



**HAWKEYE INSPECTION, LLC**  
*Consulting and Services - Evanston, Wyoming*

**Pure Energy Services (USA)**  
**Grand Junction, CO**

Report Date – 03/08/2011

**Inspection Report for:** LH-0011 Line Heater

**Manufacturer:** Tara Oilfield Services, LTD.

**Mfg. Serial Number:** 05-129C

**Year Built:** 2006

**Canadian Registration Number:** T5045.2

**Alberta Registration Number:** 537501



## PRESSURE VESSEL INVENTORY FORM

☒ Code    ☐ Code-invalidated    ☐ Non-Code    ☐ Unknown    ☐ Code-Exempt

☐ High Consequence (HCO)    ☐ Medium Consequence (MCO)    ☐ Low Consequence (LCO)

### VESSEL ID INFORMATION

Company Name : Pure Energy Services (USA) Inc.  
Facility/Location Name : Grand Junction, CO  
Field Name :  
Equipment Number : LH-0011  
Eq/Circ. ID : LH0011-C1/C2  
Equipment Name/Service : Line Heater  
Physical Location : In Grand Junction Yard  
GPS Coordinates :

### VESSEL DESCRIPTION AND SERVICE CONDITIONS

Type of Vessel: Horizontal Line Heater

Vessel Size: 3.5" O.D. Coils

Operating Pressure Range (psig): Not in service

Operating Temperature Range (°F): Not in service

Does the vessel have Internal Access? ☒ Yes    ☐ No

Specify type of internal access, if available: Into Heater shell will coil bundle removed.

Vessel is located: ☐ Inside    ☒ Outside    ☐ Under Roof

**MISCELLANEOUS VESSEL INFORMATION:** (IF VESSEL HAS NO NAMEPLATE, PLEASE OBTAIN AS MUCH OF THE FOLLOWING AS POSSIBLE FOR WORST CASE TMIN CALCULATIONS, *may have to check with operations personnel*).

Is there a Long Seam? ☐ Yes    ☐ No

Any stamping pertaining to materials of construction? ☐ Yes    ☐ No

**\*\*Diameter\*\***(strap equipment): \_\_\_\_\_

Pressure (highest the equip. sees in the process and/or check PSV setting if available) \_\_\_\_\_ psi

Temperature (highest the equipment would ever see in the process) \_\_\_\_\_

Approximate Date built or installed (check associated equipment or info at facility) \_\_\_\_\_ 2006 \_\_\_\_\_

Any other pertinent information: \_\_\_\_\_ Design data with mfg. data reports provided. \_\_\_\_\_



# PRESSURE VESSEL INVENTORY FORM

## ORIGINAL VESSEL NAMEPLATE/STAMPING INFORMATION

Code stamp: ☐ U stamp ☐ U2 stamp ☐ UM stamp ☐ API-ASME ☒ No stamp



## SUPPLEMENTAL VESSEL NAMEPLATE/STAMPING INFORMATION

Repair stamp: ☐ R stamp ☐ Other Stamp ☐ No stamp

Repaired By \_\_\_\_\_

Date of Repair \_\_\_\_\_

Nat'l Bd. R-Certification No. \_\_\_\_\_

Other Stamping Information: \_\_\_\_\_

## VESSEL DOCUMENTATION

Manufacturer Data Sheets: ☐ ASME U-1 or U-1A Forms ☐ U2 or U4 Supplemental Forms  
☐ Documentation relating to repair/alteration/rerating work: (R-1 form, calculations, revised drawings, inspection reports, etc.)

Name: Robert W. Menke

Date: 03/08/2011

## API 510 PRESSURE VESSEL EXTERNAL INSPECTION REPORT

<b>Company Name:</b> Pure Energy Services (USA) Inc.	
<b>Field/Location:</b> Grand Junction, CO	
<b>Equipment Number:</b> LH-0011	<b>Eq/Circ. ID:</b> LH0011-C1/C2
<b>Equipment Name/Service:</b> Line Heater	
<b>Physical Location:</b> In Grand Junction Yard	
<b>Manufacturer:</b> Tara Oilfield Services, LTD	<b>Manufacturer Serial Number:</b> 05-129C
<b>Year Built:</b> 2006	<b>CRN:</b> T5045.2 <b>Alberta Reg. Number:</b> 537501

**Reason for Inspection:** Initial API-510 on Stream Inspection

**Condition of Nameplate and/or Bracket:** The nameplate is attached to the nameplate bracket by (1) sheet metal screw. The nameplate is legible.

**Internal Access?** Yes. Into shell with coil bundle removed.

**Corrosion Monitoring Locations (CMLs) and baseline thickness data established?** CML's and baseline thickness data will be established as part of this inspection.

**Grounding Device in Place and Secure?** N/A. The Unit was not in service at the time of this inspection and was not grounded.

**Condition of Foundation and Anchor Bolts:** The skid assembly is in acceptable condition. All structural welds appear sound. There is no distortion and only light surface corrosion in localized areas.

**Condition of Steel Supports, Saddles, and Bolting:** The (2) vertical supports have no distortion and light surface corrosion in localized areas. All support structural welds appear sound. The support saddle-to-shell attachment welds have no visual weld defects. Both angle iron bracket-to-heater shell attachment welds have cracks (brackets attach pipe stops for pipe rack).



**Condition of Paint and/or Insulation:** The paint is in good condition with no chipping or peeling.

**Condition of Nozzles, Flanges, Repads, and Weepholes:** Nozzles and flanges are in good condition. Header piping was disconnected at the time of this inspection.

**Condition of Welds; Head and Shell Metal Surfaces:** All (exposed) metal surfaces are painted. There is no distortion or indication of corrosion under the paint coating. The pressure boundary welds have no visual weld defects.

**Condition of Ladders, Stairways, and Brackets:** The access ladder to the top fill tank is secure and in acceptable condition.

**If Equipment has Anomalous Data, did the Inspector check it?** N/A



Is There a PSV on the Vessel? No

☐ If Yes, is it set at or below the MAWP?

Date PSV last tested (if there is a tag on the valve)

**Comments:**

Heater Shell: The heater shell internal (as viewed through the cover place opening) has moderate scale.



☐ The scale is loose and no pitting is evident beneath. The horizontal supports appear to be securely attached to the heater shell and have no distortion.

Fire tube: The fire tube has light to moderate scaling. No distortion noted to the fire tube.





Coil Assemblies: (Coil 1 & 2). Inlet and outlet flanges are in acceptable condition. The tubes and 180° turns have light to moderate scale.



There is light (not measureable) pitting beneath the scale. The tubes have no distortion. Tube sheets have light corrosion and scale. Accessible tube-to-tube sheet welds appear sound.

**Recommendations:**

- Securely attach nameplate to nameplate bracket (rivot).
- Sandblast coils to remove scale
- Sandblast or hydro blast heater internals to remove loose scale from shell wall and fire tube.

**Repairs Needed:**

Weld repair angle iron bracket-to-shell attachment welds on pipe stops (front and back). (Not a code repair.)

**API 510 Inspector Signature**  
*Robert W. Menke*

**API 510 Inspector Number**  
0131

**Date**  
03/08/2011



## MANUFACTURER'S DATA REPORT FOR INDIRECT FIRED HEATER COILS

AB-28 2005-12

TIAL ☐

A# 537501.

Manufactured By: TARA Oilfield Services Ltd. P.O. Box 1389 Didsbury, AB T0M 0W0  
Manufactured For: Canadian Sub-Surface Energy Services #600, 505 - 8th Avenue S.W. Calgary, AB T2P 1G2  
Ultimate Owner: Canadian Sub-Surface Energy Services #600, 505 - 8th Ave. S.W. Calgary AB  
Location of Installation: Portable

Manufacturer's Serial No.	Construction Drawing No.	CODE: ASME B31.3			Year Built
05-129C	05-129-BDLS-1 Rev.1	Edition	2004	Addenda	N/A
					2006

## CONSTRUCTION

Coil ID/Purpose	Design Pressure	Design Temp	Design Minimum Temp	Corrosion Allowance	Registered Drawing No.	CRN
a UPSTREAM COIL	34,475 kPa	200° C	-29° C	0.0625"	05-129-BDLS-1Rev.1	T5045.2
b DOWNSTREAM COIL	34,475 kPa	200° C	-29° C	0.0625"	05-129-BDLS-1Rev.1	T5045.2
c						
d						
e						

## COIL

Tubes			End Closures				Openings		
Mat'l Spec.	Diameter	Thickness	Return Bend		Flanges		Mat'l Spec.	Size/Type	Rating
			Mat'l Spec.	Thickness	Mat'l Spec.	Rating			
a SA333-6 / SA106-B	3" NPS	.600"	SA234 GR. WPB	.600"	N/A	N/A			
b SA333-6 / SA106-B	3" NPS	.600"	SA234 GR. WPB	.600"	N/A	N/A			
c									
d									
e									

## HEADERS/MANIFOLDS

Purpose	Size	Shell	Ends				Openings		
		Mat'l Spec.	Thickness	Mat'l Spec.	Thickness	No	Mat'l Spec.	Size/Type	Rating
f									
g									

## TEST PRESSURE, NDE, POSTWELD HEAT TREATMENT AND SIZE

Hydrostatic Test Pressure	Radiography (100% or % Random)	Other NDE (MT) (PT) (UT)	Postweld Heat Treatment		Overall Length	Heating Surface	Volume
			Temp.	Time			
a 51,710 kPa	100%	-	621° C	1 Hour	18 ft 7 in	-	0.4 m3
b 51,710 kPa	100%	-	621° C	1 Hour	18 ft 7 in	-	0.4 m3
c							
d							
e							
f							
g							

IMPACT TESTING: N/A

REMARKS: INDIRECT HEATER COIL SPECIFICATIONS ONLY UP TO HEAD PLATE. FLANGES NOT INCLUDED IN THIS DESIGN.

TOTAL VOLUME: 0.8 m3 FABRICATION DRAWING 05-129C-BDLS-1. REV 2.

## 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 the above Provincial Registered Design.

Date March 1, 2006 Signed

(Representative)

For

TARA OILFIELD SERVICES LTD.

(Manufacturer)

## CERTIFICATE OF SHOP INSPECTION

The undersigned, a duly authorized Safety Codes Officer employed by ABSA has inspected the above Heater Coils and state that, to the best of my knowledge and if, the construction is in accordance with the Alberta Safety Codes Act and Regulations

Date March 1, 2006

Signed

ALT #58