>Vessel is fit for service.</p>					



Over view

Leaking flange



Data Plate

32 LTD.
CALGARY, ALBERTA, CAN.
W.P. 1345 PSI AT 200 °F
M.T. 20 °F AT 1345 PSI.
IAL # 01-2941- YEAR BUILT 1998
I.N. 12812.213 TAG # 7-1.0
SSEL TYPE: SEPARATOR
I.V. WT. - 2.00"
D. WT. - 1.989"
A - 0.125"
REG. AL 40369