

Size Category		FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS												
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1														
1. Manufactured and certified by Paul Mueller Company, 1600 W. Phelps, Springfield, Missouri, 65802 (Name and address of Manufacturer)														
2. Manufactured for Biosource Fuels, 600 Dewey Blvd Ste B, Butte, Montana, 59701 (Name and address of Purchaser)														
3. Location of installation Biosource Fuels, 4901 Harold Scoggins Drive, Muskogee, Oklahoma, 77401 (Name and address)														
4. Type Horizontal (Horiz., vert., or sphere)		Heat Exchanger (Tank, separator, jkt. vessel, heat exh., etc.)						357149-16 (Mfg's serial No.)						
NA (CRN)		EX00162D Rev D (Drawing No.)						42489 (Nat'l. Bd. No.)		2006 (Year built)				
5. ASME Code, Section VIII, Div. 1		2004/ A05 Edition and Addenda (date)						NA Code Case No.		NA Special Service per UG-120(d)				
Items 6-11 incl. to be completed for single wall vessels, jackets of jacketed vessels, shell of heat exchangers, or chamber of multichamber vessels.														
6. Shell (a) No. of course(s): 3 (b) Overall length (ft. & in.): 19' 11.1875"														
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
1	6.0" ID	17' 4.312"	SA312Tp304ERW		Sch10	0	E	None	85%	7	None	N/A	N/A	N/A
1	6.0" ID	1' 1.125"	SA204-304		N/A	0	1	None	70%	1	None	70%	N/A	N/A
1	6.0" ID	1' 5.750"	SA312Tp304ERW		Sch10	0	E	None	85%	7	None	N/A	N/A	N/A
7. Heads: (a) N/A (b) N/A (Mat'l Spec. No., Grade or Type) (H.T. - Time & 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.
N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			N/A	N/A	N/A
If removable, bolts used (describe other fastening) N/A (Mat'l, Spec. No., Grade, Size, No.)														
8. Type of jacket N/A Jacket closure N/A (Describe as ogee & weld, bar, etc.)														
If bar, give dimensions N/A If bolted, describe or sketch.														
9. MAWP 125 15 psi at max. temp. 600 600 °F Min. design metal temp. -20 °F at 125/15 psi. (internal) (external) (internal) (external)														
10. Impact test No, charpy impact test exempt per UG-20(f) and UHA-51 at test temperature of N/A °F. (Indicate yes or no and the component(s) impact tested)														
11. Hydro., pneu., or comb. test press. Hydro. at 196 psi Proof test N/A														
Items 12 and 13 to be completed for tube sections.														
12. Tubesheet: SA240Tp.304 10.375" 1.25"/1" 0 Welded Stationary (Mat'l Spec. No.) Dia., in. (subject to press.) Nom. thk., in. Corr. Allow., in. Attachment (welded or bolted)														
N/A N/A N/A N/A N/A Floating (Mat'l Spec. No.) Dia., in. Nom. thk., in. Corr. Allow., in. Attachment														
13. Tubes: SA249Tp.304 .75" .049" 26 Straight Mat'l Spec. No., Grade or Type O. D., in. (Nom. thk., in. or gauge) Number Type (Straight or U)														
Items 14-18 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers.														
14. Shell (a) No. of course(s): N/A (b) Overall length (ft. & in.): N/A														
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
	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
15. Heads: (a) SA240Tp304 (b) SA403Tp304 (Mat'l Spec. No., Grade or Type) (H.T. - Time & 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)	END	.279	0	N/A	N/A	N/A	N/A	N/A	6 5/8"			S	None	100%
(b)	END	.0625	0	N/A	N/A	2:1	N/A	N/A	N/A	X	X	S	None	100%
If removable, bolts used (describe other fastening) Stud SA193 B7 .75" 16 ea nut SA194 Gr 2H 32 ea. (Mat'l, Spec. No., Grade, Size, No.)														

16. MAWP 150 15 psi at max. temp. 400 400 °F Min. design metal temp. -20 °F at 150/15 psi.
(internal) (external) (internal) (external)

17. Impact test No, charpy impact test exempt per UHA-51 at test temperature of N/A °F
(Indicate yes or no and the component(s) impact tested)

18. Hydro., pneu., or comb. test press. Hydro. at 236 psi Proof test N/A

19. 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	
Unknown	4	2"	CL150FLG	SA312Tp.304	SA182F 304	Sch10	0		UW16.1(C)	UW16.1(K)	
Unknown	2	1"	THD'DCLPG	SA182 304	-----	3000#	0		UW16.2(L)		

20. Supports: Skirt No Lugs N/A Legs N/A Others Saddles Attached Bottom Welded
(Yes or no) (No.) (No.) (Describe) (Where and how)

21. Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report:

Expansion joint item no. 27 American Boa Inc. Serial No. 101595

(List the name of part, item number, mfg's. name and identifying number)

22. Remarks:

Overall tube length: 20' 0"

Overall tube length: 20' 0" Vessel is a 0' 6 5/8" OD heat exchanger hydro tested in horizontal position. Pressure relief device to be installed per UG-125. Front bonnet bolted to tubesheet rear bonnet bolted to tubesheet by way of a SA240 304 slip on flange. Shell course no. 2 is an expansion joint.

CERTIFICATE OF SHOP 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. 5594 Expires October 27, 2007

Date 12/29/2006

Name

Paul Mueller Company
(Manufacturer)

Signed

Manning Halder
(Representative)

CERTIFICATE OF SHOP 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 OK, KS, MO and employed by HSB CT, of Hartford, CT have inspected the pressure vessel described in this Manufacturer's Data Report on December 29, 2006, 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 a loss of any kind arising from or connected with this inspection.

Date 12/29/2006

Signed

B. J. Poirer
(Authorized Inspector)

Commissions

7376A, OK652, KS356, MO0132

(Nat'l Board incl. endorsements, State, Province and No.)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements made in this report are correct and that the field assembly construction of all parts of this vessel conforms with the requirements of ASME Code, Section VIII, Division 1. U Certificate of Authorization No. _____ Expires _____

Date _____

Name

(Assembler)

Signed

(Representative)

CERTIFICATE OF FIELD ASSEMBLY 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 _____ and employed by _____ of _____ have compared the statements in this Manufacturer's Data Report with the described pressure vessel and state that parts referred to as data items _____, not included in the certificate of shop inspection, have been inspected by me and to the best of my knowledge and belief, the Manufacturer has constructed and assembled this pressure vessel in accordance with the ASME Code, Section VIII, Division 1. The described vessel was inspected and subjected to a hydrostatic test of _____ psi. 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 a loss of any kind arising from or connected with this inspection.

Date _____

Signed

(Authorized Inspector)

Commissions

(Nat'l Board incl. endorsements, State, Province and No.)