

INSPECTION REPORT

Pressure Vessel Survey			
Location:	Point Tupper	EM&I J Report No.:	PT-D-2100A-090305-DL-R0
Client Name:		Client Ref No.:	PT-11573612-001-D2100A
Client Rep.:		Inspector Name:	Daniel Lewis
WO No.:		Inspection Date:	May 03, 2009
SPO No.:		System:	Propane
Workscope No.:	PT-2008-VESSEL-EXT-03	EM&I J Job No:	EMJ0132.33
Tag No.:	D-2100A	Equipment Description:	Propane Storage Vessel D-2100A
Date of Last Inspection:	NA	Previous Records Seen:	NA
Drawing No.:	LA-B23-F-22-8050-01-Z5, 98-CA-399735B		

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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Supports for accessway allow a lot of movement. This could possibly be placing stress on the re-enforcement plates
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"/>	Vessel supports are in good condition. Small cracks at the top of the concrete legs
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"/>	Small areas of coating breakdown. The access way appears to be the source of some of the rust staining on the vessel ends
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"/>	
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"/>	
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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	The vessel plate is fitted and the details are recorded below
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"/>	Studs and nuts are CATII/III
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"/>	This vessel is not insulated
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"/>	The vessel weld seams are coated, no deterioration evident
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"/>	This vessel is not insulated
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"/>	Vessel is coated. The vessel surface appears to be in good condition.

INSPECTION REPORT

Inspection Summary					
Item	Condition				Comments
					Small isolated areas of coating breakdown occurring over the vessel shell (see Photos #7 & 11)
8. If applicable, check weep holes in reinforcement plates are not plugged.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The vessel level gauge is Stainless Steel. This is connected to a Carbon Steel flange. The gauges on this vessel are in good condition. There is 50% coating breakdown with surface corrosion occurring on the SDV of this vessel. The trim attached to N4B has 100% coating breakdown and light surface corrosion
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"/>	The PSV on this vessel is in good condition, details are recorded below
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"/>	The nozzles of this vessel are in good condition. The nozzle flanges of this vessel have coating breakdown
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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

INSPECTION REPORT



Inspection Summary

Item	Condition				Comments
elements and connections are free from rust or other deleterious material that may prohibit full contact.					

Detail of Findings

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

Vessel ID Plate:

Certified By: Trenergy

Manufactured By: Patterson Industries

Serial No.: 064

Tag No.: D2100A

Year Built: 1999

Code/Standard: U-stamp W-RT-1

MAWP: 1724/-62 KPAG @ 149F

MDMT: -16.6F

PSV

Certified By: Land and Sea Instrumentation

Type: JPVM 15A

Serial No.: VA017249901

Date of Calibration: 02-24-09

Capacity: 18649 SCFM

Set Pressure: 1723 KPA

Condition: Good condition, 20% coating breakdown with surface corrosion. Studs and nuts CAT II

Detail of Findings

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



Photo 1 – View of North end of vessel showing access platform



Photo 2 – (N10) Studs and nuts CAT II, 20% coating breakdown with surface corrosion on flange



Photo 3 – (M) Studs and nuts CAT II, 20% coating breakdown with surface corrosion on flange



Photo 4 – (N5) Studs and nuts CAT II, 100% coating breakdown with surface corrosion on flange

Detail of Findings

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



Photo 5 – General view of vessel support leg



Photo 6 – Coating breakdown with surface corrosion occurring at foot of saddle support leg. This appears to be common of all propane storage vessels in this location



Photo 7 – Isolated area of coating breakdown with surface corrosion on shell of vessel. Does not appear to be any significant material loss



Photo 8 – (SDV2100) 50% coating breakdown with surface corrosion of valve. 90% coating breakdown with surface corrosion on flange of N2. Studs and nuts CAT II

Detail of Findings

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



Photo 9 – Grounding cable installed and in good condition



Photo 10 – (N3B, N4B) Trim attached to N4B has 100% coating breakdown with surface corrosion. 60% coating breakdown with surface corrosion on flanges, studs and nuts CAT II



Photo 11 – View of South-West end of vessel. Isolated areas of coating breakdown with surface corrosion. There does not appear to be any significant material loss



Photo 12 – (N6) Note: Use of dissimilar metals. Gauge in good condition, studs and nuts CAT II. Note: Grind marks/scores on dome end of vessel

Detail of Findings

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



Photo 13 – Note: Grind marks/scores on dome end of vessel



Photo 14 – Vessel level gauge in good condition, Dissimilar metals, studs and nuts CAT II



Photo 15 – (N4B) 60% coating breakdown with surface corrosion on flange. Studs and nuts CAT II

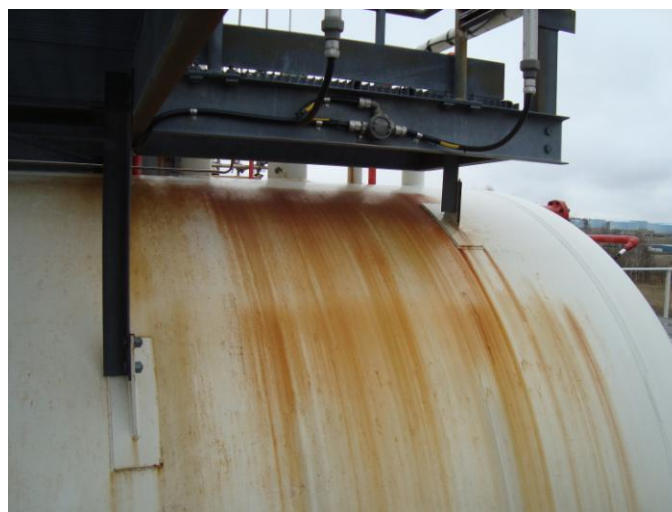


Photo 16 – Rust staining on vessel. Appears to be stemming from light rusting occurring on access way

Detail of Findings

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



Photo 17 – (N1, N8, N4A, N3A) Studs and nuts CAT II. 100% coating breakdown with surface corrosion of blank flanges. Small amount of coating breakdown with surface corrosion occurring on nozzles



Photo 18 – (N9) Studs and nuts CAT II. 60% coating breakdown with surface corrosion occurring on flanges



Photo 19 – General view of top of vessel, in good condition



Photo 20 – Isolated areas of coating breakdown with surface occurring on access way

Detail of Findings

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



Photo 21 – Vessel level gauge as viewed from above.
Note: Use of dissimilar metals. 80% coating breakdown with surface corrosion on flange. Studs and nuts CAT II



Photo 22 – (N7) 70% coating breakdown with surface corrosion of flange. Studs and nuts CAT II



Photo 23 – Corroded u-bolt holding linear heat



Photo 24 – Condition of PSV

INSPECTION REPORT



List of Attachments

Attachment 1: PT-D2100A-090314-VR-UT (Page 1 to 2)
Attachment 2: PT-D2100A-090510-JL-UT (Page 1 to 3)
Attachment 3: UT Locations
Attachment 4: 98-CA-399735B

End of Report

INSPECTION REPORT



Ultrasonic Inspection Survey for Vessel Inspection

Location:	Point Tupper	EM&I J Report No.:	PT-D2100A-090314-VR-UT
Client Name:	Exxon Mobil Sable	Client Ref No.:	PT-11573612-001-D2100A
Client Rep.:	Dale Groves	Inspector Name:	Victor Ritchie
WO No.:	11573612	Inspection Date:	March 14, 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-B		
Technician Certifications:	PCN UT2	Certification Expiry Date:	January 29, 2014
Inspection Code:	NA	Inspection Procedure:	EM&I
Item Inspected:	D2100A	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 measurements were taken on side wall using echo technique and readings were recorded. 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	30.5	N/A
Shell Bottom	TP2	144"	28.6	30.6	N/A
Shell Bottom	TP3	144"	28.6	30.8	N/A
Shell Bottom	TP4	144"	28.6	31.0	N/A
Shell Bottom	TP5	144"	28.6	30.7	N/A
Shell Bottom	TP6	144"	28.6	30.4	N/A
Shell Bottom	TP7	144"	28.6	30.0	N/A
Shell Bottom	TP8	144"	28.6	29.8	N/A
Shell Bottom	TP9	144"	28.6	29.9	N/A
Shell Bottom	TP10	144"	28.6	30.3	N/A
Shell Bottom	TP11	144"	28.6	30.1	N/A
Shell Bottom	TP12	144"	28.6	29.8	N/A
Shell Bottom	TP13	144"	28.6	29.7	N/A
Shell Bottom	TP14	144"	28.6	29.4	N/A
Shell Bottom	TP15	144"	28.6	29.2	N/A
Shell Bottom	TP16	144"	28.6	29.8	N/A
Shell Bottom	TP17	144"	28.6	30.1	N/A
Shell Bottom	TP18	144"	28.6	30.6	N/A
Shell Bottom	TP19	144"	28.6	31.0	N/A
Shell Bottom	TP20	144"	28.6	30.8	N/A
Shell Bottom	TP21	144"	28.6	30.7	N/A
Shell Bottom	TP22	144"	28.6	30.4	N/A
Shell Bottom	TP23	144"	28.6	30.5	N/A
Shell Bottom	TP24	144"	28.6	30.5	N/A
Shell Bottom	TP25	144"	28.6	30.3	N/A
Shell Bottom	TP26	144"	28.6	30.2	N/A
Shell Bottom	TP27	144"	28.6	30.0	N/A
Shell Bottom	TP28	144"	28.6	30.6	N/A
Shell Bottom	TP28	144"	28.6	30.5	N/A
Shell Bottom	TP29	144"	28.6	30.4	N/A
Shell Bottom	TP30	144"	28.6	30.5	N/A
Shell Bottom	TP32	144"	28.6	30.8	N/A
Shell Bottom	TP33	144"	28.6	30.6	N/A
Shell Bottom	TP34	144"	28.6	30.6	N/A
Shell Bottom	TP35	144"	28.6	30.2	N/A
Shell Bottom	TP36	144"	28.6	30.6	N/A

End of Report

INSPECTION REPORT



Ultrasonic Inspection Survey for Vessel Inspection

Location:	Point Tupper	EM&I J Report No.:	PT-D2100A-090510-JL-UT
Client Name:	Exxon Mobil Sable	Client Ref No.:	PT-11573612-001-D2100A
Client Rep.:	Dale Groves	Inspector Name:	John Lee
WO No.:	11573612	Inspection Date:	March 10, 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-B		
Technician Certifications:	PCN UT 3.1, 3.2	Certification Expiry Date:	May 21, 2012
Inspection Code:	NA	Inspection Procedure:	EM&I
Item Inspected:		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. Readings on North head were taken facing South and South head readings were taken facing North. 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)
Panel 1	West	144"	28.6	29.4	
Panel 1	Centre	144"	28.6	30.3	
Panel 1	East	144"	28.6	29.9	
Panel 2	West	144"	28.6	30.0	
Panel 2	Centre	144"	28.6	30.4	
Panel 2	East	144"	28.6	29.9	
Panel 3	West	144"	28.6	29.6	
Panel 3	Centre	144"	28.6	29.7	
Panel 3	East	144"	28.6	29.5	
Panel 4	West	144"	28.6	30.2	
Panel 4	Centre	144"	28.6	30.0	
Panel 4	East	144"	28.6	29.7	
Panel 5	West	144"	28.6	29.6	
Panel 5	Centre	144"	28.6	30.6	
Panel 5	East	144"	28.6	29.6	
Panel 6	West	144"	28.6	30.3	
Panel 6	Centre	144"	28.6	30.1	
Panel 6	East	144"	28.6	29.4	
Panel 7	West	144"	28.6	29.3	
Panel 7	Centre	144"	28.6	29.6	
Panel 7	East	144"	28.6	29.5	
Panel 8	West	144"	28.6	29.6	
Panel 8	Centre	144"	28.6	29.8	
Panel 8	East	144"	28.6	29.6	
Panel 9	West	144"	28.6	29.2	
Panel 9	Centre	144"	28.6	29.5	
Panel 9	East	144"	28.6	29.5	
Panel 10	West	144"	28.6	29.9	
Panel 10	Centre	144"	28.6	30.3	
Panel 10	East	144"	28.6	30.1	
Panel 11	West	144"	28.6	29.8	
Panel 11	Centre	144"	28.6	29.9	
Panel 11	East	144"	28.6	30.1	
Panel 12	West	144"	28.6	29.1	
Panel 12	Centre	144"	28.6	29.2	
Panel 12	East	144"	28.6	29.1	

INSPECTION REPORT

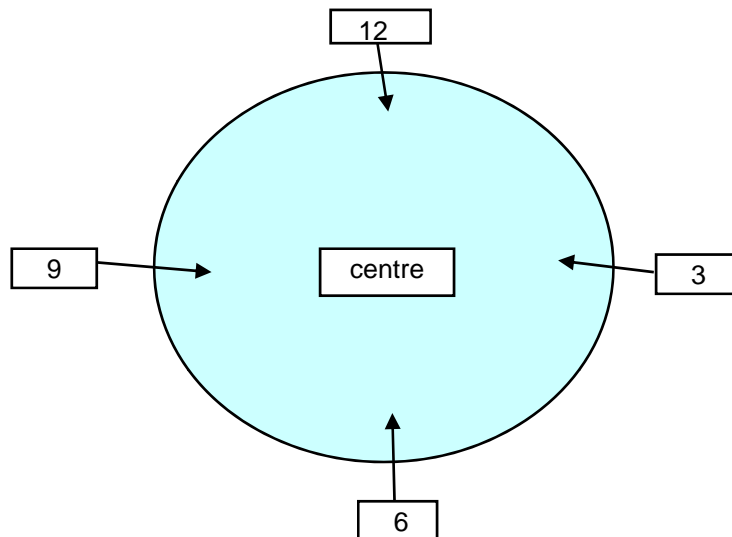
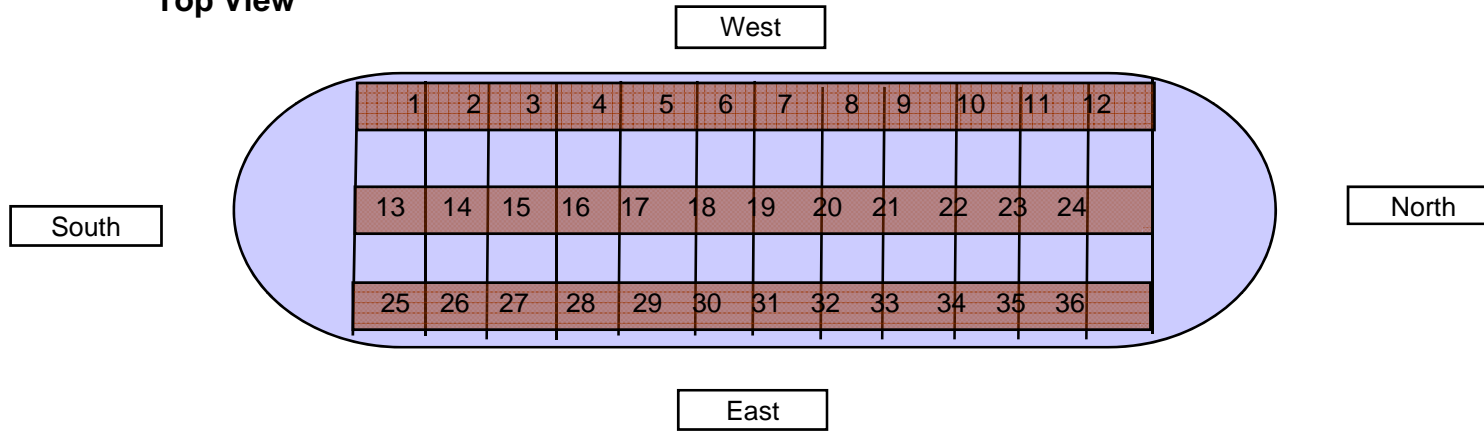


Inspection Summary

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	31.4	
North Head	6 O'clock	End	28.2	30.6	
North Head	9 O'clock	End	28.2	30.8	
North Head	Centre	End	28.2	29.8	
South Head	12 O'clock	End	28.2	31.9	
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	31.1	
South Head	Centre	End	28.2	30.4	

End of Report

Top View



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

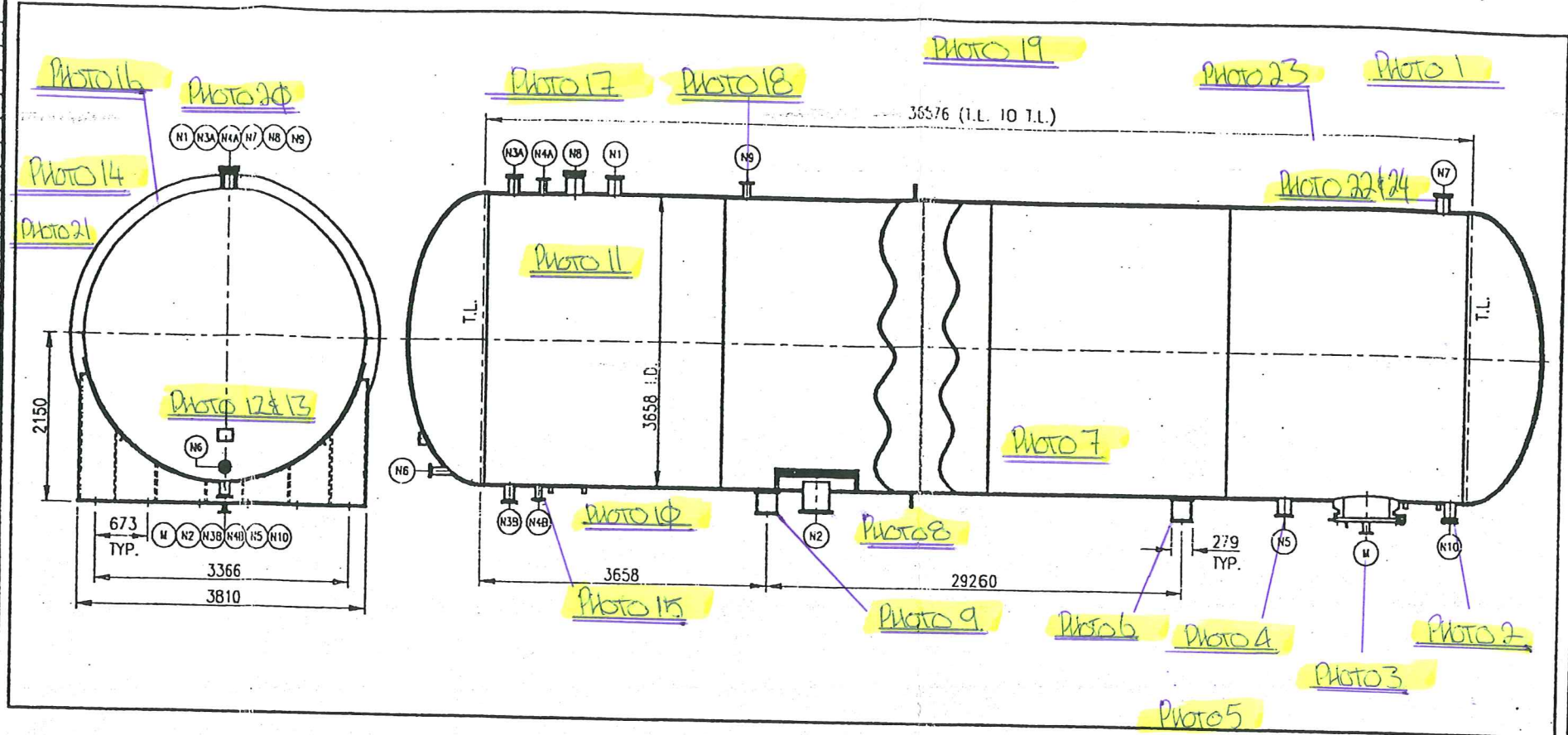
UT readings were taken on vessel end caps at the centre and at 12,3,6 & 9 o'clock positions. Lowest readings were recorded

ACCESSORIES AND ATTACHMENTS		STD DWG	TYPE	REQD		FURN. BY	INSTL. BY
				Yes	No	FAB	FAB
○ SUPPORT		CLIENT	SADD.	YES		YES	YES
○ VORTEX BREAKER		CLIENT		YES		YES	YES
○ MANWAY (DAVIT) CW COVER, BOLTS, GSKTS		FAB.					
○ LADDER CLIPS		CLIENT		YES		YES	YES
○ PLATFORM CLIPS		CLIENT					
○ PIPE SUPPORTS	REQ'D	CLIENT		YES		YES	YES
○ PIPE GUIDES	REQ'D	CLIENT		YES		YES	YES
○ INLET IMPINGEMENT PLATE		FAB		YES		YES	YES

NOTES

1. SADDLE ANCHOR BOLT SIZE: M 42 (VENDOR TO CONFIRM)
 BOLT HOLES AT FIXED END: 44.5 mm
 BOLT HOLES AT EXPANSION END: 44.5 mm x 76.2 mm LONG

2. BLIND C/W 2"-300# LWNF



MARK	QTY	SIZE	RATING	TYPE	h	Φ	DESCRIPTION
N10	1	3	300	RF			PURGE SW BLIND
N9	1	2	300	LWN			PRESSURE VENT
N8	1	8	150	RF			VENT CW BLIND & 2" NPT
N7	1	4	150	RF			RELIEF
N6	1	2	300	RF			THERMOWELL
N5	1	4	150	RF			TRANSFER
N4A/B	2	2	300	LWN			LEVEL INDICATION
N3A/B	2	3	300	RF			LEVEL CONTROL
N2	1	10	150	RF			LIQUID OUTLET
N1	1	4	150	RF			INLET

MATERIALS			
SHELL	SA-516-70(N)	HEADS	SA-516-70(N)
CLAD OR LINING		TYPE	2:1 SEMIELLPT.
SUPPORTS	SA-516-70	SADDLE	SA-516-70(N)
NOZZLES	FLANGE: SA-105(N)	NECK	SA-106B
MANHOLES/HANDHOLES	FORGINGS: SA-105(N) & SA335-LF2	NECK	SA-106B
GASKETS	COVER: SA-105(N)		
BOLTING	316 S/S SPIRAL WOUND - FLEXITALIC		
NUTS	PRESS: SA-193 B7 TEF. CTD		
INTERNALS	PIPE: SA-194 2H TEF. CTD	PLATE	SA-516-70
EXTERNALS	STRUCT: SA-516-70	BOLTING	TYPE 316 S/S
TRAYS	PLATE: SA-516-70	STRUCT:	
SUPPORT RINGS			
REINFORC. PADS	SA-516-70(N)	STIFF. RINGS	SA-516-70(N)

DESIGN DATA		
PRESSURE	DESIGN	OPERATING
INTERNAL	1724 kPa(ga) @ 65 °C	1380 kPa(ga) 42 °C
EXTERNAL	62. kPa(ga) @ 65 °C	- kPa(ga) @ - °C
WIND	SPEC. XA-A00-Z-15-0004	SEISMIC: SPEC. XA-A00-Z-15-0001
MIN. DESIGN METAL TEMP.	-27 °C	@ kPa(ga)
LIQ. SPECIFIC GRAVITY	0.464-0.868	SERVICE: SWEET
MAWP (INT) AT DESIGN TEMP. & CORR	1724 kPa(ga) LIMITED BY HEADS	
MAWP (EXT) AT DESIGN TEMP. & CORR	101 kPa(ga) LIMITED BY SHELL	
MAP (NEW & COLD)	1830 kPa(ga) LIMITED BY HEADS	
HYDROSTATIC TEST	2586 kPa(ga)	
CORROSION ALLOWANCE	SHELL & HEADS 1.6 mm	NOZZLES 1.6 mm
RADIOGRAPHY	100%	FIXED INTERNALS 3.2 mm
JOINT EFFICIENCY	PER CODE	REMOV INTERNALS 1.6 mm
POST WELD HEAT TREATMENT	N.A.	
IMPACT TEST	N.A.	PRODUCTION TEST PLATES: N.A.
CODE: ASME SECT. VIII, DIV. 1		STAMPED: Yes
INSPECTION BY TSSA, ONTARIO		CRN: REQUIRED YES
PAINTING SPEC. XA-A00-Y-15-0005		SURF. PREP. SPEC. XA-A00-Y-15-0005
INSULATION	NONE	
TOTAL WEIGHTS		
OPERATING: 372860 kg	EMPTY: 108870 kg	
TEST: 505300 kg	ERECTION: 108870 kg	
C1 97-12-17	ISSUED FOR PURCHASE	HP L.F. A.I.K.
B1 97-08-01	ISSUED FOR INQUIRY	AIK
A1 97-08-28	ISSUED FOR OFFICE CHECK	AIK
REV	DATE	DESCRIPTION
BY	CHK.	A/P.

NOTE: VESSELS D2100C AND D21000 ADDED.

SABLE OFFSHORE ENERGY PROJECT

MONENCO AGRA - BROWN&ROOT

Location: **POINT TUPPER FRACTIONATION PLANT**

Item Name: **PROPANE STORAGE VESSELS** Item No.: **D2100A/B/C**

Job No.: **MBR098820** Contract No.: **ZAPM2103**

Owner Drawing No. **98-CA-399735B** Origin **CALGARY**

Data Sheet No. **DS-D2100-01**