A0524523 - SEPARATOR INSPECTION / DATA - JAN 2005

1060-04

Canadian Natural Resources Limited

Production - Facilities Engineering

A0524523 Vertical Separator Certificate of Inspection and Manufacturers Data Report

Content Date Range: 1/4/2005 to 1/4/2005

Vessel Integrity

Inspection Data

Open: 2/2/2007 Close:

Vital: Yes
Original: Yes
Confidential No

CC+2 0P P

00763109

Alberta
MUNICIPAL AFFAIRS

VESSEL (A): 0524523
DATE OF INSPECTION: 2005 Jan 04

ABSA

Certificate of Inspection

ANADARKO CANADA CORPORATION
PO BOX 2595 STN M
425-1 STREET SW
ATTN GORDON TUNNICLIFFE
CALGARY, AB
T2P 4V4

JAN 24 2005
MIDSTREAM

PREFERRED RE-INSP. INTERVAL: 1.00 Yr.
YEAR BUILT: 2004
CRN: T0062.2
SERIAL #: 138-57-04
VOLUME: 0.268 M3
HEATING SURFACE:
SURFACE AREA:

COMPANY CODE:
DESCRIPTION: VERTICAL SEPARATOR
LOCATION: STOCK, CALGARY
MANUFACTURER: MAR-QUINN INDUSTRIES LTD

Safety Valves

PART	MAX. AUTHORIZED WORKING PRESSURE	MAX. TEMP	MIN. TEMP	VALVE ID	SETTING	CAPACITY	LOCATION
VESSEL	9928 KPA	54 C	-29 C	SV1			TO BE INSTALLED

OWNER INSTRUCTIONS/REMARKS:

Contact the ABSA Safety Codes Officer before placing the vessel/boiler in service.

Vessel/Boiler to be installed in accordance with the Safety Codes Act and Regulations.

Verify that vessel/boiler is protected by an acceptable ASME Code pressure relief device, of adequate capacity, set at no more than maximum pressure authorized and installed in accordance with the Safety Codes Act & Regulations.

If installed at a wellsite or battery, this vessel may be removed from annual fee as per information bulletin IB03-003(I) - (Vessels having a volume not exceeding 0.5 M3 (500 Litres) that are located in well head plants or batteries)

Safety Codes Officer: CHAN, SIDNEY **Signature:**

NOTE: REQUIREMENTS OF THE SAFETY CODES ACT AND THE REGULATIONS ISSUED THEREUNDER:

The owner or person in charge shall report all accidents involving a boiler, pressure vessel or pressure piping system to the district Safety Codes Officer immediately and shall send a full report in writing to the Administrator as required by the Act. No repairs or alterations may be made unless authorized by a Safety Codes Officer.

(A) 524523

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS CORRECTED COPY
(Alternative Form for Single Chamber, Completely Shop or Fabricated Vessels Only)
As required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and Certified by: MAR-QUINN INDUSTRIES LTD., 7115 SPARROW DRIVE, LEDUC, ALBERTA, CANADA, T9E 7L1
(Name and Address of Manufacturer)

2. Manufactured for: ANADARKO CANADA CORPORATION 425 - 1st. St. S.W. Calgary Alberta T2P 4V4
(Name and Address of Purchaser)

3. Location of installation: stock
(Name and Address)

4. Type: Vert Separator (Horiz. or Vert., tank) | 138 - 57 - 04 (Mfgr's serial No.) | T0062.213 (CRN) | # 342 Rev A (Drawing No.) | N/A (Nat'l Bd. No.) | 2004 Year Built

5. The chemical and physical properties of all parts meet the requirements of material specifications of the **ASME BOILER AND PRESSURE VESSEL CODE**. The design, construction, and workmanship conform to **ASME Rules**, Section VIII, Division 1 2001 Year

to 2003 Addenda (date) | N/A Code Case No.s | N/A Special Service per UG-120(d)

6. Shell: SA-106-B Mat'l (Spec. No., Grade) | 1.031 Nom. Thk. (In.) | 0.125 Corr. Allow. (In.) | 16 in. OD Diam. I. D. (ft. & In.) | 10'-9" Length (overall) (ft. & In.)

7. Seams: Smls Long. (Welded, Dbl., Sngl., Lap, Butt.) | Smls R. T. (Spot or) | 100 Eff. (%) | 1150 H. T. Temp. (F) | 1.25 Time (hr.) | Type # 1 Girth.(Welded, Dbl., Sngl., Laps, Butt) | FULL R. T. (Spot, Partial,or Full) | 1 No. of Courses

8. Heads: (a) Mat'l SA-516-70N (Spec. No., Grade) (b) Mat'l SA-516-70N (Spec. No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	C.A.	Crown Radius	Knuckle Radius	Elliptical Radius	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	TOP	0.9	0.125	N/A	N/A	2:1	N/A	N/A	N/A	Concave
(b)	BOTTOM	0.9	0.125	N/A	N/A	2:1	N/A	N/A	N/A	Concave

If removable, bolts used (describe other fastenings) N/A (Matl., Spec., No., Gr., Size., No.)

9. MAWP 1440 psi at max. temp. 130 °F
Min. design metal temp. -20 °F at 1440 psi. Hydro., pneu., or comb. test pressure 1872

10. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain)	No.	Diam. Or Size	Type	Mat'l	Nom. Thk.	Reinforcement Mat'l	How Attached	Location
Gas Inlet/Outlet	2	3 in. NPS	CL600RFWN	SA-105N/SA-106B	0.600 in.	N/A	UW16.1(c)	Shell/Top Head
LLC,HLSD,LLSD	4	3 in. NPS	CL600RFWN	SA-105N/SA-106B	0.600 in.	N/A	UW16.1(c)	Shell
Water/Oil Out,PI,TI	4	2 in. NPS	CL600RFWN	SA-105N/SA-106B	0.343 in.	N/A	UW16.1(c)	Shell
Water LG, Oil LG,PSV	5	2 in. NPS	CL600RFWN	SA-105N/SA-106B	0.343 in.	N/A	UW16.1(c)	Shell
Drain	1	2 in. NPS	CL600RFWN	SA-105N/SA-106B	0.343 in.	N/A	UW16.1(c)	Bottom Head

11. Supports: Skirts Yes (Yes or No) Lugs N/A (No.) Legs N/A (No.) Other N/A (Describe) Attached: Btm Head by Welding (Where and How)

12. Remarks: Manufacturer's Partial Data Reports properly Identified and signed by Commissioned inspectors have been furnished for the following items of the report: N/A (Name of part, Item number, Mfgr's name, and Identifying stamp)
Volume: 9.45 cubic feet. Construction Dwg # 138-56-58-04-A Rev 3 Impact test exempt as per UG-20(f) 1 thru 5 & UCS-66(a).
Hydostatic test conducted in the vertical position.Full RT as per UW -51. Vertical Three Phase Separator.PSV by others.

CERTIFICATE OF SHOP / FIELD COMPLIANCE

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1. "U" Certificate of Authorization No. 33,420 expires 9-Jul-05

Date 31-Dec-04 Co. name Mar-Quinn Industries Ltd. (Manufacturer) Signed (Representative)

CERTIFICATE OF SHOP / FIELD INSPECTION

Vessel constructed by Mar-Quinn Industries Ltd. at 7115 - Sparrow Drive Leduc Alberta Can. T9E 7L1
I, the undersigned, hold a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/ or the State or Province of Alberta and employed by ABSA

have inspected the component described in this Manufacturer's Data Report on 04-JAN.-05, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Code Section VIII, Division 1.By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date JAN 3 1 2005 Signed (Authorized Inspector) Commissions AB#1144 (Nat'l Board Incl. Endorsement , State. Prov. And No.)

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
(Alternative Form for Single Chamber, Completely Shop or Fabricated Vessels Only)
As required by the Provisions of the ASME Code Rules, Section VIII, Division 1

(A) 524523

1. Manufactured and Certified by: MAR-QUINN INDUSTRIES LTD., 7115 SPARROW DRIVE, LEDUC, ALBERTA, CANADA, T9E 7L1 (Name and Address of Manufacturer)

2. Manufactured for: ANADARKO CANADA CORPORATION 425 - 1st. St. S.W. Calgary Alberta T2P 4V4 (Name and Address of Purchaser) CLK ✓

3. Location of installation: stock (Name and Address)

4. Type: Vert Separator (Horiz. or Vert., tank) | 138 - 57 - 04 (Mfgr's serial No.) | T0062.2 (CRN) | # 342 Rev A (Drawing No.) | N/A (Nat'l Bd. No.) | 2004 Year Built

5. The chemical and physical properties of all parts meet the requirements of material specifications of the **ASME BOILER AND PRESSURE VESSEL CODE**. The design, construction, and workmanship conform to **ASME Rules**, Section VIII, Division 1 2001 Year

to 2003 Addenda (date) | N/A Code Case No.s | N/A Special Service per UG-120(d)

6. Shell: SA-106-B Mat'l (Spec. No., Grade) | 1.031 Nom. Thk. (In.) | 0.125 Corr. Allow. (In.) | 16 in. OD Diam. I. D. (ft. & In.) | 10'-9" Length (overall) (ft. & In.)

7. Seams: Smls Long. (Welded, Dbl., Sngl., Lap, Butt.) | Smls R. T. (Spot or | 100 Eff. (%) | 1150 H. T. Temp. (F) | 1.25 Time (hr.) | Type # 1 Girth.(Welded, Dbl., Sngl., Laps, Butt) | FULL R. T. (Spot, Partial,or Full) | 1 No. of Courses

8. Heads: (a) Mat'l SA-516-70N (Spec. No., Grade) (b) Mat'l SA-516-70N (Spec. No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	C.A.	Crown Radius	Knuckle Radius	Elliptical Radius	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	TOP	0.9	0.125	N/A	N/A	2:1	N/A	N/A	N/A	Concave
(b)	BOTTOM	0.9	0.125	N/A	N/A	2:1	N/A	N/A	N/A	Concave

If removable, bolts used (describe other fastenings) N/A (Matl., Spec., No., Gr., Size., No.)

9. MAWP 1440 psi at max. temp. 130 °F

Min. design metal temp. -20 °F at 1440 psi. Hydro., pneu., or comb. **test pressure** 1872

10. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain)	No.	Diam. Or Size	Type	Mat'l	Nom. Thk.	Reinforcement Mat'l	How Attached	Location
Gas Inlet/Outlet	2	3 in. NPS	CL600RFWN	SA-105N/SA-106B	0.600 in.	N/A	UW16.1(c)	Shell/Top Head
LLC,HLSD,LLSD	4	3 in. NPS	CL600RFWN	SA-105N/SA-106B	0.600 in.	N/A	UW16.1(c)	Shell
Water/Oil Out,PI,TI	4	2 in. NPT	CL600RFWN	SA-105N/SA-106B	0.343 in.	N/A	UW16.1(c)	Shell
Water LG, Oil LG,PSV	5	2 in. NPT	CL600RFWN	SA-105N/SA-106B	0.343 in.	N/A	UW16.1(c)	Shell
Drain	1	2 in. NPT	CL600RFWN	SA-105N/SA-106B	0.343 in.	N/A	UW16.1(c)	Bottom Head

11. Supports: Skirts Yes (Yes or No) Lugs N/A (No.) Legs N/A (No.) Other N/A (Describe) Attached: Btm Head by Welding (Where and How)

12. Remarks: Manufacturer's Partial Data Reports properly Identified and signed by Commissioned inspectors have been furnished for the following items of the report: N/A (Name of part, Item number, Mfgr's name, and Identifying stamp)

Volume: 9.45 cubic feet. Construction Dwg # 138-56-58-04-A Rev 3 Impact test exempt as per UG-20(f) 1 thru 5 & UCS-66(a).

Hydostatic test conducted in the vertical position.Full RT as per UW -51. Vertical Three Phase Separator.PSV by others.

CERTIFICATE OF SHOP / FIELD COMPLIANCE

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1. "U" Certificate of Authorization No. 33,420 expires 9-Jul-05

Date Dec. 31, 2004 Co. name Mar-Quinn Industries Ltd. (Manufacturer) Signed (Representative)

CERTIFICATE OF SHOP / FIELD INSPECTION

Vessel constructed by Mar-Quinn Industries Ltd. at 7115 - Sparrow Drive Leduc Alberta Can. T9E 7L1

I, the undersigned, hold a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/ or the State or Province of Alberta and employed by Alberta Boilers Safety Association

have inspected the component described in this Manufacturer's Data Report on JAN 0 4 2005, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Code Section VIII, Division 1.By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date JAN 0 4 2005 Signed (Authorized Inspector) Commissions AB #144A (Nat'l Board Incl. Endorsement , State, Prov. And No.)

@ Anadarko Separator 138-57-04

FORM U-3 MANUFACTURER'S CERTIFICATE OF COMPLIANCE
COVERING PRESSURE VESSELS TO BE STAMPED WITH THE UM SYMBOL. SEE U-1(i)
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

0529523B

1. Manufactured and Certified by: Mar-Quinn Industries Ltd., 7115 Sparrow Drive, Leduc, Alberta, T9E 7L1 (Name and Address of manufacturer)
2. Manufactured for: ANADARKO CANADA CORPORATION 425-1st. St. S.W. Calgary, AB T2P 4V4 (Name and Address of Purchaser)
3. Location of installation: STOCK (Name and Address)
4. Type: Vertical (Horiz., vert., or sphere) | Scrubber (Tank, separator, ect.) | 138-72-04 (Mfgr's serial No.)

OH5414.213	280 Rev. A	N/A	2004
(CRN)	(Drawing No.)	(Nat'l Bd. No.)	(Year built)

5. ASME Code, Setion VIII, Div. 1: 2001, A2003 (Edition and Addenda (date)) | N/A (Code Case No.)

Item 6-11 incl. To be completed for single wall vessels, jackets of jacketed vessels, shell of heat exchangers, or chamber of multi-chamber vessels.

6. Shell (a) No. of course(s): 1 (b) Overall lengh (ft. & in.): 30 in.

Course(s)			Material	Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat, A,B,& C)			Heat Treatment	
No.	Diameter, in.	Lengh (ft.& in.)	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
1	8.625 in.	30 in.	SA-106-B	0.322	0.125	Smls	N/A	N/A	#1	FULL	100%	1150	1.25hrs

7. Heads: (a) SA-234-WPB (Mat'l Spec., No., Grade, or Type) H.T. - Time & Temp. (b) SA-234-WPB (Mat'l Spec., No., Grade, or Type) H. T. - Time & temp.

	Location (Top, Bottom,Ends)	Thickness		Radius		Elliptical	Conical	Hemispherical	Flat	Side To Pressure		Category A		
		Min.	Corr.	Crown	Knuckle	Ratio	Apex Angle	Radius	Diame	Convex	Concave	Type	Full, Spot, None	Eff.
(a)	Top	0.25	0.125	N/A	N/A	2 to 1	N/A	N/A	N/A	N/A	Yes	#1	FULL	100%
(b)	Bottom	0.25	0.125	N/A	N/A	2 to 1	N/A	N/A	N/A	N/A	Yes	#1	FULL	100%

If removable, bolts used (describe other fastening) N/A (Mat'l Spec., No., Grade, Size, No.)

8. Type of jacket N/A Jacket closur N/A
If bar, give dimensions ; If bolted describe or sketch. N/A

9. MAWP 300 (internal) N/A (external) psi at max. temp. 200 (internal) N/A (external) Min. design metal temp. -20 °F at 300 psi

10. Impact test Exempt as per UG 20(f) 1 thru 5 (Indicate yes or no and the component(s) impact tested)

11. Hydro., pneu., or comb. Test press. 390 psi Proof test N/A

12. Nozzles, inspection, and safety valve openings:

Purpose Inlet, Outlet, Drain, etc.	No.	Diam. Or Size	FlangeType	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Inlet	1	1.0 in.	T.O.L.	SA-105N	N/A	CL3000	0.125	N/A	UW16.1(a)	N/A	Shell
Outlet	1	2.0 in.	H.CPLG.	SA-105N	N/A	CL3000	0.125	N/A	UW16.1(a)	N/A	Top Head
Drain	1	1.0 in.	T.O.L.	SA-105N	N/A	CL3000	0.125	N/A	UW16.1(a)	N/A	Bottom Head
Inspection	1	1.0 in.	T.O.L.	SA-105N	N/A	CL3000	0.125	N/A	UW16.1(a)	N/A	Shell
LC	1	2.0 in.	H.CPLG.	SA-105N	N/A	CL3000	0.125	N/A	UW16.1(a)	N/A	Shell

13. Supports: Skirts Yes (Yes or No) Lugs N/A (No.) Legs N/A (No.) Others N/A (Describe) Attached: Welded to Btm. Head (Where and How)

14. Manufacturer's Partial Data Report properly indetified and signed by Commissioned Inspectors have been finnished for the following items of the report: (List the name of part, item number, mfg's. name and identifying number)

15. Remarks: Vol. 1.04 cubic feet. Construction Dwg. 138-71-73-04-A Rev. 0
Hydrostatic test conducted in vertical position.

Certificate of Shop Compliance

We certify that the statements made in this report are correct and that all details of desigb, material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessles, Section VIII, Division 1.

UM Certificate of Authorization No. 33,421 Expires 9-Jul-05

Date Dec 28/2004 Name Mar-Quinn Industries Ltd. (Manufacturer) Signed (Represntative)

Signed Randy Colbert (Certified Individual)