

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 Fuel Gas Scrubber
Manufacturer: LoTech Manufacturing Inc. (For Tara Projects)
Mfg. Serial Number: 8285.26
Year Built: 2005
Canadian Registration Number: OH5148.21345



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-FGS
Equipment Name/Service : (Line Heater) Fuel Gas Scrubber
Physical Location : In Grand Junction Yard
GPS Coordinates :

VESSEL DESCRIPTION AND SERVICE CONDITIONS

Type of Vessel: Vertical Scrubber

Vessel Size: 8.625" O.D.

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:

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): 8.625"

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

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

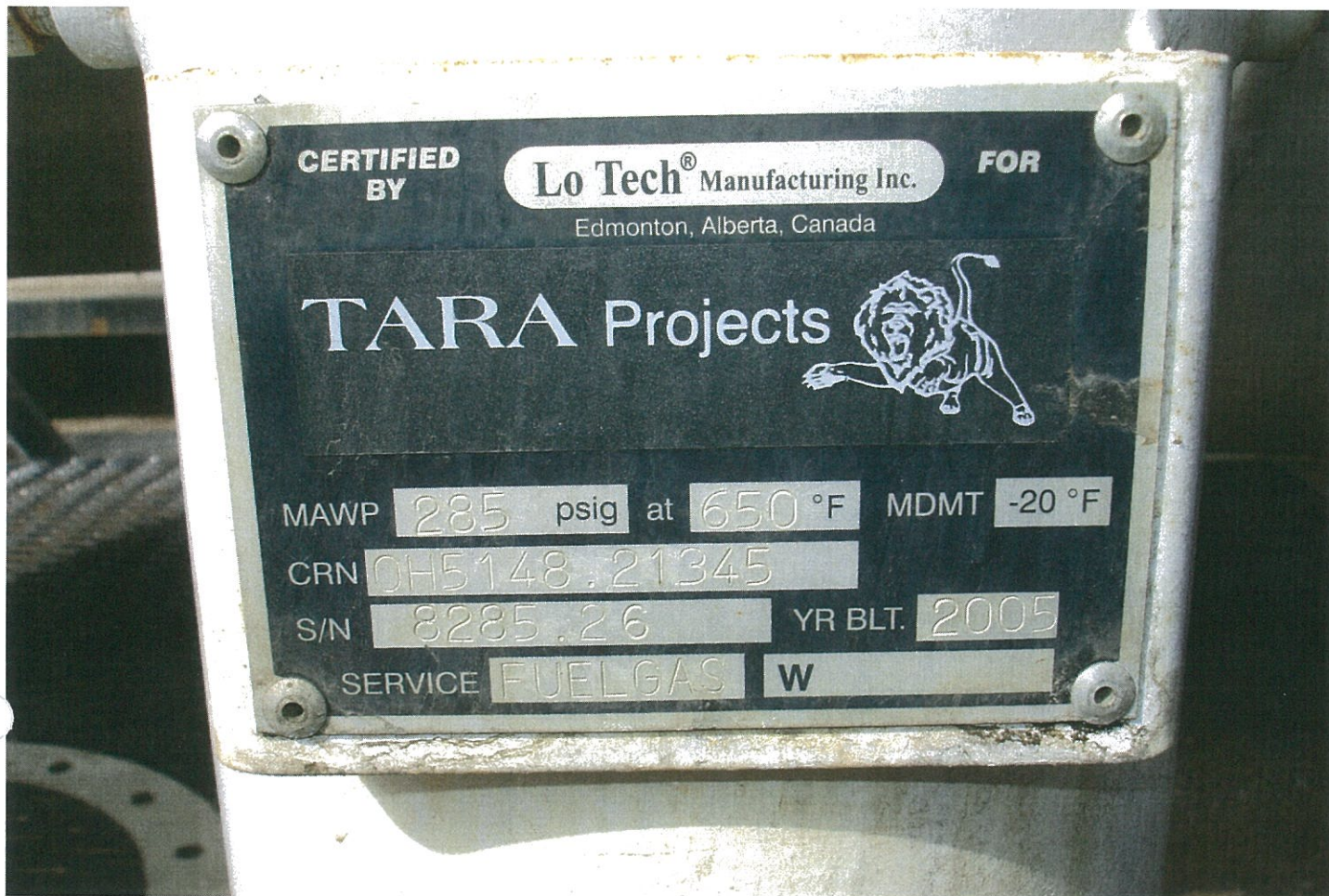
Approximate Date built or installed (check associated equipment or info at facility) 2005

Any other pertinent information:

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: Eric Crandall

Date: 03/08/2011

API 510 PRESSURE VESSEL EXTERNAL INSPECTION REPORT

Company Name: Pure Energy Services (USA) Inc.	
Field/Location: Grand Junction, CO	
Equipment Number: LH-0011	Eq/Circ. ID: LH0011-FGS
Equipment Name/Service: Fuel Gas Scrubber	
Physical Location: In Grand Junction Yard	
Manufacturer: LoTech Manufacturing Inc.	Manufacturer Serial Number: 8285.26
Year Built: 2005	CRN: OH5148.21345

Reason for Inspection: Initial API-510 on Stream Inspection

Condition of Nameplate and/or Bracket: Nameplate is intact and legible. The nameplate bracket is securely attached.

Internal Access? No.

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 heater was not in service at the time of this inspection and was not grounded.

Condition of Foundation and Anchor Bolts: Anchor bolts are in place and secure. The vessel flat bottom head also serves as a base plate. The base plate is anchored to the skid frame. All (4) anchor bolts are in place and secure.

Condition of Steel Supports, Saddles, and Bolting: The base plate has light corrosion but no deformation.

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

Condition of Nozzles, Flanges, Repads, and Weepholes: All threaded couplings. There is no evidence of leaks at any of the threaded connections.

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: N/A

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:

None

Recommendations:

None

Repairs Needed:

None

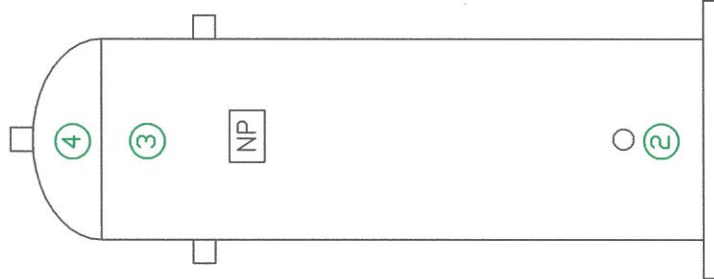
API 510 Inspector Signature
Robert W. Menke

API 510 Inspector Number
0131

Date
03/08/2011

EQUIP RETIREMENT DATE: 3/4/2055
NEXT INSPECTION IS DUE: 3/7/2012

- #2. 01- BTM SHELL-FRONT 0. 311 TC
- #2. 02- BTM SHELL-LEFT 0. 310 TC
- #2. 03- BTM SHELL-BACK 0. 309 TC
- #2. 04- BTM SHELL-RIGHT 0. 323 TC
- #3. 01- TOP SHELL-FRONT 0. 308 TC
- #3. 02- TOP SHELL-LEFT 0. 302 TC
- #3. 03- BTM SHELL-BACK 0. 308 TC
- #3. 04- TOP SHELL-RIGHT 0. 306 TC
- #4. 01- TOP HD-FRONT 0. 331 TC
- #4. 02- TOP HD-LEFT 0. 338 TC
- #4. 03- TOP HD-BACK 0. 323 TC
- #4. 04- TOP HD-RIGHT 0. 325 TC



TC-560

NAMEPLATE INFO	
MFG	LDTECH MANUFACTURING, INC.
SERIAL NUMBER	8285. 26
NATIONAL BOARD #	NONE
DATE BUILT	2005
DESIGN P & T	285 PSIG @ 650°F
NOTE	CRN # DH 5148. 21345 NO "U" STAMP

BUSINESS UNIT	PURE ENERGY
EQ/CIRC ID #	LH-0011-FGS
EQUIP NAME	FUEL GAS SCRUBBER
LOCATION	WITH LINE HEATER LH-0011
DWG #	LH0011-FGS

DESC: FUEL GAS SCRUBBER
DWG#: LH0011-FGS-2.01-4.04

UltraPIPE Inspection Data Management
Hawkeye Inspection, LLC
1595 So. Hwy 150, Suite F
Evanston, WY 82930 307-789-3540

Corrosion Monitoring Eq/Circ ID Analysis Report

(Report in Inches, Corrosion Rates in MPY)
Analysis: Straight Line

Report Date: 04/21/2011 18:38:57

Unit: LH-0011
Eq/Circ ID: LH0011-FGS
Eq Type: VESSEL
Class:
RBI:

Flange Rating: 535 lb/in²
Design Pressure: 285 lb/in²
Design Temp: 650 °F

Description:
FUEL GAS SCRUBBER - SN:8285.47

Summary: Group Name:
Insp. Due Date = 03/07/2012
Pred. Ret. Date = 03/04/2055

Group description:
RCR = 2.9 MPY
Rem. Life (from last survey 03/08/2011) = 44.0 yrs

0 C.A. Status: No
Total Caution TMLs = 0

TM Number	Location Description	Ctn	First Survey Thick Nt	First Survey Date	Previous Survey Thick Nt	Previous Survey Date	Last Survey Thick Nt	Last Survey Date	Short Term Rate	Long Term Rate	Best Fit Rate	Max Hist CR	Retirement Thickness	Rep TML CR	TM Retirement Date	TM Inspection Due Date
2.01	BTM SHELL-FRONT	N	0.322 NM	06/01/2005	N/A	N/A	0.311 TC	03/08/2011	N/A	1.9	N/A	10.7	0.197 U	1.9	03/08/2011	03/01/2012
2.02	BTM SHELL-LEFT	N	0.322 NM	06/01/2005	N/A	N/A	0.310 TC	03/08/2011	N/A	2.1	N/A	9.2	0.197 U	2.1	12/28/2008	03/01/2012
2.03	BTM SHELL-BACK	N	0.322 NM	06/01/2005	N/A	N/A	0.309 TC	03/08/2011	N/A	2.3	N/A	6.4	0.197 U	2.3	11/17/2009	03/07/2012
2.04	BTM SHELL-RIGHT	N	0.322 NM	06/01/2005	N/A	N/A	0.323 TC	03/08/2011	N/A	0.0	N/A	13.7	0.197 U	0.1	03/17/3271	03/07/2012
3.01	TOP SHELL-FRONT	N	0.322 NM	06/01/2005	N/A	N/A	0.308 TC	03/08/2011	N/A	2.4	N/A	13.7	0.197 U	2.4	06/07/2007	03/07/2012
3.02	TOP SHELL-LEFT	N	0.322 NM	06/01/2005	N/A	N/A	0.302 TC	03/08/2011	N/A	3.5	N/A	8.3	0.197 U	3.5	03/07/2041	03/07/2012
3.03	TOP SHELL-BACK	N	0.322 NM	06/01/2005	N/A	N/A	0.308 TC	03/08/2011	N/A	2.4	N/A	7.7	0.197 U	2.4	06/07/2007	03/07/2012
3.04	TOP SHELL-RIGHT	N	0.322 NM	06/01/2005	N/A	N/A	0.306 TC	03/08/2011	N/A	2.8	N/A	8.5	0.197 U	2.8	02/10/2050	03/07/2012
4.01	TOP HD-FRONT	N	0.322 NM	06/01/2005	N/A	N/A	0.331 TC	03/08/2011	N/A	0.0	N/A	13.3	0.197 U	0.1	03/18/3351	03/07/2012
4.02	TOP HD-LEFT	N	0.322 NM	06/01/2005	N/A	N/A	0.338 TC	03/08/2011	N/A	0.0	N/A	13.3	0.197 U	0.1	03/19/3421	03/07/2012
4.03	TOP HD-BACK	N	0.322 NM	06/01/2005	N/A	N/A	0.323 TC	03/08/2011	N/A	0.0	N/A	13.1	0.197 U	0.1	03/17/3271	03/07/2012
4.04	TOP HD-RIGHT	N	0.322 NM	06/01/2005	N/A	N/A	0.325 TC	03/08/2011	N/A	0.0	N/A	31.2	0.197 U	0.1	03/17/3291	03/07/2012

UltraPIPE Inspection Data Management
Hawkeye Inspection, LLC
1595 So. Hwy 150, Suite F
Evanston, WY 82930 307-789-3540

(Report in Inches, Corrosion Rates in MPY)
Analysis: Straight Line
Report Date: 04/21/2011 18:38:58

Unit: LH-0011
Eq/Circ ID: LH0011-FGS
Eq Type: VESSEL
Class:
RBI:
Description:
FUEL GAS SCRUBBER - SN:8285.47
Flange Rating: 535 lb/in.
Design Pressure: 285 lb/in.
Design Temp: 650 °F

TML Corrosion Rates are each the maximum of:
(A) -- Calculated Corrosion Rates x 1.00
(B) -- Default Corrosion Rate

Representative Corrosion Rate is the Maximum of:
(A) -- Average Corrosion Rate x 1.00 : 1.5 MPY
(B) -- Average Max 25.0% of TMLs, Min of 2 : 2.9 MPY
(C) -- Formula Corrosion Rate (Sigma = 1.28) : 2.1 MPY
(D) -- Default Corrosion Rate : 0.1 MPY
Representative Corrosion Rate = 2.9 MPY

TML thickness readings have not been compensated for high Temperatures.

TML thickness readings have been compensated for growths.

TML Life calculations are based on the Representative TML Corrosion Rate using Short Term and Long Term Corrosion Rates.

Nominal thickness is used for TML corrosion rate calculations with less than 3 surveys.

Minimum time between inspections required for corrosion rate calculation is 3 months.

TML Inspection Interval is:

(A) -- Minimum(TML Life / 2.00, 1.00 years)

Eq/Circ ID Last Survey Date is based on the LAST of the last 0% of TML survey dates (Min 1).

Eq/Circ ID Estimated life = 44.0 years from the most recent survey date.

(Estimated Life is based on the average of the earliest 0% (Min 6) TML retirement dates.)

Predicted Eq/Circ ID Retirement date is 03/04/2055

Recommended Eq/Circ ID Inspection Date is 03/07/2012

UT/RT Inspection Interval is the minimum(Remaining life / 2.0, 1.00 years).

Caution TML Logic: TML Corrosion Rate > 15.0 MPY .OR. TML Remaining Life < 1.00 Years.

There are 0 Caution TMLs in this Eq/Circ ID.

Lo Tech Manufacturing Inc.

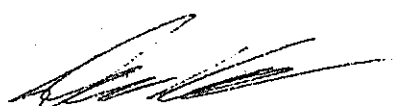
Fuel Gas Scrubbers • Desiccant Dehydrators • Check Valves

7719 - 69 Street
Edmonton, Alberta T6B 1V4
Phone: (780) 440-5064
Fax: (780) 440-5172**Certificate Of Compliance**

I Hereby Certify That The Below Registered Category "H" Pressure Fitting Has Been Designed, Manufactured, and Pressure Tested In Accordance With The Alberta Safety Codes Act, CSA B51 And ASME Section VIII, Division 1, 2004 Edition.

CRN	0H5148.21345		
S/N	8285.47		
Diameter	8.625	Inches	Overall Length 36 Inches
Year Built	2005		
MAWP	285	PSIG	@ 650 °F
MDMT	-20 °F		
C.A.	0.125	Inches	
Radiography	N/A		
PWHT : Time	N/A	min.	Temp. N/A °F
Hydro Tested @	430	PSIG	

	Material	Thickness
Shell	SA-106 Gr. B	Sch 40 - 0.322"
Head 1	SA-234-WPB	Sch 40 - 0.322"
Head 2	SA-516 Gr. 70N	0.75"



Quality Control Manager
Dennis Klokocki

December 8, 2010