

A0574155 - LINE HEATER DATA - AUG 2000

1060-04

Canadian Natural Resources Limited
Production - Facilities Engineering
A0574155 Line Heater Pressure Vessel Data Sheet

Content Date Range: 8/30/2000 to 8/30/2000

Vessel Integrity

Inspection Data

Open: 3/27/2007 Close:

CC+2 OP P



00781482

Vital: Yes
Original: Yes
Confidential: No

CLK ✓



PRESSURE VESSEL / PSV DATA SHEET

Exhibit #1600
Revision 2, August 30, 2000

GENERAL INFORMATION

AREA: WEST BLUEBERRY		LOCATION (LSD): 8-4-88-25 W6M	
FACILITY: 8-4-WELL SITE LINE HEATER		DATE: 01/11/2003	
VESSEL NAME: LINE HEATER			
"A" NUMBER: 475155		CRN Number: K1977.12	
INTERNALLY COATED: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>			
STATUS: OPERATING <input checked="" type="checkbox"/> SHUT IN <input type="checkbox"/> SURPLUS <input type="checkbox"/> JUNK <input type="checkbox"/>			
MANWAY: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>			
OPERATING PRESSURE: 6000 KPA		SHELL:	
		TUBES:	
DESIGN PRESSURE 20340 KPA		SHELL:	
		TUBES:	
MANUFACTURER: MAR-QUINN		SERIAL NUMBER: 126-87-01-G	YEAR BUILT: 2001
SIZE: (ID X LENGTH): 76.2MMX12.49M		HEAT TREATED: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	

PSV DATA

MANUFACTURER: FARRIS		SIZE: 1 X 1 D	
MODEL #: N/A		CRN #: 000386.9C	
SERIAL #: SE-11989-1		CAPACITY: 361SCFM	
SET DATE: 8-01		SET PRESSURE: 150 PSI	
TAG #:			

SERVICE CONDITIONS (CHECK ALL THAT APPLY)

STEAM <input type="checkbox"/>	SWEET GLYCOL <input type="checkbox"/>	SOUR GLYCOL <input type="checkbox"/>
AIR <input type="checkbox"/>	SWEET GAS <input type="checkbox"/>	SOUR GAS <input checked="" type="checkbox"/>
LEAN AMINE <input type="checkbox"/>	SWEET CONDENSATE <input type="checkbox"/>	SOUR CONDENSATE <input checked="" type="checkbox"/>
RICH AMINE <input type="checkbox"/>	SWEET OIL <input type="checkbox"/>	SOUR OIL <input checked="" type="checkbox"/>
NITROGEN <input type="checkbox"/>	LPG <input type="checkbox"/>	CARBON DIOXIDE <input type="checkbox"/>

METER RUN DATA

METER RUN	METER
MODEL: NORTH STAR FLOW PRODUCTS	MODEL: BARTON
SERIAL #: ER00770	SERIAL #: 202C-C9400790
I.D. U/S: 2.902	DIFFERENTIAL PRESSURE: 0-100" WC
I.D. D/S 2.902	STATIC PRESSURE: 0-1500 PSI



INSTALLATION OR EXTERNAL INSPECTION CHECKLIST
EXHIBIT #400

Project Description			Project Location WEST BLUEBERRY	
8-4-88-25-06 Line Heater				
Task	Sub Task	Date	Checked by	Comments
PV Nameplate Requirements (All items to be legibly stamped on the Pressure Vessel Nameplate) The pressure vessel detail sheet must be completed and attached to this report	A Number, S Number or BC Number	01/11/2003	M.L.	475155
	Proper CRN for the provincial jurisdiction the equipment is installed in (Alberta .2, Saskatchewan .1, B.C. .3)	01/11/2003	M.L.	K1977.12
	Design Pressure	01/11/2003	M.L.	2950 PSII
	Minimum Design Temperature	01/11/2003	M.L.	200F
	Name of Manufacturer	01/11/2003	M.L.	MAR-QUINN
	Year Built	01/11/2003	M.L.	2001
	Serial Number	01/11/2003	M.L.	126-87-01-G
External Coating	Piping and pressure vessel coated -with no evidence of disbondment or flaking	01/11/2003	M.L.	GOOD
Vessel Supports	Vessel bolted down	01/11/2003	M.L.	WELDED
	Inspection hole in skirt	01/11/2003	M.L.	NO
Bulges, dents or blisters on vessel	No evidence of external deformities on the vessel or piping system	01/11/2003	M.L.	NO
External Corrosion	No evidence of external corrosion on the studs, bolts, external surface of the pressure vessel or piping	01/11/2003	M.L.	NO
External Cracks	No evidence of external cracking on the welds, paying special attention to the weld toe	01/11/2003	M.L.	NO



**INSTALLATION OR EXTERNAL INSPECTION CHECKLIST
EXHIBIT #400**

Project Description			Project Location WEST BLUEBERRY	
Task	Sub Task	Date	Checked by	Comments
Pressure Gauge	Gauge accuracy verified	01/11/2003	M.L.	GOOD
Temperature Gauge	Temperature gauge properly installed in a thermowell and in good condition	01/11/2003	M.L.	
PSV Nameplate Requirements (All information must be clearly stamped on the nameplate)	Stamped with a UV symbol			YES
	CRN#			YES
	Model Number			YES
	Manufacturer			YES
	Serial Number			YES
	Capacity			YES
PSV Condition	Sealed with a lead seal			N/A
	Set pressure not to exceed MAWP of Pressure Vessel			N/A
	Installed in a vertical position			N/A
	Evidence of leakage			N/A
	Block valves locked open			N/A
	Drain hole is visible and not plugged			N/A
	Discharge pipe size not smaller than inlet of valve			N/A
	Excessive stress on discharge piping	01/11/2003	M.L.	N/A



INSTALLATION OR EXTERNAL INSPECTION CHECKLIST
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Project Description			Project Location WEST BLUEBERRY	
Task	Sub Task	Date	Checked by	Comments
	Valve discharge not in an area that may be dangerous to personnel	01/11/2003	M.L.	GOOD
	Block valves not permitted on power boilers or heaters	01/11/2003	M.L.	N/A
	Service Date not to exceed 5 years (state last service date)	01/11/2003	M.L.	GOOD
Rupture Discs	Nameplate data checked	01/11/2003	M.L.	NONE
	Direction of flow checked			
	Space between rupture disc and PSV supplied with a pressure gauge			
Insulation	Cladding in good condition	01/11/2003	M.L.	YES
Bolts and Studs	Tight and with a minimum of 2 threads showing on either side	01/11/2003	M.L.	YES
Gaskets	Installed in all flanged connections	01/11/2003	M.I.	YES
Leak Testing	No evidence of leakage on vessel piping, or instrumentation tubing	01/11/2003	M.L.	YES
Hydrotesting	Pressure test on all piping not previously tested in the shop	01/11/2003	M.L.	YES
Piping Inspection	Provision for adequate support	01/11/2003	M.L.	YES
	Provision for expansion	01/11/2003	M.L.	YES
	No evidence of leakage	01/11/2003	M.L.	YES
	Proper alignment to ensure no undue strain on the system	01/11/2003	M.L.	YES
	Proper rating for service conditions	01/11/2003	M.I.	YES



**INSTALLATION OR EXTERNAL INSPECTION CHECKLIST
EXHIBIT #400**

Project Description			Project Location WEST BLUEBERRY	
Task	Sub Task	Date	Checked by	Comments
Drawings	Pressure vessel drawings reviewed and correct		M.L.	
	P & ID drawings reviewed and correct		M.L.	
Material Check	All material grades and specifications as per the approved drawings		M.L.	
	Valve positions and type checked against drawing		M.L.	
	Check valves installed in the proper direction		M.L.	
	Instrumentation checked against approved drawings		M.L.	
Function Test Completed	All controllers, ESDV's, SCADA systems and meters functional		M.L.	
Data Package (each item to be included)	Vessel Drawings			
	ABSA Manufacturers Data Report for Pressure Vessels			
	ABSA AB-81 - Completion of Construction Report for all Piping systems			
	ABSA AB-83 - Construction Data Report for Piping systems			
	ABSA AB-96 - General Engineering Requirements for Design & Construction of Pressure Piping Systems			
	Non Destructive Examination Reports			
	Welder Qualification Records			
	Hydrotest Reports			



**INSTALLATION OR EXTERNAL INSPECTION CHECKLIST
EXHIBIT #400**

Project Description			Project Location WEST BLUEBERRY	
Task	Sub Task	Date	Checked by	Comments
	Hydrotest gauge calibration records	01/05/2003	M.L.	
	Stress Relieving Charts			NONE
	P & I.D.'s - As built	01/11/2003	M.L.	
	Material Test Records (required for all pressure vessels - optional for piping systems)	01/11/2003	M.L.	
	Weld Procedures	12/10/2002	M.L.	