Canadian Natural Resources Limited
GENERAL PRESSURE VESSEL INFORMATION **Job # 105.00642**

District: **Grand Prairie**	Skid No. **Nil**
Facility: **Clear Hills Gas Plant**	Location (LSD): **16-11-88-13 W6M**
Vessel Name Equipment Number: **Sales Cyclone Separator**	
Orientation: **Vertical**	
Status: **In service**	**Regulatory Inspection**

PRESSURE VESSEL NAMEPLATE DATA

"A" or "G" or "S" (Sask.) or BC Registration Number. **A465949**		CRN Number: **P-5547.21**	
Vessel serial number: C01-6525-1		Size: 30" x 20'	
Shell thickness: 50.8mm		Shell material: SA 516 70 N	
Head thickness: 48.3mm		Head material: SA 516 70 N	
Tube wall thickness:		Tube material:	
Tube diameter:		Tube length:	
Channel thickness:		Channel material:	
Design pressure	Shell: 13790 kPa	Operating pressure	Shell: 6300 kPa
	Tubes:		Tubes:
Design Temp.	Shell: 104ºC	Operating temperature	Shell: ºC
	Tubes:		Tubes:
X-ray: RT -1		Heat treatment: HT	
Code parameters: ASME VIII, Div 1		Coated: Nil	
Manufacturer: Compact		Year built: 2002	
Corrosion allowance: 1.6mm		Manway: No	

PRESSURE SAFETY VALVE NAMEPLATE DATA

PSV Tag #	Manufacture	Model #	Serial #	Set Pressure (kPa)	Capacity (scfm)	Service Date
2415-V5	**Crosby**	**JOS-E-45/A**	**C01-6525-1**	**10205**	**37818**	**03/05**
CRN #	Service By	Block Valve	Location	Size	Code Stamp	
OG-0201.2C	**Unified Valve**	**Outlet Yes; Locked open CN-166**	**Outlet Piping**	**3"600 x 4"150**	**UV NB**	

SERVICE CONDITIONS-INDICATE ALL THAT APPLY

Sweet X	Sour	Oil	Gas X	Water
Amine	LPG	Condensate	Air	Glycol
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. 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

A465949

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 insulation present. Roof seal has not been installed, floor is wet
External Condition Assess paint condition, areas peeling, record any corrosion, damage, etc (record location, size and depth of corrosion or damage)	**X**				Paint is in good condition, no exposed metal. No damage or deflection present.
Leakage Record any leakage at flanges, threaded joints, weep holes on repads, etc.	**X**				No leaks present.
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**				Skirt is firmly bolted to skid, paint is in good condition, no buckling or dents present. No leakage present at attachment welds to vessel. Attachment welds are acceptable. Skid is grounded.
Anchor Bolts Hammer tap to ensure secure. Look for cracking in treads or signs of deformation.	**X**				Skirt is bolted to skid floor, No deformation or cracking present.
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**				Nozzle paint is in good condition no leaks present. Stud threads present fully engaged, no damage or deflection present. No gussets present.
Gauges Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp.	**X**				Pressure gauge (0-13800 kPa) Suitable for MAWP Gauge is clear and visible.
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 and in place. No loose clamps or supports. No evidence of structural overload or deflection. Inlet. Paint is in good condition, no exposed metal.
Valving Ensure no leaks are visible. Valves are properly supported and chained if necessary.	**X**				Valves are properly supported, no leaks present.
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**				PSV is set below MAWP of vessel. PSV Discharge piping is larger than inlet piping and is properly supported and routed. Block valve present on outlet line; locked open CN-166 PSV Seal is intact Location: Outlet piping downstream.
NDE methods Was UT/ MPI done on vessel (MI coordinator to review results)	**X**				Ultrasonic corrosion survey carried out - no metal thickness detected below nominal minus corrosion allowance.

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: 1) Service PSV 2) Install a roof seal.
Summary: Vessel is in overall good condition, visual external inspection and ultrasonic corrosion survey performed - no metal thickness detected below nominal minus corrosion allowance.
Long term corrosion rate based on greatest thickness loss – no corrosion rate to assess.

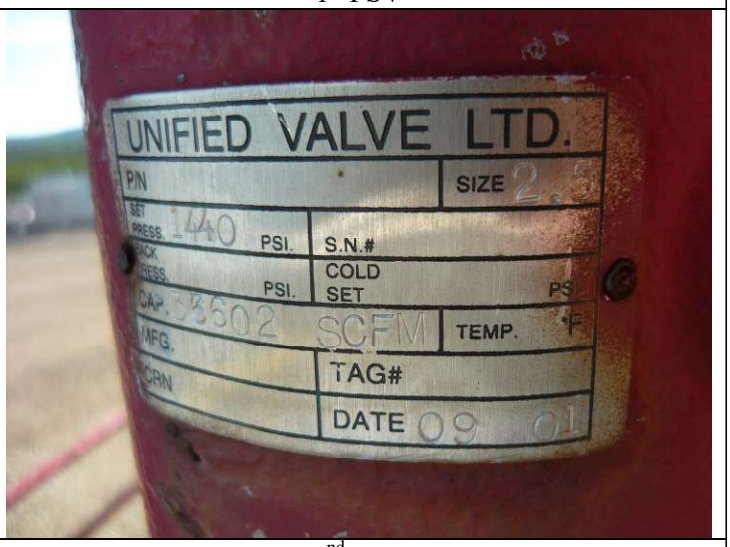
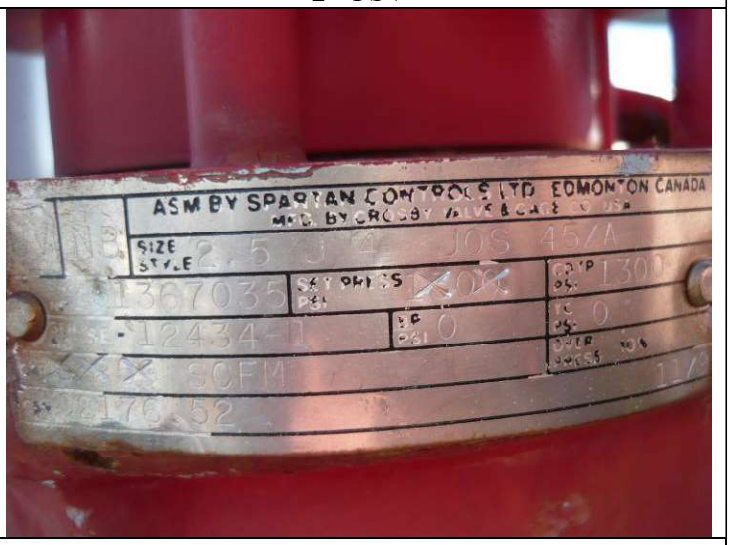
Vessel is fit for service.

Inspected By: Dellas Weidman **Date:** July 08th 2010

Photo Table for A465949

	
Data Plate	Pressure Gauge
	
Skirt	No roof seal

	
Bottom Head Scaling	Roof Seal not intact
	
Vessel Overview	Two PSV's on the same sales line (left=1 right =2) second PSV was recorded on excel list.

	
1st PSV	1st PSV
	
2nd PSV UVL ID	2nd PSV
	
Service Tag 2nd PSV 03-2005	PVS Data Plate

	
2nd PSV Data Plate	2nd PVS Data Plate