A0475230 - SEPARATOR INSPECTION/DATA - MAY 2003

1060-04

Canadian Natural Resources Limited

Production - Facilities Engineering
A0475230 Horizontal Separator Vessel Data Sheet and Inspection Report

Content Date Range: 5/15/2003 to 5/15/2003

Vessel Integrity

Inspection Data

Open: 4/25/2007 Close:

Vital: Yes
Original: Yes
Confidential No

CC+2 0P P



00785018

CLK ✓

PRESSURE EQUIPMENT INTEGRITY MANAGEMENT PROGRAM

Internal Inspection Checklist
Exhibit #300

P.O. Box 2595, Stn. M
425 – 1st St. SW
CALGARY, Alberta
T2P 4V4
Phone: (403) 231-0111 Fax: (403) 231-0526

Report No.:	01
Date:	May 15, 2003
File No.:	A1208-03

GENERAL PRESSURE VESSEL INFORMATION

Area: Wild Hay	Location (LSD): 12-36-56-24
Facility:	Date: May 15, 2003
Vessel Name: Horizontal Separator	
Internally coated: yes ☐ no ☒ **THIS VESSEL IS TO BE INTERNALLY COATED DURING SKID MODIFICATIONS**	
Orientation: horizontal ☒ vertical ☐	
Facility Vessel Identification #: V-100	
Separator type (if applicable): 2-phase ☒ 3-phase ☐	
Direct fired vessel: yes ☐ no ☒	Last flame arrestor test date: N/A
Status: operating ☒ shut in ☐ surplus ☐ junk ☐ Vessel currently out of service, skid will be re installed after skid modifications with vessel being placed back into service.	
Thermal insulation: yes ☐ no ☒	Asbestos: yes ☐ no ☒

PRESSURE VESSEL NAMEPLATE DATA

"A" number: A 475203 30 "S" Number (Sask.): B.C. Registration #:		CRN number: P 6409.2	
Vessel serial number: 011055-V-100		Size (i.d. x length): 48" Dia. x 20' S/S	
Drawing #:		Capacity (volume):	
Shell thickness: 1.00" Nom.		Shell material: SA-516-70	
Head thickness: 1.0625" Min.		Head material: Sa-516-70	
Tube wall thickness: N/A		Tube material: N/A	
Tube size (i.d.): N/A			
Channel thickness: N/A		Channel material: N/A	
Design pressure	Shell Side: 720 psig. Tube Side: N/A	Operating pressure	Shell Side: Tube Side: N/A
Design temperature	Shell Side: 130 F Tube Side: N/A	Operating temperature	Shell Side: Tube Side: N/A
X-ray: RT-1		Heat treatment: ☐No	
Code parameters:		Joint efficiency (j.e.):	
Manufacturer: Black Sivalls & Bryson Canada Ltd.		Year built: 2001	
Corrosion allowance: .0625"		Manway? Yes ☒ No ☐	

Anadarko Canada Corporation

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PSV DATA

LOCATION (Reference Pressure Vessel A# that the valve is attached to or protecting. Where the valve is not protecting a vessel describe the piping system location. i.e. Inlet Header or Compressor Discharge): A475203 On Vessel 38

	Set Pressure	CRN #	Manufacturer / Model / Tag # /Serial #	Capacity (Scfm)	Size	Set Date
Shell Side	720 psig	42885 2-2-A10	Farris 26KA-12-120 Serial # SE 13713-2 1014**-temp	25908	3" 300# RF x 4" 150# RF	0 5/02/03 Unified Valve I.D. # 2967 E
Tube Side	N/A		N/A			

SERVICE CONDITIONS

Steam ☐	Air ☐	Sweet Oil ☐	Sour Oil ☐
Sour Condensate ☐	LPG ☐	Sweet Gas ☒	Sour Gas ☐
Sweet Condensate ☒	Nitrogen ☐	Amine ☐	Salt Water ☐
Chlorine ☐	Ammonia ☐	Sweet Glycol ☐	Sour Glycol ☐
Sulphur ☐	Other		

GENERAL INSPECTION CHECKLIST

Pressure Gauge Condition: GOOD

Foundation Condition: On Skid

Shells / Heads / Piping

External Condition: GOOD

Internal Condition: (address pitting, general metal loss, hydrogen blistering, scale build up) GOOD, minor clean up required for internal coating application.

Nozzles / Flange Condition: GOOD

Internal Piping / Bolting / Pipe support Condition: GOOD

Repairs completed by: N/A	Date:
Owners Representative: Keith McIntosh	Date: May 15, 2003

Tower Summary		
Location: N/A	Vessel Name: N/A	Vessel A #: N/A

Tray Level	Tray Condition	Shell Condition
Top Head/ Shell		
Tray 1		
Tray 2		
Tray 3		
Tray 4		
Tray 5		
Tray 6		
Tray 7		
Tray 8		
Tray 9		
Tray 10		
Tray 11		
Tray 12		
Tray 13		
Tray 14		
Tray 15		
Tray 16		

Firetube Condition:	N/A
Demister Pad Condition:	Will be inspected when removed for coating, visual inspection at this time looks good.
Anode Condition:	N/A

Exchangers	
Exchanger Type (Kettle, Shell and Tube):	N/A
Channel Head / Bonnet Condition:	N/A
Stays and Tube Support Condition:	N/A
Tubesheet Condition:	N/A
External Tube Bundle Condition:	N/A
Internal Tube Bundle Condition:	N/A
Shell Side Fouling:	N/A
Tube Side Fouling:	N/A

Coating Inspection	
Type and Manufacturer of Coating:	Devoe 253 to be applied at Priority Projects shop in Nisku, Alberta
Location:	Vessel Internal Only
Coating Condition:	Will be new application.

NDE Inspection	
Type of Testing:	Internal and External visual Only
Location of Test:	
Contractors Name:	
Contractors Qualifications:	
Test Results:	

Vessel Status	YES	NO
Suitable for Further Service	☒	☐
Repairs Required	☐	☒
Repairs Completed	☐	☐

Tower Summary		
Location: N/A	Vessel Name: N/A	Vessel A #: N/A

Tray Level	Tray Condition	Shell Condition
Tray 17		
Tray 18		
Tray 19		
Tray 20		
Tray 21		
Tray 22		
Tray 23		
Bottom Head and Shell		

Recommendations: This Separator skid unit is currently at Priority Projects in Nisku, Alberta for Revamp. The unit was sent in from the Wild Hay area and is to be returned to that area when modifications are complete.

The internal of this Separator is to be coated with Devoe 253 high build epoxy coating during modifications at Priority Projects shop in Nisku. The coating application is to be performed by Brothers Coating from Edmonton, Alberta.

Name (PRINTED)	Signature	Date
VISUAL INSERVICE INSPECTOR: Keith McIntosh		May 15, 2003
QA ADMINISTRATOR:		
QA COORDINATOR: Terry McConnell	*Terry McConnell*	
ABSA SAFETY CODES OFFICER:		

CLK ✓

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CALGARY, Alberta
T2P 4V4
Phone: (403) 231-0111 Fax: (403) 231-0526

Report No.:	01
Date:	May 15, 2003
File No.:	A1208-03

GENERAL PRESSURE VESSEL INFORMATION

Area: Wild Hay	Location (LSD): 12-36-56-24
Facility:	Date: May 15, 2003
Vessel Name: Vertical Fuel Gas Scrubber	
Internally coated: yes ☐ no ☒	
Orientation: horizontal ☐ vertical ☒	
Facility Vessel Identification #: None	
Separator type (if applicable): 2-phase ☐ 3-phase ☐ Single	
Direct fired vessel: yes ☐ no ☒	Last flame arrestor test date: N/A
Status: operating ☒ shut in ☐ surplus ☐ junk ☐ Vessel currently out of service, skid will be re installed after skid modifications with vessel being placed back into service.	
Thermal insulation: yes ☐ no ☒	Asbestos: yes ☐ no ☒

PRESSURE VESSEL NAMEPLATE DATA

"A" number: N/A Miniture Vessel "S" Number (Sask.): B.C. Registration #: A0403-02 Should be A# 0975Z30B		CRN number: L 8158.2.1	
Vessel serial number: 01802-001V10		Size (i.d. x length): 8" Dia. x 36" S/S	
Drawing #:		Capacity (volume):	
Shell thickness: .322"		Shell material: SA-106-B	
Head thickness: .500"		Head material: SA-516-70	
Tube wall thickness: N/A		Tube material: N/A	
Tube size (i.d.): N/A			
Channel thickness: N/A		Channel material: N/A	
Design pressure	Shell Side: 150 psig. Tube Side: N/A	Operating pressure	Shell Side: Tube Side: N/A
Design temperature	Shell Side: Tube Side: N/A	Operating temperature	Shell Side: Tube Side: N/A
X-ray: N/A		Heat treatment: ☐ No	
Code parameters:		Joint efficiency (j.e.):	
Manufacturer: Black Sivalls & Bryson Canada Ltd.		Year built: 2001	
Corrosion allowance: .0625"		Manway? Yes ☐ No ☒	

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PSV DATA

LOCATION (Reference Pressure Vessel A# that the valve is attached to or protecting. Where the valve is not protecting a vessel describe the piping system location. i.e. Inlet Header or Compressor Discharge): Off Fuel Gas Scrubber Piping

	Set Pressure	CRN #	Manufacturer / Model / Tag # /Serial #	Capacity (Scfm)	Size	Set Date
Shell Side	150 psig.	0G26 06.5C	100** temp	329	1"x1" NPT	0 5/02/03 Unified Valve ID# 2977E
Tube Side	N/A		N/A			

SERVICE CONDITIONS

Steam ☐	Air ☐	Sweet Oil ☐	Sour Oil ☐
Sour Condensate ☐	LPG ☐	Sweet Gas ☒	Sour Gas ☐
Sweet Condensate ☐	Nitrogen ☐	Amine ☐	Salt Water ☐
Chlorine ☐	Ammonia ☐	Sweet Glycol ☐	Sour Glycol ☐
Sulphur ☐	Other		

GENERAL INSPECTION CHECKLIST

Pressure Gauge Condition: GLASS BROKEN, should be replaced

Foundation Condition: on skid

Shells / Heads / Piping

External Condition: GOOD

Internal Condition: (address pitting, general metal loss, hydrogen blistering, scale buildup) INACCESSABLE

Nozzles / Flange Condition: GOOD

Internal Piping / Bolting / Pipe support Condition: GOOD

Firetube Condition: N/A

Demister Pad Condition:	N/A
Anode Condition:	N/A

Exchangers	
Exchanger Type (Kettle, Shell and Tube):	N/A
Channel Head / Bonnet Condition:	N/A
Stays and Tube Support Condition:	N/A
Tubesheet Condition:	N/A
External Tube Bundle Condition:	N/A
Internal Tube Bundle Condition:	N/A
Shell Side Fouling:	N/A
Tube Side Fouling:	N/A

Coating Inspection	
Type and Manufacturer of Coating:	NONE
Location:	
Coating Condition:	

NDE Inspection	
Type of Testing:	External Visual Only
Location of Test:	
Contractors Name:	
Contractors Qualifications:	
Test Results:	

Vessel Status	YES	NO
Suitable for Further Service	☒	☐
Repairs Required	☐	☒
Repairs Completed	☐	☐

Repairs completed by:	Date:

Owners Representative: Keith McIntosh	Date: May 15, 2003

Tower Summary		
Location:	Vessel Name:	Vessel A #:

Tray Level	Tray Condition	Shell Condition
Top Head/ Shell		
Tray 1		
Tray 2		
Tray 3		
Tray 4		
Tray 5		
Tray 6		
Tray 7		
Tray 8		
Tray 9		
Tray 10		
Tray 11		
Tray 12		
Tray 13		
Tray 14		
Tray 15		
Tray 16		
Tray 17		

Tower Summary		
Location:	Vessel Name:	Vessel A #:

Tray Level	Tray Condition	Shell Condition
Tray 18		
Tray 19		
Tray 20		
Tray 21		
Tray 22		
Tray 23		
Bottom Head and Shell		

Recommendations: This Separator skid unit is currently at Priority Projects in Nisku, Alberta for Revamp. The unit was sent in from the Wild Hay area and is to be returned to that area when modifications are complete.

No work is to be done on the Fuel Gas Scrubber at this time.

Name (PRINTED)	Signature	Date
VISUAL INSERVICE INSPECTOR: Keith McIntosh		May 15, 2003
QA ADMINISTRATOR:		
QA COORDINATOR: Terry McConnell	*Terry McConnell*	
ABSA SAFETY CODES OFFICER:		