

Pressure Vessel Survey								
Location:	Point Tupper	EM&I J Report No.:	PT-D2005-090315-BR-R1					
Client Name:		Client Ref No.:	PT-11573607-001-D2005					
Client Rep.:		Inspector Name:	Barry Ritchie					
WO No.:		Inspection Date:	March 15, 2009					
SPO No.:		System:	Propane + Liquids					
Workscope No.:	PT-2008-VESSEL-EXT-02	EM&I J Job No:	EMJ0132.33					
Tag No.:	D-2005	Equipment Description:	Depronanizer Feed Drum D-2005					
Date of Last Inspection:	NA	Previous Records Seen:	NA					
Drawing No.:	LA-B22-F-22-8005-01-Z5, 98-	CA-399735-1A, 98-CA-39973	5-4B-0					

Drawing No.: LA-B22-F-22-8005-01-Z5, 98-CA-399735-1A, 98-CA-399735-4B-0										
Inspection Summary										
Item		Cond	dition		Comments					
External Ladders, Access and Support Structure	Good	Fair	Poor	NA						
1. If applicable, check ladders, stairways, platforms and walkways that are connected to, or bearing on the vessel for signs of corrosion, missing components, or deterioration.	\boxtimes				As per report D2008					
If applicable, check vessel supports for signs of deterioration, settlement, deflection, and/or corrosion.					Four areas of coating breakdown on bolt connections for continuous deluge break wire (see Photo #3)					
3. If applicable, check coatings for signs of deterioration, rusts spots, cracks, blistering, and/or coating disbondment.		\boxtimes								
4. a) For horizontally mounted vessels, check for signs of trapped moisture, resulting in corrosion between cradle support and vessel shell.										
b) For vertically mounted vessels on skirt support or support legs, check for condensation, resulting in corrosion on the bottom cap/ inside skirt support surface or area of attachment of the support legs to the bottom cap.				\boxtimes						
5. Check the grounding connection is correctly installed, with cable connections tight and ground wires in good condition.					See Photos #5 & 6					
6. Check all bolted connections for any signs of corrosion or mechanical damage.	\boxtimes									
7. If applicable, check the vessel sliding foot free to move and hold-down bolts are free.				\boxtimes						
Vessel External Surfaces	Good	Fair	Poor	NA						
1. Check permanent identifying tags on vessel are legible and present the required information.					See Photos #15,16,17, 18					
2. If applicable, check that all bolts/studs extend fully through their nuts, having a protrusion beyond the nut of not less than one thread; flange bolts have bolt heads all on the side of the joint.	\boxtimes									
3. If applicable, check bolted connections are in full contact with connected elements and connections for any signs of rust, corrosion or mechanical damage.										
4. If applicable, check insulation support bands and clips for signs of corrosion or breakage.				\boxtimes						
5. Check all welded seams and connections for any signs of deterioration, corrosion, cracking, pitting or other sign of failure. Specify.	\boxtimes									
6) If applicable, check insulation type, condition for any insulation damage and ingress of water. Record insulation type.				\boxtimes						
7. Carry out visual inspection of the exterior surface of the vessel, including coatings for any signs of leaks, cracks, deformation, distortion, pitting, corrosion or other forms of deterioration. If so, specify type, location and extent.					See Photos #7-14					
8. If applicable, check weep holes in reinforcement plates are not plugged.										
External Piping / Instrument Attachments	Good	Fair	Poor	NA						
1. If applicable, check vessel trim, such as gauges, sight glasses, valves and other appurtenances, show signs of deterioration, or missing components, etc.										
2. If applicable, check if the PSV on the vessel is in calibration. Record tag number of PSV and calibration date.					See Photo #30					



Inspection Summary								
Item		Cond	dition	Comments				
3. Inspect fittings, nozzles and other connections, including the surrounding vessel shell / head for any signs of distortion or cracks, wall loss, leakage, deterioration of coatings, etc. Specify extent and location.		\boxtimes						
Vessel Internal Surfaces	Good	Fair	Poor	NA	External Only			
1. Check for signs of corrosion, erosion, cracks, blisters, pitting, distortion, or other forms of deterioration on the internal vessel surfaces. If any, specify type, location and extent.				\boxtimes				
2. Check all welded joints for any signs of deterioration, corrosion, cracking, pitting or other sign of failure. Specify.				\boxtimes				
3. Check all man-ways, nozzles and connections for distortion, cracks, corrosion, wall loss and other type of defects or failures. If any defects are noted, specify type, extent and location.				\boxtimes				
4. If applicable, compare the results of performed wall thickness survey with previous reports for areas of wall thickness loss. Identify areas on inspection report.				\boxtimes				
5. Where applicable, check vessel internal cladding for signs of bulging, buckling, cracks, holes, etc. If any, specify type, location and extent.				\boxtimes				
6. Where applicable, check the vessel internal coating for signs of deterioration, such as: rust spots, blisters, coating disbandment, etc. If any, specify type, location and extent.				\boxtimes				
7. If possible, check gasket seals on all flanges for signs of corrosion and/or mechanical damage.								
Internal Equipment/Piping /Supports	Good	Fair	Poor	NA				
1. Where applicable, check supports for vessel's internal equipment and components for signs of corrosion, distortion and deterioration.				\boxtimes				
2. If applicable, check vessel's internals for signs of corrosion, distortion and deterioration, missing components etc.								
3. If applicable, check if bolted connections are in full contact with connected elements and connections are free from rust or other deleterious material that may prohibit full contact.				\boxtimes				
Detail of Findings								

Instructions: With the aid of Drawing(s), Sketch(es) and Photo(s) describe findings

UT thickness readings were taken on areas where coating breakdown was noted. No areas of concern

ID Tag:

Certified By: Trenergy Inc MAWP: 250/-9 PSIG @ 149F MDMT: -16.6F @ 250/-9 PSIG

Serial No.: 066 **Year Built:** 1999 **CRN:** 9093.8

MAWP: 1724/-62 KPAG @ 65C **MDMT:** -27C @ 1724/-62 KPAG

Serial No.: 066 **Year Built**: 1999 **CRN:** 9093.8

PSV Tag:

L&S Job: 09-16511-17 Date: January 23, 2009 Set Pressure: 1723 KPA Capacity: 18649 SCFM Model: JPVM 15A

Detail of Findings





Photo 1 – North face of North vessel support, coating breakdon on flange connection to concrete, also coating breakdown on and around bolt connections for deluge continuious loop breaker

Photo 2 – South face of North vessel support, coating breakdown only on lower flange connection to concrete



Photo 3 – South face of South vessel support, in good condtion. Coating breakdown only on lower flange



Photo 4 – North face of South vessel support, coating breakdown on lower flange and on edges of vertical stiffeners

Detail of Findings





Photo 5 – Showing Earthing strap

Photo 6 - Showing Earthing strap



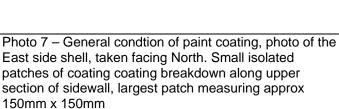




Photo 8 –General condtion of paint coating, photo of the East side shell, taken facing North. Small isolated patches of coating coating breakdown along upper section of sidewall, largest patch measuring approx 150mm x 150mm

Detail of Findings





Photo 9 – General condtion of paint coating, photo of the East side shell, taken facing North. Small isolated patches of coating coating breakdown along upper section of sidewall, largest patch measuring approx 150mm x 150mm

Photo 10 – General condtion of paint coating, photo of the East side shell, taken facing North. Small isolated patches of coating coating breakdown along upper section of sidewall, largest patch measuring approx 150mm x 150mm



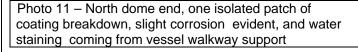




Photo 12 – West side of dome facing South, small isolated patches of coating breakdown on upper South end (see Photo 14)

Detail of Findings





Photo 13 – West side of dome facing South, small isolated patches of coating breakdown on upper South end (see Photo 14)

Photo 14 – West side of dome facing South, small isolated patches of coating breakdown on upper South end





Photo 15 – Showing ID tags

Photo 16 – Showing ID tags

Detail of Findings





Photo 17 – Showing ID tags

Photo 18 – Showing ID tags



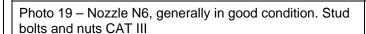




Photo 20 – Nozzles N3B & N4B, coating breakdown and slight corrosion. Studs and nuts CAT III

Detail of Findings

Instructions: With the aid of Drawing(s), Sketch(es) and Photo(s) describe findings





Photo 21 – Nozzles N3B & N4B, coating breakdown and slight corrosion. Studs and nuts CAT III

Photo 22 – Nozzle N2 with light to moderate corrosion and coating breakdown. Studs and nuts CAT III





Photo 23 – Nozzle N2 with light to moderate corrosion and coating breakdown. Studs and nuts CAT III

Photo 24 – Manhole, showing coating breakdown and light corrosion. Studs and nuts CAT III

Detail of Findings

Instructions: With the aid of Drawing(s), Sketch(es) and Photo(s) describe findings





Photo 25 – Top of dome South end, with nozzles N3A,N4A,NB, & N1. Taken facing West showing isolated coating breakdown on top of dome and around nozzles with light corrosion. Studs and nuts CAT III

Photo 26 – West side shell, photo taken facing North, showing small isolated patches of coating breakdown



Photo 27 – General view of top section of vessel, photo taken facing North



Photo 28 – West side wall next to South dome end showing discoloration of vessel and coating breakdown

Detail of Findings



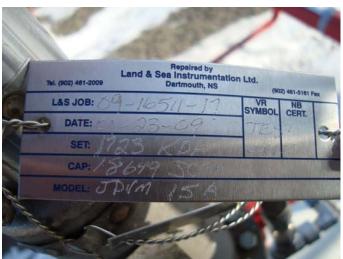


Photo 29 – Nozzle N9, slight coating breakdown, studs and nuts CAT III

Photo 30 - PSV tag



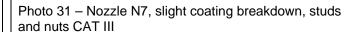




Photo 32 – Example of coating breakdown



Detail of Findings

Instructions: With the aid of Drawing(s), Sketch(es) and Photo(s) describe findings



Photo 33 – Taken from walkway, North end of vessel facing South. General view of the top

List of Attachments

Attachment 1: PT-D2005-090314-VR-UT (Page 1 to 2) Attachment 2: PT-D2005-090524-MR-UT (Page 1 to 3)

Attachment 3: 98-CA-399735-1A

End of Report



	U	Itrasoni	c Inspect	ion S	ur	vey for Vessel In	spectio	n		
Location:		Point Tup	per -			EM&I J Report No	.:	PT-D2005-090314-VR-UT		
Client Name:		Exxon M	obil Sable			Client Ref No.:		PT-1157	'3607-001-D2005	
Client Rep.:		Dale Gro	ves			Inspector Name:		Victor Ri	itchie	
WO No.:		11573607				Inspection Date:		March 1	4, 2009	
SPO No.:		4501869	140			Inspection Time:		Various		
Workscope No.:		PT-2008-VESSEL-EXT-02			System:		Propane	+ Liquids		
Previous Report N	lo.	NA				EM&I J Job No:		EMJ013	2.33	
Ref. Drawing No.:		LA-B23-F	-22-8005-0)1-Z5, 9	98-0	CA-399735-1A, 98-C	A-399735	-4B-0		
Technician Certific	cations:	PCN UT	2			Certification Expir	y Date:	January	29, 2014	
Inspection Code:		NA				Inspection Proced	lure:	EM&I		
Item Inspected:		storage t	ank			Material (Incl. Vol.):	CS		
Surface Condition	:	As coate	d			Surface Temp:		Ambient		
Instrument	Туре	: Epoch L	TC	Equip	me	ent S/N: 090100701	Cal Due	e Date: January 24, 2010		
Instrument Setting	gs Refe	rence Lev	el: 80fsh	Gain: 50db Reject			Settings: NA			
Search Unit Cable	s Type):		Length: 5' Transf			Transfe	er Value:		
Calibration Block:		Step wed	lge 2.5-12.5	5mm	Ü	alibration Block S/N	N :	CB2		
Simulation Block:		NA			Couplant:			Ultragel		
Computerized Pro	gram:	NA								
Transducer Mfg:	Type:		Model No).:		Angle:	Frequen	су:	Size:	
Panametrics	dual elen	nent	ent D790SM			0	5MHz		10mm	

Restricted Access?	Yes	No	Comments:
Comments:			
UT measurments were taken upon the t	survey.	·	•

Inspection Summary



Inspection Summary

Item Identification	Test Point	Diameter (inches)	Nominal Wall Thickness (mm)	Minimum Wall Thickness (mm)	Average Wall Thickness (mm)
Shell Bottom	TP1	147.5"	28.5	30.1	N/A
Shell Bottom	TP2	147.5"	28.5	30.4	N/A
Shell Bottom	TP3	147.5"	28.5	30.4	N/A
Shell Bottom	TP4	147.5"	28.5	29.9	N/A
Shell Bottom	TP5	147.5"	28.5	30.2	N/A
Shell Bottom	TP6	147.5"	28.5	30.2	N/A
Shell Bottom	TP7	147.5"	28.5	30.3	N/A
Shell Bottom	TP8	147.5"	28.5	30.2	N/A
Shell Bottom	TP9	147.5"	28.5	30.3	N/A
Shell Bottom	TP10	147.5"	28.5	30.8	N/A
Shell Bottom	TP11	147.5"	28.5	30.8	N/A
Shell Bottom	TP12	147.5"	28.5	30.7	N/A
Shell Bottom	TP13	147.5"	28.5	29.9	N/A
Shell Bottom	TP14	147.5"	28.5	29.8	N/A
Shell Bottom	TP15	147.5"	28.5	29.9	N/A
Shell Bottom	TP16	147.5"	28.5	30.2	N/A
Shell Bottom	TP17	147.5"	28.5	30.2	N/A
Shell Bottom	TP18	147.5"	28.5	30.0	N/A
Shell Bottom	TP19	147.5"	28.5	29.9	N/A
Shell Bottom	TP20	147.5"	28.5	29.9	N/A
Shell Bottom	TP21	147.5"	28.5	30.0	N/A
Shell Bottom	TP22	147.5"	28.5	29.9	N/A
Shell Bottom	TP23	147.5"	28.5	29.9	N/A
Shell Bottom	TP24	147.5"	28.5	29.8	N/A
Shell Bottom	TP25	147.5"	28.5	30.4	N/A
Shell Bottom	TP26	147.5"	28.5	30.3	N/A
Shell Bottom	TP27	147.5"	28.5	30.4	N/A
Shell Bottom	TP28	147.5"	28.5	30.6	N/A
Shell Bottom	TP28	147.5"	28.5	30.8	N/A
Shell Bottom	TP29	147.5"	28.5	30.7	N/A
Shell Bottom	TP30	147.5"	28.5	30.7	N/A
Shell Bottom	TP32	147.5"	28.5	30.9	N/A
Shell Bottom	TP33	147.5"	28.5	30.8	N/A
Shell Bottom	TP34	147.5"	28.5	30.3	N/A
Shell Bottom	TP35	147.5"	28.5	30.3	N/A
Shell Bottom	TP36	147.5"	28.5	30.5	N/A

End of Report



	U	Itrasoni	c Inspect	ion S	ur	vey for Vessel In	spectio	n		
Location:		Point Tup	per			EM&I J Report No.	.:	PT-D2005-090524-MR-UT		
Client Name:		Exxon M	obil Sable			Client Ref No.:		PT-1157	3607-001-D2005	
Client Rep.:		Dale Gro	ves			Inspector Name:		Michael	Rotondella	
WO No.:		11573607				Inspection Date:		May 24,	2009	
SPO No.:		4501869140				Inspection Time:		Various		
Workscope No.:		PT-2008-VESSEL-EXT-02				System:		Propane	+ Liquids	
Previous Report N	lo.	NA				EM&I J Job No:		EMJ013	2.33	
Ref. Drawing No.:		LA-B23-F	-22-8005-0)1-Z5, 9	98-0	CA-399735-1A, 98-C	A-399735	-4B-0		
Technician Certific	cations:	PCN UT	2 3.1, 3.2, 3	3.8, 3.9		Certification Expir	y Date:	October	24, 2010	
Inspection Code:		NA				Inspection Proced	lure:	EM&I		
Item Inspected:		D2005				Material (Incl. Vol.):	C/S		
Surface Condition	:	As coate	d			Surface Temp:		Ambient		
Instrument	Туре	: Epoch L	TC	Equip	oment S/N: 090108403 Cal Du			e Date: March 11, 2010		
Instrument Setting	js Refe	rence Lev	el: 80fsh	h Gain: 60db Re			Reject	Reject Settings: NA		
Search Unit Cable	s Type):		Length: 5'			Transfer Value:			
Calibration Block:		Step wed	lge 2.5-12.5	īmm	Calibration Block S/N:			09-1652		
Simulation Block:		NA			C	ouplant:		Ultragel II		
Computerized Pro	gram:	NA								
Transducer Mfg:	Type:		Model No).:		Angle:	Frequen	су:	Size:	
Panametrics	Dual Eler	ment D790SM				0	5MHz		10mm	

Inspection Summary						
Restricted Access?	Yes	No	Comments: Rope Access Required			

Comments:

UT spot readings were taken and the readings were recorded. See below and Attachment 3 for locations and readings. All readings are in millimeters.

Readings on North head were taken facing South and South head readings were taken facing North.



Inspection Summary

Item Identification	Test Point	Diameter (inches)	Nominal Wall Thickness (mm)	Minimum Wall Thickness (mm)	Average Wall Thickness (mm)
D2005 Bottom Shell	Plate 1	144"	28.58	29.2	N/A
D2005 Bottom Shell	Plate 2	144"	28.58	29.0	N/A
D2005 Bottom Shell	Plate 3	144"	28.58	28.9	N/A
D2005 Bottom Shell	Plate 4	144"	28.58	29.5	N/A
D2005 Bottom Shell	Plate 5	144"	28.58	28.2	N/A
D2005 Bottom Shell	Plate 6	144"	28.58	28.1	N/A
D2005 Bottom Shell	Plate 7	144"	28.58	28.4	N/A
D2005 Bottom Shell	Plate 8	144"	28.58	28.5	N/A
D2005 Bottom Shell	Plate 9	144"	28.58	29.2	N/A
D2005 Bottom Shell	Plate 10	144"	28.58	29.0	N/A
D2005 Bottom Shell	Plate 11	144"	28.58	29.4	N/A
D2005 Bottom Shell	Plate 12	144"	28.58	29.2	N/A
D2005 Top Shell	Plate 1	144"	28.58	29.5	N/A
D2005 Top Shell	Plate 2	144"	28.58	29.4	N/A
D2005 Top Shell	Plate 3	144"	28.58	28.9	N/A
D2005 Top Shell	Plate 4	144"	28.58	29.6	N/A
D2005 Top Shell	Plate 5	144"	28.58	29.0	N/A
D2005 Top Shell	Plate 6	144"	28.58	29.2	N/A
D2005 Top Shell	Plate 7	144"	28.58	29.6	N/A
D2005 Top Shell	Plate 8	144"	28.58	28.9	N/A
D2005 Top Shell	Plate 9	144"	28.58	29.3	N/A
D2005 Top Shell	Plate 10	144"	28.58	29.5	N/A
D2005 Top Shell	Plate 11	144"	28.58	29.7	N/A
D2005 Top Shell	Plate 12	144"	28.58	29.3	N/A
D2005 North Head	12 O'clock	End	28.58	31.5	N/A
D2005 North Head	3 O'clock	End	28.58	31.1	N/A
D2005 North Head	6 O'clock	End	28.58	30.8	N/A
D2005 North Head	9 O'clock	End	28.58	30.8	N/A
D2005 North Head	Centre	End	28.58	30.8	N/A N/A
D2003 NOITH HEAU	Centre	LIIU	20.00	30.7	IN/PA
D2005 South Head	12 O'clock	End	28.58	31.1	N/A
D2005 South Head	3 O'clock	End	28.58	30.2	N/A
D2005 South Head	6 O'clock	End	28.58	30.1	N/A
D2005 South Head	9 O'clock	End	28.58	31.4	N/A
D2005 South Head	Centre	End	28.58	29.9	N/A



Inspection Summary

Item Identification	Test Point	Diameter (inches)	Nominal Wall Thickness (mm)	Minimum Wall Thickness (mm)	Average Wall Thickness (mm)
D2005 East Shell	Plate 1	144"	28.58	29.3	N/A
D2005 East Shell	Plate 2	144"	28.58	29.4	N/A
D2005 East Shell	Plate 3	144"	28.58	29.0	N/A
D2005 East Shell	Plate 4	144"	28.58	29.3	N/A
D2005 East Shell	Plate 5	144"	28.58	28.8	N/A
D2005 East Shell	Plate 6	144"	28.58	29.2	N/A
D2005 East Shell	Plate 7	144"	28.58	29.4	N/A
D2005 East Shell	Plate 8	144"	28.58	28.9	N/A
D2005 East Shell	Plate 9	144"	28.58	29.2	N/A
D2005 East Shell	Plate 10	144"	28.58	29.3	N/A
D2005 East Shell	Plate 11	144"	28.58	29.6	N/A
D2005 East Shell	Plate 12	144"	28.58	29.4	N/A
D2005 West Shell	Plate 1	144"	28.58	29.3	N/A
D2005 West Shell	Plate 2	144"	28.58	29.1	N/A
D2005 West Shell	Plate 3	144"	28.58	28.8	N/A
D2005 West Shell	Plate 4	144"	28.58	29.4	N/A
D2005 West Shell	Plate 5	144"	28.58	28.8	N/A
D2005 West Shell	Plate 6	144"	28.58	29.2	N/A
D2005 West Shell	Plate 7	144"	28.58	29.4	N/A
D2005 West Shell	Plate 8	144"	28.58	28.9	N/A
D2005 West Shell	Plate 9	144"	28.58	29.2	N/A
D2005 West Shell	Plate 10	144"	28.58	29.6	N/A
D2005 West Shell	Plate 11	144"	28.58	29.4	N/A
D2005 West Shell	Plate 12	144"	28.58	29.4	N/A

End of Report

