Canadian Natural Resources Limited
GENERAL PRESSURE VESSEL INFORMATION **Job # 10.110056**

District: Grande Prairie AB.	Skid No.
Facility: Knopcik Gas Gathering	**Location (LSD): 16-11-72-11 W6M**
Vessel Name Equipment Number: Line Heater	
Orientation: Horizontal	
Status: In Service	**Regulatory Inspection**

PRESSURE VESSEL NAMEPLATE DATA

"A" or "G" or "S" (Sask.) or BC Registration Number. **A0499431**		CRN Number: N5965.213/N5297.213	
Vessel serial number: 03-3993-3		Size: 36 in. X 16 ft.	
Shell thickness: 6.4 mm		Shell material: SA 36	
Head thickness: 6.4 mm		Head material: SA 36	
Tube wall thickness:		Tube material:	
Tube diameter:		Tube length:	
Channel thickness:		Channel material:	
Design pressure	1st Pass: 3135 PSI	Operating pressure	Shell: Atmos
	2nd Pass: 1620 PSI		Tubes: 0 – 5000 PSI
Design Temp.	1st Pass: 250 Deg F.	Operating temperature	Shell: 0 – 250 Deg F.
	2nd Pass: 250 Deg F.		Tubes: 0 – 250 Deg F.
X-ray: RT 1		Heat treatment: HT	
Code parameters: ASME B31.3		Coated: no	
Manufacturer: Opsco Energy		Year built: 2003	
Corrosion allowance: 3.2 mm		Manway: no	

PRESSURE SAFETY VALVE NAMEPLATE DATA

PSV Tag #	Manufacture	Model #	Serial #	Set Pressure (kPa)	Capacity (scfm)	Service Date
PSV 1926	**Taylor**	**82E6351311**	**14842-82**	**500 PSI**	**1830**	**10, 2010**
CRN #	Service By	Block Valve	Location	Size	Code Stamp	
OG1316.2C	**Kings Energy**	**No**	**Inlet piping**	**1"x 1"**	**UV/NB**	

SERVICE CONDITIONS-INDICATE ALL THAT APPLY

Sweet X	Sour	Oil	Gas X	Water X
Amine	LPG	Condensate X	Air	Glycol X
Other (Describe):				

Inspection Interval _____PSV Service Interval_____
(Determined by MIC in conjunction with Chief Inspector following guidelines of CNRL Owner-User Inspection Program)

Reports reviewed and accepted by:
Mechanical Integrity Coordinator_____Date_____

Fill out all forms as completely as possible. <u>All information</u> 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

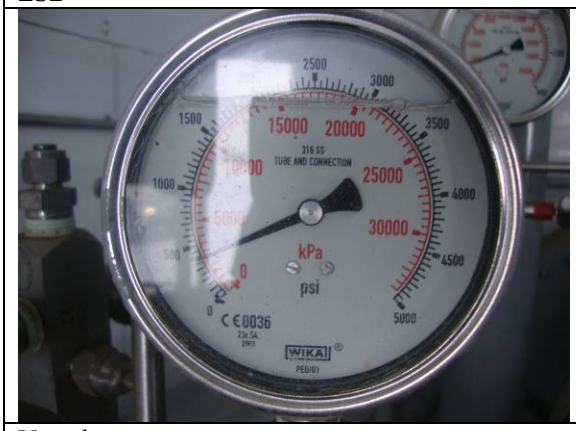
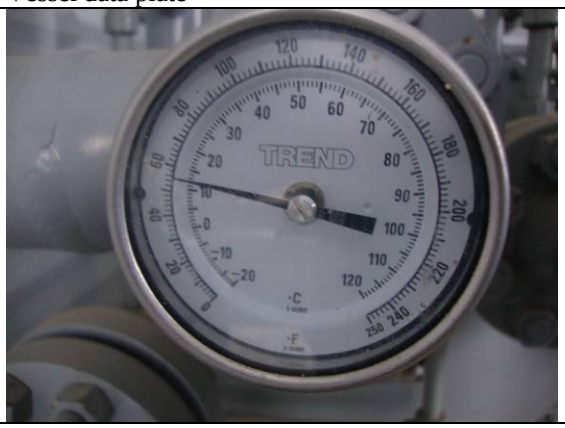
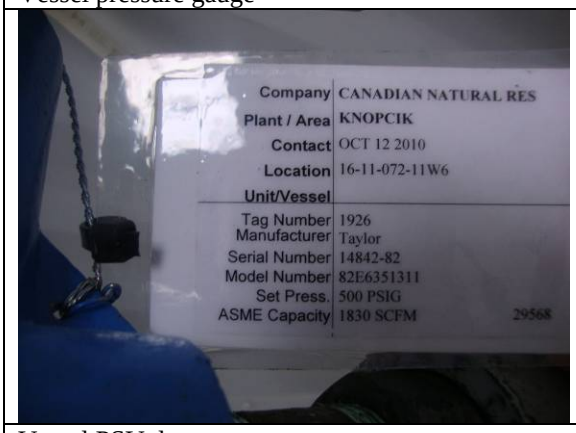
External Inspection Items	G	F	P	N/A	Comments
Insulation Verify sealed around manways, nozzles, no damage present, and there is no egress of moisture.	X				**No damage present- no egress of moisture. Sealed around nozzles, saddles and skid building. All straps in place and secure.**
External Condition Assess paint condition, areas peeling, record any corrosion, damage, etc (record location, size and depth of corrosion or damage)	X				**Paint in good overall condition – No exposed metal.**
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				**Saddles: Bolted directly 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				**Saddles bolted securely to skid floor. 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				**Stud threads are fully engaged to nuts - no short bolting. 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 – 5000 PSI./ temperature gauge 0 – 250 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 good condition – no exposed metal.**
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				**Location: Inlet piping to vessel burner – set at 500 PSI. No block valve between vessel and PSV. Discharge piping is same size as valve out let. Seal in place.**
NDE methods Was UT/ MPI done on vessel (MI coordinator to review results)	X				**Ultrasonic thickness survey carried out – no metal thickness detected below nominal.**

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)
Recommendations: No recommendations at this time.
Summary: Vessel is in overall good condition, visual external inspection and ultrasonic corrosion survey performed – no metal thickness detected below nominal.
Long term corrosion rate based on greatest thickness loss –no corrosion rate to assess.

Vessel is fit for service.

Inspected By: Gerry Avery **Date:** March 3, 2011

Photo Table

	
LSD	Vessel data plate
	
Vessel pressure gauge	Vessel temperature gauge
	
Vessel PSV data tag	Vessel PSV
	
Vessel inlet view	Vessel overview