

Forum - Gainville
NB# 544

42

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 Greens Bayou Pipe Mill 13935 Industrial Road Houston, Texas 77015
(Name and address of Manufacturer)
2. Manufactured for Northshore Supply 13935 Industrial Road Houston, Texas 77015
(Name and address of Purchaser)
3. Location of installation Unknown
(Name and address)
4. Type 6 Shell 2453-001 THRU 2453-006 2014
(Description of vessel part (shell, two-piece head, tube bundle)) (Manufacturer's serial number) (CRN)
(National Board number) (Drawing number) (Drawing prepared by) (Year built)
5. ASME Code, Section VIII, Div. 1 2013
(Edition and Addenda, if applicable (date)) (Code Case number) (Special service per UG-120(d))
6. Shell: (a) Number of course(s) 1 (b) Overall length 7'-6"

Course(s)			Material	Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
No.	Diameter	Length	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
1	30" OD	7'-6"	SA516-70-N	1.25"	*	1	Full	*					

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

7. Heads: (a) (Material spec. number, grade or type) (H.T. — time and temp.) (b) (Material spec. number, grade or type) (H.T. — time and temp.)

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

8. MAWP at max. temp. Min. design metal temp. at
(Internal) (External) (Internal) (External)
9. Impact test No at test temperature of
(Indicate yes or no and the component(s) impact tested)
10. Hydro., pneu., or comb. test pressure None Proof test
11. 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	

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 No Lugs Legs Other Attached
(Yes or no) (Number) (Number) (Describe) (Where and how)

14. Remarks *No Design Functions by Greens Bayou Pipe Mill

Forum - Grainco 11.0
NB# 5466

FORM U-2A (Back)

2453

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. 42,546 Expires 01/19/2015

Date 2/18/14 Name Greens Bayou Pipe Mill Signed [Signature]
(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 TUV Rheinland AIA Services, LLC of Houston, Texas

have inspected the pressure vessel part described in this Manufacturer's Data Report on 2/18/14 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 2/18/14 Signed [Signature] Commissions NB314166 A-B
(Authorized Inspector) [National Board (incl. endorsements)]

Forum-Gainville
NB# 5466

2/2

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 Greens Bayou Pipe Mill 13935 Industrial Road Houston, Texas 77015
(Name and address of Manufacturer)
2. Manufactured for Northshore Supply 13935 Industrial Road Houston, Texas 77015
(Name and address of Purchaser)
3. Location of installation Unknown
(Name and address)
4. Type 4 Shell 2454-003 THRU 2454-006 2014
(Description of vessel part (shell, two-piece head, tube bundle)) (Manufacturer's serial number) (CRN)
(National Board number) (Drawing number) (Drawing prepared by) (Year built)
5. ASME Code, Section VIII, Div. 1 2013 2013 2013
(Edition and Addenda, if applicable (date)) (Code Case number) (Special service per UG-120(d))
6. Shell: (a) Number of course(s) 1 (b) Overall length 7'-6"

No.	Course(s)		Material Spec./Grade or Type	Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
	Diameter	Length		Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
1	30" OD	7'-6"	SA516-70-N	1.25"	*	1	Full	*					

No.	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Location	Bolting				
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material	

7. Heads: (a) _____ (Material spec. number, grade or type) (H.T. — time and temp.) (b) _____ (Material spec. number, grade or type) (H.T. — time and temp.)

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

Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Bolting				
								Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material	
(a)												
(b)												

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

9. Impact test at test temperature of
[Indicate yes or no and the component(s) impact tested] No

10. Hydro., pneu., or comb. test pressure Proof test
None

11. 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	

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 No Lugs Legs Other Attached
(Yes or no) (Number) (Number) (Describe) (Where and how)

14. Remarks
*No Design Functions by Greens Bayou Pipe Mill

Seminole - Gainesville
NB# 5469

FORM U-2A (Back)

2454

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. 42,546 Expires 01/19/2015

Date 3/3/14 Name Greens Bayou Pipe Mill Signed [Signature]
(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 TUV Rheinland AIA Services, LLC of Houston, Texas

have inspected the pressure vessel part described in this Manufacturer's Data Report on 3/3/14 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 3/3/14 Signed [Signature] Commissions NB/4/66 A-13
(Authorized Inspector) (National Board (incl. endorsements))

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 Forum US, Inc., 3331 North I-35, Gainesville, Texas, 76240
 (Name and address of Manufacturer)

2. Manufactured for Anadarko, P.O.Box 4995, The Woodlands, Texas, 77387-4995
 (Name and address of Purchaser)

3. Location of Installation Unknown
 (Name and address)

4. Type Horizontal G000362-005 N/A TTG-140000Rev1 5466 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/ N/A N/A N/A
 [Edition and Addenda, if applicable (date)] (Code Case numbers) (Special service per UG-120(d))

6. Shell: SA-516-70N 1.25 in 0.125 in 30" (OD) 15'
 (Material spec. number, grade) (Nominal thickness) (Corr. allow.) (Inner diameter) (Length (overall))

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

7. Seams: Type 1 Full 100% N/A N/A Type 1 Full 100% 2
 [Long. (welded, dbl., sngl., lap, butt)] [R.T. (spot or full)] (Eff. %) (H.T. temp) (Time, hr) [Girth. (welded, dbl., sngl., lap, butt)] [R.T. (spot or full)] (Eff. %) (No. of courses)

8. Heads: (a) Material SA-516-70N (b) Material SA-516-70N
 (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)	END	1.170"	0.125"	N/A	N/A	2:1	N/A	N/A	N/A	Concave
(b)	END	1.170"	0.125"	N/A	N/A	2:1	N/A	N/A	N/A	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)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A

9. MAWP 1440 psi N/A at max. temp. 120 °F N/A
 (Internal) (External) (Internal) (External)

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

Proof test N/A .

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	
Inlet (N1)	1	NPS 4"	600# RFLWN	SA-105N	-	1"	0.125"	-	UW-16.1(c)	-	-
Gas outlet (N2)	1	NPS 4"	600# RFLWN	SA-105N	-	1"	0.125"	--	UW-16.1(c)	-	-
Oil Bridle (N3A)	1	NPS 2"	600# RFWN	SA-106-B	SA-105N	0.344"	0.125"	-	UW-16.1(c)	Welded	-
Oil Bridle (N3B)	1	NPS 2"	600# RFWN	SA-106-B	SA-105N	0.344"	0.125"	-	UW-16.1(c)	Welded	-

Additional Nozzles - See Attached U-4...

11. Supports: Skirt N/A Lugs 2 Legs 2 Other N/A Attached Cylinder #1 & 2 - Welded
 (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:

Shell # (2453-5),(2454-5) Greens Bayou Pipe Mill. Certificate # 42,546
 (Name of part, item number, Manufacturer's name and identifying stamp)

Impact Testing Exemption Per UCS-66. Over Pressure Protection Per UG-125.

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-

Blind Flange: (1) NPS 6" 600# SA-105
Bolts Studs: (24) 1 x 7.24 w/2 - Hex nuts SA-194-2H/SA-193-B7

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 37188 expires January 9, 2017.

Date 04/23/2014

Co. name

Forum US, Inc.

Signed



(Representative)

(Manufacturer)

CERTIFICATE OF SHOP/FIELD INSPECTION

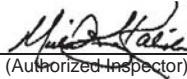
Vessel constructed by Forum US, Inc. at 3331 North I-35, Gainesville, Texas, 76240

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and employed by OneCIS Insurance Company, of Lynn, MA

have inspected the component described in this Manufacturer's Data Report on April 24, 2014, 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 04/25/2014

Signed



(Authorized Inspector)

Commissions

9604A

[National Board (incl. endorsements)]

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

1. Manufactured and certified by Forum US, Inc., 3331 North I-35, Gainesville, Texas, 76240
(Name and address of Manufacturer)

2. Manufactured for Anadarko, P.O.Box 4995, The Woodlands, Texas, 77387-4995
(Name and address of Purchaser)

3. Location of installation Unknown
(Name and address)

4. Type Horizontal N/A G000362-005
(Horizontal, vertical, or sphere) (Tank, separator, heat exch., etc.) (Manufacturer's serial number)

N/A TTG-140000Rev1 5466 2014
(CRN) (Drawing number) (National Board number) (Year built)

Data Report
 Item Number _____ Remarks _____

Additional 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	
PSV (N4)	1	NPS 3"	600# RFWN	SA-106-B	SA-105N	0.6"	0.125"	-	UW-16.1(c)	Welded	-
Oil Outlet (N5)	1	NPS 2"	600# RFWN	SA-106-B	SA-105N	0.344"	0.125"	-	UW-16.1(c)	Welded	-
Cleanout (N6)	1	NPS 6"	600# RFLWN	SA-350-LF2	-	1.375"	0.125"	-	UW-16.1(c)	-	-
PI (N7)	1	NPS .7500"	CPLG	SA-105	-	0.35"	0.125"	-	UW-16.1(z-2)	-	-
TI (N8)	1	NPS 1.5"	150# RFWN	SA-106-B	SA-105N	0.4"	0.125"	-	UW-16.1(c)	Welded	-
Water Outlet (N9)	1	NPS 2"	600# RFWN	SA-106-B	SA-105N	0.344"	0.125"	-	UW-16.1(c)	Welded	-
Water Bridle (N10A)	1	NPS 2"	600# RFWN	SA-106-B	SA-105N	0.344"	0.125"	-	UW-16.1(c)	Welded	-
Water Bridle (N10B)	1	NPS 2"	600# RFWN	SA-106-B	SA-105N	0.344"	0.125"	-	UW-16.1(i)	Welded	-
Weir Adjust (N11)	1	NPS 6"	600# RFLWN	-	SA-105N	1.375"	0.125"	-	UW-16.1(c)	-	-
Cleanout (N12)	1	NPS 2"	600# RFWN	SA-106-B	SA-105	0.344"	0.125"	-	UW-16.1(c)	Welded	-

Certificate of Authorization: Type "U" No. 37188 Expires January 9, 2017

Date 04/23/2014 Name Forum US, Inc. Signed *Stephanie Halverson*
(Manufacturer) (Representative)

Date 04/25/2014 Name *[Signature]* Commissions 9604A
(Authorized Inspector) (National Board Authorized Inspector Commission number)