Markey Cryogenic Equipment Co.
www.markeycryo.com.
888-471-CRYO
2796
kevin@markeycryo.com

2012 Chart LNG Trailer

Manufacturer:	Chart USA
Year:	2012
Serial Number:	25048
Capacity:	10,600 US Gallons
MAWP:	70 PSI @ 100° F
National Board:	73584
Design Temp:	-320° F @ 70 PSI
Test Pressure:	135 PSI


TEST DATE
TYPE
NEXT TEST DUE
9-25 V
9-26
1-22 P
1-27

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HYUNDAI

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: Chart, Inc., 407 Seventh Street NW, New Prague, Minnesota 56071 (Name and address of Manufacturer)

2. Manufactured for: STOCK (Name and address of Purchaser)

3. Location of installation: STOCK (Name and address)

4. Type: ST-12700 (Horizontal or vertical tank) | 25048 (Manufacturer's serial number) | - (CRN) | D20576473E (Drawing number.) | 73584 (National Board number.) | 2012 (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 Edition 2010 (Year)

to 2011a [Addenda, if applicable (date)] | NA (Code Case numbers) | LOW TEMP. SVC. ,UW2B UHA [Special Service per UG-120(d)]

6. Shell: SA240 T304 (Material spec. number, grade) | .179" (nominal thickness) | 0 (Corr. Allow.) | 7' 3.3" (Inner diameter) | 38' 0" [Length (overall)]

7. Seams: TYPE 1 [Long. (welded, dbl., sngl., lap,butt)] | FULL [R.T. (Spot or Full)] | 100 (Eff (%)) | NA (H.T. Temp.) | NA (Time, hr) | TYPE 2 Girth (welded, dbl., sngl., lap,butt) | SPOT [R.T.(spot, or full)] | 80 (Eff.,%) | 8 (No.of Courses)

8. Heads: (a) Material SA240 T304 (Spec. no., grade) (b) Material SA240 T304 (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)	END	.188"	0	NA	NA	2:1	NA	NA	NA	CONCAVE
(b)	END	.188"	0	NA	NA	2:1	NA	NA	NA	CONCAVE

If removable, bolts used (describe other fastenings) NONE (Material spec. number, grade size,number)

9. MAWP 70 (Internal) - (External) PSI at max. temp. 100 (Internal) - (External) °F

Min.design metal temp, -320 °F at 70 PSI Hydro., pneu., or comb. test pressure 135 PSI

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	
VENT,BF,TF	3	3.50"OD	W.E.	SA312 T304L	NA	.216"	0	NA	UW16.1e	NA	NA
PB SUPPLY	1	3.50"OD	W.E.	SA479 T304	NA	.750"	0	NA	UW16.1e	NA	NA
GPL,FT,ET,LPH	4	1.25"OD	W.E.	SA479 T304	NA	.420"	0	NA	UW16.1e	NA	NA
XRAY/HYDRO	1	2.38"OD	CPLG.	SA182 F304	NA	.429"	0	NA	UW16.1e	NA	NA

11. Supports: Skirt NO (Yes or no) Lugs NA (Number) Legs NA (Number) Other BLOCKS (Describe) Attached SHELL WELDED (Where and how)

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for following items of the report:
WELDED HEADS, BRIGHTON TRU-EDGE DIVISION OF ENERFAB, SERIAL NO. 1012493-4 AND 1012493-6; "U" NO. 34,243
(Name of part, Item number, Manufacturer's name and identifying stamp)
VACUUM JACKETED VESSEL. INNER VESSEL CODED ONLY. IMPACT TEST EXEMPT PER UHA51(d)(1)(a). RT-UW-11(A)(5).
TEST POSITION IS HORIZONTAL. FOR NONCORROSIVE SERVICE. XRAY/HYDRO PORT IS PLUGGED AND SEAL WELDED.
UNIT WAS PARTIALLY ASSEMBLED AND HYDRO TESTED AT CHART INC., OWATONNA, MN. FACILITY.

CERTIFICATE OF SHOP/FIELD COMPLIANCE

We certifiy 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 8377 expires 01/15/2013

Date 11/02/12 Co. name Chart, Inc. (Manufacturer) Signed (Representative)

CERTIFICATE OF SHOP/FIELD INSPECTION

Vessel constructed by Chart, Inc. at 407 Seventh Street NW, New Prague, Minnesota 56071

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Minnesota and employed by One Beacon America Insurance Company

have inspected the component described in this Manufacturer's Data Report on 11/01/12 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 11/02/12 Signed (Authorized Inspector) Commissions NB 13148AN, MN CO-055306 (National Board (incl. endorsements), State, Province and number)

FORM U-2A MANUFACTURER'S PARTIAL DATA REPORT (ALTERNATIVE 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: Brighton Tru-Edge Heads, Division of Enerfab, Inc , 11861 Mosteller, Cincinnati, Ohio 45241 (Name and address of Manufacturer)

2. Manufactured for: CHART (MN) , 407 7TH STREET NW , NEW PRAGUE MN 56071 (Name and address of Purchaser)

3. Location of installation: UNKNOWN (Name and address)

4. Type: ELLIP HEADS 87.324"ID x .2500" NOM. [Description of vessel part (shell, two-piece head, tube bundle)] | 1012493 - 4,7 (Manufacturer's serial number) | (CRN)

(National Board number) | PO# 3078841 (Drawing number) | TG# P/N 20565382 (Drawing prepared by) | 2012 (Year built)

5. ASME Code, Section VIII, Div. 1: 2010 EDITION / 2011 ADDENDA [Edition and Addenda (date)] | 2714 (Code Case number) | [Special service per UG-120(d)]

6. Shell (a) No. of course(s): (b) Overall length

Course(s)			Material	Thickness		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.	Time

7. Heads: (a) SA240-304 S/S (Material spec. number, grade or type) (H.T. - time & temp.) (b) (Material spec. number, 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	Diameter	Convex	Concave	Type	Full, Spot, None	Eff.	
(a)		.1880				2:1						1	FULL	Unk.	
(b)															

If removable, bolts used (describe other fastening) (Material spec. number, grade, size, number)

8. MAWP (Internal) (External) at max. temp. (Internal) (External) Min. design metal temp. at

9. Impact test: YES [indicate yes or no and the component(s) impact tested] at test temperature of -320°F

10. Hydro., pneu., or comb. test pressure Proof test

11. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	

12. Identification of part(s)

Name of Part	Quantity	Line No.	Mfr's. Identification No.	Mfr's Drawing No.	CRN	National Board No.	Year Built

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

14. Remarks: NO DESIGN FUNCTION BY BRIGHTON TRU-EDGE HEADS.

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. 34,243 Expires November 20 2012

Date 9-19-2012 Name Brighton Tru-Edge Heads, Division of Enerfab, Inc. (Manufacturer) Signed (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/or the State or Province of Ohio and employed by HSB CT of Hartford, CT have inspected the pressure vessel part described in this Manufacturer's Data Report on 9-19-2012, 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 9-19-2012 Signed (Authorized Inspector) Commissions NB10901A OH1Dd (National Board (incl. endorsements), State, Province, and number)

FORM U-2A MANUFACTURER'S PARTIAL DATA REPORT (ALTERNATIVE 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: Brighton Tru-Edge Heads, Division of Enerfab, Inc., 11861 Mostelier, Cincinnati, Ohio 45241 (Name and address of Manufacturer)

2. Manufactured for: CHART (MN) , 407 7TH STREET NW ; NEW PRAGUE MN 56071 (Name and address of Purchaser)

3. Location of installation: UNKNOWN (Name and address)

4. Type: ELLIP HEADS 87.324"ID x .2500" NOM [Description of vessel part (shell, two-piece head, tube bundle)] — 1012493 - 6,8 (Manufacturer's serial number) — (CRN)

(National Board number) — PO# 3078841 (Drawing number) — TG# P/N20565382 (Drawing prepared by) — 2012 (Year built)

5. ASME Code, Section VIII, Div. 1: 2010 EDITION / 2011 ADDENDA [Edition and Addenda (date)] — 2714 (Code Case number) — [Special service per UG-120(d)]

6. Shell (a) No. of course(s): (b) Overall length

Course(s)			Material	Thickness		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.	Time

7. Heads: (a) SA240-304 S/S (Material spec. number, grade or type) (H.T. - time & temp.) (b) (Material spec. number, grade or type) (H.T. - time & temp.)

	Location (Top, Bottom, Ends)	Thickness Min.	Thickness Corr.	Radius Crown	Radius Knuckle	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure Convex	Side to Pressure Concave	Category A Type	Category A Full, Spot, None	Category A Eff.
(a)		.1880				2:1						1	FULL	Unk.
(b)														

If removable, bolts used (describe other fastening) (Material spec. number, grade, size, number)

8. MAWP (Internal) (External) at max. temp. (Internal) (External) Min. design metal temp. at

9. Impact test: YES [Indicate yes or no and the component(s) impact tested] at test temperature of -320°F

10. Hydro., pneu., or comb. test pressure Proof test

11. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or size	Flange Type	Material Nozzle	Material Flange	Nozzle Thickness Nom.	Nozzle Thickness Corr.	Reinforcement Material	How Attached Nozzle	How Attached Flange	Location (Insp. Open.)

12. Identification of part(s)

Name of Part	Quantity	Line No.	Mfr's. Identification No.	Mfr's Drawing No.	CRN	National Board No.	Year Built

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

14. Remarks: NO DESIGN FUNCTION BY BRIGHTON TRU-EDGE HEADS.

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. 34,243 Expires November 20 2012

Date 8-28-2012 Name Brighton Tru-Edge Heads, Division of Enerfab, Inc. (Manufacturer) Signed (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/or the State or Province of Ohio and employed by HSB CT of Hartford, CT have inspected the pressure vessel part described in this Manufacturer's Data Report on 8-28-2012, 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 8-28-2012 Signed (Authorized Inspector) Commissions NB10104A OH426 [National Board (incl. endorsements), State, Province, and number]