

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

**Job 10.118582**

District: <b>Grande Prairie, Alberta</b>	Skid No.
Facility: <b>Spirit River Battery</b>	Location (LSD): <b>08-09-77-07W6M</b>
Vessel Name Equipment Number: <b>Flare Knockout Drum</b>	
Orientation: <b>Horizontal</b>	
Status: <b>In Service</b>	<b>Regulatory Inspection</b>

**PRESSURE VESSEL NAMEPLATE DATA**

"A" or "G" or "S" (Sask.) or BC Registration Number. <b>A0462576</b>		CRN Number: P6520.2	
Vessel serial number: 11796		Size: 36 in x 120 in	
Shell thickness: 7.9 mm		Shell material: SA 516 70N	
Head thickness: 9.5 mm		Head material: SA 516 70N	
Tube wall thickness:		Tube material:	
Tube diameter:		Tube length:	
Channel thickness:		Channel material:	
Design pressure	Shell: 50 PSI	Operating pressure	Shell:
	Tubes:		Tubes:
Design Temp.	Shell: 300° F	Operating temperature	Shell:
	Tubes:		Tubes:
X-ray: RT-1		Heat treatment: Nil	
Code parameters: ASME VIII, Div. 1		Coated: N/S	
Manufacturer: E & D PIPE AND PROCESS EQUIPMENT LTD.		Year built: 2001	
Corrosion allowance: 1.6 mm		Manway: Yes	

**PRESSURE SAFETY VALVE NAMEPLATE DATA**

PSV Tag #	Manufacture / Model / Serial	Set Pressure (PSI / kPa)	Capacity (scfm)	Size	Block Valve	Location	Service by / Date
	No PSV protection						

**SERVICE CONDITIONS-INDICATE ALL THAT APPLY**

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

Other (Describe):


**Inspection Interval** \_\_\_\_\_ **PSV Service Interval** \_\_\_\_\_  
(Determined by MIC in conjunction with Chief Inspector following guidelines of Canadian Natural Resources 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

<b>External Inspection Items</b>	G	F	P	N/A	<b>Comments</b>
<b>Insulation</b> Verify sealed around manways, nozzles, no damage present, and there is no egress of moisture.	X				<b>Vessel is completely insulated – sealed around manway and nozzles – no damage or open sections – no egress of moisture</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>Vessel is completely insulated – no corrosion or damaged paint noted at CMLs</b>
<b>Leakage</b> Record any leakage at flanges, threaded joints, weep holes on repads, etc.	X				<b>No leaks detected</b>
<b>Saddle</b> Assess condition of paint, fire protection, and 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>Paint in good condition – no corrosion, buckling or dents – attachment welds are acceptable with no sign of leaks – 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>Vessel is securely bolted to skid floor – no deformation</b>
<b>Concrete foundation</b> Check for cracks, spalling, etc.				X	<b>None</b>
<b>Ladder / Platform</b> Describe general condition, ensure support is secure to vessel, and describe any hazards.				X	<b>None</b>
<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>Paint in good condition – no leaks – stud threads fully engaged – no damage or deflection – no gussets</b>
<b>Gauges</b> Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp.				X	<b>No gauges present</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 – all clamps in place – no evidence of structural overload or deflection – paint in good condition – no corrosion</b>
<b>Valving</b> Ensure no leaks are visible. Valves are properly supported and chained if necessary.	X				<b>No leaks detected – valves are properly supported</b>
<b>PSV</b> Ensure PSV is set at pressure at or below that of vessel. Seal intact? Location? Discharge to safe location?				X	<b>No PSV – vessel vents to flare</b>
<b>NDE methods</b> Was UT/ MPI done on vessel (MI coordinator to review results)	X				<b>Ultrasonic corrosion survey carried out, no metal thickness detected below nominal minus corrosion allowance.</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:</b> No recommendations at this time.  <b>Summary:</b> This vessel is in good condition, visual external and ultrasonic thickness inspection carried out – no metal thickness detected below nominal minus corrosion allowance.  Corrosion rate based on greatest thickness loss (head) 0.040mm per year. Retirement Date to “T”min is year 2200.  <b>Vessel is fit for service.</b></p>					

Inspected By:  Andrew Neis - Cert# 880

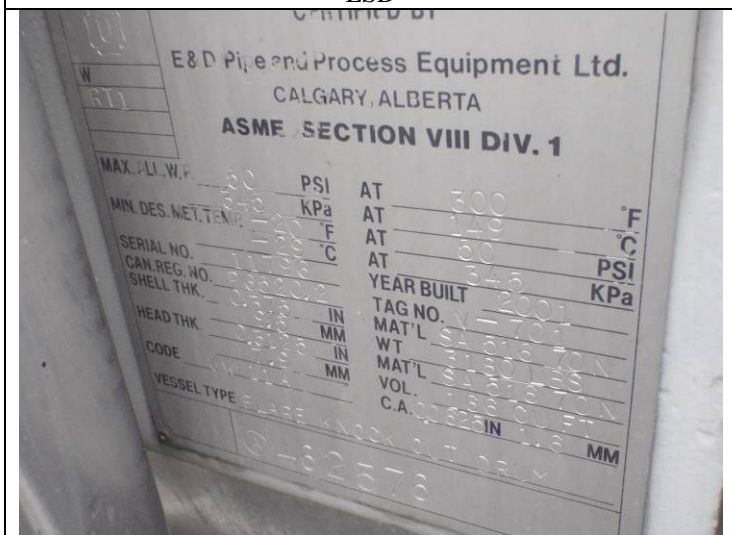
Date: May 12, 2017



LSD



Overview



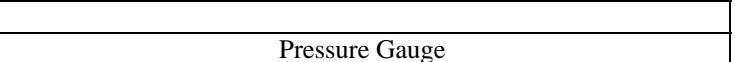
Data Plate



Saddle bolting



PSV Tag



Pressure Gauge