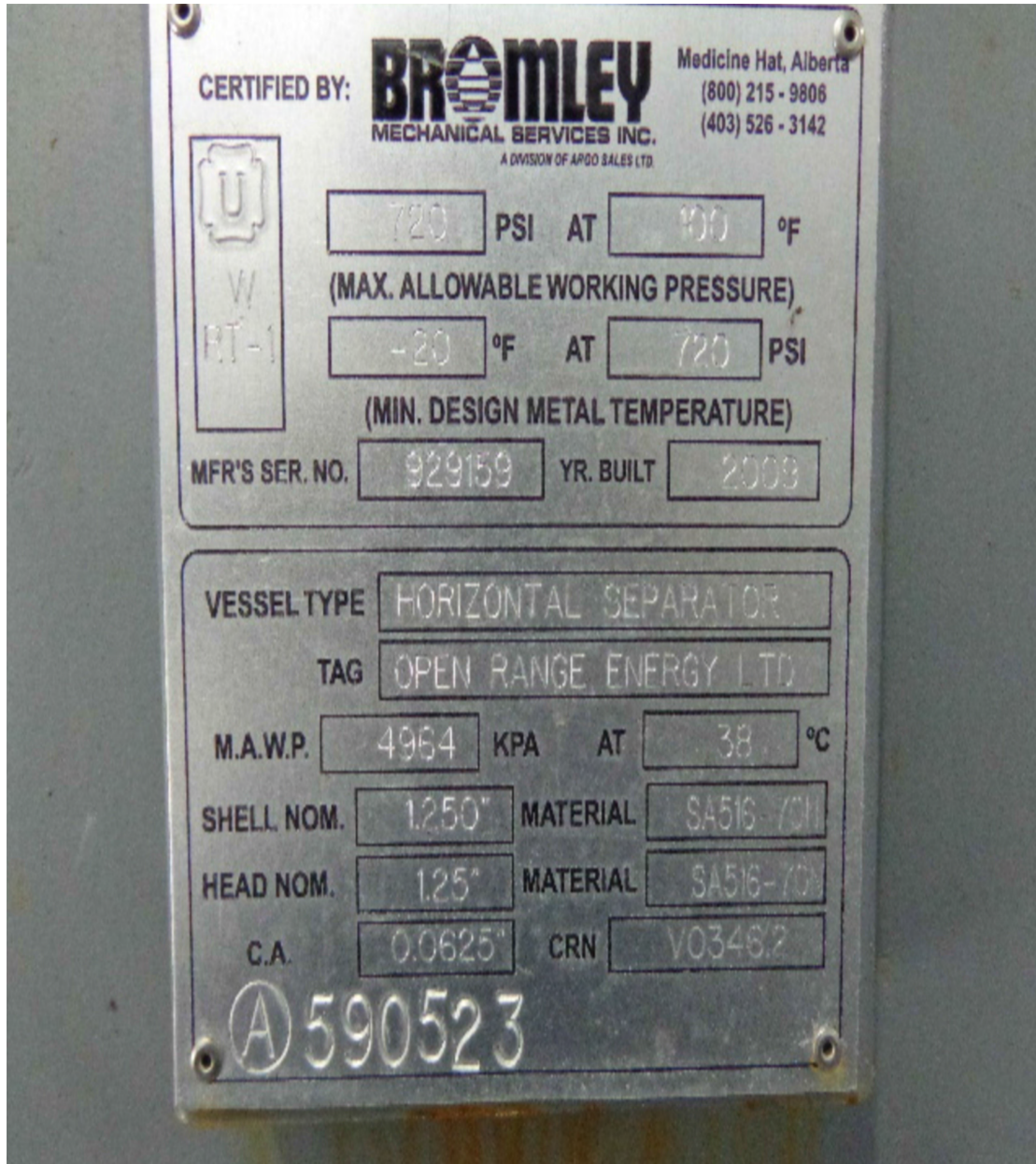


This pressure vessel is acceptable for continued use for 5 years from the date of this inspection under the current service conditions.

Bill Day, IPVI Certification 000232

<b>Client:</b>	PEYTO EXPLORATION & DEVELOPMENT CORP
<b>LSD:</b>	09-34-053-20W5M
<b>Drawing#:</b>	01
<b>Location:</b>	Galloway Gas Plant
<b>Regulatory#:</b>	<b>A0590523</b>
<b>Serial:</b>	929159
<b>CRN#:</b>	V0346.2
<b>Tag#:</b>	
<b>Date:</b>	05.22.2014
<b>Job#:</b>	<b>B02203</b>



<b>Client:</b>	PEYTO EXPLORATION & DEVELOPMENT CORP
<b>LSD:</b>	09-34-053-20W5M
<b>Drawing#:</b>	01A
<b>Location:</b>	Galloway Gas Plant
<b>Regulatory#:</b>	<b>A0590523</b>
<b>Serial:</b>	929159
<b>CRN#:</b>	V0346.2
<b>Tag#:</b>	
<b>Date:</b>	05.22.2014
<b>Job#:</b>	<b>B02203</b>



# PEYTO EXPLORATION & DEVELOPMENT CORP - ULTRASONIC CORROSION SURVEY

STATIC DATA					
Date:	05.22.2014	Vessel Name:	Horizontal Separator	Vessel Shell Nom:	
LSD:	09-34-053-20W5M	Regulatory#:	A0590523	Vessel Head Nom:	
Drawing#:	01	Report#:	1910	Tube Shell Nom:	
Inspector:	Bill Day	CRN#:	V0346.2	Tube Head Nom:	
Location:	Galloway Gas Plant	NB#:		Shell Side MAWP:	
District:	Sundance	Tag#:		Shell Side MAWT:	
Process:	Sweet	Natural Gas	Year Built:	2009	Tube Side MAWP:
PKG#:		Manufacture:	Bromley Mechanical Services	Tube Side MAWT:	
UT Tech.:	UT 1-1, Rev 3	Vessel CA:		Radiography:	-
Surface Cond:	Smooth Painted	Vessel OD:		Code Stamp:	U
Surface Temp:	45 °F	AB 506 Vessel Type:		Orientation:	Horizontal
Job#:	B02203	Manway:	NO	Insulated:	NO
Vessel Comment:	PSV SERIAL# 536366-1-A10 SET PRESSURE 720 PSI			HT:	NO

TML 01-05		UT SURVEY READINGS (in)						UT RESULT SUMMARY				
Type	Head	1	2	3	4	5	6	Nominal	Minimum	Average	T-Min	CA
Shape	Ellipsoidal	1.273	1.255	1.263	1.261	1.265	1.261	1.250 in	1.255 in	1.263 in		
Side	Shell											
OD	60 in											
Code	ASME Sec VIII, Div 1											
Material	SA 516 - 70											
Stress												
Efficiency												
Date	May-14											
Previous												
Current	May-14	1.273	1.255	1.263	1.261	1.265	1.261	UT ANALYSIS OF LOW MINIMUM READING				
Concerns		All Readings Acceptable						% Below Nom.	0.00	Short Term C.R.		
								% Below C.A.		Long Term C.R.		
								Below T-Min	NO	Remaining Life		
								Int. Corrosion	NO	Assumed Nominal NO		
								Int. Erosion	NO	Assumed Material NO		
Comments	May-14: HIGH READING 1.273"							Inspector Reviewed				

TML 01-10		UT SURVEY READINGS (in)						UT RESULT SUMMARY				
Type	Shell	1	2	3	4	5	6	Nominal	Minimum	Average	T-Min	CA
Shape	Cylindrical	1.274	1.274	1.273	1.275	1.275	1.275	1.250 in	1.273 in	1.274 in		
Side	Shell											
OD	60 in											
Code	ASME Sec VIII, Div 1											
Material	SA 516 - 70											
Stress												
Efficiency												
Date	May-14											
Previous												
Current	May-14	1.274	1.274	1.273	1.275	1.275	1.275	UT ANALYSIS OF LOW MINIMUM READING				
Concerns		All Readings Acceptable						% Below Nom.	0.00	Short Term C.R.		
								% Below C.A.		Long Term C.R.		
								Below T-Min	NO	Remaining Life		
								Int. Corrosion	NO	Assumed Nominal NO		
								Int. Erosion	NO	Assumed Material NO		
Comments	May-14: HIGH READING 1.275							Inspector Reviewed				

TML 01-15		UT SURVEY READINGS (in)						UT RESULT SUMMARY				
Type	Shell	1	2	3	4	5	6	Nominal	Minimum	Average	T-Min	CA
Shape	Cylindrical	1.280	1.281	1.282	1.282	1.287	1.285	1.250 in	1.280 in	1.283 in		
Side	Shell											
OD	60 in											
Code	ASME Sec VIII, Div 1											
Material	SA 516 - 70											
Stress												
Efficiency												
Date	May-14											
Previous												
Current	May-14	1.280	1.281	1.282	1.282	1.287	1.285	UT ANALYSIS OF LOW MINIMUM READING				
Concerns		All Readings Acceptable						% Below Nom.	0.00	Short Term C.R.		
								% Below C.A.		Long Term C.R.		
								Below T-Min	NO	Remaining Life		
								Int. Corrosion	NO	Assumed Nominal NO		
								Int. Erosion	NO	Assumed Material NO		
Comments	May-14: HIGH READING 1.287"							Inspector Reviewed				



# PEYTO EXPLORATION & DEVELOPMENT CORP - ULTRASONIC CORROSION SURVEY

STATIC DATA			
Date:	05.22.2014	Vessel Name:	Horizontal Separator
Regulatory#:	A0590523	Location:	Galloway Gas Plant
LSD:	09-34-053-20W5M	Job#:	B02203
Drawing#:	01	CRN#:	V0346.2

TML	01-20			UT SURVEY READINGS (in)						UT RESULT SUMMARY				
Type	Shell	Date	May-14	1	2	3	4	5	6	Nominal	Minimum	Average	T-Min	CA
Shape	Cylindrical			1.284	1.288	1.278	1.283	1.281	1.283	1.250 in	1.278 in	1.283 in		
Side	Shell	Previous		All Readings Acceptable						UT ANALYSIS OF LOW MINIMUM READING				
OD	60 in	Current	May-14	1.284	1.288	1.278	1.283	1.281	1.283	% Below Nom.	0.00	Short Term C.R.		
Code	ASME Sec VIII, Div 1	Concerns		All Readings Acceptable						% Below C.A.		Long Term C.R.		
Material	SA 516 - 70									Below T-Min	NO	Remaining Life		
Stress										Int. Corrosion	NO	Assumed Nominal NO		
Efficiency										Int. Erosion	NO	Assumed Material NO		
Comments				May-14: HIGH READING 1.288"						Inspector Reviewed				

TML	01-25			UT SURVEY READINGS (in)						UT RESULT SUMMARY				
Type	Shell	Date	May-14	1	2	3	4	5	6	Nominal	Minimum	Average	T-Min	CA
Shape	Cylindrical			1.280	1.278	1.281	1.280	1.278	1.279	1.250 in	1.278 in	1.279 in		
Side	Shell	Previous		All Readings Acceptable						UT ANALYSIS OF LOW MINIMUM READING				
OD	60 in	Current	May-14	1.280	1.278	1.281	1.280	1.278	1.279	% Below Nom.	0.00	Short Term C.R.		
Code	ASME Sec VIII, Div 1	Concerns		All Readings Acceptable						% Below C.A.		Long Term C.R.		
Material	SA 516 - 70									Below T-Min	NO	Remaining Life		
Stress										Int. Corrosion	NO	Assumed Nominal NO		
Efficiency										Int. Erosion	NO	Assumed Material NO		
Comments				May-14: HIGH READING 1.281"						Inspector Reviewed				

TML	01-30			UT SURVEY READINGS (in)						UT RESULT SUMMARY				
Type	Shell	Date	May-14	1	2	3	4	5	6	Nominal	Minimum	Average	T-Min	CA
Shape	Cylindrical			1.274	1.275	1.275	1.270	1.270	1.269	1.250 in	1.269 in	1.272 in		
Side	Shell	Previous		All Readings Acceptable						UT ANALYSIS OF LOW MINIMUM READING				
OD	60 in	Current	May-14	1.274	1.275	1.275	1.270	1.270	1.269	% Below Nom.	0.00	Short Term C.R.		
Code	ASME Sec VIII, Div 1	Concerns		All Readings Acceptable						% Below C.A.		Long Term C.R.		
Material	SA 516 - 70									Below T-Min	NO	Remaining Life		
Stress										Int. Corrosion	NO	Assumed Nominal NO		
Efficiency										Int. Erosion	NO	Assumed Material NO		
Comments				May-14: HIGH READING 1.275"						Inspector Reviewed				

TML	01-35			UT SURVEY READINGS (in)						UT RESULT SUMMARY				
Type	Head	Date	May-14	1	2	3	4	5	6	Nominal	Minimum	Average	T-Min	CA
Shape	Ellipsoidal			1.235	1.243	1.245	1.245	1.246	1.246	1.250 in	1.235 in	1.243 in		
Side	Shell	Previous		All Readings Acceptable						UT ANALYSIS OF LOW MINIMUM READING				
OD	60 in	Current	May-14	1.235	1.243	1.245	1.245	1.246	1.246	% Below Nom.	1.20	Short Term C.R.		
Code	ASME Sec VIII, Div 1	Concerns		All Readings Acceptable						% Below C.A.		Long Term C.R.		
Material	SA 516 - 70									Below T-Min	NO	Remaining Life		
Stress										Int. Corrosion	NO	Assumed Nominal NO		
Efficiency										Int. Erosion	NO	Assumed Material NO		
Comments				May-14: HIGH READING 1.246"						Inspector Reviewed				

See The Head Minimum Required Thickness Calculation on the last page of this report.



# PEYTO EXPLORATION & DEVELOPMENT CORP - ULTRASONIC CORROSION SURVEY

STATIC DATA			
Date:	05.22.2014	Vessel Name:	Horizontal Separator
Regulatory#:	A0590523	Location:	Galloway Gas Plant
LSD:	09-34-053-20W5M	Serial:	929159
Drawing#:	01	Job#:	B02203
		CRN#:	V0346.2

TML	01-40	UT SURVEY READINGS (in)						UT RESULT SUMMARY																								
Type	Boot Shell	1	2	3	4	5	6	Nominal	Minimum	Average	T-Min	CA																				
Shape	Cylindrical	1.008	1.011	1.012	1.013	1.015	1.014	1.031 in	1.008 in	1.012 in																						
Side	Shell	<table border="1"> <thead> <tr> <th colspan="3">UT ANALYSIS OF LOW MINIMUM READING</th> </tr> </thead> <tbody> <tr> <td>% Below Nom.</td> <td>2.23</td> <td>Short Term C.R.</td> </tr> <tr> <td>% Below C.A.</td> <td></td> <td>Long Term C.R.</td> </tr> <tr> <td>Below T-Min</td> <td>NO</td> <td>Remaining Life</td> </tr> <tr> <td>Int. Corrosion</td> <td>NO</td> <td>Assumed Nominal</td> <td>NO</td> </tr> <tr> <td>Int. Erosion</td> <td>NO</td> <td>Assumed Material</td> <td>NO</td> </tr> </tbody> </table>											UT ANALYSIS OF LOW MINIMUM READING			% Below Nom.	2.23	Short Term C.R.	% Below C.A.		Long Term C.R.	Below T-Min	NO	Remaining Life	Int. Corrosion	NO	Assumed Nominal	NO	Int. Erosion	NO	Assumed Material	NO
UT ANALYSIS OF LOW MINIMUM READING																																
% Below Nom.	2.23	Short Term C.R.																														
% Below C.A.		Long Term C.R.																														
Below T-Min	NO	Remaining Life																														
Int. Corrosion	NO	Assumed Nominal	NO																													
Int. Erosion	NO	Assumed Material	NO																													
OD	16 in	<p>See the Boot Shell Minimum Thickness calculation on the last page of this report.</p>																														
Code	ASME Sec VIII, Div 1	<p>Inspector Reviewed</p>																														
Material	SA 516 - 70	<p>Comments May-14: HIGH READING 1.015"</p>																														
Stress																																
Efficiency																																

TML	01-45	UT SURVEY READINGS (in)						UT RESULT SUMMARY																								
Type	Boot Shell	1	2	3	4	5	6	Nominal	Minimum	Average	T-Min	CA																				
Shape	Cylindrical	1.010	1.010	1.013	1.013	1.009	1.011	1.031 in	1.009 in	1.011 in																						
Side	Shell	<table border="1"> <thead> <tr> <th colspan="3">UT ANALYSIS OF LOW MINIMUM READING</th> </tr> </thead> <tbody> <tr> <td>% Below Nom.</td> <td>2.13</td> <td>Short Term C.R.</td> </tr> <tr> <td>% Below C.A.</td> <td></td> <td>Long Term C.R.</td> </tr> <tr> <td>Below T-Min</td> <td>NO</td> <td>Remaining Life</td> </tr> <tr> <td>Int. Corrosion</td> <td>NO</td> <td>Assumed Nominal</td> <td>NO</td> </tr> <tr> <td>Int. Erosion</td> <td>NO</td> <td>Assumed Material</td> <td>NO</td> </tr> </tbody> </table>											UT ANALYSIS OF LOW MINIMUM READING			% Below Nom.	2.13	Short Term C.R.	% Below C.A.		Long Term C.R.	Below T-Min	NO	Remaining Life	Int. Corrosion	NO	Assumed Nominal	NO	Int. Erosion	NO	Assumed Material	NO
UT ANALYSIS OF LOW MINIMUM READING																																
% Below Nom.	2.13	Short Term C.R.																														
% Below C.A.		Long Term C.R.																														
Below T-Min	NO	Remaining Life																														
Int. Corrosion	NO	Assumed Nominal	NO																													
Int. Erosion	NO	Assumed Material	NO																													
OD	16 in	<p>See the Boot Shell Minimum Thickness calculation on the last page of this report.</p>																														
Code	ASME Sec VIII, Div 1	<p>Inspector Reviewed</p>																														
Material	SA 516 - 70	<p>Comments May-14: HIGH READING 1.013"</p>																														
Stress																																
Efficiency																																

TML	01-50	UT SURVEY READINGS (in)						UT RESULT SUMMARY																								
Type	Boot Head	1	2	3	4	5	6	Nominal	Minimum	Average	T-Min	CA																				
Shape	Ellipsoidal	0.941	0.941	0.952	0.962	0.953	1.050	1.000 in	0.941 in	0.966 in																						
Side	Shell	<table border="1"> <thead> <tr> <th colspan="3">UT ANALYSIS OF LOW MINIMUM READING</th> </tr> </thead> <tbody> <tr> <td>% Below Nom.</td> <td>5.90</td> <td>Short Term C.R.</td> </tr> <tr> <td>% Below C.A.</td> <td></td> <td>Long Term C.R.</td> </tr> <tr> <td>Below T-Min</td> <td>NO</td> <td>Remaining Life</td> </tr> <tr> <td>Int. Corrosion</td> <td>NO</td> <td>Assumed Nominal</td> <td>NO</td> </tr> <tr> <td>Int. Erosion</td> <td>NO</td> <td>Assumed Material</td> <td>NO</td> </tr> </tbody> </table>											UT ANALYSIS OF LOW MINIMUM READING			% Below Nom.	5.90	Short Term C.R.	% Below C.A.		Long Term C.R.	Below T-Min	NO	Remaining Life	Int. Corrosion	NO	Assumed Nominal	NO	Int. Erosion	NO	Assumed Material	NO
UT ANALYSIS OF LOW MINIMUM READING																																
% Below Nom.	5.90	Short Term C.R.																														
% Below C.A.		Long Term C.R.																														
Below T-Min	NO	Remaining Life																														
Int. Corrosion	NO	Assumed Nominal	NO																													
Int. Erosion	NO	Assumed Material	NO																													
OD	16 in	<p>See the Boot Head Minimum Thickness calculation on the last page of this report.</p>																														
Code	ASME Sec VIII, Div 1	<p>Inspector Reviewed</p>																														
Material	SA 516 - 70	<p>Comments May-14: HIGH READING 1.05" ASSUMED NOMINAL &amp; MATERIAL</p>																														
Stress																																
Efficiency																																

TML	01-55	UT SURVEY READINGS (in)						UT RESULT SUMMARY																								
Type	Nozzle	1	2	3	4	5	6	Nominal	Minimum	Average	T-Min	CA																				
Shape	90° Elbow	0.349	0.345	0.341	0.343	0.342	0.341	0.343 in	0.341 in	0.344 in																						
Side	Shell	<table border="1"> <thead> <tr> <th colspan="3">UT ANALYSIS OF LOW MINIMUM READING</th> </tr> </thead> <tbody> <tr> <td>% Below Nom.</td> <td>0.58</td> <td>Short Term C.R.</td> </tr> <tr> <td>% Below C.A.</td> <td></td> <td>Long Term C.R.</td> </tr> <tr> <td>Below T-Min</td> <td>NO</td> <td>Remaining Life</td> </tr> <tr> <td>Int. Corrosion</td> <td>NO</td> <td>Assumed Nominal</td> <td>NO</td> </tr> <tr> <td>Int. Erosion</td> <td>NO</td> <td>Assumed Material</td> <td>NO</td> </tr> </tbody> </table>											UT ANALYSIS OF LOW MINIMUM READING			% Below Nom.	0.58	Short Term C.R.	% Below C.A.		Long Term C.R.	Below T-Min	NO	Remaining Life	Int. Corrosion	NO	Assumed Nominal	NO	Int. Erosion	NO	Assumed Material	NO
UT ANALYSIS OF LOW MINIMUM READING																																
% Below Nom.	0.58	Short Term C.R.																														
% Below C.A.		Long Term C.R.																														
Below T-Min	NO	Remaining Life																														
Int. Corrosion	NO	Assumed Nominal	NO																													
Int. Erosion	NO	Assumed Material	NO																													
OD	2.375 in SCH 160	<p>Thickness exceeds the Manufacturer's Minimum Required Thickness for new pipe.</p>																														
Code	ASME Sec VIII, Div 1	<p>Inspector Reviewed</p>																														
Material	SA 234 - WPB	<p>Comments May-14: HIGH READING 0.349"</p>																														
Stress																																
Efficiency																																



# PEYTO EXPLORATION & DEVELOPMENT CORP - ULTRASONIC CORROSION SURVEY

STATIC DATA			
Date:	05.22.2014	Vessel Name:	Horizontal Separator
Regulatory#:	A0590523	Location:	Galloway Gas Plant
LSD:	09-34-053-20W5M	Job#:	B02203
Drawing#:	01	CRN#:	V0346.2

TML	01-57	Date	UT SURVEY READINGS (in)	UT RESULT SUMMARY
Type	Nozzle	May-14	1 2 3 4 5 6 0.436 0.416 0.416 0.425 0.437 0.443	Nominal 0.438 in Minimum 0.416 in Average 0.429 in T-Min CA
Shape	Cylindrical	May-14	0.436 0.416 0.416 0.425 0.437 0.443	<b>UT ANALYSIS OF LOW MINIMUM READING</b> % Below Nom. 5.02 Short Term C.R. % Below C.A. Long Term C.R. Below T-Min NO Remaining Life Int. Corrosion NO Assumed Nominal NO Int. Erosion NO Assumed Material NO
Side	Shell			
OD	3.5 in SCH 160	Previous	Current	
Code	ASME Sec VIII, Div 1	Concerns	All Readings Acceptable	
Material	SA 106 - B	<b>Thickness exceeds the Manufacturer's Minimum Required</b> <b>Thickness for new pipe.</b>		
Stress		Comments May-14: HIGH READING 0.443"		
Efficiency				

TML	01-60	Date	UT SURVEY READINGS (in)	UT RESULT SUMMARY
Type	Nozzle	May-14	1 2 3 4 5 6 0.436 0.433 0.441 0.435 0.435 0.437	Nominal 0.438 in Minimum 0.433 in Average 0.436 in T-Min CA
Shape	Cylindrical	May-14	0.436 0.433 0.441 0.435 0.435 0.437	<b>UT ANALYSIS OF LOW MINIMUM READING</b> % Below Nom. 1.14 Short Term C.R. % Below C.A. Long Term C.R. Below T-Min NO Remaining Life Int. Corrosion NO Assumed Nominal NO Int. Erosion NO Assumed Material NO
Side	Shell			
OD	3.5 in SCH 160	Previous	Current	
Code	ASME Sec VIII, Div 1	Concerns	All Readings Acceptable	
Material	SA 106 - B	<b>Thickness exceeds the Manufacturer's Minimum Required</b> <b>Thickness for new pipe.</b>		
Stress		Comments May-14: HIGH READING 0.441"		
Efficiency				

TML	01-65	Date	UT SURVEY READINGS (in)	UT RESULT SUMMARY
Type	Nozzle	May-14	1 2 3 4 5 6 0.310 0.308 0.298 0.304 0.308 0.311	Nominal 0.343 in Minimum 0.298 in Average 0.306 in T-Min CA
Shape	90° Elbow	May-14	0.310 0.308 0.298 0.304 0.308 0.311	<b>UT ANALYSIS OF LOW MINIMUM READING</b> % Below Nom. 13.12 Short Term C.R. % Below C.A. Long Term C.R. Below T-Min NO Remaining Life Int. Corrosion NO Assumed Nominal NO Int. Erosion NO Assumed Material NO
Side	Shell			
OD	2.375 in SCH 160	Previous	Current	
Code	ASME Sec VIII, Div 1	Concerns	All Readings Acceptable	
Material	SA 234 - WPB	<b>Thickness is 0.002" under the Manufacturer's Minimum Required</b> <b>Thickness for New Pipe. Reassess at the next UT Inspection.</b>		
Stress		Comments May-14: HIGH READING 0.311"		
Efficiency				

TML	01-70	Date	UT SURVEY READINGS (in)	UT RESULT SUMMARY
Type	Nozzle	May-14	1 2 3 4 5 6 0.326 0.325 0.327 0.327 0.331 0.335	Nominal 0.343 in Minimum 0.325 in Average 0.328 in T-Min CA
Shape	90° Elbow	May-14	0.326 0.325 0.327 0.327 0.331 0.335	<b>UT ANALYSIS OF LOW MINIMUM READING</b> % Below Nom. 5.25 Short Term C.R. % Below C.A. Long Term C.R. Below T-Min NO Remaining Life Int. Corrosion NO Assumed Nominal NO Int. Erosion NO Assumed Material NO
Side	Shell			
OD	2.375 in SCH 160	Previous	Current	
Code	ASME Sec VIII, Div 1	Concerns	All Readings Acceptable	
Material	SA 234 - WPB	<b>Thickness exceeds the Manufacturer's Minimum Required</b> <b>Thickness for new pipe.</b>		
Stress		Comments May-14: HIGH READING 0.335"		
Efficiency				



# PEYTO EXPLORATION & DEVELOPMENT CORP - ULTRASONIC CORROSION SURVEY

## STATIC DATA

Date:	05.22.2014	Vessel Name:	Horizontal Separator	Regulatory#:	A0590523
LSD:	09-34-053-20W5M	Location:	Galloway Gas Plant	Serial:	929159
Drawing#:	01	Job#:	B02203	CRN#:	V0346.2

TML 01-75	
Type	Piping
Shape	90° Elbow
Side	Shell
OD	8.625 in SCH 40
Code	ASME B.31.3
Material	SA 234 - WPB
Stress	
Efficiency	

Date	May-14
Previous	
Current	
Concerns	

UT SURVEY READINGS (in)						
1	2	3	4	5	6	
0.366	0.354	0.352	0.352	0.357	0.356	
0.366	0.354	0.352	0.352	0.357	0.356	

Comments May-14: HIGH READING 0.366"  
ASSUMED NOMINAL

Inspector Reviewed

UT RESULT SUMMARY				
Nominal	Minimum	Average	T-Min	CA
0.322 in	0.352 in	0.356 in		0.0402 in
UT ANALYSIS OF LOW MINIMUM READING				
% Below Nom.	0.00	Short Term C.R.		
% Below C.A.	0.00	Long Term C.R.		
Below T-Min	NO	Remaining Life		
Int. Corrosion	NO	Assumed Nominal	NO	
Int. Erosion	NO	Assumed Material	NO	

TML 01-77	
Type	Piping
Shape	90° Elbow
Side	Shell
OD	12.75 in SCH STD
Code	ASME B.31.3
Material	SA 234 - WPB
Stress	
Efficiency	

Date	May-14
Previous	
Current	
Concerns	

UT SURVEY READINGS (in)						
1	2	3	4	5	6	
0.377	0.374	0.369	0.373	0.377	0.390	
0.377	0.374	0.369	0.373	0.377	0.390	

Thickness exceeds the Manufacturer's Minimum Required  
Thickness for new pipe.

Comments May-14: HIGH READING 0.390"  
ASSUMED NOMINAL

Inspector Reviewed

UT RESULT SUMMARY				
Nominal	Minimum	Average	T-Min	CA
0.375 in	0.369 in	0.377 in		0.0469 in
UT ANALYSIS OF LOW MINIMUM READING				
% Below Nom.	1.60	Short Term C.R.		
% Below C.A.	0.00	Long Term C.R.		
Below T-Min	NO	Remaining Life		
Int. Corrosion	NO	Assumed Nominal	NO	
Int. Erosion	NO	Assumed Material	NO	

TML 01-80	
Type	Piping
Shape	90° Elbow
Side	Shell
OD	12.75 in SCH STD
Code	ASME B.31.3
Material	SA 234 - WPB
Stress	
Efficiency	

Date	May-14
Previous	
Current	
Concerns	

UT SURVEY READINGS (in)						
1	2	3	4	5	6	
0.388	0.389	0.373	0.379	0.376	0.368	
0.388	0.389	0.373	0.379	0.376	0.368	

Thickness exceeds the Manufacturer's Minimum Required  
Thickness for new pipe.

Comments May-14: HIGH READING 0.389"  
ASSUMED NOMINAL

Inspector Reviewed

UT RESULT SUMMARY				
Nominal	Minimum	Average	T-Min	CA
0.375 in	0.368 in	0.379 in		0.0469 in
UT ANALYSIS OF LOW MINIMUM READING				
% Below Nom.	1.87	Short Term C.R.		
% Below C.A.	0.00	Long Term C.R.		
Below T-Min	NO	Remaining Life		
Int. Corrosion	NO	Assumed Nominal	NO	
Int. Erosion	NO	Assumed Material	NO	

TML 01-85	
Type	Piping
Shape	90° Elbow
Side	Shell
OD	12.75 in SCH STD
Code	ASME B.31.3
Material	SA 234 - WPB
Stress	
Efficiency	

Date	May-14
Previous	
Current	
Concerns	

UT SURVEY READINGS (in)						
1	2	3	4	5	6	
0.374	0.371	0.383	0.388	0.379	0.369	
0.374	0.371	0.383	0.388	0.379	0.369	

Thickness exceeds the Manufacturer's Minimum Required  
Thickness for new pipe.

Comments May-14: HIGH READING 0.388"  
ASSUMED NOMINAL

Inspector Reviewed

UT RESULT SUMMARY				
Nominal	Minimum	Average	T-Min	CA
0.375 in	0.369 in	0.377 in		0.0469 in
UT ANALYSIS OF LOW MINIMUM READING				
% Below Nom.	1.60	Short Term C.R.		
% Below C.A.	0.00	Long Term C.R.		
Below T-Min	NO	Remaining Life		
Int. Corrosion	NO	Assumed Nominal	NO	
Int. Erosion	NO	Assumed Material	NO	



# PEYTO EXPLORATION & DEVELOPMENT CORP - ULTRASONIC CORROSION SURVEY

STATIC DATA			
Date:	05.22.2014	Vessel Name:	Horizontal Separator
Regulatory#:	A0590523	Location:	Galloway Gas Plant
LSD:	09-34-053-20W5M	Job#:	B02203
Drawing#:	01	CRN#:	V0346.2

TML	01-90		UT SURVEY READINGS (in)	UT RESULT SUMMARY	
Type	Piping	Date	1 2 3 4 5 6	Nominal Minimum Average T-Min CA	
Shape	90° Elbow	May-14	0.146 0.150 0.153 0.151 0.151 0.152	0.154 in 0.146 in 0.150 in 0.0192 in	
Side	Shell	Previous		<b>UT ANALYSIS OF LOW MINIMUM READING</b>	
OD	2.375 in SCH 40	Current	0.146 0.150 0.153 0.151 0.151 0.152	% Below Nom. 5.19 Short Term C.R.	% Below C.A. 0.00 Long Term C.R.
Code	ASME B.31.3	Concerns	All Readings Acceptable	Below T-Min NO Remaining Life	Int. Corrosion NO Assumed Nominal NO
Material	SA 234 - WPB			Int. Erosion NO Assumed Material NO	
Stress					
Efficiency					
<p style="color: blue;">Thickness exceeds the Manufacturer's Minimum Required Thickness for new pipe.</p> <p>Comments May-14: HIGH READING 0.153" ASSUMED NOMINAL</p>			 <b>Inspector Reviewed</b>		

TML	01-95		UT SURVEY READINGS (in)	UT RESULT SUMMARY	
Type	Piping	Date	1 2 3 4 5 6	Nominal Minimum Average T-Min CA	
Shape	90° Elbow	May-14	0.155 0.155 0.157 0.150 0.150 0.147	0.154 in 0.147 in 0.152 in 0.0192 in	
Side	Shell	Previous		<b>UT ANALYSIS OF LOW MINIMUM READING</b>	
OD	2.375 in SCH 40	Current	0.155 0.155 0.157 0.150 0.150 0.147	% Below Nom. 4.55 Short Term C.R.	% Below C.A. 0.00 Long Term C.R.
Code	ASME B.31.3	Concerns	All Readings Acceptable	Below T-Min NO Remaining Life	Int. Corrosion NO Assumed Nominal NO
Material	SA 234 - WPB			Int. Erosion NO Assumed Material NO	
Stress					
Efficiency					
<p style="color: blue;">Thickness exceeds the Manufacturer's Minimum Required Thickness for new pipe.</p> <p>Comments May-14: HIGH READING 0.157" ASSUMED NOMINAL</p>			 <b>Inspector Reviewed</b>		

TML	01-97		UT SURVEY READINGS (in)	UT RESULT SUMMARY	
Type	Piping	Date	1 2 3 4 5 6	Nominal Minimum Average T-Min CA	
Shape	90° Elbow	May-14	0.155 0.156 0.156 0.155 0.156 0.155	0.154 in 0.155 in 0.156 in 0.0192 in	
Side	Shell	Previous		<b>UT ANALYSIS OF LOW MINIMUM READING</b>	
OD	2.375 in SCH 40	Current	0.155 0.156 0.156 0.155 0.156 0.155	% Below Nom. 0.00 Short Term C.R.	% Below C.A. 0.00 Long Term C.R.
Code	ASME B.31.3	Concerns	All Readings Acceptable	Below T-Min NO Remaining Life	Int. Corrosion NO Assumed Nominal NO
Material	SA 234 - WPB			Int. Erosion NO Assumed Material NO	
Stress					
Efficiency					
<p>Comments May-14: HIGH READING 0.156" ASSUMED NOMINAL</p>			 <b>Inspector Reviewed</b>		



Calculations: (Day Consulting Inc.)

**Elliptical Head Tmin Calculation**

$$T_{min} = \frac{PD}{2SE - 0.2P} + CA$$

$$T_{min} = \frac{720 \times 57.5}{(2 \times 20000 \times 1) - (0.2 \times 720)} + 0.0625$$

$$T_{min} = \frac{41400.0}{39856} + 0.0625$$

**Tmin = 1.0387** Inches

**Tmin+CA = 1.1012** Inches

SA-516-70N
Inside Diameter in Inches → 57.5

**Shell Tmin Calculation Section VIII Div 1 Internal Pressure**

$$t_{min} = \frac{PR}{SE - (0.6XP)} + CA$$

$$t_{min} = \frac{720 \times 28.75}{(20000 \times 1) - (0.6 \times 720)} + 0.0625$$

$$t_{min} = \frac{20700.00}{19568} + 0.0625$$

Circumferental Stress  
Longitudinal Joints

**Tmin= 1.058** Inches

**Tmin + CA= 1.120** Inches

SA-106-B Seamless Pipe
Inside Diameter inches → 57.5

Water Boot Head

**Elliptical Head Tmin Calculation**

$$T_{min} = \frac{PD}{2SE - 0.2P} + CA$$

$$T_{min} = \frac{720 \times 13.938}{(2 \times 17100 \times 1) - (0.2 \times 720)} + 0.0625$$

$$T_{min} = \frac{10035.4}{34056} + 0.0625$$

**Tmin = 0.2947** Inches

**Tmin+CA = 0.3572** Inches

SA-234-WPB
Inside Diameter in Inches → 13.938

Water Boot Shell

**Shell Tmin Calculation Section VIII Div 1 Internal Pressure**

$$t_{min} = \frac{PR}{SE - (0.6XP)} + CA$$

$$t_{min} = \frac{720 \times 6.969}{(17100 \times 1) - (0.6 \times 720)} + 0.0625$$

$$t_{min} = \frac{5017.68}{16668} + 0.0625$$

Circumferental Stress  
Longitudinal Joints

**Tmin= 0.301** Inches

**Tmin + CA= 0.364** Inches

SA-106-B Seamless Pipe
Inside Diameter inches → 13.938