



# Ultrasonic Corrosion Survey

Survey Name: BARRICK ENERGY INC.

LSD: 10-29-071-23W5  
 Dwg#:447  
 Survey Name: BARRICK ENERGY INC.

Vessel Number: A0102369  
 Vessel Name: FREE WATER KNOCKOUT

Manufacturer: NATCO CANADA LTD.  
 Serial Number: L-10-116

Survey Date: 2/28/2010  
 Inspector: MWS

District Unit: FIELD

Year Built: 1971

Shell MAWP PSI: 50 MAWT\_F: 200

Process: SOUR

Location: STURGEON LAKE NORTH

Tag Number: -

Tube MAWP PSI: 0 MAWT\_F: 0

Project Number: C40290A

Skid: PKG54776

CRN: A9372.2

Vessel CA: 0.063

[\[Click here for Piping Drawing -- 10-29-071-23W5 -447A.pdf\]](#)

Band	Description		Readings						Year	Avg	Min	Recommended Next Inspection	Nominal	CA	T-Min	Recommended Retirement Date	
			1	2	3	4	5	6									
447-05	Head	Baseline	0.679	0.679	0.681	0.676	0.680	0.682	2010	0.680	0.676	2011	0.5500	0.063	0.2164	2030	
Shape	Ellipsoidal Shell	Previous										Comments:					
OD	120	Current	0.679	0.679	0.681	0.676	0.680	0.682	2010	0.680	0.676						
Spec	VIII Div 1	Short Term Loss MPY:															
Material	SA 285 - C	Long Term Loss MPY:										0.000	OK				
447-07	Head	Baseline	0.701	0.696	0.689	0.661	0.660	0.676	2010	0.681	0.660	2011	0.5500	0.063	0.2164	2030	
Shape	Ellipsoidal Shell	Previous										Comments:					
OD	120	Current	0.701	0.696	0.689	0.661	0.660	0.676	2010	0.681	0.660						
Spec	VIII Div 1	Short Term Loss MPY:															
Material	SA 285 - C	Long Term Loss MPY:										0.000	OK				
447-10	Shell	Baseline	0.383	0.381	0.389	0.389	0.392	0.376	2010	0.385	0.376	2011	0.3750	0.063	0.2175	2030	
Shape	Cylindrical Shell	Previous										Comments:					
OD	120	Current	0.383	0.381	0.389	0.389	0.392	0.376	2010	0.385	0.376						
Spec	VIII Div 1	Short Term Loss MPY:															
Material	SA 285 - C	Long Term Loss MPY:										0.000	OK				
447-15	Shell	Baseline	0.395	0.397	0.394	0.399	0.400	0.401	2010	0.398	0.394	2011	0.3750	0.063	0.2175	2030	
Shape	Cylindrical Shell	Previous										Comments:					
OD	120	Current	0.395	0.397	0.394	0.399	0.400	0.401	2010	0.398	0.394						
Spec	VIII Div 1	Short Term Loss MPY:															
Material	SA 285 - C	Long Term Loss MPY:										0.000	OK				
447-20	Shell	Baseline	0.433	0.429	0.430	0.398	0.398	0.414	2010	0.417	0.398	2011	0.3750	0.063	0.2175	2030	
Shape	Cylindrical Shell	Previous										Comments:					
OD	120	Current	0.433	0.429	0.430	0.398	0.398	0.414	2010	0.417	0.398						
Spec	VIII Div 1	Short Term Loss MPY:															
Material	SA 285 - C	Long Term Loss MPY:										0.000	OK				
447-25	Shell	Baseline	0.386	0.383	0.385	0.389	0.388	0.390	2010	0.387	0.383	2011	0.3750	0.063	0.2175	2030	
Shape	Cylindrical Shell	Previous										Comments:					

<b>OD</b>	120	<b>Current</b>	0.386	0.383	0.385	0.389	0.388	0.390	2010	0.387	0.383										
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>																			
<b>Material</b>	SA 285 - C	<b>Long Term Loss MPY:</b>										0.000	<b>OK</b>								
<b>447-30</b>	Shell	<b>Baseline</b>	0.390	0.392	0.392	0.392	0.389	0.370	2010	0.388	0.370	2011	0.3750	0.063	0.2175	2030					
<b>Shape</b>	Cylindrical Shell	<b>Previous</b>										<b>Comments:</b>									
<b>OD</b>	120	<b>Current</b>	0.390	0.392	0.392	0.392	0.389	0.370	2010	0.388	0.370										
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>																			
<b>Material</b>	SA 285 - C	<b>Long Term Loss MPY:</b>										0.000	<b>OK</b>								
<b>447-35</b>	Shell	<b>Baseline</b>	0.315	0.301	0.353	0.362	0.369	0.363	2010	0.344	0.301	2011	0.3750	0.063	0.2175	2030					
<b>Shape</b>	Cylindrical Shell	<b>Previous</b>										<b>Comments:</b>									
<b>OD</b>	120	<b>Current</b>	0.315	0.301	0.353	0.362	0.369	0.363	2010	0.344	0.301										
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>																			
<b>Material</b>	SA 285 - C	<b>Long Term Loss MPY:</b>										0.000	Caution								
<b>447-40</b>	Shell	<b>Baseline</b>	0.363	0.346	0.353	0.375	0.368	0.282	2010	0.348	0.282	2011	0.3750	0.063	0.2175	2030					
<b>Shape</b>	Cylindrical Shell	<b>Previous</b>										<b>Comments:</b>									
<b>OD</b>	120	<b>Current</b>	0.363	0.346	0.353	0.375	0.368	0.282	2010	0.348	0.282										
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>																			
<b>Material</b>	SA 285 - C	<b>Long Term Loss MPY:</b>										0.000	Caution								
<b>447-43</b>	Shell	<b>Baseline</b>	0.288	0.283	0.276	0.334	0.359	0.367	2010	0.318	0.276	2011	0.3750	0.063	0.2175	2030					
<b>Shape</b>	Cylindrical Shell	<b>Previous</b>										<b>Comments:</b>									
<b>OD</b>	120	<b>Current</b>	0.288	0.283	0.276	0.334	0.359	0.367	2010	0.318	0.276										
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>																			
<b>Material</b>	SA 285 - C	<b>Long Term Loss MPY:</b>										0.000	Caution								
<b>447-45</b>	Shell	<b>Baseline</b>	0.385	0.385	0.385	0.383	0.382	0.382	2010	0.384	0.382	2011	0.3750	0.063	0.2175	2030					
<b>Shape</b>	Cylindrical Shell	<b>Previous</b>										<b>Comments:</b>									
<b>OD</b>	120	<b>Current</b>	0.385	0.385	0.385	0.383	0.382	0.382	2010	0.384	0.382										
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>																			
<b>Material</b>	SA 285 - C	<b>Long Term Loss MPY:</b>										0.000	<b>OK</b>								
<b>447-50</b>	Head	<b>Baseline</b>	0.321	0.323	0.325	0.322	0.321	0.325	2010	0.323	0.321	2011	0.3750	0.063	0.0423	2030					
<b>Shape</b>	Ellipsoidal Shell	<b>Previous</b>										<b>Comments:</b>									
<b>OD</b>	24	<b>Current</b>	0.321	0.323	0.325	0.322	0.321	0.325	2010	0.323	0.321										
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>																			
<b>Material</b>	SA 285 - C	<b>Long Term Loss MPY:</b>										0.000	<b>OK</b>								
<b>447-55</b>	Shell	<b>Baseline</b>	0.294	0.298	0.302	0.302	0.303	0.300	2010	0.300	0.294	2011	0.3750	0.063	0.0424	2030					
<b>Shape</b>	Cylindrical Shell	<b>Previous</b>										<b>Comments:</b>									
<b>OD</b>	24	<b>Current</b>	0.294	0.298	0.302	0.302	0.303	0.300	2010	0.300	0.294										
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>																			
<b>Material</b>	SA 285 - C	<b>Long Term Loss MPY:</b>										0.000	Caution								
<b>447-57</b>	Shell	<b>Baseline</b>	0.307	0.308	0.294	0.308	0.308	0.310	2010	0.306	0.294	2011	0.3750	0.063	0.0424	2030					
<b>Shape</b>	Cylindrical Shell	<b>Previous</b>										<b>Comments:</b>									
<b>OD</b>	24	<b>Current</b>	0.307	0.308	0.294	0.308	0.308	0.310	2010	0.306	0.294										
<b>Spec</b>	VIII Div 1	<b>Short Term Loss MPY:</b>																			
<b>Material</b>	SA 285 - C	<b>Long Term Loss MPY:</b>										0.000	Caution								

447-60	Nozzle	Baseline	0.298	0.289	0.305	0.301	0.296	0.301	2010	0.298	0.289	2011	0.3000	0.063	0.0049	2030		
Shape	90° Elbow Shell	Previous										Comments:						
OD	3.5	Current	0.298	0.289	0.305	0.301	0.296	0.301	2010	0.298	0.289							
Spec	VIII Div 1	Short Term Loss MPY:																
Material	SA 234 - WPB	Long Term Loss MPY:										0.000	OK					
447-65	Nozzle	Baseline	0.300	0.298	0.295	0.293	0.291	0.283	2010	0.293	0.283	2011	0.3000	0.063	0.0049	2030		
Shape	90° Elbow Shell	Previous										Comments:						
OD	3.5	Current	0.300	0.298	0.295	0.293	0.291	0.283	2010	0.293	0.283							
Spec	VIII Div 1	Short Term Loss MPY:																
Material	SA 234 - WPB	Long Term Loss MPY:										0.000	OK					
447-67	Nozzle	Baseline	0.302	0.297	0.299	0.295	0.298	0.295	2010	0.298	0.295	2011	0.3000	0.063	0.0049	2030		
Shape	90° Elbow Shell	Previous										Comments:						
OD	3.5	Current	0.302	0.297	0.299	0.295	0.298	0.295	2010	0.298	0.295							
Spec	VIII Div 1	Short Term Loss MPY:																
Material	SA 234 - WPB	Long Term Loss MPY:										0.000	OK					
447-70	Nozzle	Baseline	0.296	0.294	0.295	0.289	0.291	0.292	2010	0.293	0.289	2011	0.3000	0.063	0.0049	2030		
Shape	90° Elbow Shell	Previous										Comments:						
OD	3.5	Current	0.296	0.294	0.295	0.289	0.291	0.292	2010	0.293	0.289							
Spec	VIII Div 1	Short Term Loss MPY:																
Material	SA 234 - WPB	Long Term Loss MPY:										0.000	OK					
447-72	Piping	Baseline	0.285	0.288	0.288	0.300	0.296	0.299	2010	0.293	0.285	2011	0.2800	0.035	0.0083	2030		
Shape	90° Elbow Shell	Previous										Comments:						
OD	6.625	Current	0.285	0.288	0.288	0.300	0.296	0.299	2010	0.293	0.285							
Spec	B31.3	Short Term Loss MPY:																
Material	A 234 - WPB	Long Term Loss MPY:										0.000	OK					
447-74	Piping	Baseline	0.208	0.207	0.204	0.203	0.210	0.215	2010	0.208	0.203	2011	0.2160	0.027	0.0044	2030		
Shape	90° Elbow Shell	Previous										Comments:						
OD	3.5	Current	0.208	0.207	0.204	0.203	0.210	0.215	2010	0.208	0.203							
Spec	B31.3	Short Term Loss MPY:																
Material	A 234 - WPB	Long Term Loss MPY:										0.000	OK					
447-76	Piping	Baseline	0.200	0.198	0.197	0.198	0.201	0.209	2010	0.201	0.197	2011	0.2160	0.027	0.0044	2030		
Shape	90° Elbow Shell	Previous										Comments:						
OD	3.5	Current	0.200	0.198	0.197	0.198	0.201	0.209	2010	0.201	0.197							
Spec	B31.3	Short Term Loss MPY:																
Material	A 234 - WPB	Long Term Loss MPY:										0.000	OK					
447-78	Piping	Baseline	0.200	0.198	0.201	0.198	0.198	0.195	2010	0.198	0.195	2011	0.2160	0.027	0.0044	2030		
Shape	90° Elbow Shell	Previous										Comments:						
OD	3.5	Current	0.200	0.198	0.201	0.198	0.198	0.195	2010	0.198	0.195							
Spec	B31.3	Short Term Loss MPY:																
Material	A 234 - WPB	Long Term Loss MPY:										0.000	OK					
447-80	Piping	Baseline	0.195	0.196	0.198	0.201	0.214	0.209	2010	0.202	0.195	2011	0.2160	0.027	0.0044	2030		
Shape	90° Elbow Shell	Previous										Comments:						

<b>OD</b>	3.5	<b>Current</b>	0.195	0.196	0.198	0.201	0.214	0.209	2010	0.202	0.195						
<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>447-82</b>	Piping	<b>Baseline</b>	0.200	0.204	0.205	0.205	0.205	0.205	2010	0.204	0.200	2011	0.2160	0.027	0.0044	2030	
<b>Shape</b>	90° Elbow Shell	<b>Previous</b>										<b>Comments:</b>					
<b>OD</b>	3.5	<b>Current</b>	0.200	0.204	0.205	0.205	0.205	0.205	2010	0.204	0.200						
<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>447-84</b>	Piping	<b>Baseline</b>	0.195	0.198	0.196	0.195	0.193	0.195	2010	0.195	0.193	2011	0.2160	0.027	0.0044	2030	
<b>Shape</b>	90° Elbow Shell	<b>Previous</b>										<b>Comments:</b>					
<b>OD</b>	3.5	<b>Current</b>	0.195	0.198	0.196	0.195	0.193	0.195	2010	0.195	0.193						
<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>447-86</b>	Piping	<b>Baseline</b>	0.196	0.198	0.197	0.198	0.203	0.198	2010	0.198	0.196	2011	0.2160	0.027	0.0044	2030	
<b>Shape</b>	90° Elbow Shell	<b>Previous</b>										<b>Comments:</b>					
<b>OD</b>	3.5	<b>Current</b>	0.196	0.198	0.197	0.198	0.203	0.198	2010	0.198	0.196						
<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>447-88</b>	Piping	<b>Baseline</b>	0.199	0.208	0.211	0.224	0.233	0.238	2010	0.219	0.199	2011	0.2160	0.027	0.0044	2030	
<b>Shape</b>	90° Elbow Shell	<b>Previous</b>										<b>Comments:</b>					
<b>OD</b>	3.5	<b>Current</b>	0.199	0.208	0.211	0.224	0.233	0.238	2010	0.219	0.199						
<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>447-90</b>	Piping	<b>Baseline</b>	0.214	0.207	0.154	0.207	0.208	0.208	2010	0.200	0.154	2011	0.2160	0.027	0.0044	2030	
<b>Shape</b>	90° Elbow Shell	<b>Previous</b>										<b>Comments:</b>					
<b>OD</b>	3.5	<b>Current</b>	0.214	0.207	0.154	0.207	0.208	0.208	2010	0.200	0.154						
<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	Caution				
<b>447-92</b>	Piping	<b>Baseline</b>	0.207	0.206	0.207	0.204	0.203	0.206	2010	0.206	0.203	2011	0.2160	0.027	0.0044	2030	
<b>Shape</b>	90° Elbow Shell	<b>Previous</b>										<b>Comments:</b>					
<b>OD</b>	3.5	<b>Current</b>	0.207	0.206	0.207	0.204	0.203	0.206	2010	0.206	0.203						
<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>447-94</b>	Piping	<b>Baseline</b>	0.651	0.650	0.649	0.635	0.645	0.643	2010	0.646	0.635	2011	0.6880	0.086	0.0300	2030	
<b>Shape</b>	90° Elbow Shell	<b>Previous</b>										<b>Comments:</b>					
<b>OD</b>	24	<b>Current</b>	0.651	0.650	0.649	0.635	0.645	0.643	2010	0.646	0.635						
<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>	OD ASSUMED			
<b>447-96</b>	Piping	<b>Baseline</b>	0.656	0.661	0.656	0.662	0.673	0.657	2010	0.661	0.656	2011	0.6000	0.075	0.0044	2030	
<b>Shape</b>	90° Elbow Shell	<b>Previous</b>										<b>Comments:</b>					
<b>OD</b>	24	<b>Current</b>	0.656	0.661	0.656	0.662	0.673	0.657	2010	0.661	0.656						
<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>	OD ASSUMED			

