

INSPECTION REPORT

Pressure Vessel Survey			
Location:	Point Tupper	EM&I Report No.:	PT-D2100C-090715-JT-R0
Client Name:		Client Ref No.:	PT-11564782-002-D2100C
Client Rep.:		Inspector Name:	James Tulk
WO No.:		Inspection Date:	July 15, 2009
SPO No.:		System:	Propane
Workscope No.:	PT-2009-D2100C-INT-01	EM&I Job No:	EMJ0132.43
Tag No.:	D-2100C	Equipment Description:	Propane Storage Vessel D-2100C
Date of Last Inspection:	NA	Previous Records Seen:	NA
Drawing No.:	LA-B23-F-22-8051-01-Z3, 98-CA-399735-1B-5		

Inspection Summary					
Restriction?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Comments:		
Item	Condition				Comments
External Ladders, Access and Support Structure	Good	Fair	Poor	NA	Internal inspection only
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. If applicable, check vessel supports for signs of deterioration, settlement, deflection, and/or corrosion.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. If applicable, check coatings for signs of deterioration, rusts spots, cracks, blistering, and/or coating disbondment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4. a) For horizontally mounted vessels, check for signs of trapped moisture, resulting in corrosion between cradle support and vessel shell.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
5. Check the grounding connection is correctly installed, with cable connections tight and ground wires in good condition.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
6. Check all bolted connections for any signs of corrosion or mechanical damage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
7. If applicable, check the vessel sliding foot free to move and hold-down bolts are free.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Vessel External Surfaces	Good	Fair	Poor	NA	Internal inspection only
1. Check permanent identifying tags on vessel are legible and present the required information.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Details of Findings and Photos 11 and 12
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. If applicable, check bolted connections are in full contact with connected elements and connections for any signs of rust, corrosion or mechanical damage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4. If applicable, check insulation support bands and clips for signs of corrosion or breakage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
5. Check all welded seams and connections for any signs of deterioration, corrosion, cracking, pitting or other sign of failure. Specify.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
6) If applicable, check insulation type, condition for any insulation damage and ingress of water. Record insulation type.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
8. If applicable, check weep holes in reinforcement plates are not plugged.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
External Piping / Instrument Attachments	Good	Fair	Poor	NA	Internal inspection only
1. If applicable, check vessel trim, such as gauges, sight glasses, valves and other appurtenances, show signs of deterioration, or missing components, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. If applicable, check if the PSV on the vessel is in calibration. Record tag number of PSV and calibration date.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Details of Findings and Photo 13
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Vessel Internal Surfaces	Good	Fair	Poor	NA	

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Restriction?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Comments:			
Item	Condition				Comments	
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Note 1	
2. Check all welded joints for any signs of deterioration, corrosion, cracking, pitting or other sign of failure. Specify.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Note 2	
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Note 3	
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
5. Where applicable, check vessel internal cladding for signs of bulging, buckling, cracks, holes, etc. If any, specify type, location and extent.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
7. If possible, check gasket seals on all flanges for signs of corrosion and/or mechanical damage.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Manway only, see Note 4	
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Screen angle iron support legs, see Note 5	
2. If applicable, check vessel's internals for signs of corrosion, distortion and deterioration, missing components etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vortex breaker N2, see Note 6	
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

Detail of Findings

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

1) No signs of cracks, blisters, distortion, erosion/corrosion (other than pitting) or any forms of deterioration evident on interior shell. Generalized pitting found throughout shell particularly between circ seams 6 to 7. A random selection of the most pronounced pitting was measured on four(4) corrosion pits and evaluated to be the most significant.

pit 1= 0.7mm depth - see photo 5 Acceptable for service

pit 2= 1.0mm depth - see photo 6 Acceptable for service

pit 3= 0.7mm depth - see photo 7 Acceptable for service

pit 4= 0.9mm depth - see photo 8 & 9 Acceptable for service

A localized pitting area was also found adjacent to south head circ seam 13 which was measured at its most significant depth and found to be approx 1.2mm deep and a length of 32mm. See photo 3 and 4.

2) During inspection, no evidence of corrosion, cracking, pitting or deterioration was found on welded joints. Acceptable for service.

3) No signs of distortion, cracks, corrosion, wall loss or any type of defect on manway, nozzles or connections was found. Acceptable for service.

4) No evidence of corrosion/erosion or any mechanical damage on manway gasket and cover seals. Acceptable for service.

5) No signs of cracking, corrosion, erosion, distortion or any deterioration on screen support legs.

6) No evidence of corrosion, distortion, missing components or any deterioration on vortex breaker for nozzle N2.

Note: Only lower half of vessels interior in question could be properly inspected. No scaffold to access the upper half of vessel.

ID Tag:

Certified by: Trenergy Inc.

MAWP: 210/-9 PSIG @ 149F

MDMT: -16.6F @ 250/-9 PSIG

Serial No.: 062

Year built: 1998

CRN: 9094.8

PSV Tag:

L+S Job: 09-16828-3

Date: February 24, 2009

Set Pressure: 1723 KPA

Capacity: 18649 SCFM

Model: JPV15A

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Detail of Findings

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



Photo 1 – Interior of north head



Photo 2 – Bottom section of north head circ seam and 3" nozzle N10

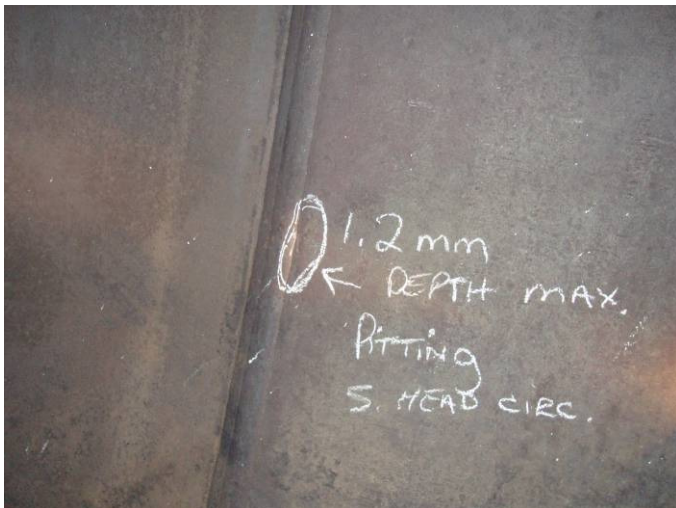


Photo 3 – Area of pitting

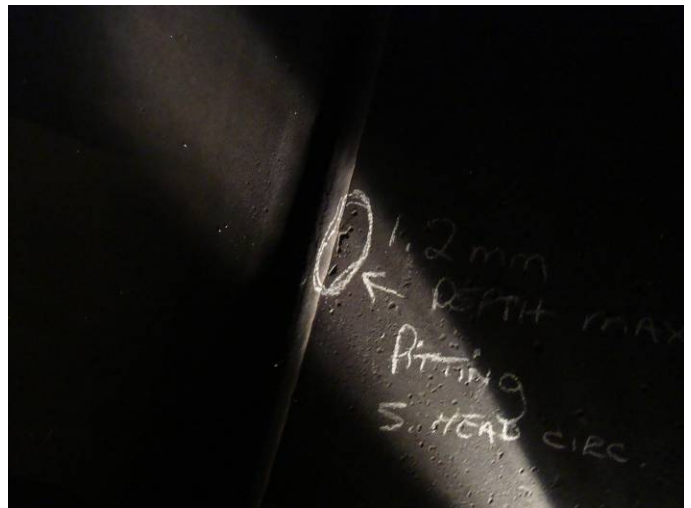


Photo 4 – Area of pitting

Detail of Findings

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



Photo 5 – Area of pitting



Photo 6 – Area of pitting



Photo 7 – Area of pitting



Photo 8 – Area of pitting

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Detail of Findings

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



Photo 9 – Area of pitting



Photo 10 – Profile shot looking south inside vessel



Photo 11 – Nameplate



Photo 12 – Nameplate

INSPECTION REPORT

Detail of Findings

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



Photo 13 – PSV tag

List of Attachments

Attachment 1: PT-D2100C-090429-DL-MPI (hinges)

Attachment 2: PT-D2100C-090715-NE-MPI

Attachment 3: 98-CA-399735-1B-5

End of Report

INSPECTION REPORT



MPI Survey

Location:	Point Tupper	EM&IJ Report No.:	PT-D2100C-090429-DL-MPI
Client Name:	Exxon Mobil Sable	Client Ref No.:	PT-11564782-002-D2100C
Client Rep.:	Dale Groves	Inspector Name:	Daniel Lewis
WO No.:	11564782	Inspection Date:	April 29, 2009
SPO No.:	4501905471	Inspection Time:	Various
Workscope No.:	PT-2009-D2100C-INT-01	System:	Propane
Previous Report No.	NA	EM&IJ Job No:	EMJ0132.43
Ref. Drawing No.:	LA-B23-F-22-8051-01-Z3, 98-CA-399735-B, DS-D2100-01-1		
Technician Certifications:	PCN MPI LVL 2	Certification Expiry Date:	May 05, 2012
Inspection Code:		Inspection Procedure:	MT401ASME
Material:	C/S	Surface Condition:	Needle gun
Consumables:	Contrast: White	Type: WCP-2	Manufacturer: Magnaflux
Equipment:	Type: Y5	S/N: 1450	Batch: 07H14K/2755
		Calibration Due: 40 Lb Cal lift	Current Type: N/A

Inspection Summary

Comments:

MPI was conducted on the man-way hinges of vessel D-2100C.

Restricted access to hinge welds. 50% of weld not able to be inspected due to geometry of hinge.

Foil strip Type 1 indicator (brass finish) used to test sensitivity. Sensitivity achieved on areas of inspection.

No abnormalities were found in area of inspection.

Daniel Lewis
PCN #302198

Ink

Manufacturer: Magnaflux
Type: 7HF
Solution: Prepared bath
Batch: 07G07K/3679

End of Report

INSPECTION REPORT



MPI Survey

Location:	Point Tupper	EM&IJ Report No.:	PT-D2100C-090715-NE-MPI
Client Name:	Exxon Mobil Sable	Client Ref No.:	PT-11564782-002-D2100C
Client Rep.:	Dale Groves	Inspector Name:	Neil English
WO No.:	11564782	Inspection Date:	July 15, 2009
SPO No.:	4501905471	Inspection Time:	Various
Workscope No.:	PT-2009-D2100C-INT-01	System:	Propane Storage Vessel
Previous Report No.	NA	EM&IJ Job No:	EMJ0132.31
Ref. Drawing No.:	LA-B23-F-22-8051-01-Z3, 98-CA-399735-B, DS-D2100-01-1		
Technician Certifications:	CGSB MPI LVL 2	Certification Expiry Date:	December 31, 2011
Inspection Code:	ASME VIII	Inspection Procedure:	MT401ASME
Material:	C/S	Surface Condition:	Wire brush cleaned
Consumables:	Contrast: White	Type: 8901W	Manufacturer: Ardrox
	Type: Electro Spec ES-X	S/N: 12764	Batch: 65082407
Equipment:		Calibration Due: 10 Lb Cal lift	Current Type: AC

Inspection Summary

Comments:

Black on white Magnetic Particle Inspection was conducted on butane storage vessel D-2100C. Nozzles N6, N3B, N4B, N5, M1 and N10 were inspected. Also, two foot spot checks on every second circular seam were inspected in the 3, 6, and 9 o'clock positions, as well as any accessible tee joint.

At time of Inspection, no relevant Indications were observed.

Foil strip Type 1 indicator (brass finish) was used to test sensitivity.

Neil English
CGSB: #11752

Ink

Manufacturer:
Type: 8031, Black Ink
Solution: Prepared bath, Aerosol
Batch: 32111507

End of Report

