

(A) 489817

# MANUFACTURER'S DATA REPORT FOR INDIRECT FIRED HEATER COILS

(A) No. 0489817

Manufactured by NATCO CANADA 11236-91<sup>st</sup> AVE. GRANDE PRAIRIE AB T8V-6K6

Manufactured for TALISMAN ENERGY CANADA

Ultimate Owner TALISMAN ENERGY 3400, 88-3<sup>rd</sup> ST. SW CALGARY AB. T2P-5C5

Location of Installation ELMWORTH WELL TIE-IN

Mfg. Serial No. 80292-51 Code: ASME B31.3, Edition 2002 Addenda 2002

Drawing Number D-80292-51 Year Built 2003 Intended Service SOUR

a. Material Specifications SA-106B RTJWN 1500 #  
Coil Ends (Flanges/N.P.T.) Rating

b. Material Specifications SA-106B RTJWN 1500 #  
Coil Ends (Flanges/N.P.T.) Rating

a. Diameter 6" Nom. Thickness SCH 160 O/A Length 27'-6" C.A. 0.125"

b. Diameter          Nom. Thickness          O/A Length          C.A.         

a. Maximum Working Pressure 22305 kPa at Maximum Temperature 93 °C

b. Maximum Working Pressure          kPa at Maximum Temperature          °C

a. Hydrostatic Test Pressure 38439 kPa C.R.N. X 0443.2

b. Hydrostatic Test Pressure          kPa C.R.N.         

Heating Surface 567 SQ. FT. Radiography RT-1 (Random, % or Full)

Volume 48 CU. FT. P.W.H.T. N/R

Remarks S.O. # 80292  
CONSTRUCTION DWG. D-80292-51 REV. 1


### CERTIFICATE OF COMPLIANCE

We certify that the statements in this report are correct and that all details of design, material, construction, and workmanship of this coil bundle are in accordance with Registered Design No.

Date May 28/03. Signed Mark Francis (Representative) For NATCO CANADA (Manufacturer)

### CERTIFICATE OF SHOP INSPECTION

I, the undersigned, a duly authorized Safety Codes Officer employed by The Alberta Boilers Safety Association have inspected the above Heater Coils and state that, to the best of my knowledge and belief, the construction is in accordance with the Alberta Safety Codes Act and Regulations.

Date May 28/03 Signed Harry Belcher 

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ASME B31.3  
2002 Edition, - Addenda  
Piping System/Coil Design

By: G. Foucault  
Checked: April 24, 2004  
Date:

Pre-Heat Coil  
3375 mwp F°  
100 F°

Contract Number 80292  
Drawing Number D-80292-51

**Design Data**  
Nominal Pipe O.D. (D) = 6.625 inches  
Design Pressure (P) = 2025 psi  
Design Temp (T) = 200 deg. F  
MDMT = 14 deg. F  
Internal Corrosion Allow (C(I)) = 0.125 inches  
External Corrosion Allow (C(e)) = 0.000 inches  
Y Factor = 0.4  
Efficiency (E) = 1.0

**Material**  
Pipe SA-106B Stress@ Design Temp. = 20000 psi  
Flange SA-234WPB Stress@ Design Temp. = 21900 psi  
Fillings SA-105N Stress@ Design Temp. = 20000 psi

**Thickness Req'd Ref. 304.1.2 (3a)**  
 $t = (P \cdot D) / (2 \cdot (S \cdot E) + (P \cdot Y))$   
 $t_{min} = t + C(I) + C(e)$   
Pipe Schedule Used 160.000  
Nominal wall Thickness (From UT Report) 0.685 inches  
Minimum Wall Thickness (t) 0.599 inches  
Corrod Min. Wall = (t) - C(I) - C(e) 0.474 inches

**Check Flange MAWP @ Design Temp**  
Flange Size 6.625 NPS  
Design Temperature 200 Deg. F  
Flange MAWP (from) 2025 psi  
Flanges MAWP Greater Than Desing Pressure - OK

**Threfores Minimal Pipe Thickness OK**  
Max Allow. Pressure of Pipe In Corr'd Condition  
 $P_{max} = (2 \cdot S \cdot E) / (D - (2 \cdot t \cdot Y))$   
3038.2 psig  
Pipe MAWP Greater Than Design Pressure

**Hydro Test Ref. 345.4.2**  
Test Temp 60 degs F  
Design Press (P) 2025.000 psi  
Stress @ 60 Deg F 20000 psi  
S @ Design Temp 20000 psi  
 $P = (1.5 \cdot P \cdot St) / S$  3037.5 psi

Maximum Press. 3038.2 psi  
Limited By Design