

113

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

1. Manufactured and certified by Himile Mechanical Manufacturing Co., Ltd. No.2069,Himile Road Mishui Hitec Park Gaomi, Shandong Province, 261500 PRC.
(Name and address of Manufacturer)
2. Manufactured for Cameron
(Name and address of Purchaser)
3. Location of installation Not Known
(Name and address)
4. Type Vertical 437101 NA HMS00445,Rev.12(0) 5114 2014
(Horizontal or vertical, tank) (Manufacturer's serial number) (CRN) (Drawing number) (National Board number) (Year built)
5. ASME Code, Section VIII, Division 1 2013 NA NA
[Edition and Addenda, if applicable (date)] (Code Case numbers) [Special Service per UG-120(d)]
6. Shell: SA-106 Gr.B/C / SA 350 LF2 CLASS 1 0.969" 0 22.062" 7'-0"
(Material spec. number, grade) (Nominal thickness) (Corr. allow.) (Inner diameter) (Length (overall))
7. Seams: S None 100 NA NA Sngl. Type1 Spot 85 1
(Long. (welded, dbl., sngl., lap, butt)) (R.T. (spot or full)) (Eff., %) (H. T. temp.) (Time, hr) (Grth. (welded, dbl., sngl., lap, butt)) (R.T. (Spot or full)) (Eff., %) (No. of courses)
8. Heads: (a) Material SA-516 Gr.70 N (b) Material SA-516 Gr.70
(Spec. no., grade) (Spec. no., grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	Top	1.079"	0.125"	NA	NA	2:1	NA	NA	NA	Concave
(b)	Bottom	0.82"	0	NA	NA	2:1	NA	NA	NA	Concave

Body Flanges on Heads												
	Location	Type	ID	OD	Flange Thk.	Min Hub Thk.	Material	How Attached	Bolting			
									Num.&Size	Bolting Material	Washer (OD, ID, thk)	Washer Material
(a)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

10. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain etc.)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp.Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Gas Inlet(Inspection)	1	NPS6	CI 600 lwn.	/	SA-105	1.378"	0	Inherent	Fig.UW-16.1(c)	No NDE	Shell
See attached U-4 Form											

11. Supports: Skirt Yes Lugs NA Legs NA Other No Attached welded to head
(Yes or no) (Number) (Number) (Describe) (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: (6)24" CLOSURES R&M ENERGY SYSTEMS XC452 ASME-U
(Name of part, item number, Manufacturer's name and identifying stamp)
- (1) Impact test exempted according to UG-20(f), UCS-66(c).

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 BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. "U" Certificate of Authorization Number 39.452 expires April 7, 2016.

Date Jul.14,2014 Co. name Himile Mechanical Manufacturing Co.,Ltd. Signed [Signature]
(Manufacturer) (Representative)

CERTIFICATE OF SHOP/FIELD INSPECTION

Vessel constructed by Himile Mechanical Manufacturing Co., Ltd. at No.2069,Himile Road Mishui Hitec Park Gaomi, Shandong Province 261500 PRC.
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by SGS United Kingdom Limited.

have inspected the component described in this Manufacturer's Data Report on 15 Jul 14, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 15 Jul 14 Signed [Signature] Commissions NB 13940 A
(Authorized Inspector) (National Board (incl. endorsement))

FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET

As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

213

1. Manufactured and certified by Himile Mechanical Manufacturing Co., Ltd. No.2069, Himile Road Mishui Hitec Park Gaomi, Shandong Province, 261500 PRC.

(Name and address of Manufacturer)

2. Manufactured for Cameron

(Name and address of Purchaser)

3. Location of installation Not Known

(Name and address)

4. Type: Vertical

(Horizontal, vertical, or sphere)

Vessel

(Tank, separator, heat exch., etc.)

437101

(Manufacturer's serial number)

NA

(CRN)

HMS00445, Rev.12(0)

(Drawing Number)

5114

(National Board number)

2014

(Year built)

Data Report

Item Number

Remarks

Purpose (Inlet, Outlet, Drain etc.)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Gas Outlet (Inspection)	1	NPS6	Cl 600 lwn.	/	SA-105	1.378"	0	Inherent	Fig.UW-16.1(c)	No NDE	Shell
Lower Outlet/Drain	1	NPT1	w.e.	SA-105	/	0.205"	0	Inherent	Fig.UW-16.1(bb)	/	NA
Lower Level Control	1	NPT2	w.e.	SA-105	/	0.305"	0	Inherent	Fig.UW-16.1(bb)	/	NA
Lower Level Gauge	1	NPT2	w.e.	SA-105	/	0.305"	0	Inherent	Fig.UW-16.1(bb)	/	NA
Upper Outlet/Drain	1	NPT1	w.e.	SA-105	/	0.205"	0	Inherent	Fig.UW-16.1(bb)	/	NA
Upper Level Control	1	NPT2	w.e.	SA-105	/	0.305"	0	Inherent	Fig.UW-16.1(bb)	/	NA
Upper Level Gauge	1	NPT2	w.e.	SA-105	/	0.305"	0	Inherent	Fig.UW-16.1(bb)	/	NA
PSV	1	NPT1	w.e.	SA-105	/	0.205"	0	Inherent	Fig.UW-16.1(bb)	/	NA
DPI	2	NPT1/2	w.e.	SA-105	/	0.157"	0	Inherent	Fig.UW-16.1(bb)	/	NA
PI	1	NPT1/2	w.e.	SA-105	/	0.157"	0	Inherent	Fig.UW-16.1(bb)	/	NA

Certificate of Authorization: Type U No. 39,452 Expires April 7, 2016

Date Jul. 14, 2014 Name Himile Mechanical Manufacturing Co., Ltd.

(Manufacturer)

Signed [Signature]

(Representative)

Date 15 July 14 Name [Signature]

(Authorized Inspector)

Commission NB 13940A

[National Board (ind. endorsements)]

SO No 1451913-1

PO No 4510290882 FORM U-2A MANUFACTURER'S PARTIAL DATA REPORT (ALTERNATE FORM)

A Part of a Pressure Vessel Fabricated by One Manufacturer for Another Manufacturer
As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manufactured and certified by R&M ENERGY SYSTEMS 10906 FM 2920 TOMBALL, TEXAS 77375
(Name and address of Manufacturer)
2. Manufactured for NATCO US/CAMERON PO BOX 3101 HOUSTON, TX 77253-3101
(Name and address of Purchaser)
3. Location of Installation UNKNOWN
(Name and address)
4. Type: (6) 24" CLOSURES XC452 THRU XC457 N/A
(Description of vessel part (shell, two-piece head, tube bundle)) (Mfg.'s Serial No.) (CRN)
N/A 1451913-1R1 R&M ENERGY SYSTEMS 2014
(National Board Number) (Drawing Number) (Drawing prepared by) (Year Built)
5. ASME Code, Section VIII, Div. 1 2013 EDITION N/A
(Edition and Addenda (Date)) (Code Case No.) (Special service per UG-120(d))
6. Shell (a) No. of course(s) 1 (b) Overall length (ft. and in.): 1-00.

Course(s)			Material	Thickness, in.		Long Joint (Cat. A)				Circum. Joint (Cat. A, B, & C)				Heat Treatment	
No.	Diameter, In	Length, ft.-in	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp., F	Time		
1	22.062	1-00.	SA 350 LF2	1.000	0.125	S	NONE	1	S	NONE	1	N/A	N/A		
			CLASS 1												

Body Flanges on Shells										Bolting		
No.	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Location	Num & Size	Bolting Material	Washer (OD, ID, Thk)	Washer Material
N/A												

7. Heads: (a) SA 516-70 N (b) N/A										(Mat'l Spec. no., Grade or Type)(H.T. - Time and Temp.)			
Location (Top, Bottom)		Thickness, in.		Radius, in.		Elliptical	Conical	Hemispherical	Flat	Side to Pressure		Category A	
Ends		Min.	Corr.	Crown	Knuckle	Ratio	Apex Angle	Radius	Diameter	Convex	Concave	Type	Full, Spot, None, Effc.
(a)	TOP	1.079	0.125	----	----	2:1	----	----	----		X	S	NONE 1
(b)													

Body Flanges on Heads										Bolting		
	Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Num & Size	Bolting Material	Washer (OD, ID, Thk)	Washer Material
(a)	N/A											

8. MAWP 1440 PSI @ max temp. = 130 °F. Min Design Metal Temp -20 °F at 1440 PSI
Internal external Internal external

9. Impact test Yes - CAP & HUB At a test temp of -51 & -50 °F
(Indicate yes or no and the component(s) impact tested)

10. Hydro., pneu., or comb. Test pressure SEE REMARKS Proof Test: N/A

Purpose		Dia. or		Material		Nozzle Thickness, in		Reinforcement	How Attached		Location
(Inlet, Outlet, Drain, etc.)	No.	Size, in.	Type	Nozzle	Flange	Nom.	Corr.	Material	Nozzle	Flange	(Insp. Open.)
SEE REMARKS											
PAV	1	1/2" NPT	TH'D	SA 350 LF2 CL1	N/A	N/A		INHERENT	INT THD		SHELL

12. Identification of part(s)							
Name of Part	Qty.	Line No.	Mfg's. Identification No.	Mfg's. Dwg No.	CRN	National Board No.	Year
N/A							

13. Supports: Skirt — Lugs — Legs — Others — Attached —
(Yes or No) (Number) (Number) (Describe) (Where and How)

14. Remarks: THIS TEMPERATURE APPLICABLE TO CLOSURE METAL COMPONENTS ONLY. ACTUAL SERVICE TEMPERATURE IS DETERMINED BY TEMPERATURE LIMITATIONS OF O-RING MATERIAL. UG-120, c.2 DESIGN & CALCULATION BY R&M ENERGY SYSTEMS. CLOSURE ASSEMBLY IS NOT HYDROSTATICALLY TESTED, PRESSURE ALERT VALVE FURNISHED.

FORM U-2A (Back)

CERTIFICATE OF SHOP/FIELD COMPLIANCE

We certify that the statements made in this report are correct and that all details of material, construction, and workmanship of this pressure vessel part conform to the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1.

U Certificate of Authorization No. 10052 Expires: July 16, 2014

Date: 02/28/14 Name: R&M ENERGY SYSTEMS Signed: Jimmy R. Duess
(Manufacturer) (Representative)

CERTIFICATE OF SHOP/FIELD INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by The Hartford Steam Boiler Inspection and Insurance Company of CONNECTICUT have inspected the pressure vessel part described in this Manufacturer's Data Report on 2/28, 2014, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel part in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel part described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date: 2/28/14 Signed: B. Bouchard Commissions: NB3976AN TX1868
(Authorized Inspector) [National Board (incl. endorsements)]