

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

**Job 10.112902**

District: <b>Grande Prairie AB.</b>	Skid No.
Facility: <b>Clear Hills Gas Plant</b>	Location (LSD): <b>16-11-88-13W6M</b>
Vessel Name Equipment Number: <b>Stabilizer Feed 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>A3129683</b>		CRN Number: N 0043.2	
Vessel serial number: 95-C3278-3000		Size: 84 in. X 20 ft.	
Shell thickness: 22.23 mm		Shell material: SA 516-70	
Head thickness: 23.6 mm		Head material: SA 516-70	
Tube wall thickness:		Tube material:	
Tube diameter:		Tube length:	
Channel thickness:		Channel material:	
Design pressure	Shell: 300 PSI	Operating pressure	Shell:
	Tubes:		Tubes:
Design Temp.	Shell: 100 Deg F.	Operating temperature	Shell:
	Tubes:		Tubes:
X-ray: RT 1		Heat treatment: HT	
Code parameters: ASME VIII Div 1		Coated: No	
Manufacturer: Maloney Steel Ltd.		Year built: 1995	
Corrosion allowance: 3.2 mm		Manway: No	

**PRESSURE SAFETY VALVE NAMEPLATE DATA**

PSV Tag #	Manufacture / Model / Serial	Set Pressure (PSI / kPa)	Capacity (scfm)	Size	Block Valve	Location	Service by Date
C350	Farris//26JA13-120//CE44007-2-A10	300 PSI	4622 scfm	2.5"x 4"	No	Head of vessel	Powell 9, 2010

**SERVICE CONDITIONS-INDICATE ALL THAT APPLY**

Sweet	Sour X	Oil	Gas X	Water
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:

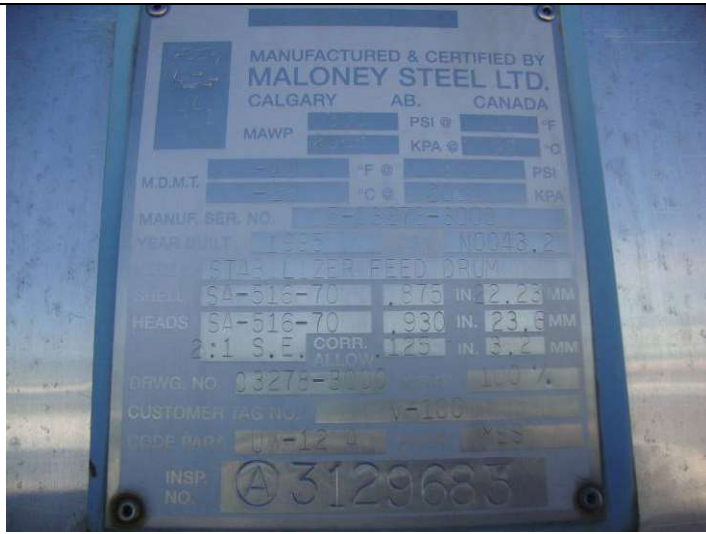
**Mechanical Integrity Coordinator** \_\_\_\_\_ **Date** \_\_\_\_\_

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- no damage present- sealed around nozzles and man way.</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 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, 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>Saddles: Bolted directly to skid deck. No buckling or dents. No corrosion at attachment welds to vessel. Ground wire attached to vessel.</b>
<b>Anchor Bolts</b> Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.	X				<b>Vessel saddles bolted firmly to skid deck – 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, and 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 joints 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>Clear and clean – no leakage. Within operational range for service. Temperature gauge -40- 120 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>Valving</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>Location: Vessel head - Set at MAWP of vessel. No block valve between vessel and PSV. Discharge piping is same size as valve out let. Seal in place.</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: 2” Elbow – nominal thickness is 3.9mm / min thickness is 3.2mm / T min thickness is 1.6mm.</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)</p> <p><b>Recommendations:</b> No recommendations.</p> <p><b>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.</b></p> <p>Long term corrosion rate based on greatest thickness loss – no corrosion rate to assess.</p> <p><b>Vessel is fit for service.</b></p>					

Inspected By: Gerry Avery

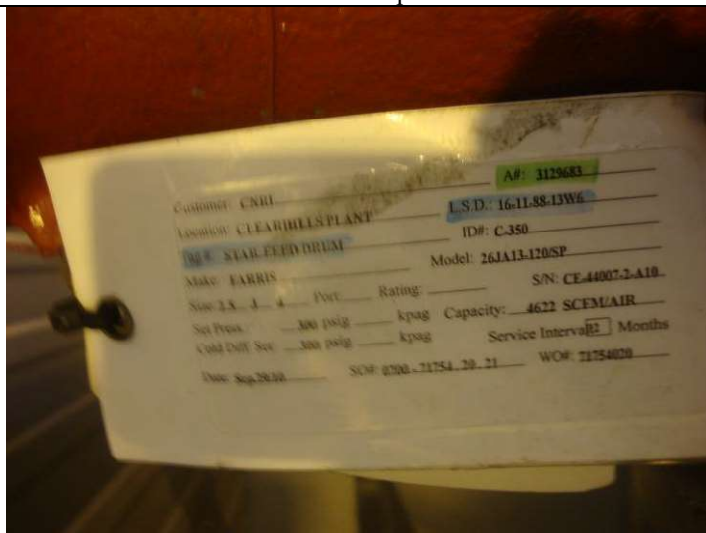
Date: March 18, 2013



Vessel data plate



overview



PSV data tag



PSV



Vessel overview



Temperature gauge



Vessel boot