

1060-04

Canadian Natural Resources Limited
Production - Facilities Engineering
A0481338 Indirect Fired Heater Coil Certificate of
Inspection and Manufacturers Data Report

Content Date Range: 12/4/2001 to 12/4/2001

Vessel Integrity

Inspection Data

Open: 1/23/2007 Close:

Vital: Yes
Original: Yes
Confidential: No

CC+2 0P P



00758614

A0481338 - HEATER COIL INSPECTION - DEC 2001

Certificate of Inspection

4-23-75-7-W6
SADDLE
Yr. HILLS

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

PREFERRED RE-INSP. INTERVAL:

YEAR BUILT: 2001

CRN: K1977.12

SERIAL #: 126-98-01-C

LOCATION: CALGARY (STOCK)

DESCRIPTION: INDIRECT FIRED HEATER COILS

VOLUME: 0.13 M3

HEATING SURFACE: 10.75 M2

COMPANY CODE:

SURFACE AREA:

MANUFACTURER: MAR-QUINN INDUSTRIES LTD

Safety Valves

PART	MAX. AUTHORIZED WORKING PRESSURE	MAX. TEMP	MIN. TEMP	VALVE ID	SETTING	CAPACITY	LOCATION
COIL 1	20340 KPA	93 C		SV1			TO BE INSTALLED
COIL 2	13962 KPA	93 C		SV2			TO BE INSTALLED

OWNER INSTRUCTIONS/REMARKS:

NOT SUBJECT TO ANNUAL FEES AS PER REGULATIONS PART 4 SECTION 28 (h)
DIRECT OR INDIRECT FIRED OIL AND GAS PROCESS HEATERS OF THE COIL TYPE;

OWNER TO VERIFY INTEGRITY OF VESSEL BY PERIODIC INSPECTION PROGRAM.

VERIFY THAT VESSEL/BOILER IS PROTECTED BY AN ACCEPTABLE ASME CODE PRESSURE RELIEF VALVE, OF ADEQUATE CAPACITY, SET AT NO MORE THAN MAXIMUM PRESSURE AUTHORIZED AND INSTALLED IN ACCORDANCE WITH THE SAFETY CODES ACT & REGULATIONS.

VESSEL/BOILER TO BE INSTALLED IN ACCORDANCE WITH THE SAFETY CODES ACT AND REGULATIONS.

Safety Codes Officer: DENYS, METRO

Signature: *M Denys*

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.



MANUFACTURER'S DATA REPORT FOR INDIRECT FIRED HEATER COILS

(A) No. 48/338Manufactured by Mar-Quinn Industries Ltd. 7115 - Sparrow Drive Leduc Alberta T9E 7L1Manufactured for Anadarko Canada Ltd. 425 - 1st. St. S.W. Calgary Alberta T2P 4V4Ultimate Owner Anadarko Canada Ltd. 425 - 1st. St. S.W. Calgary Alberta T2P 4V4Location of Installation unknownMfg. Serial No. 126 - 98 - 01 - C Code: ASME B31.3, Edition 1999 Addenda 2000Drawing Number # 253 Rev A Year Built 2001 Intended Service water, oil, gas

a. Material Specifications	<u>SA-106-B</u> <i>Coil</i>	<u>SA-105N</u> <i>Ends (Flanges/N.P.T.)</i>	<u>1500# RFWN</u> <i>Rating</i>
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b. Material Specifications	<u>SA-106-B</u> <i>Coil</i>	<u>SA-105N</u> <i>Ends (Flanges/N.P.T.)</i>	<u>900# RFWN</u> <i>Rating</i>
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a. Diameter 76.2 mm Nom. Thickness 11.12 mm O/A Length 12.49 m C.A. 3.2 mmb. Diameter 76.2 mm Nom. Thickness 11.12 mm O/A Length 12.49 m C.A. 3.2 mma. Maximum Working Pressure 20,340 kPa at Maximum Temperature 93 °Cb. Maximum Working Pressure 13,962 kPa at Maximum Temperature 93 °Ca. Hydrostatic Test Pressure 30,510 kPa C.R.N. K - 1977.12b. Hydrostatic Test Pressure 20,947 kPa C.R.N. K - 1977.12Heating Surface 10.75 square meters Radiography 100 % Full (Random, % or Full)Volume 0.13 cubic meters P.W.H.T. 60 minutes @ 1150 FRemarks Impact test exempt as per Table 323.2.2Construction Dwg# 126 - 77 - 01 - Coil Rev 0**CERTIFICATE OF COMPLIANCE**

We certify that the statements in this report are correct and that all details of design, material, construction, and workmanship of this coil bundle are in accordance with Registered Design No.

Date Dec 4/01 Signed Harley Math For Mar-Quinn Industries Ltd.
(Representative) *(Manufacturer)***CERTIFICATE OF SHOP INSPECTION**

I, the undersigned, a duly authorized Safety Codes Officer employed by The Alberta Boilers Safety Association have inspected the above Heater Coils and state that, to the best of my knowledge and belief, the construction is in accordance with the Alberta Safety Codes Act and Regulations.

Date 2001-12-04Signed m. Denny

ALBERTA MUNICIPAL AFFAIRS

Alberta Boilers Safety Association

200, 4208 - 97 Street

Edmonton AB T6E 5Z9

Partial/ Partiel

**MANUFACTURER'S DATA REPORT
FOR PRESSURE VESSEL
DÉCLARATION DE CONFORMITÉ DU CONSTRUCTEUR
D'APPAREILS SOUS PRESSION**

Upon shipment of a pressure vessel, this form fully and correctly filled in must be mailed to the office of the Chief Inspector in the province of installation in accordance with the regulations under the Act, governing the construction and installation of pressure vessels.

Au moment de l'expédition d'un appareil sous pression, ce formulaire complété correctement, doit être envoyé au bureau de l'inspecteur en chef de la province d'installation tel que prévu dans les règlements de la loi sur les appareils sous pression.

Manufactured by Construit par	Name and address of Manufacturer/ Nom et adresse du constructeur Mar-Quinn Industries Ltd. 7115 Sparrow Drive Leduc, Alberta T9E-7L1
Manufactured for Construit pour	Name and address of Purchaser or Consignee/ Nom et adresse du client ou de son représentant Anadarko Canada Ltd. 425 - 1st St. S.W. Calgary Alberta T2P 4V4
Ultimate owner Utilisateur	Name and address/ Nom et adresse Anadarko Canada Ltd. 425 - 1st St. S.W. Calgary Alberta T2P 4V4
Location of installation Lieu d'installation	Address/ Adresse Unknown

Pressure vessel/ Appareil

Type/ Genre Vertical Fitting Scrubber	Overall Length/Longueur totale 762mm s/s	Serial No./ N° de série 128 - 08 - 01	Year built/Année de fabrication 2001
Provincial Registration No. - C.R.N./N° d'enregistrement provincial - N.E.C. OH 1531.123		National Board No./ N° National Board N/A	Drawing No./ N° de dessin # S-197 Rev 0

The chemical and physical properties of all parts meet the requirements of material specifications of the A.S.M.E. Code.
Les propriétés chimiques et physiques de toutes les composantes respectent les exigences des spécifications de matériaux de code ASME.

The design, construction and workmanship conform to CSA B51. La conception, la construction et la façon sont conformes à ACNOR B51.	ASME Section VIII	Division I	Addenda/Supplément 2000	Code case No N° de cas N/A
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Manufacturer's partial data reports properly identified and signed by authorized inspectors have been furnished for the following items of the report, and attached to this report:

Les rapports partiels du constructeur adéquatement identifiés et signés par les inspecteurs autorisés ont été produits pour les items suivants du rapport, et attachés à ce rapport:

Names of parts/ Nom de la composante	Item No./ N° d'item	Manufacturer's Name/ Nom du constructeur	Identifying Stamp/ Estampe d'identification
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Shell/ Virole

Description	Material Matériau	Thickness Épaisseur	Corr. Allow. Surépais. de corr.	Diameter Diamètre	Longitudinal Joints Joints longitudinaux			P.W.H.T Traitement therm		Girth Joints Joints de circonférence		Number of courses Nombre de sections
					Type	R.T Radiog.	Efficiency Efficacité	Temp.	Time Durée	Type	R.T. Radiog.	
Pipe	SA-106-B	8.2mm	3.2mm	203mm	smls	N/A	100%	1150 F	60 min	#1	Full	1
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Heads/ Tetes

Description	Material Matériau	Min. Thickn. Épais minim.	Corr. Allow. Surépais. de corr.	Crown. Radius Rayon couron.	Knuckle Radius Petit rayon	Ellipse Ratio Rapp. ellipse	Conical Apex Angle Angle conique	Hemisph. Radius Ray Hémisph	Flat Diameter Diam plat	Side to pressure Côte sous pression
Top	SA-234-WPB	6.4mm	3.2mm	N/A	N/A	2:1	N/A	N/A	N/A	Concave
Bottom	SA-234-WPB	6.4mm	3.2mm	N/A	N/A	2:1	N/A	N/A	N/A	Concave

Removable bolts used (describe other fastenings) Boulons amovible utilisés (décrire tout autre attache)	N/A	Mat'l Spec./ Spéc. du mat. N/A	Grade N/A	Size/ Dimension N/A
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Pressure - Temperature/ Pression - température

Pressure Vessel Part Partie de l'appareil	Constructed for max. allowable working pressure Construit pour une pression maximale de marche permise	At max. temp. A une temp. max.	Min. Temp. (when less than -29°C) Temp. min. (inférieure à -29°C)	Test pressure (hydro-pneumatic or combination) Pression d'épreuve (hydro-pneumatique ou combinaison)
SHELL	250 PSIG 1724 kPa	100F 38C	-20F -29C	375 PSIG 2586 kPa

Tube Section/ Faisceau tubulaire

Tubesheet/ Plaque tubulaire N/A	Material/ Matériau N/A	Diameter/ Diamètre N/A	Nominal Thickness Épaisseur nominale N/A	Corr. Allow Surépais. corrosion N/A	Attachment Mode d'attachement N/A
Tube material/ Matériau des tubes N/A	Diameter/ Diamètre N/A	Nominal Thickness (gauge) Épaisseur nominale (calibre) N/A	Number/ Nbre N/A	Type (Straight or U) Type (Droit ou U) N/A	Heating Surface Surface de chauffe N/A

Jacket/ Chemise

Type of jacket/ Genre de chemise N/A	Jacket closure Fermeture de chemise N/A	Proof Test Pression d'épreuve N/A	Heating Surface Surface de chauffe N/A	Sketch/ Schéma N/A
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Safety Valve Outlets/ Soupapes de sûreté

Number/ Nombre N/A	Dimension N/A	Location/ Endroit N/A
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Nozzles and Openings/ Tubulures et ouvertures

Purpose/ But	Number Nombre	Dimension	Type	Material Matériau	Nominal Thickness Épaisseur nominale	Reinforcement material Matériau de renfort	How attached Genre d'attaches	Location/ Endroit
Inlet	1	25.4mm	T.O.L.	SA-105N	3000#	N/A	UW 16.1a	Shell
Drain	1	25.4mm	T.O.L.	SA-105N	3000#	N/A	UW 16.1a	Bottom Head
Outlet	1	50.8mm	Coupling	SA-105N	3000#	N/A	UW 16.1a	Top Head

Supports/ Supports

Skirt/ Jupe Yes/ Oui No/ Non <input checked="" type="checkbox"/> <input type="checkbox"/>	Lugs/ Oreilles No./ Nbre N/A	Legs/ Pieds No./ Nbre N/A	Other/ Autres (Description) N/A	Attached/ Attaches (Where and How/ Méthode et endroit) Welded to Bottom Head
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Remarks/ Observations (Cubical capacity/ Volume)

Volume 0.031 cubic meters Impact test exempt as per UCS 66(a) & UG 20 (f) 1 thru 5
 Hydrostatic test conducted in the vertical position
 Construction Dwg # 127 - 01 - 01 - A Rev A
 ** to be Protected from over pressure with PSV in the piping system**

Certificate of Compliance/ Certificat de conformité

We certify that the statements made in this data report are correct and that the said vessel has been constructed in accordance with the Provincial Registered design below and the requirements of standard CSA B51.

Nous certifions que les données de la déclaration de conformité sont correctes et que l'appareil a été construit en accord avec l'enregistrement provincial ci-dessous et les exigences de la norme ACNOR B51.

Provincial Registered Design
 Enregistrement provincial OH 1531.123

Manufacturer
 Constructeur Mar-Quinn Industries Ltd.

Signature Harley Martin Date Dec 5/09

Certificate of Shop Inspection/ Certificat d'inspection en usine

I, the undersigned, a duly authorized Boiler and Pressure Vessel Inspector Je, soussigné, inspecteur autorisé de chaudières et appareil sous pression employed by Alberta Boilers Safety Association

of/ de Alberta
 have inspected the above vessel and state that to the best of my knowledge and belief, the manufacturer has constructed the vessel in accordance with the Provincial registration CRN OH 1531.123 and the requirements of standard CSA B51.

ai inspecté l'appareil précité et autant que je sache, crois que le constructeur a construit l'appareil en accord avec l'enregistrement provincial NEC N/A et les exigences de la norme ACNOR B51.

Inspector's Name
 Nom de l'inspecteur N/A

Signature _____ Date _____

Certificate of Compliance - Field Work/ Certificat de conformité - Installation au chantier

We certify that the field installation of all parts of the vessel conforms with the requirements of Provincial Regulations.

Nous certifions que l'installation au chantier de toutes les composantes de l'appareil est conforme aux règlements provinciaux.

Installer's Name
 Nom de l'installateur _____

Signature _____

Date _____

Certificate of Field Inspection/ Certificat d'inspection - Installation au chantier

I, the undersigned, a duly authorized Boiler and Pressure Vessel Inspector Je, soussigné, inspecteur autorisé de chaudières et appareil sous pression employed by _____

have inspected the items not covered by the Shop Inspection Certificate and the installation of the items and state that to the best of my knowledge and belief the construction and assembly of the items are in accordance with the Provincial Regulations.

ai inspecté les composantes non couvertes par le certificat d'inspection en usine et l'installation de l'appareil et, autant que je sache, la construction et l'assemblage de l'appareil sont en accord avec les règlements provinciaux.

Inspector's Name
 Nom de l'inspecteur _____

Signature _____ Date _____