

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 07-27-051-19W5M

Date: JUNE 07, 2014

SAP Equipment ID: 66046896

VESSEL STATIC DATA						
Plant		Ansell Gas Plant		Op Unit		System
Prov. Insp. #		A0436391		CRN		N6022.2
Equipment Description		Inlet Separator		Serial #		77334
Manufacturer		Bromley Mechanical		Vessel Class		
Internal Access: yes		Description: 18" MW		Year Built		1997
MAWP		1440	PSI	@	100	°F
CODE :		RT : 1		PWHT : yes		
Diameter		36in I.D	Length	(s/s) in	OAL	192 in
Shell		Mat'I	SA-516-70N	Thickness	1.750	in
Head		Mat'I	SA-516-70N	Thickness min	1.720	in
Nozzle		Mat'I		Thickness		in
Internal Coating: NO		Internal Clad : NO		Capacity		94.6 ft3
Manway : yes		Inspection Port : no		Skirt		
Nozzle Rating		600	lb ANSI	Painted :	YES	Insulated no
PROCESS DATA						
Product Description				Gas		Sweet
Operating Pressure				PSI		Operating Temperature °C
PSV STATIC DATA						
Serial No.	Location	Set Pressure	Capacity SCFM / Lbs/Hr / GPM	Manufacturer	Model / Type	Service Date / Company
C07-24958	Top shell	486psi	18060scfm	Crosby	JBSE35J	12-Sep-11. Wizard. PSV-1002
PSV DETAILS						
	Type (Thread/Flange)		ANSI Rating		Size (in)	
PRD Inlet	Flanged		600		3"	
PRD Outlet	Flanged				4"	
NDE Equipment records						
Procedure#	Description	Manufacturer	Model#	Serial#	Due Date	

INSPECTION SUMMARY

A visual external and internal inspection was conducted on vessel during plant outage. In plant 1 inlet building. process building.

External:

Vessel and piping are in good condition, piping well supports. No significant paint damage, corrosion or mechanical damage noted on shell, top head or piping. Light surface rusting and general corrosion noted on bottom head and drain line. Estimated depth 0.015". Some very small, minor paint chips found on vessel. Vessel is securely welded to the skid floor. An inspection access port is present in the skirt. Dataplate is securely attached to vessel and is legible. Manway davit is only has a single nut. Bridle top PSI gauge has paint spatter on the glass, making is hard to read. Gound cable attached to skid, no direct connection to vessel. PSV service is up to date, set below MAWP, vents to flare header. Shortbolting noted on PSV inlet flange. UT survey done 2014 by Streamline Inspection.

Internal:

Internal inspection was done after vessel was washed and aired out. There was a wax buildup on vessel internally prior to cleaning. Internal access is through 18" manway. Manway nozzle throat and flange gasket surface in acceptable condition, no corrosion or damage noted. Internally the vessel bottom head and shell is in fair condition. No significant corrosion or damage noted. All visually accessible nozzles are in good condition, with no corrosion or obstructions found. Internal drain vortex breaker, inlet deflector and internal coil appear in good condition and are securely attached. Demister was not removed at time of inspection. Demister was found to be securely attached, but somewhat fouled and waxy. It is recommended that demister be removed and replaced at next plant outage, and a visual inspection be performed on top head at that time. All internal welds appear to be in good condition with no corrosion or defects noted.

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

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RECOMMENDATIONS

Review UT Survey results.
Double nut manway davit.
At next plant outage remove and replace demister pad, Visually inspect top head once demister has been removed.
Fix shortbolting on PSV inlet flange, will require longer bolts – operations was informed of concern.

NONCONFORMANCES / INSPECTION DEFICIENCIES

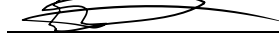
Shortbolting on PSV inlet flange.

INSPECTION PLANNING

Inspection Strategy	Availability	Inspection Interval
Inspection Date June 07, 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	June 07, 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
V1	General Other (Please Explain)	Good			Overall
V2	General Corrosion	Fair	Bottom head and drain line		Light general corrosion, estimated depth 0.015"
V3	General Leaks	n/a			No leaks noted
V4	Vibration	n/a			Plant was down during inspection
V5	Dissimilar Flange Rating	Good			Similar flange ratings
V6	Ladder/Stairway	n/a			
V7	Heads	Fair	Bottom head		Light general corrosion, estimated depth 0.015"
V8	Guy Wires	n/a			
V9	Electrical Ground	Fair	Skid is grounded, no direct attachment to vessel		Ground cable connection to skid tight and secure
V10	Painted Inactive Corrosion	n/a			
V11	Coating/Painting	Fair			Minor paint damage on shell, no corrosion
V12	Expansion Joint or Bellows	n/a			
V13	Gauge/Site Glass	Fair	PSI gauge on top of bridle		Gauge glass lightly covered in paint overspray.
V14	Shell	Good	Limited to ut ports		No significant corrosion or damage noted
V15	Jacket	n/a			
V21	Support Other (Please explain)	Good	Piping		Well supported
V22	Foundation	Good			Vessel on steel skid. Building on steel piles
V23	Anchor Bolts	n/a			
V24	Saddle/Skirt	Good	Skirt		Welded to floor, secure. Light surface rusting / corrosion on skirt I.D.
V25	Davit	Fair			Single nut
V26	Fireproofing	n/a			
V31	Connections Other (Please explain)	Good			All connections secure
V32	Small Branches	Good	Tubing		No leaks or kinks
V33	Nozzles	Good			No corrosion or damage noted
V34	Manways	Good			No corrosion or damage, gasket surfaces acceptable
V35	Reinforcing Pads	Fair	Bottom drain nozzle		Unable to determine presence of weep hole. Very light surface corrosion on repad.
V36	Inadequate Thread Engagement	Poor	PSV inlet flange		3 studs shortbolted on both ends, 3 threads shy of flush
V37	Bolting	Fair			Bolting tight and secure. No corrosion of threads noted. Three shortbolts on PSV inlet flange
V38	Flanges	Good			No leaks or corrosion noted
V39	Leak Clamps	n/a			
V41	Insulation Other (Please explain)	n/a			
	Damage	n/a			
V43	Penetrations	n/a			
V44	Insulation Jacket	n/a			
V45	Banding	n/a			
V46	Seals/Joints	n/a			
V51	Relief Devices Other (Please explain)	Good			PSV service up to date, set below MAWP
V52	Corrosion	n/a			None noted
V53	Leaks	n/a			None noted
V54	Restricted Inlet/Outlet	n/a			
V55	Manual Operation Lever	n/a			

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DETAILED INSPECTION VISUAL INTERNAL

ID	Description	Condition	Location	NCR	Comments
V1	General Other (Please Explain)	Fair			Overall
V2	Corrosion (depth, length, width)	n/a			No corrosion noted
V3	Erosion	n/a			No erosion noted
V4	Distortion	n/a			No distortions noted
V5	Blisters	n/a			No blisters noted
V6	Deposits	n/a			No deposits found
V7	Heads	Fair	Bottom head		NO significant corrosion or damage noted
V8	Welds	Good			No corrosion, damage or visible defects noted
V9	Nozzles	Good			No corrosion, damage or obstructions noted
V10	Shell	Fair			No significant corrosion or damage noted
V11	Gasket Surfaces	Good	manway		Acceptable condition, no corrosion or damage
V21	Internals Other (Please explain)	Good	Inlet deflector plate, internal coil, vortex breaker		Securely attached
V22	Demister	Fair			Securely attached, some fouling noted
V23	Baffle/Wier	n/a			
V24	Sparger	n/a			
V25	Thermowells	n/a			
V26	Metallic Linings	n/a			
V27	Nonmetallic Linings	n/a			
V28	Trays	n/a			
V29	Tray Rings	n/a			
V30	Other Welded Attachments	Good	Demister support bars		Securely attached

DETAILED INSPECTION OTHER TECHNIQUES

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

DETAILED INSPECTION UT THICKNESS

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

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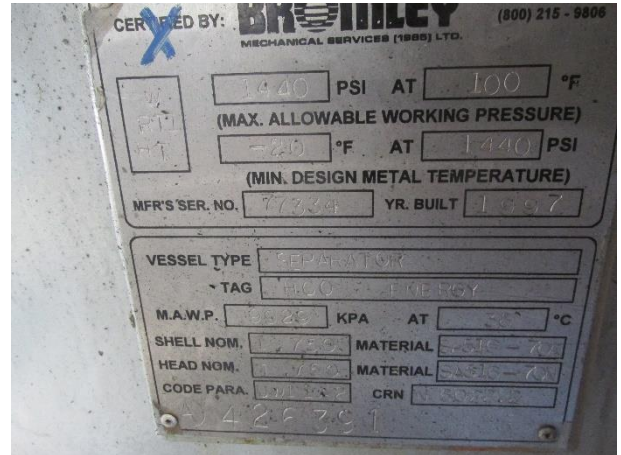
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PHOTOS



LSD sign



Daplate



Vessel overview



Skirt access port



Minor paint damage to shell



Bottom head general corrosion

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PHOTOS



Access through Manway, port in wall to access



Manway



Davit arm, single nut only



Manway cover and davit arm



Manway nozzle throat



Nozzle internal

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Bottom head, vortex breaker



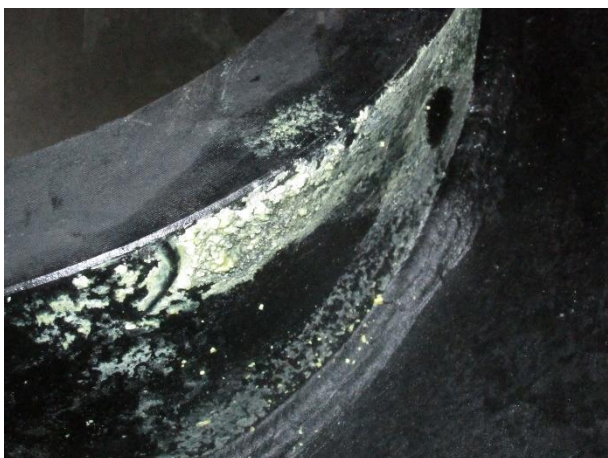
Internal coil attachment and supports



Internal coil support



Bottom head to shell circ weld



Some waxy deposits remaining on manway nozzle



Demister pad

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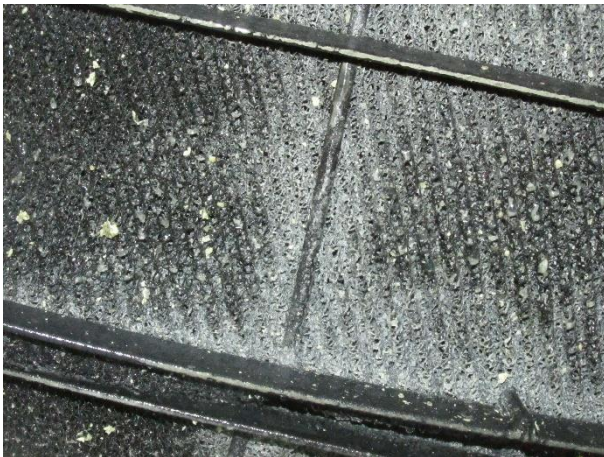
PHOTOS



Demister pad fouling



Demister pad fouling



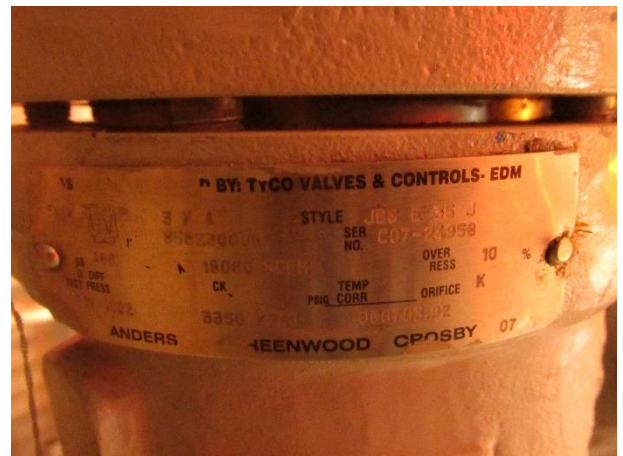
Demister pad fouling



PSV service tag



PSV overview



PSV Dataplate

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PHOTOS



PSV inlet flange shortbolting top of studs



PSV inlet flange shortbolting bottom of studs



Paint overspray on bridge PSI gauge glass