



Assessment General Information			
Assessment Name:	Revision 002	Assessment Date:	11-Dec-2024
Assessment Method:	Fully-Quantitative PoF and Fully-Quantitative CoF		
Risk Analysis Period (months):	12		
Equipment General Information			
Equipment Number:	Column - 01		
Equipment Type:	Column		
Design Code:	ASME		
Site:	NIGC		
Facility:	Heater Station		
Manufacturer:	Null		
Commission Date:	01-Jan-2020		
Equipment Name:	C - 01		
Process Description:			
Component General Information			
Component Number:	Btm Section		
Component Type:	Elliptical Head	API Component Type:	COLBTM
Component Name:	Btm Head		
Risk Links to Equipment Risk:	Yes		

Equipment Properties			
Administrative Control for Upset Management:	No	Steamed Out Prior to Water Flushing:	No
Downtime Protection Used:	No	PWHT:	Yes
Heat Traced:	No	Liner Online Monitoring:	No
Min. Required Temperature Before Pressurisation Allowed by Admin:	(not provided)	Material is Exposed to Fluids, Mists or Solids Containing Chlorine Externally:	No
Pressurisation Controlled by Admin:	No	Presence of Sulphides, Moisture and Oxygen During Shutdown:	No
Interface at Soil or Water:	No	Presence of Sulphides, Moisture and Oxygen During Operation:	No
External Environment:	Arid/dry	Thermal History:	(not provided)
System Management Factor:	1	Equipment Volume:	8 m ³
Online Monitoring:	(not provided)		



Component Properties			
Nominal Diameter:	2000 mm	Nominal Thickness:	18 mm
Minimum Measured Thickness:	17 mm	Min. Required Thickness:	10 mm
Current Corrosion Rate:	1.3 mm/yr	Delta FATT:	(not provided)
Presence of Cracks:	No	Structural Thickness:	11 mm
Weld Joint Efficiency:	1	Component Volume:	1 m ³
Maximum Brinnell Hardness of Weld:	(not provided)	Allowable Stress at Assessment Temperature:	10 MPa
Level of Confidence In Corrosion Rate:	High	Minimum Structural Thickness Governs:	Yes
It is fabricated from P-1 and P-3 steels where the design temperature is less than or equal to 343°C (650°F).	No	The equipment satisfied all requirements of a recognized code or standard at the time of fabrication.	No
The nominal operating conditions have been essentially the same and consistent with the specified design conditions for a significant period of time, and more severe conditions (i.e., lower temperature and/or higher stress) are not expected in the future.	No	Cyclic service, fatigue or vibration service is not a design requirement per design code	No
		The CET at the MAWP is greater than or equal to -29°C (-20°F) if it is a pressure vessel or -104°C (-155°F) if it is a piping circuit.	No
		Complexity of Protrusions:	Above average
The equipment or circuit is not subject to shock chilling	No	Brittle Fracture Governing Thickness	(not provided)

Operating Conditions Properties			
Max. Operating Temperature:	100 °C	Max. Operating Pressure:	0.1 MPa
Min. Operating Temperature:	15 °C	Min. Operating Pressure:	0 MPa
Critical Exposure Temperature:	0 °C	Flow Rate:	0 m ³ /hr
% Operating at -12 °C to -8 °C	0 %	% Operating at -8°C to 6°C	0 %
% Operating at 6°C to 32°C	0 %	% Operating at 32°C to 71°C	25 %
% Operating at 71°C to 107°C	75 %	% Operating at 107°C to 121°C	0 %
% Operating at 121°C to 135°C	0 %	% Operating at 135°C to 162°C	0 %
% Operating at 162°C to 176°C	0 %	Operating Hydrogen Partial Pressure	(not provided)
% Operating at 176°C or Above	0 %		

Stream / Process Flow	
Fluid	
Model Fluid:	Water
Toxic Fluid:	(not provided)



RiskWISE Written Scheme of Examination



Btm Section

Revision 002

Phase of Fluid at Storage	Liquid	Toxic Fluid Percentage (%)	0
Liquid Level (%)	100		
Operating Condition			
Maximum Operating Temperature:	100 °C	Minimum Operating Temperature:	15 °C
Maximum Operating Pressure:	0.1 MPa	Minimum Operating Pressure:	0 MPa
Operating Hydrogen Partial Pressure:	(not provided)	Flow Rate:	0 m³/hr
Environment Condition			
NaOH Concentration (%):	(not provided)		
Chloride Ion (ppm):	(not provided)	CO3 Concentration in Water (ppm):	(not provided)
H2S Content in Water (ppm):	(not provided)	pH of Water:	(not provided)
Toxic Constituents:	No	Exposed To Acid Gas Treating Amine:	No
Exposure to Amine:	(not provided)		
Amine Solution Composition:	(not provided)		
Aqueous Phase During Operation:	No	Aqueous Phase During Shutdown:	No
Environment Contains H2S:	No	Presence of Hydrofluoric Acid:	No
Presence of Cyanides:	No	Process Contains Hydrogen:	No
Environment Contains Caustic in Any Concentration:	No	Exposed to Sulphur-Bearing Compounds:	No
Material is Exposed to Fluids, Mists, or Solids Containing Chlorine Internally:	No	Exposed to Acid Gas Treating Amine:	No

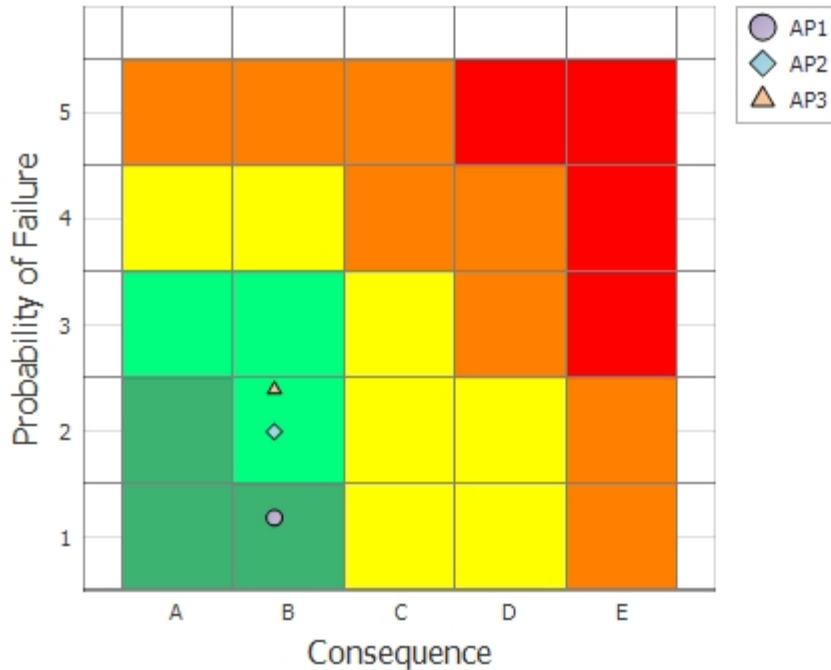
Material Properties			
Material:	(not provided)		
Design Pressure:	100 MPa	Design Temperature:	100 °C
Tensile Strength:	280 MPa	Yield Strength:	220 MPa
Reference Temperature:	(not provided)	Sigma Phase (%):	(not provided)
Corrosion Allowance:	5 mm	Austenitic Steel:	No
Carbon or Low Alloy Steel:	Yes	Nickel-based Alloy:	No
Susceptible to Temper:	No	Sulfur Content:	(not provided)
Chromium ≥ 12%:	No	Min. Design Temperature:	(not provided)
Heat Treatment:	(not provided)	Material Cost Factor:	1
Material is Susceptible to PTA:	No	Max. Design Temperature:	100 °C
PTA Material Grade:	(not provided)		
Material is Susceptible to HTHA:	No	Steel Product Form:	(not provided)
HTHA Material Grade:	(not provided)		



Coating, Cladding, Insulation, and Lining			
Coating			
Internal Coating:	Yes	External Coating:	Yes
External Coating Installation Date:	01-Jan-2020	External Coating Quality:	High coating quality
Support Configuration Which Does Not Allow Coating Maintenance:	No		
Cladding			
Internal Cladding:	No	Cladding Corrosion Rate:	(not provided)
Cladding Thickness:	(not provided)		
Insulation			
External Insulation:	Yes	Insulation Contains Chlorides:	No
External Insulation Type:	Mineral Wool	Insulation Condition:	Above average
Lining			
Internal Lining:	No	Internal Liner Condition:	(not provided)
Internal Liner Type:	(not provided)		



Risk Summary



Description	12 months	24 months	36 months	RLI (months)
Risk	1B	2B	2B	78

Damage Mechanisms

Damage Mechanisms	DF AP1	DF AP2	DF AP3
Corrosion Under Insulation	0.0034	0.0034	0.0034
External Corrosion	0.0034	0.0034	0.0034
Internal Thinning	0.4692	3.1285	7.7226

Inspections

Inspection Plan	Damage Mechanism	Inspection Summary	Date	Effectiveness
IP - 02	External Corrosion	Intrusive - Ultrasonic - Digital Ultrasonic Thickness Gauge - 50 %	01-Jun-2022	A
IP - 01	Internal Thinning	Intrusive - Ultrasonic - Digital Ultrasonic Thickness Gauge - 50 %	01-Jun-2022	A



Inspections				
Inspection Plan	Damage Mechanism	Inspection Summary	Date	Effectiveness