

FORM A-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 2

1. Manufactured and certified by KOBE STEEL, LTD. TAKASAGO EQUIPMENT PLANT 3-1.2-CHOME SHINHAMA ARAI-CHO, TAKASAGO-CITY, 676-8670 JAPAN
(Name and address of manufacturer)

2. Manufactured for OPTI CANADA INC. CALGARY, ALBERTA CANADA
(Name and address of purchaser)

3. Location of installation LONG LAKE, ALBERTA CANADA

4. Type VERT. REACTOR 100001 ALD-09-001 80652-01S Rev.6 910 2010
Horizontal or vertical tank Manufacturer's Serial No. CRN Drawing No. National Bd. No. 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 Code, Section VIII, Division 2. 2004
Year

JULY.1.2005 1489-2.2235-9.2306.2523
Addenda date Code Case No.

Items 6 to 11 incl. to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers

6. Shell SA-336M F22V (SA-336 F22V) 219mm 0mm 3660mm 17262mm
Material (Spec. No., Grade) Nom. thk. Corr. allow. Inside diameter Length (overall)

7. Seams SEAMLESS NO. 1 BUTT 705°C x 8Hr FULL 5
Longitudinal Girth Heat treatment Radiographic treatment No. of courses

8. Heads: (a) Material SA-542M TP.D CL. 4a (SA-542 TP.D CL. 4a) (b) Material SA-542M TP.D CL. 4a (SA-542 TP.D CL. 4a)
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	110mm	0mm *1	---	---	---	---	1880mm	---	CONVEX&CONCAVE
(b)	BOTTOM	110mm	0mm *1	---	---	---	---	1880mm	---	CONVEX&CONCAVE

9. If removable, bolts used (describe other fastenings) _____
Material, Spec. No., Grade, Size, Number

10. Jacket closure _____ If bar, give dimensions _____ If bolted, describe or sketch.
Describe as ogee and weld, bar, etc.

11. Design press. 19.0MPaG 0.102MPaG at max. temp. 454°C 454°C Charpy impact MIN.48J / AVE.55J
(Internal) (External) (Internal) (External)
 at test temp. of -29°C Min. design metal temp. -29°C at 19.0MPaG Pneu., hydro., or comb.
 test pressure 28.56MPaG

Items 12 and 13 to be completed for tube sections ; N/A

12. Tubesheets Stationary material (Spec. No., Grade) Diameter (subject to pressure) Nom. thk. Corr. allow. Attach. tw/d, bolted
Floating material (Spec. No., Grade) Diameter Nom. thk. Corr. allow. Attach. tw/d, bolted

13. Tubes Material (Spec. No., Grade) O.D. Nom. thk. Number Type (straight or "U")

Items 14 to 18 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers ; N/A

14. Shell Material (Spec. No., Grade) Nom. thk. Corr. allow. Inside diameter Length (overall)

15. Seams Longitudinal (w/d, dbl, singl.) Heat treatment (yes or no) Radiographic treatment
Girth Heat treatment Radiographic treatment No. of courses

16. Heads: (a) Matl. _____ (b) Matl. _____
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)										
(b)										

17. If removable, bolts used (describe other fastenings) _____
Material, Spec. No., Grade, Size, Number

18. Design press. _____ at max. temp. _____ Charpy impact _____
(Internal) (External) (Internal) (External)
 at test temp. of _____ Min. design metal temp. _____ at _____ Pneu., hydro., or comb.
 test pressure _____

FORM A-1 (Back)

Items below to be completed for all vessels where applicable

19. Nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Type	Material	Nom. Thk. (mm)	Reinforcement Material	How Attached	Location
MANWAY	1	30"	SPECIAL	SA-336 GR.F22V	312.5	INTEGRAL	WELDED	TOP HEAD
OUTLET	1	22"	SPECIAL	SA-336 GR.F22V	47.5	INTEGRAL	WELDED	BOTTOM HEAD
CATALYST DUMP	1	6"	Cl. 2500FLG	SA-336 GR.F22V	34.0	INTEGRAL	WELDED	BOTTOM HEAD
QUENCH HOUSING	2	6"	Cl. 2500FLG	SA-336 GR.F22V	34.0	INTEGRAL	WELDED	SHELL

20. Supports: Skirt YES Lugs — Legs — Other — Attached WELDED TO BOTTOM SHELL RING
Yes or no No. No. Describe Where and how

21. Service: Fatigue analysis required NO and —
Yes or no Describe contents or service

22. Remarks: Manufacturer's Partial Data Reports properly identified and signed by commissioned inspectors have been furnished for the following items of the report SEE FORM A-3 SUPPLEMENTARY SHEET * 3
Name of part, item number, manufacturer's name, and identifying stamp
SAFETY DEVICES WILL BE PROVIDED BY THE CUSTOMER.

CERTIFICATION OF DESIGN

User's Design Specification on file at KOBE STEEL, LTD. TAKASAGO EQUIPMENT PLANT.
 Manufacturer's Design Report on file at KOBE STEEL, LTD. TAKASAGO EQUIPMENT PLANT.
 User's Design Specification certified by RADOSLAV STEFANOVIC PE State ALBERTA Reg. No. M58627
 Manufacturer's Design Report certified by SUSUMU TERADA PE State OHIO Reg. No. E-50270

CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements 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 2.
 "U2" Certificate of Authorization No. 12,315 expires AUGUST 9, 2010
 Date 3/1/10 Co. name KOBE STEEL, LTD. TAKASAGO EQUIPMENT PLANT Signed HIROYUKI BAN Representative
Manufacturer

CERTIFICATE OF SHOP INSPECTION

Vessel made by KOBE STEEL, LTD. TAKASAGO EQUIPMENT PLANT, at 3-1,2-CHOME SHINHAMA ARAI-CHO TAKASAGO-CITY 676-8670 JAPAN
 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 GEORGIA and employed by ONEBEACON AMERICA INSURANCE COMPANY of LYNN MASSACHUSETTS, have inspected the pressure vessel described in this Manufacturer's Data Report on FEBRUARY 1, 2010, 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 2. 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 3/1/10 Signed MOTOO KANKE Authorized Inspector Commissions NB-9012A, B / GA765
National Board (incl. endorsements), State, Prov., and No.

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the field assembly construction of all parts of this vessel conforms with the requirements of Section VIII, Division 2 of the ASME BOILER AND PRESSURE VESSEL CODE.
 "U2" Certificate of Authorization No. _____ expires _____
 Date _____ Co. name _____ Assembler that certified and constructed field assembly 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 that, 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 2. 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 _____
National Board (incl. endorsements), State, Prov., and No.