



# Ultrasonic Corrosion Survey

Survey Name: BARRICK ENERGY INC.

**LSD:** 06-08-069-21W5      **Vessel Number:** A2825892      **Manufacturer:** PLAINS OIL LTD.      **Survey Date:** 1/31/2010  
**Dwg#:** 309      **Vessel Name:** LINE HEATER      **Serial Number:** 1216H1      **Inspector:** MWS  
**Survey Name:** BARRICK ENERGY INC.      **Year Built:** 1994      **Shell MAWP PSI:** 5 MAWT\_F: 200      **Process:** SWEET  
**District Unit:** FIELD      **Tag Number:** -      **Tube MAWP PSI:** 5000 MAWT\_F: 200      **Project Number:** C40290  
**Location:** STURGEON LAKE SOUTH      **CRN:** 2102.2      **Vessel CA:** 0.125  
**Skid:** PKG55539

[\[Click here for Vessel Drawing -- 06-08-069-21W5 -309.pdf\]](#)

Band	Description		Readings						Year	Avg	Min	Recommended Next Inspection	Nominal	CA	T-Min	Recommended Retirement Date
			1	2	3	4	5	6								
309-05	Head	Baseline	0.402	0.403	0.403	0.405	0.405	0.406	2010	0.404	0.402	2011	0.3750	0.125	0.0102	2030
Shape	Flat shell	Previous										Comments:				
OD	72	Current	0.402	0.403	0.403	0.405	0.405	0.406	2010	0.404	0.402	MATERIAL & NOMINAL ASSUMED				
Spec	VIII Div 1	Short Term Loss MPY:														
Material	SA 516 - 70	Long Term Loss MPY:						0.000	OK							
309-10	Shell	Baseline	0.257	0.258	0.259	0.258	0.259	0.262	2010	0.259	0.257	2011	0.2500	0.125	0.0102	2030
Shape	Cylindrical shell	Previous										Comments:				
OD	72	Current	0.257	0.258	0.259	0.258	0.259	0.262	2010	0.259	0.257	MATERIAL & NOMINAL ASSUMED				
Spec	VIII Div 1	Short Term Loss MPY:														
Material	SA 516 - 70	Long Term Loss MPY:						0.000	OK							
309-15	Shell	Baseline	0.261	0.264	0.266	0.269	0.265	0.262	2010	0.265	0.261	2011	0.2500	0.125	0.0102	2030
Shape	Cylindrical shell	Previous										Comments:				
OD	72	Current	0.261	0.264	0.266	0.269	0.265	0.262	2010	0.265	0.261	MATERIAL & NOMINAL ASSUMED				
Spec	VIII Div 1	Short Term Loss MPY:														
Material	SA 516 - 70	Long Term Loss MPY:						0.000	OK							
309-20	Shell	Baseline	0.270	0.272	0.270	0.271	0.272	0.272	2010	0.271	0.270	2011	0.2500	0.125	0.0102	2030
Shape	Cylindrical shell	Previous										Comments:				
OD	72	Current	0.270	0.272	0.270	0.271	0.272	0.272	2010	0.271	0.270	MATERIAL & NOMINAL ASSUMED				
Spec	VIII Div 1	Short Term Loss MPY:														
Material	SA 516 - 70	Long Term Loss MPY:						0.000	OK							
309-25	Shell	Baseline	0.275	0.278	0.279	0.276	0.278	0.274	2010	0.277	0.274	2011	0.2500	0.125	0.0102	2030
Shape	Cylindrical shell	Previous										Comments:				
OD	72	Current	0.275	0.278	0.279	0.276	0.278	0.274	2010	0.277	0.274	MATERIAL & NOMINAL ASSUMED				
Spec	VIII Div 1	Short Term Loss MPY:														
Material	SA 516 - 70	Long Term Loss MPY:						0.000	OK							
309-30	Shell	Baseline	0.262	0.263	0.260	0.262	0.263	0.265	2010	0.263	0.260	2011	0.2500	0.125	0.0102	2030
Shape	Cylindrical shell	Previous										Comments:				

<b>OD</b>	72	<b>Current</b>	0.262	0.263	0.260	0.262	0.263	0.265	2010	0.263	0.260	MATERIAL & NOMINAL ASSUMED				
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>														
<b>Material</b>	SA 516 - 70	<b>Long Term Loss MPY:</b>										0.000	<b>OK</b>			
<b>309-35</b>	Shell	<b>Baseline</b>	0.247	0.250	0.249	0.252	0.252	0.254	2010	0.251	0.247	2011	0.2500	0.125	0.0102	2030
<b>Shape</b>	Cylindrical shell	<b>Previous</b>										<b>Comments:</b>				
<b>OD</b>	72	<b>Current</b>	0.247	0.250	0.249	0.252	0.252	0.254	2010	0.251	0.247	MATERIAL & NOMINAL ASSUMED				
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>														
<b>Material</b>	SA 516 - 70	<b>Long Term Loss MPY:</b>										0.000	<b>OK</b>			
<b>309-37</b>	Shell	<b>Baseline</b>	0.256	0.255	0.256	0.263	0.259	0.258	2010	0.258	0.255	2011	0.2500	0.125	0.0102	2030
<b>Shape</b>	Cylindrical shell	<b>Previous</b>										<b>Comments:</b>				
<b>OD</b>	72	<b>Current</b>	0.256	0.255	0.256	0.263	0.259	0.258	2010	0.258	0.255	MATERIAL & NOMINAL ASSUMED				
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>														
<b>Material</b>	SA 516 - 70	<b>Long Term Loss MPY:</b>										0.000	<b>OK</b>			
<b>309-40</b>	Head	<b>Baseline</b>	0.414	0.407	0.409	0.408	0.409	0.411	2010	0.410	0.407	2011	0.3750	0.125	0.0102	2030
<b>Shape</b>	Flat shell	<b>Previous</b>										<b>Comments:</b>				
<b>OD</b>	72	<b>Current</b>	0.414	0.407	0.409	0.408	0.409	0.411	2010	0.410	0.407	MATERIAL & NOMINAL ASSUMED				
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>														
<b>Material</b>	SA 516 - 70	<b>Long Term Loss MPY:</b>										0.000	<b>OK</b>			
<b>309-45</b>	Head	<b>Baseline</b>	0.410	0.410	0.408	0.412	0.408	0.407	2010	0.409	0.407	2011	0.3750	0.125	0.0102	2030
<b>Shape</b>	Flat shell	<b>Previous</b>										<b>Comments:</b>				
<b>OD</b>	72	<b>Current</b>	0.410	0.410	0.408	0.412	0.408	0.407	2010	0.409	0.407	MATERIAL & NOMINAL ASSUMED				
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>														
<b>Material</b>	SA 516 - 70	<b>Long Term Loss MPY:</b>										0.000	<b>OK</b>			
<b>309-50</b>	Nozzle	<b>Baseline</b>	0.637	0.649	0.687	0.686	0.686	0.637	2010	0.664	0.637	2011	0.6740	0.125	0.0005	2030
<b>Shape</b>	Cylindrical shell	<b>Previous</b>										<b>Comments:</b>				
<b>OD</b>	4.5	<b>Current</b>	0.637	0.649	0.687	0.686	0.686	0.637	2010	0.664	0.637	MATERIAL & NOMINAL ASSUMED				
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>														
<b>Material</b>	SA 106 - B	<b>Long Term Loss MPY:</b>										0.000	<b>OK</b>			
<b>309-55</b>	Nozzle	<b>Baseline</b>	0.686	0.652	0.658	0.687	0.728	0.714	2010	0.688	0.652	2011	0.6740	0.125	0.0005	2030
<b>Shape</b>	Cylindrical shell	<b>Previous</b>										<b>Comments:</b>				
<b>OD</b>	4.5	<b>Current</b>	0.686	0.652	0.658	0.687	0.728	0.714	2010	0.688	0.652	MATERIAL & NOMINAL ASSUMED				
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>														
<b>Material</b>	SA 106 - B	<b>Long Term Loss MPY:</b>										0.000	<b>OK</b>			
<b>309-60</b>	Nozzle	<b>Baseline</b>	0.648	0.682	0.722	0.694	0.660	0.647	2010	0.676	0.647	2011	0.6740	0.125	0.0005	2030
<b>Shape</b>	Cylindrical shell	<b>Previous</b>										<b>Comments:</b>				
<b>OD</b>	4.5	<b>Current</b>	0.648	0.682	0.722	0.694	0.660	0.647	2010	0.676	0.647	MATERIAL & NOMINAL ASSUMED				
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>														
<b>Material</b>	SA 106 - B	<b>Long Term Loss MPY:</b>										0.000	<b>OK</b>			
<b>309-65</b>	Nozzle	<b>Baseline</b>	0.689	0.677	0.661	0.676	0.693	0.699	2010	0.683	0.661	2011	0.6740	0.125	0.0005	2030
<b>Shape</b>	Cylindrical shell	<b>Previous</b>										<b>Comments:</b>				
<b>OD</b>	4.5	<b>Current</b>	0.689	0.677	0.661	0.676	0.693	0.699	2010	0.683	0.661	MATERIAL & NOMINAL ASSUMED				
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>														
<b>Material</b>	SA 106 - B	<b>Long Term Loss MPY:</b>										0.000	<b>OK</b>			

<b>309-70</b>	Piping	<b>Baseline</b>	0.764	0.749	0.745	0.741	0.735	0.729	2010	0.744	0.729	2011	0.6740	0.0842	0.5000	2030	
<b>Shape</b>	90° Elbow Tube	<b>Previous</b>										<b>Comments:</b>					
<b>OD</b>	4.5	<b>Current</b>	0.764	0.749	0.745	0.741	0.735	0.729	2010	0.744	0.729						
<b>Spec</b>	B31.3		<b>Short Term Loss MPY:</b>														
<b>Material</b>	A 234 - WPB		<b>Long Term Loss MPY:</b>									0.000	<b>OK</b>				
<b>309-75</b>	Piping	<b>Baseline</b>	0.776	0.767	0.756	0.735	0.728	0.728	2010	0.748	0.728	2011	0.6740	0.0842	0.5000	2030	
<b>Shape</b>	90° Elbow Tube	<b>Previous</b>										<b>Comments:</b>					
<b>OD</b>	4.5	<b>Current</b>	0.776	0.767	0.756	0.735	0.728	0.728	2010	0.748	0.728						
<b>Spec</b>	B31.3		<b>Short Term Loss MPY:</b>														
<b>Material</b>	A 234 - WPB		<b>Long Term Loss MPY:</b>									0.000	<b>OK</b>				
<b>309-80</b>	Piping	<b>Baseline</b>	0.784	0.900	0.907	0.901	0.838	0.808	2010	0.856	0.784	2011	0.6740	0.0842	0.5000	2030	
<b>Shape</b>	Tee Tube	<b>Previous</b>										<b>Comments:</b>					
<b>OD</b>	4.5	<b>Current</b>	0.784	0.900	0.907	0.901	0.838	0.808	2010	0.856	0.784						
<b>Spec</b>	B31.3		<b>Short Term Loss MPY:</b>														
<b>Material</b>	A 234 - WPB		<b>Long Term Loss MPY:</b>									0.000	<b>OK</b>				
<b>309-85</b>	Piping	<b>Baseline</b>	0.744	0.747	0.750	0.721	0.725	0.724	2010	0.735	0.721	2011	0.6740	0.0842	0.5000	2030	
<b>Shape</b>	90° Elbow Tube	<b>Previous</b>										<b>Comments:</b>					
<b>OD</b>	4.5	<b>Current</b>	0.744	0.747	0.750	0.721	0.725	0.724	2010	0.735	0.721						
<b>Spec</b>	B31.3		<b>Short Term Loss MPY:</b>														
<b>Material</b>	A 234 - WPB		<b>Long Term Loss MPY:</b>									0.000	<b>OK</b>				
<b>309-90</b>	Piping	<b>Baseline</b>	0.579	0.551	0.542	0.540	0.544	0.544	2010	0.550	0.540	2011	0.6000	0.075	0.3889	2030	
<b>Shape</b>	90° Elbow Tube	<b>Previous</b>										<b>Comments:</b>					
<b>OD</b>	3.5	<b>Current</b>	0.579	0.551	0.542	0.540	0.544	0.544	2010	0.550	0.540						
<b>Spec</b>	B31.3		<b>Short Term Loss MPY:</b>														
<b>Material</b>	A 234 - WPB		<b>Long Term Loss MPY:</b>									0.000	<b>OK</b>				
<b>309-95</b>	Piping	<b>Baseline</b>	0.802	0.842	0.950	0.936	0.850	0.782	2010	0.860	0.782	2011	0.6740	0.0842	0.5000	2030	
<b>Shape</b>	Tee Tube	<b>Previous</b>										<b>Comments:</b>					
<b>OD</b>	4.5	<b>Current</b>	0.802	0.842	0.950	0.936	0.850	0.782	2010	0.860	0.782						
<b>Spec</b>	B31.3		<b>Short Term Loss MPY:</b>														
<b>Material</b>	A 234 - WPB		<b>Long Term Loss MPY:</b>									0.000	<b>OK</b>				
<b>309-99</b>	Piping	<b>Baseline</b>	0.367	0.369	0.370	0.368	0.369	0.373	2010	0.369	0.367	2011	0.3750	0.0469	0.0025	2030	
<b>Shape</b>	Cylindrical Shell	<b>Previous</b>										<b>Comments:</b>					
<b>OD</b>	20	<b>Current</b>	0.367	0.369	0.370	0.368	0.369	0.373	2010	0.369	0.367						
<b>Spec</b>	B31.3		<b>Short Term Loss MPY:</b>														
<b>Material</b>	A 106 - B		<b>Long Term Loss MPY:</b>									0.000	<b>OK</b>				