

FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

#100495

1/2

1. Manufactured and certified by Yuba Heat Transfer Division 2121 N. 161st E. Ave. Tulsa, OK
(Name and address of Manufacturer)

2. Manufactured for Unocal P.O. Box 5797, Kennewick, WA 99337
(Name and address of Purchaser)

3. Location of installation Unocal, Finley Plant Game Farm Road, Kennewick, WA 99337
(Name and address)

4. Type: Horizontal Exchanger 95-E-944-1 - 95-E-944-1 6725 1996
(Horiz., vert., or sphere) (Tank, separator, jkt. vessel, heat exch., etc.) (Mfg's serial No.) (CRN) (Drawing No.) (Nat'l. Bd. No.) (Year built)

5. ASME Code, Section VIII, Div. 1 1992 "A93" - -
Edition and Addenda (date) Code Case No. 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 multi-chamber vessels.

6. Shell (a) No. of course(s): 1 (b) Overall length (ft & in.): 13'-3 1/8"

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	39"	8'-7 3/4"	SA-516-70		1/2"	1/8"	Db1	Spot	85%	Db1	Spot	85%	-	-

7. Heads: (a) SA-516-70 (b) -
(Mat'l Spec. No., Grade or Type) H.T. - Time & Temp (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	1/2"	1/8"	-	-	2:1	-	-	39"	-	Concave	-	-	-
(b)	Shell Cone:	(SA-516-70) (1/2" thk) (1/8" C.A.) (2'-5 7/16" LG) (RT-Full-100%) (39" I.D.)												

If removable, bolts used (describe other fastening) 2 1/2" SA-193-B7 studs & 2 1/2" SA-194-2H nuts
(Mat'l Spec. No., Grade, size, No.)

8. Type of jacket - Jacket closure -
(Describe as ogee & weld, bar, etc.)

If bar, give dimensions - If bolted, describe or sketch.
9. MAWP 250 - psi at max. temp. 150 - °F Min. design metal temp. 10 °F at 250 psi.
(internal) (external) (internal) (external)

10. Impact test No - Per UG-20(f)
(Indicate yes or no and the component(s) impact tested)

11. Hydro., pneu., or comb. test press. 375 Proof test -

Items 12 and 13 to be completed for tube sections.

12. Tubesheet: SA-350-LF2 24 5/8" 7 3/4" 1/8" Welded
Stationary (Mat'l Spec. No.) Dia., in. (subject to press.) Nom. thk., in. Corr. Allow., in. Attachment (welded or bolted)

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Floating (Mat'l Spec. No.) Dia., in. Nom. thk., in. Corr. Allow., in. Attachment

13. Tubes: SA-179-S1010 3/4" .120 278 "U"
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): 1 (b) Overall length (ft & in.): 3'-7 3/8"
Channel

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	22"	3'-7 3/8"	SA-350-LF2		2 5/8"	1/8"	Db1	Full	100%	Db1	Full	100%	1100°F	2.3 hrs

15. Heads: (a) SA-516-70 (b) -
(Mat'l Spec. No., Grade or Type) H.T. - Time & Temp (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)	Channel Head:	(SA-516-70) (2 1/2" thk) (1/8" C.A.) (2:1 Ellip) (22" I.D.)												
(b)	Channel Flg:	(SA-350-LF2) (8 7/16" thk) (1/8" C.A.) (38 5/8" O.D. X 22" I.D.)												

If removable, bolts used (describe other fastening) -
(Mat'l Spec. No., Grade, Size, No.)

16. MAWP 3400 (internal) (external) psi at max. temp. 150 (internal) (external) °F Min. design metal temp. 10 °F at 3400 psi.

17. Impact test Yes - Channel Flg, Channel, Channel Head

(Indicate yes or no and the component(s) impact tested)

18. Hydro., pneu., or comb. test press. 5100

Proof test -

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	
Channel Inlet	1	6"	RTJLWN	SA-350-LF2	2500#	1/8"	-	-	Welded	Channel	Channel
Channel Outlet	1	6"	RTJLWN	SA-350-LF2	2500#	1/8"	-	-	Welded	Channel	Channel
Shell Inlet	1	3"	RFLWN	SA-105	300#	1/8"	-	-	Welded	Shell	Shell
Shell Outlet	1	8"	RFLWN	SA-105	300#	1/8"	-	-	Welded	Shell	Shell
Shell Rel. V.	1	4"	RFLWN	SA-105	300#	1/8"	-	-	Welded	Shell	Shell
Shell Rel. V.	1	2"	RFLWN	SA-105	300#	1/8"	-	-	Welded	Shell	Shell
Press Ga. Conn	1	1"	Cplg	SA-105		6000#	1/8"	-	Welded		Shell

20. Supports: Skirt - (Yes or No) Lugs - (No.) Legs - (No.) Others - (Describe) Attached - (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:

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

22. Remarks:

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. 11,178 Expires 6-4, 19 98

Date 4/4/96 Name Yuba Heat Transfer Division Signed Faye Morgan
(Manufacturer) (Representative) Morgan

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the State or Province of OK and employed by Commercial Union Insurance Company of Boston, MA have inspected the pressure vessel described in this Manufacturer's Data Report on 3/20, 19 96, 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 4/4/96 Signed Raymond White Commissions Nat'l Brd. # 8223A OK # 268
(Authorized Inspector) (Nat'l Board incl. endorsement, State, Province and No.)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements on 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 -, 19 -

Date - Name - Signed -
(Assembler) (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 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 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 - Commissions -
(Authorized Inspector) (Nat'l Board incl. endorsement, State, Province and No.)

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Remarks

NB-67
Rev. 4

FORM R-2 REPORT OF ALTERATION
in accordance with provisions of the National Board Inspection Code

1a. Construction performed by: AP&F Construction 10-02-33
(name of "R" organization responsible for construction) (Form R No.)
215 south River Bend Way, North Salt Lake, Utah 84054
(address) (PO No., Job No., etc.)
10-02

1b. Design performed by: AP&F Construction 10-02-33
(name of "R" organization responsible for design) (Form R No.)
215 south River Bend Way, North Salt Lake, Utah 84054
(address) (PO No., Job No., etc.)
10-02

2. Owner: Silver Eagle Refinery
(name)
2355 south 1100 west, Woods Cross, Utah 84087
(address)

3. Location of installation Silver Eagle Refinery
(name)
2355 south 1100 west, Woods Cross, Utah 84087
(address)

4. Unit Identification Pressure Vessel Name of original manufacturer Yuba Heat Transfer Division
(boiler, pressure vessel)

5. Identifying nos.: 95-E-944-1 6725 -- -- 1996
(mfg serial No.) (National Board No.) (jurisdiction No.) (other.) (year built)

6. NBIC Edition / Addenda: 2007 2008
(edition) (addenda)

Original Code of Construction for Item: ASME sec.VIII div.1 1992/A93
(name/section/division) (edition/addenda)

Construction Code Used for Alteration Performed: ASME sec.VIII div.1 2007 / 2009
(name/section/division) (edition/addenda)

7a. Description of construction work: _____
(use supplemental sheet R-4, if necessary)

7b. Description of design scope: Re-Rate vessel. Shell side 227psi @425deg.F Tube side 617psi@475deg.F
(use supplemental sheet R-4, if necessary)

Pressure test, if applied 295/802 psi MAWP 227 psi

8. Replacement Parts. Attached are Manufacturer's Partial Data Reports or Form R-3's properly completed for the following items of this report.

(name of part, item number, data report type, mfg's name, and identifying mark)

9. Remarks: _____

DESIGN CERTIFICATION

I, Marshall Wright, certify that to the best of my knowledge and belief the statements in this report are correct and that the design change described in this report conforms to the *National Board Inspection Code*.

National Board "R" Certificate of Authorization No. 2367 Expires on Dec. 31, 2010

Date 2-1-2010

AP+F Construction
(name of design organization)

Signed

Barth K. D. G. K.
(authorized representative)

CERTIFICATE OF DESIGN CHANGE REVIEW

I, Kay Gedge, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of Utah and employed by HSB CT of Hartford CT have reviewed the design change as described in this report and state that to the best of my knowledge and belief such change complies with the applicable requirements of the *National Board Inspection Code*.

By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any way for any personal injury, property damage or loss of any kind arising from or connected with this inspection.

Date 1 Feb 2010

Signed

Kay Gedge
(inspector)

Commissions 12091 B/A UT 481
(National Board and jurisdiction no.)

CONSTRUCTION CERTIFICATION

I, Marshall Wright, certify that to the best of my knowledge and belief the statements in this report are correct and that all material, construction, and workmanship on this Alteration conforms to the *National Board Inspection Code*.

National Board "R" Certificate of Authorization No. 2367 Expires on Dec. 31, 2010

Date 2-1-2010

AP+F Construction
(name of construction organization)

Signed

Barth K. D. G. K.
(authorized signature)

CERTIFICATE OF INSPECTION

I, Kay Gedge, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of Utah and employed by HSB CT of Hartford CT have inspected the work described in this report on 1 Feb 2010 and state that to the best of my knowledge and belief this work complies with the applicable requirements of the *National Board Inspection Code*.

By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.

Date 1 Feb 2010

Signed

Kay Gedge
(inspector)

Commissions 12091 B/A UT 481
(National Board and jurisdiction no.)