

FIRED HEATER INSPECTION REPORT

LSD: 07-27-051-19W5M

Date: JULY 10, 2014

SAP Equipment ID: 66036373

HEATER STATIC DATA						
Plant	Ansell Gas Plant		Op Unit		System	
Prov. Insp. #	n/a		CRN Non-code		Equip Tag # F-360	
Description	Glycol Reboiler				Serial # 5413-70	
Manufacturer	Presson Manufacturing				Vessel Class	
Internal Access:	YES	Description: Firetube flange			Year Built 1994	
COIL #1 RADIANT DATA						
MAWP	kPa / PSI @		°C / °F		MDMT °C / °F	
CODE :	Fluid Service		Sweet/Sour		PWHT : YES NO	
Diameter	Length (T/T) mm/in		OAL mm / in		Vertical Horizontal	
Coil Mat'l	Thickness		mm / in		Corr Allowance mm / in	
Operating Pressure		kPa / PSI		Operating Temperature °C / °F		
COIL #2 CONVECTION DATA						
MAWP	kPa / PSI @		°C / °F		MDMT °C / °F	
CODE :	Fluid Service		Sweet/Sour		PWHT : YES NO	
Diameter	Length (T/T) mm/in		OAL mm / in		Vertical Horizontal	
Coil Mat'l	Thickness		mm / in		Corr Allowance mm / in	
Operating Pressure		kPa / PSI		Operating Temperature °C / °F		
PSV STATIC DATA						
Serial No.	Location	Set Pressure	Capacity SCFM / Lbs/Hr / GPM	Manufacturer	Model / Type	Service Date / Company
PSV DETAILS						
	Type (Thread/Flange)		ANSI Rating		Size (mm)	
PRD Inlet						
PRD Outlet						
NDE Equipment records						
Procedure#	Description	Manufacturer	Model#	Serial#	Due Date	

INSPECTION SUMMARY

A visual external inspection was conducted on reboiler. In plant 1 dehy building. Plant 1 down at time of inspection. Dataplate is on burner, secure and legible.

Top vessel – reboiler - 36" dia x 168" approx.. Insulated and clad, cladding in good condition. Some outer layer paint deterioration on firetube flange. Some cladding damage / denting on still column. Burner and stack appear to be in good condition.

Bottom vessel – accumulator – 24" dia x 168" approx.. Painted, in good condition.

Vessel through wall seals intact. Reboiler welded to support structure, welded to skid floor, secure. Ground cable directly connected to reboiler support. All piping well supported and in good condition. Non code, atmospheric, no PSV found or required. UT inspection performed 2014 by Streamline Inspection.

Equipment list has SN 541370, but dataplate has SN 5413-70.

Vessel was found to be in good condition and fit for continued service.

RECOMMENDATIONS

Review UT survey results.
Change SN in database from SN 541370 to SN 5413-70.

NONCONFORMANCES / INSPECTION DEFICIENCIES

No deficiencies noted

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INSPECTION PLANNING

Inspection Strategy	Availability	Inspection Interval
Inspection Date July 10, 2014	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	July 10, 2014
Company	Streamline Inspection	PESL #	000711	API # 27479
Reviewed and Approved by			Date	
		PESL #		API #
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
H02	Corrosion	n/a			None noted
H03	Leaks	n/a			None noted
H04	Vibration	n/a			
H05	Platforms	n/a			
H06	Electrical Ground	Good	Attached to support stand structure		Present and secure
H07	Painting	Fair	Firetube flange		Outer layer paint deterioration due to heat
H21	Support Other (Please explain)	Good	Piping		Well supported
H22	Foundation	Good			Steel support structure welded to skid floor
H23	Anchor Bolts	n/a			
H24	Slide Plates	n/a			
H25	Fireproofing	n/a			
H31	Connections Other (Please explain)	Good			All connections appear secure
H32	Nozzles	Good			No corrosion or damage
H33	Connecting Flanges	Good			No leaks or corrosion
H34	Dissimilar Flange Rating	Good			Similar
H35	Bolting	Good			All bolting tight and secure, no corrosion of threads
H36	Inadequate Thread Engagement	Good			Adequate engagement
H37	Small Branches	Good	Tubing		No leakd or kinks
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			None noted
H61	Insulation Other (Please explain)	Fair	Reboiler (top) and still column		Insulated and clad
H62	Insulation Damage	Fair	Still column		Some cladding damage / denting
H63	Insulation Penetrations	Good	UT port cut out		Coverplates in place
H64	Insulation Jacket	Fair	Still column		Some cladding damage / denting
H65	Insulation Banding	n/a			
H66	Insulation Seals/Joints	Good	Vessel through wall		Seals intact
H71	Vent or Stack Other (Please Explain)	Good	Stack		Appears structurally sound
H72	Vent or Stack Structural Appearance	Good	Stack		Appears structurally sound
H73	Vent or Stack Thermographic Scan	n/a			
H74	Stack Thickness	n/a			
H75	Vent or Stack Joints (Bolted Connections)	Good	Bolted		Tight and secure
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
H86	Related equipment	n/a			

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DETAILED INSPECTION VISUAL INTERNAL

ID	Description	Condition	Location	NCR	Comments
H01	General Other (Please Explain)	n/a			
H02	Corrosion	n/a			
H03	Leaks	n/a			
H04	Tubes	n/a			
H05	Tube Supports	n/a			
H06	Firebox	n/a			
H07	Vent or Stack	n/a			
H21	Connections Other (Please explain)	n/a			
H22	Bolting	n/a			
H23	Fittings	n/a			
H24	Openings	n/a			
H31	Accessories Other (Please Explain)	n/a			
H32	Burners	n/a			
H33	Damper	n/a			
H34	Soot Blower	n/a			
H41	Insulation Other (Please Explain)	n/a			
H42	Refractory	n/a			
H43	Insulation or Lining	n/a			

DETAILED INSPECTION OTHER TECHNIQUES

ID	Location	Observation/Measurement	Acceptance Criteria	NCR	Comments
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

DETAILED INSPECTION TUBE INSPECTION

Tube #	Flaw Type	Flaw Length	Location on Tube	Wall Loss	NCR	Comments

DETAILED INSPECTION UT THICKNESS

CML	Nom. Thk	Current Reading	Short Term Corr Rate	Long Term Corr Rate	Remaining Life	Comments

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PHOTOS



LSD sign



DATAPLATE, ON BURNER



OVERVIEW



EXHAUST STACK AND DISTILL COLUMN



DISTILL COLUMN CLADDING DAMAGE

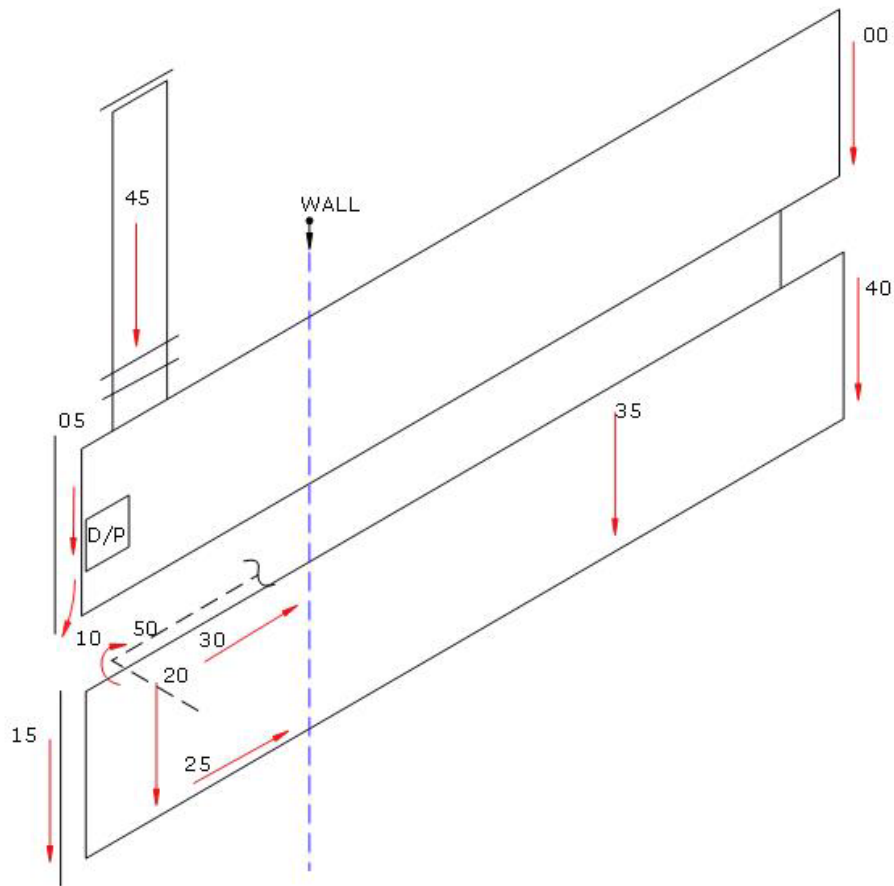


OVERVIEW IN SIDE BUILDING

Location Name:	ANSELL GAS PLANT	LSD:	07-27-051-19W5
A#:	N/A	Equipment/Tag No.	F-360
Equipment Description:	DEHY GLYCOL SYSTEM	Serial Number:	5413-70
		CRN: (or other ID#)	N/A
MAWP:	N/A	Design Temp:	N/A
Shell Material:	N/A	Head Material:	N/A
Shell Thickness:	N/A	Head Thickness:	N/A
Corrosion Allowance:	N/A	Date Built:	1994
Size:	20"	Manufacturer:	PRESSON

Notes:









Ultrasonic Corrosion Survey

Survey Name: Husky Energy

Date: Jul 11, 2014

Inspector: C. Graham

LSD: 07-27-051-19W5 Area: Ansell Location: Gas Plant
A #: Tag Number: F-360 Vessel Name: Dehy Glycol Systems
CRN: Year Built: 1994 Serial Number: 5413-70
Vessel CA: mm Manufacturer: Presson
Shell MAWP: MAWTF: Tube MAWP: MAWTF:

TML Description	Baseline	Material:	Unknown
00 Head	2014	Flag	CA
Shape: Flat	Min 9.630	Nominal	T Min
OD: 20"	Avg 9.730		Corr. Rate
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:

TML Description	Baseline	Material:	Unknown
05 Head	2014	Flag	CA
Shape: Flat	Min 6.860	Nominal	T Min
OD: 20"	Avg 6.930		Corr. Rate
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:

TML Description	Baseline	Material:	Unknown
10 Head	2014	Flag	CA
Shape: Flat	Min 6.580	Nominal	T Min
OD: 20"	Avg 6.650		Corr. Rate
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:

TML Description	Baseline	Material:	Unknown
15 Head	2014	Flag	CA
Shape: Flat	Min 9.680	Nominal	T Min
OD: 20"	Avg 9.800		Corr. Rate
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:



Ultrasonic Corrosion Survey

Survey Name: Husky Energy

Date: Jul 11, 2014

Inspector: C. Graham

LSD: 07-27-051-19W5 Area: Ansell Location: Gas Plant
A #: Tag Number: F-360 Vessel Name: Dehy Glycol Systems
CRN: Year Built: 1994 Serial Number: 5413-70
Vessel CA: mm Manufacturer: Presson
Shell MAWP: MAWTF: Tube MAWP: MAWTF:

TML Description		Baseline				Material:	Unknown
20	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min		0.000			
OD:	20"	Avg					Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	Unknown
25	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min		0.000			
OD:	20"	Avg					Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	Unknown
30	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min		0.000			
OD:	20"	Avg					Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:

TML Description		Baseline				Material:	Unknown
35	Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate
Shape:	Cylindrical	Min		0.000			
OD:	20"	Avg					Remaining Life:
Spec:	ASME VIII Div.1	Comments:					Retirement Date:



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Survey Name: Husky Energy

Date: Jul 11, 2014

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LSD: 07-27-051-19W5 Area: Ansell Location: Gas Plant
A #: Tag Number: F-360 Vessel Name: Dehy Glycol Systems
CRN: Year Built: 1994 Serial Number: 5413-70
Vessel CA: mm Manufacturer: Presson
Shell MAWP: MAWTF: Tube MAWP: MAWTF:

TML Description	Baseline					Material:	Unknown
40 Head	2014	Flag	CA	Nominal	T Min	Corr. Rate	
Shape: Flat	Min		0.000				
OD: 20"	Avg						Remaining Life:
Spec: ASME VIII Div.1	Comments:						Retirement Date:

TML Description	Baseline					Material:	A-234-WPB
45 Shell	2014	Flag	CA	Nominal	T Min	Corr. Rate	
Shape: Gas Boot	Min	5.556	0.794	6.350			
OD: 12.75"	Avg			Assumed			Remaining Life:
Spec: ASME B31.3	Comments:						Retirement Date:

TML Description	Baseline					Material:	A-234-WPB
50 Nozzle	2014	Flag	CA	Nominal	T Min	Corr. Rate	
Shape: 90° Elbow	Min	4.801	0.686	5.486			
OD: 3.5"	Avg			Assumed			Remaining Life:
Spec: ASME VIII Div.1	Comments:						Retirement Date:
