

INSPECTION REPORT

Pressure Vessel Survey			
Location:	Point Tupper	EM&I J Report No.:	PT-D2100B-090320-BR-R1
Client Name:		Client Ref No.:	PT-11573613-001-D2100B
Client Rep.:		Inspector Name:	Barry Ritchie
WO No.:		Inspection Date:	March 20, 2009
SPO No.:		System:	Propane
Workscope No.:	PT-2008-VESSEL-EXT-03	EM&I J Job No:	EMJ0132.33
Tag No.:	D-2100B	Equipment Description:	Propane Storage Vessel D-2100B
Date of Last Inspection:	NA	Previous Records Seen:	NA
Drawing No.:	LA-B23-F-22-8050-01-Z5, 98-CA-399735-1B-5, 98-CA-399735-4B-0		

Inspection Summary					
Item	Condition				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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. If applicable, check vessel supports for signs of deterioration, settlement, deflection, and/or corrosion.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Photo #3
3. If applicable, check coatings for signs of deterioration, rusts spots, cracks, blistering, and/or coating disbondment.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. a) For horizontally mounted vessels, check for signs of trapped moisture, resulting in corrosion between cradle support and vessel shell.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Photo #3 & 6
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Photos #7-10
6. Check all bolted connections for any signs of corrosion or mechanical damage.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. If applicable, check the vessel sliding foot free to move and hold-down bolts are free.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Vessel External Surfaces	Good	Fair	Poor	NA	
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 Photo #11-14
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Photos #21-27
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	
1. If applicable, check vessel trim, such as gauges, sight glasses, valves and other appurtenances, show signs of deterioration, or missing components, etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 Photo #34
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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Inspection Summary					
Item	Condition				Comments
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Check all welded joints 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"/>	
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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. If applicable, check vessel's internals for signs of corrosion, distortion and deterioration, missing components etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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

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

ID Tag:

Certified By: Trenergy Inc

MAWP: 1724/-62 KPAG @ 65C

MDMT: -27C @ 1724/-62 KPAG

Serial No.: 063

Year Built: 1999

CRN: 9094.8

MAWP: 250/-9 PSIG @ 149F

MDMT: -16.6F @ 250/-9 PSIG

Serial No.: 063

Year Built: 1999

CRN: 9094.8

PSV Tag:

L&S Job: 09-16828-17

Date: March 4, 2009

Set Pressure: 1723 KPA

Capacity: 18649 SCFM

Model: JPVM 15A

Detail of Findings

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



Photo 1 – Showing North face of North vessel support, paint coating in good condition



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



Photo 3 – Steel to concrete connection, coating breakdown mainly on edges



Photo 4 – South face of South vessel support, paint in good condition

Detail of Findings

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



Photo 5 – North face of South vessel support, paint coating in good condition. Coating breakdown on lower flange mainly



Photo 6 – Close-up of lower flange, no water damage or trapped moisture, paint coating flaking

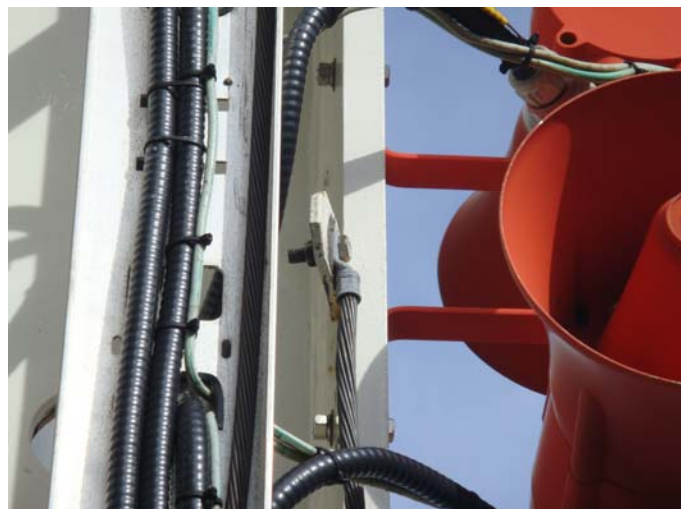


Photo 7 – Earthing strap connection North vessel support



Photo 8 – Earthing strap and connections on North vessel support

Detail of Findings

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



Photo 9 – Earthing strap connection on South vessel support



Photo 10 – Earthing strap on vessel support South side, general photo



Photo 11 – Showing ID plate



Photo 12 – Showing ID plate

Detail of Findings

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



Photo 13 – Showing ID plate



Photo 14 – Showing ID plate



Photo 15 – Nozzle N6, in generally good condition, no areas of concern. Studs and nuts CAT III



Photo 16 – Nozzles N3B & N4B, coating breakdown and light corrosion located on nozzle body and flange, studs and nuts CAT III

Detail of Findings

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



Photo 17 – Nozzle N2, coating breakdown only on flange connection. Studs and nuts uncoated but in good condition, CAT III



Photo 18 – Nozzle N5, coating breakdown only located on flange connection. Studs and nuts CAT III



Photo 19 – Manhole, coating breakdown on flanges only, studs and nuts uncoated, CAT III



Photo 20 – N10, insulation bag in good condition, studs and nut CAT III

Detail of Findings

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



Photo 21 – General condition of East side shell, good condition



Photo 22 – General condition of East side shell, good condition



Photo 23 – General condition of East side shell, good condition



Photo 24 – General good condition of North dome end, photo taken facing South

Detail of Findings

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



Photo 25 – West side shell generally in good condition



Photo 26 – West side shell generally in good condition



Photo 27 – West side shell generally in good condition



Photo 28 – Showing 4 small isolated patches of coating breakdown and light corrosion on the upper South-East side shell Dome end

Detail of Findings

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



Photo 29 – Nozzles N3A/N4A/N8/N1, coating breakdown and light to moderate corrosion located only on flange edges. All studs and nuts are uncoated but in good condition, CAT III



Photo 30 – South-West upper side shell, water staining only good condition



Photo 31 – Nozzle N9, coating breakdown on flange connection, only studs and nuts have lost paint coating but are still in good condition, CAT III



Photo 32 – Generally good condition on top section of vessel, photo taken facing North

INSPECTION REPORT

Detail of Findings

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



Photo 33 – Nozzle N7, coating breakdown only on flange connection, studs and nuts CAT II



Photo 34 – PSV calibration Tag



Photo 35 – East top side of North dome, good condition



Photo 36 – Condition of top West side of North dome

INSPECTION REPORT

Detail of Findings

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



Photo 37 – General view of top section of vessel in good condition



Photo 38 – Typical condition of deluge pipe support



Photo 39 – General view of upper side shell West side, six very small areas of coating breakdown and light corrosion, photo taken facing South

INSPECTION REPORT



List of Attachments

Attachment 1: PT-D2100B-090315-VR-UT (Page 1 to 2)

Attachment 2: PT-D2100B-090511-JL-UT (Page 1 to 3)

Attachment 3: UT Diagram

End of Report

INSPECTION REPORT



Ultrasonic Inspection Survey for Vessel Inspection

Location:	Point Tupper	EM&I J Report No.:	PT-D2100B-090315-VR-UT
Client Name:	Exxon Mobil Sable	Client Ref No.:	PT-11573613-001-D2100B
Client Rep.:	Dale Groves	Inspector Name:	Victor Ritchie
WO No.:	11573613	Inspection Date:	March 15, 2009
SPO No.:	4501869140	Inspection Time:	Various
Workscope No.:	PT-2008-VESSEL-EXT-03	System:	Propane
Previous Report No.	NA	EM&I J Job No:	EMJ0132.33
Ref. Drawing No.:	LA-B23-F-22-8050-01-Z5, 98-CA-399735-1B-5, 98-CA-399735-4B-0		
Technician Certifications:	PCN UT 2	Certification Expiry Date:	January 29, 2014
Inspection Code:	NA	Inspection Procedure:	EM&I
Item Inspected:	D2100B	Material (Incl. Vol.):	CS
Surface Condition:	As coated	Surface Temp:	Ambient
Instrument	Type: Epoch LTC	Equipment S/N: 090100701	Cal Due Date: January 24, 2010
Instrument Settings	Reference Level: 80fsh	Gain: 50db	Reject Settings: NA
Search Unit Cables	Type:	Length: 5'	Transfer Value:
Calibration Block:	Step wedge 2.5-12.5mm	Calibration Block S/N:	CB2
Simulation Block:	NA	Couplant:	Ultragel
Computerized Program:	NA		
Transducer Mfg:	Type:	Model No.:	Angle:
Panametrics	dual element	D790SM	0

Inspection Summary

Restricted Access?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Comments:
<p>Comments:</p> <p>UT measurments were taken using side wall echo technique. This does not constitute a UT survey. See below for locations and readings. All readings are in millimeters.</p>			

INSPECTION REPORT

Inspection Summary

Item Identification	Test Point	Diameter (inches)	Nominal Wall Thickness (mm)	Minimum Wall Thickness (mm)	Average Wall Thickness (mm)
Shell Bottom	TP1	144"	28.6	29.7	N/A
Shell Bottom	TP2	144"	28.6	29.4	N/A
Shell Bottom	TP3	144"	28.6	29.8	N/A
Shell Bottom	TP4	144"	28.6	30.3	N/A
Shell Bottom	TP5	144"	28.6	30.5	N/A
Shell Bottom	TP6	144"	28.6	30.4	N/A
Shell Bottom	TP7	144"	28.6	30.2	N/A
Shell Bottom	TP8	144"	28.6	30.4	N/A
Shell Bottom	TP9	144"	28.6	30.1	N/A
Shell Bottom	TP10	144"	28.6	30.0	N/A
Shell Bottom	TP11	144"	28.6	29.2	N/A
Shell Bottom	TP12	144"	28.6	29.4	N/A
Shell Bottom	TP13	144"	28.6	29.6	N/A
Shell Bottom	TP14	144"	28.6	29.6	N/A
Shell Bottom	TP15	144"	28.6	29.4	N/A
Shell Bottom	TP16	144"	28.6	29.0	N/A
Shell Bottom	TP17	144"	28.6	29.3	N/A
Shell Bottom	TP18	144"	28.6	29.3	N/A
Shell Bottom	TP19	144"	28.6	30.8	N/A
Shell Bottom	TP20	144"	28.6	30.6	N/A
Shell Bottom	TP21	144"	28.6	30.8	N/A
Shell Bottom	TP22	144"	28.6	29.8	N/A
Shell Bottom	TP23	144"	28.6	29.6	N/A
Shell Bottom	TP24	144"	28.6	30.0	N/A
Shell Bottom	TP25	144"	28.6	30.1	N/A
Shell Bottom	TP26	144"	28.6	29.8	N/A
Shell Bottom	TP27	144"	28.6	30.4	N/A
Shell Bottom	TP28	144"	28.6	30.4	N/A
Shell Bottom	TP28	144"	28.6	31.0	N/A
Shell Bottom	TP29	144"	28.6	30.8	N/A
Shell Bottom	TP30	144"	28.6	30.4	N/A
Shell Bottom	TP32	144"	28.6	30.6	N/A
Shell Bottom	TP33	144"	28.6	30.4	N/A
Shell Bottom	TP34	144"	28.6	30.4	N/A
Shell Bottom	TP35	144"	28.6	30.6	N/A
Shell Bottom	TP36	144"	28.6	30.4	N/A

End of Report

INSPECTION REPORT



Ultrasonic Inspection Survey for Vessel Inspection

Location:	Point Tupper	EM&I J Report No.:	PT-D2100B-090511-JL-UT
Client Name:	Exxon Mobil Sable	Client Ref No.:	PT-11573613-001-D2100B
Client Rep.:	Dale Groves	Inspector Name:	John Lee
WO No.:	11573613	Inspection Date:	March 11, 2009
SPO No.:	4501869140	Inspection Time:	Various
Workscope No.:	PT-2008-VESSEL-EXT-03	System:	Propane
Previous Report No.	NA	EM&I J Job No:	EMJ0132.33
Ref. Drawing No.:	LA-B23-F-22-8050-01-Z5, 98-CA-399735-1B-5, 98-CA-399735-4B-0		
Technician Certifications:	PCN UT 2	Certification Expiry Date:	May 21, 2012
Inspection Code:	NA	Inspection Procedure:	EM&I
Item Inspected:	D2100B	Material (Incl. Vol.):	C/S
Surface Condition:	As coated	Surface Temp:	Ambient
Instrument	Type: Epoch LTC	Equipment S/N: 090108103	Cal Due Date: March 11, 2010
Instrument Settings	Reference Level: 80fsh	Gain: 60db	Reject Settings: NA
Search Unit Cables	Type:	Length: 5'	Transfer Value:
Calibration Block:	Step wedge 2.5-12.5mm	Calibration Block S/N:	09-1652
Simulation Block:	NA	Couplant:	Ultragel II
Computerized Program:	NA		
Transducer Mfg:	Type:	Model No.:	Angle:
Panametrics	dual element	D790SM - 625220	0

Inspection Summary

Restricted Access?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Comments: Rope Access Required
<p>Comments:</p> <p>UT spot readings were taken and the readings were recorded. See below and Attachment 3 for locations and readings. All readings are in millimeters.</p> <p>Readings on North cap were taken facing South and readings on South cap were taken facing North.</p>			

INSPECTION REPORT

Inspection Summary

Item Identification	Test Point	Diameter (inches)	Nominal Wall Thickness (mm)	Minimum Wall Thickness (mm)	Average Wall Thickness (mm)
North Head	12 o'clock	End	28.2	31.4	
North Head	3 o'clock	End	28.2	31.3	
North Head	6 o'clock	End	28.2	30.6	
North Head	9 o'clock	End	28.2	30.6	
North Head	Centre	End	28.2	31.0	
South Head	12 o'clock	End	28.2	31.4	
South Head	3 o'clock	End	28.2	31.7	
South Head	6 o'clock	End	28.2	30.4	
South Head	9 o'clock	End	28.2	31.4	
South Head	Centre	End	28.2	31.2	
Panel 1	West	144"	28.6	29.5	
Panel 1	Centre	144"	28.6	29.6	
Panel 1	East	144"	28.6	29.8	
Panel 2	West	144"	28.6	29.9	
Panel 2	Centre	144"	28.6	29.7	
Panel 2	East	144"	28.6	28.9	
Panel 3	West	144"	28.6	29.7	
Panel 3	Centre	144"	28.6	29.7	
Panel 3	East	144"	28.6	30.1	
Panel 4	West	144"	28.6	28.7	
Panel 4	Centre	144"	28.6	29.3	
Panel 4	East	144"	28.6	28.8	
Panel 5	West	144"	28.6	29.6	
Panel 5	Centre	144"	28.6	29.5	
Panel 5	East	144"	28.6	29.4	
Panel 6	West	144"	28.6	29.8	
Panel 6	Centre	144"	28.6	30.4	
Panel 6	East	144"	28.6	30.5	
Panel 7	West	144"	28.6	30.6	
Panel 7	Centre	144"	28.6	30.3	
Panel 7	East	144"	28.6	30.1	
Panel 8	West	144"	28.6	29.6	
Panel 8	Centre	144"	28.6	30.1	
Panel 8	East	144"	28.6	29.8	

INSPECTION REPORT



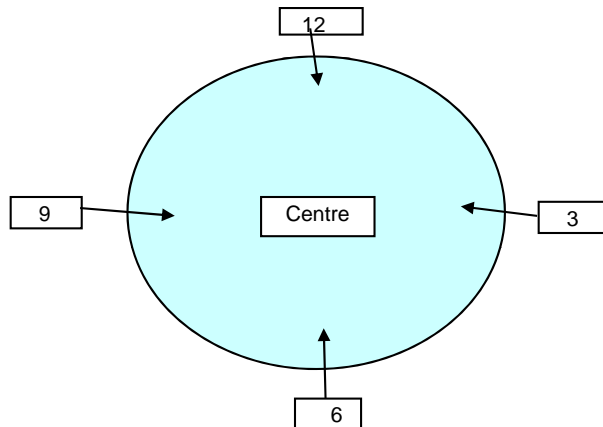
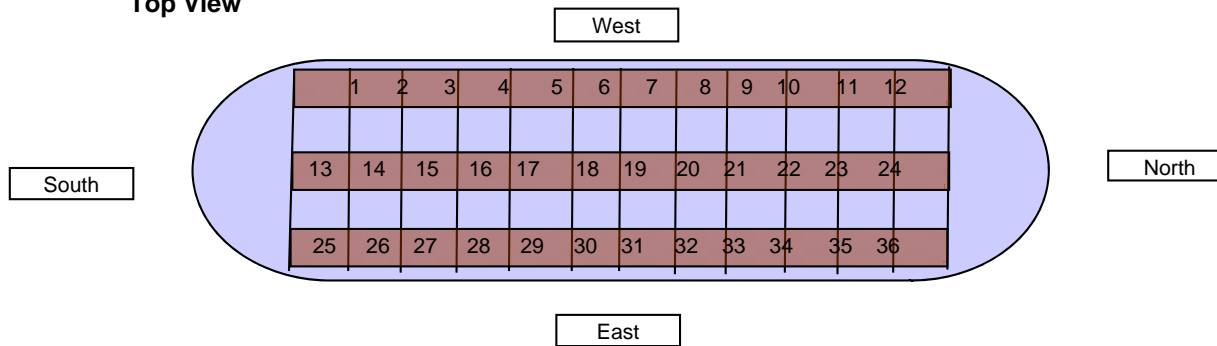
Inspection Summary

Item Identification	Test Point	Diameter (inches)	Nominal Wall Thickness (mm)	Minimum Wall Thickness (mm)	Average Wall Thickness (mm)
Panel 9	West	144"	28.6	29.6	
Panel 9	Centre	144"	28.6	29.5	
Panel 9	East	144"	28.6	29.8	
Panel 10	West	144"	28.6	29.3	
Panel 10	Centre	144"	28.6	30.0	
Panel 10	East	144"	28.6	29.5	
Panel 11	West	144"	28.6	30.7	
Panel 11	Centre	144"	28.6	30.0	
Panel 11	East	144"	28.6	29.5	
Panel 12	West	144"	28.6	30.4	
Panel 12	Centre	144"	28.6	30.3	
Panel 12	East	144"	28.6	30.3	

End of Report

Three UT readings were taken on each plate.
One on the East, one top Center, and one on
the West side. The areas are numbered and
readings were recorded on the UT report.
Only the lowest readings were reported.

Top View



UT readings were taken on vessel end caps
at the Centre and at 12,3,6 & 9 O'clock
positions. Lowest readings were recorded.