

## FIRED HEATER INSPECTION REPORT

LSD: 12-05-054-20w5m

Date: May 4, 2015

SAP Equipment ID: 66068448

HEATER STATIC DATA						
Plant Galloway Plant			Op Unit		System	
Prov. Insp. # n/a			CRN non code		Equip Tag # 052145	
Description Stabilizer Reboiler Shell Side					Serial # 2001-6729-02	
Manufacturer Alco Gas & Oil					Vessel Class	
Internal Access YES		Description 48" firetube flange			Year Built 2002	
COIL #1 RADIANT DATA						
MAWP		PSI		@	°F	
CODE :		Fluid Service Sweet			PWHT : No	
Diameter		Length (T/T)		mm	OAL	mm
Coil Mat'l		Thickness		in	Corr Allowance 5 in	
Operating Pressure			kPa		Operating Temperature °C	
COIL #2 RADIANT DATA						
MAWP		PSI		@	°C	
CODE :		Fluid Service			PWHT :	
Diameter		Length (T/T)		mm	OAL	mm
Coil Mat'l		Thickness		in	Corr Allowance in	
Operating Pressure			kPa		Operating Temperature °C	
PSV STATIC DATA						
Serial No.	Location	Set Pressure	Capacity SCFM	Manufacturer	Model / Type	Service Date / Company
PSV DETAILS						
	Type (Thread/Flange)		ANSI Rating		Size (inches)	
PRD Inlet						
PRD Outlet						
NDE Equipment Records						
Procedure#	Description	Manufacturer	Model#	Serial#	Due Date	

### INSPECTION SUMMARY

Reboiler shell side, MAWP 14.9psi @ 550F. Shell SA-36, nom 0.250". Head SA-36 nom 1.00" / 0.875". Corrosion allowance - none. Shell is insulated and clad, cladding in good condition. Flanged heads are painted, paint in good condition. Piping well supported and secure. Dataplate secure and legible. Shell side non code, atmospheric pressure, no PSV. Burner appears to be in good condition and securely attached. Burner last tested 06/14. Exhaust stack appears to be in good structural condition and securely attached. UT corrosion survey conducted by Streamline May 2015.

### RECOMMENDATIONS

Perform internal inspection and UT and MPI on firetube, UT coil next turnaround..

### NONCONFORMANCES / INSPECTION DEFICIENCIES


None noted

### INSPECTION PLANNING

Inspection Strategy	Availability	Inspection Interval
Inspection Date May 4, 2015	Date of Last Inspect	Date of Next Inspect

### REPORT CERTIFICATION

The signatures below certify that inspections/tests have been completed in accordance with the identified inspection strategy and that the specified equipment is considered fit for service until the date of next inspection.

Inspected by	Ed Tymensen		Date	May 4, 2015
Company	Streamline Inspection Ltd	PESL #	000711	API # 27479
Reviewed and Approved by		Date		
		PESL #	API #	

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Criticality Assessment Rerun \_\_\_\_\_

Inspection Planning Rerun \_\_\_\_\_

Assessed Next Inspection Date \_\_\_\_\_

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### DETAILED INSPECTION VISUAL EXTERNAL

ID	Description	Condition	Location	NCR	Comments
H01	General Other (Please Explain)	Good			Overall no significant concerns observed
H02	Corrosion	Good			No corrosion concerns noted insulated vessel, limited visual
H03	Leaks	Good			No active leaks present
H04	Vibration	N/A			
H05	Platforms	N/A			
H06	Electrical Ground	Good			Securely attached to skid
H07	Painting	Good	flanged heads		Insulated, limited visual
H21	Support Other (Please explain)	Good	piping		well supported
H22	Foundation	Good			On steel piles
H23	Anchor Bolts	Good	Saddle supports		securely attached
H24	Slide Plates	N/A			
H25	Fireproofing	N/A			
H31	Connections Other (Please explain)	Good			All connections appear secure
H32	Nozzles	Good			No corrosion, damage or signs of strain
H33	Connecting Flanges	Good			No leaks, misalignment or signs of strain
H34	Dissimilar Flange Rating	Good			None noted
H35	Bolting	Good			All bolting tight and secure
H36	Inadequate Thread Engagement	Good			None noted
H37	Small Branches	Good	tubing		no leaks, kinks or signs of stain
H38	Reinforcing Pads	N/A			
H39	Manways	N/A			
H40	Davits	N/A			
H41	Handholes	N/A			
H51	Casing Other (Please Explain)	N/A			
H52	Casing Thermographic Scan	N/A			
H53	Surface Irregularities	N/A			insulated
H61	Insulation Other (Please explain)	Good	shell and piping		insulated and clad
H62	Insulation Damage	N/A			none noted
H63	Insulation Penetrations	Good	UT ports		coverplates present
H64	Insulation Jacket	Good	shell and piping		tin clad
H65	Insulation Banding	N/A			
H66	Insulation Seals/Joints	Good	Vessl through wall		Seal intact
H71	Vent or Stack Other (Please Explain)	Good	exhaust stack		no concerns noted
H72	Vent or Stack Structural Appearance	Good	exhaust stack		no concerns noted
H73	Vent or Stack Thermographic Scan	N/A			not performed
H74	Stack Thickness	N/A			
H75	Vent or Stack Joints (Bolted Connections)	Good			securely attached
H76	Guy Wires	N/A			
H77	Lightning Rods	N/A			
H80	Accessories and Attachments (Please Explain)	N/A			
H82	Damper Linkages	N/A			
H83	Regenerative Preheaters	N/A			
H84	Blowdown Equipment	N/A			
H85	Burners	Good			no concerns noted. Last tested 06/14
H86	Related equipment	N/A			

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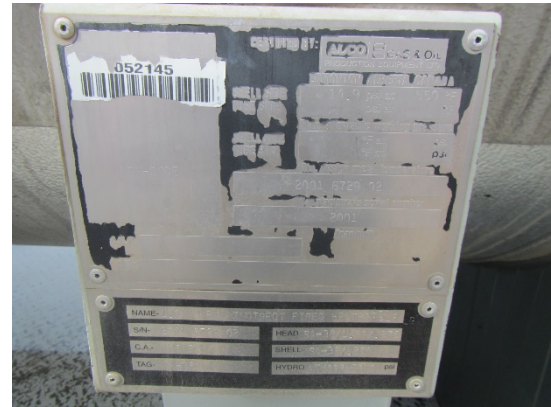
Date: May 4, 2015

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### PHOTOS



LSD SIGN



DATAPLATE



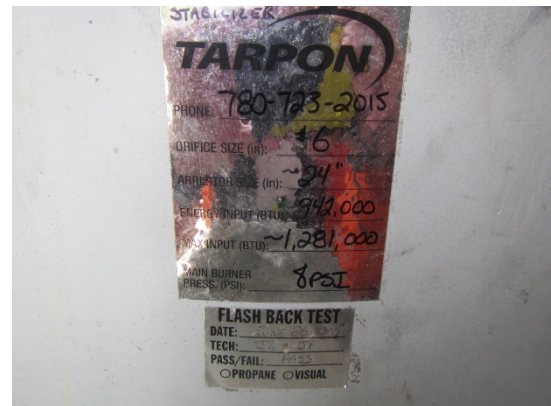
REBOILER OVERVIEW



OVERVIEW



BURNER AND EXHAUST STACK



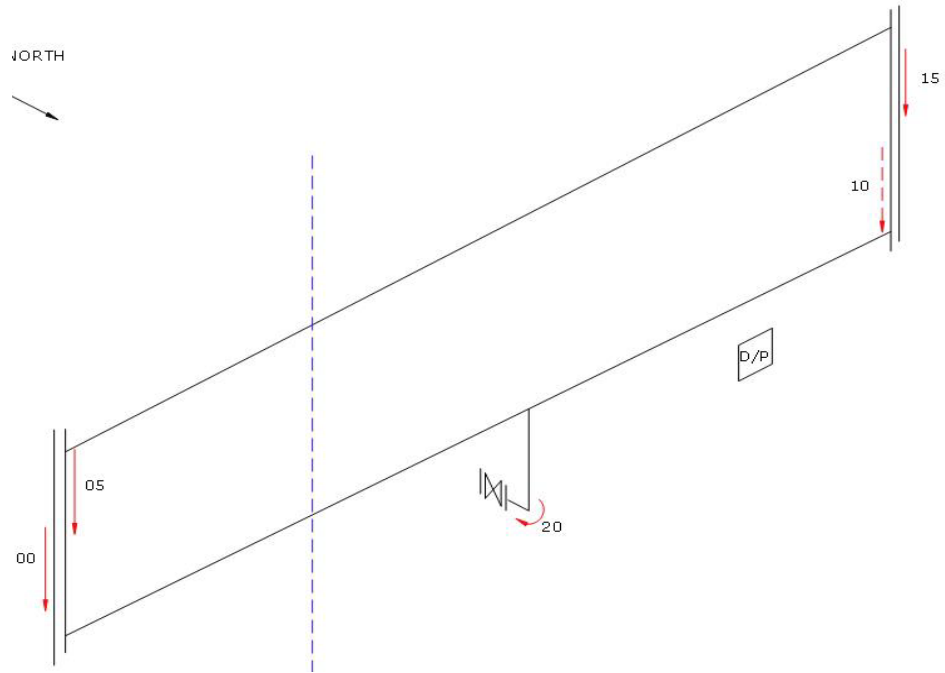
BURNER TEST STICKER

Location Name:	GALLOWAY	LSD:	12-05-054-20W5
A#:		Equipment/Tag No.	H-360
Equipment Description:	REBOILER STABILIZER (NON CODE)		
Manufacturer:	ALCO		
Serial Number:	2001 6729 02	CRN:	
Shell MAWP:	15	PSI	Shell Design Temp: 550 °F
Tube MAWP:		PSI	Tube Design Temp: °F
Shell Material:	SA-36	Head Material:	SA-36
Shell Thickness:	6.35	mm	Head Thickness: 25.40 mm
Corrosion Allowance:		mm	Date Built: 2001
Size:	1067	mm	Pipe / Rolled Plate: PIPE
RT:			

NOTES:









# Ultrasonic Corrosion Survey

\*All values are in millimeters unless otherwise stated.

Survey Name: Husky Energy

Date: May 5, 2015

Inspector: D. Skeard

<b>LSD:</b> 12-05-054-20W5	<b>Area:</b> GALLOWAY	<b>Location:</b> PLANT
<b>A #:</b>	<b>Tag Number:</b> H-360	<b>Vessel Name:</b> REBOILER STABILIZER (NON CODE)
<b>CRN:</b>	<b>Year Built:</b> 2001	<b>Serial Number:</b> 2001 6729 02
<b>RT:</b>	<b>Vessel CA:</b> 0.000 mm	<b>Manufacturer:</b> ALCO
	<b>Shell MAWP:</b> 15 PSI	<b>Tube MAWP:</b> PSI
	<b>MAWTF:</b> 550 °F	<b>MAWTF:</b> °F
		<b>Pipe/Plate</b> PIPE

<b>TML Description</b>	Baseline	<b>Material:</b> SA-36
<b>00</b> HEAD	<b>2015</b>	<b>Flag</b> <b>CA</b> <b>Nominal</b> <b>T Min</b> <b>STCR mm/yr</b> <b>LTCR mm/yr</b>
<b>Shape:</b> Flat	<b>Min</b> 26.62	25.400 0.000 25.400 0.000 0.000
<b>OD:</b> 1066.8	<b>Avg</b> 26.75	
<b>Spec:</b> ASME VIII Div.1	<b>Comments:</b>	<b>Remaining Life:</b> <b>Retirement Date:</b>

<b>TML Description</b>	Baseline	<b>Material:</b> SA-36
<b>05</b> SHELL	<b>2015</b>	<b>Flag</b> <b>CA</b> <b>Nominal</b> <b>T Min</b> <b>STCR mm/yr</b> <b>LTCR mm/yr</b>
<b>Shape:</b> Cylindrical	<b>Min</b> 7.19	6.350 0.000 6.350 0.000 0.000
<b>OD:</b> 1066.8	<b>Avg</b> 7.67	
<b>Spec:</b> ASME VIII Div.1	<b>Comments:</b>	<b>Remaining Life:</b> <b>Retirement Date:</b>

<b>TML Description</b>	Baseline	<b>Material:</b> SA-36
<b>10</b> SHELL	<b>2015</b>	<b>Flag</b> <b>CA</b> <b>Nominal</b> <b>T Min</b> <b>STCR mm/yr</b> <b>LTCR mm/yr</b>
<b>Shape:</b> Cylindrical	<b>Min</b> 6.93	6.350 0.000 6.350 0.000 0.000
<b>OD:</b> 1066.8	<b>Avg</b> 7.21	
<b>Spec:</b> ASME VIII Div.1	<b>Comments:</b>	<b>Remaining Life:</b> <b>Retirement Date:</b>

<b>TML Description</b>	Baseline	<b>Material:</b> SA-36
<b>15</b> HEAD	<b>2015</b>	<b>Flag</b> <b>CA</b> <b>Nominal</b> <b>T Min</b> <b>STCR mm/yr</b> <b>LTCR mm/yr</b>
<b>Shape:</b> Flat	<b>Min</b> 26.82	25.400 0.000 25.400 0.000 0.000
<b>OD:</b> 1066.8	<b>Avg</b> 26.95	
<b>Spec:</b> ASME VIII Div.1	<b>Comments:</b>	<b>Remaining Life:</b> <b>Retirement Date:</b>



**Survey Name: Husky Energy**

**Date: May 5, 2015**

Inspector: D. Skeard

## Pipe/Plate

Retirement Date:

## Baseline