

เอกสารแนบที่ 18

รายงานการตรวจสอบสภาพและความหนาของระบบท่อ

	PIPING INSPECTION SUMMARY REPORT		Report/ Project	Sheet
			2112012	S 1/1
STT-CC-001-02-01 (TRL 001 G-Base 95 Tank Receiving line (Jetty to Tank No.1,2,3))				

Date of inspections: 24 December 2021

Piping data				
Line ID :	TRL 001 Tank Receiving line	Line Description :	Jetty to Tank No.3,10	
Product :	G-Base 95	Diameter/Schedule :	6 inch, Sch. STD.	T nom : 7.11 mm.
Material :	API 5L GR.B	Insulation :	N/A	

Design and calculations				
Design Pressure P :	285 psi	$T_{min} = \frac{PD}{2(SE+PY)}$	Tmin (pressure) :	0.84 mm.
Diameter D :	6 inch.		Tmat (Table 6 API574) :	3.3 mm. T struc : 2.8 mm.
Stress S (Table A1) :	20.0 ksi		T minimum measured :	5.96 mm.
Q factor E (Table A1A or a1B) :	1		Service life (from last reading) :	1965 / 51 years
Coefficient Y: (Table304.1.1) :	0.4		Corrosion Rate :	0.347 mm./year
The estimated remaining life for this line is: 10.04 years				



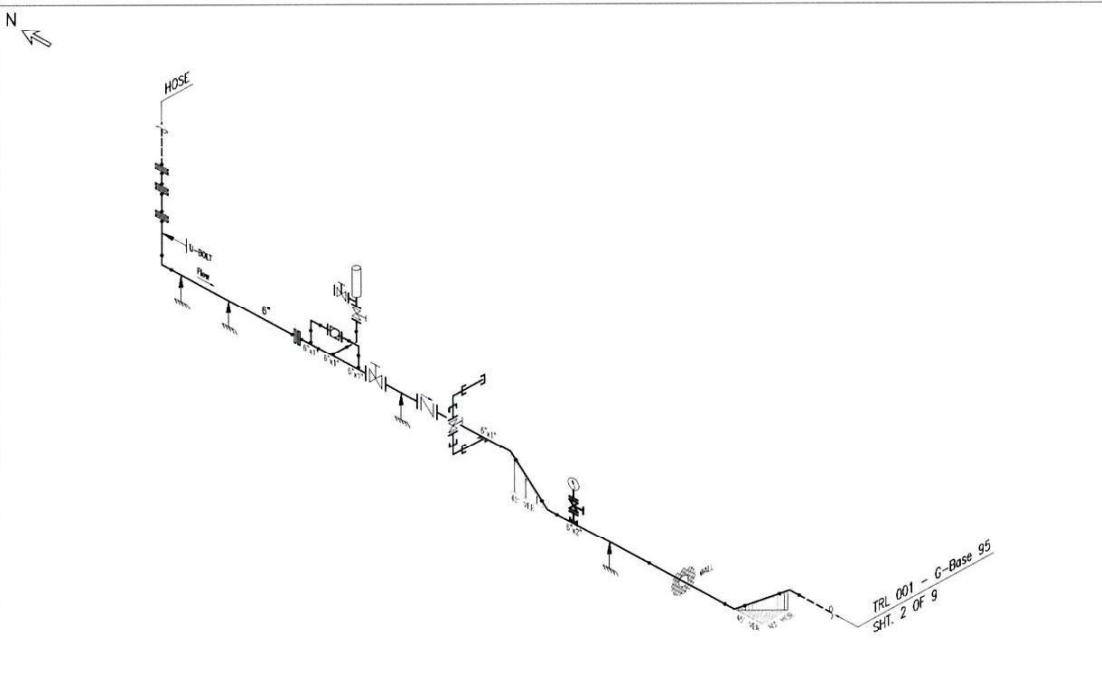
UT settings				
Procedure :	P-INT12 rev. 01	Material Temperature :	Ambient	
Equipment type, s/n :	Olympus 38DL plus ,S/N.130686407	Probe type, s/n :	D790-SM 5 MHz.	
Cal block, s/n :	SN 0471	Calibration step :	Low 6 mm.	High 10 mm.



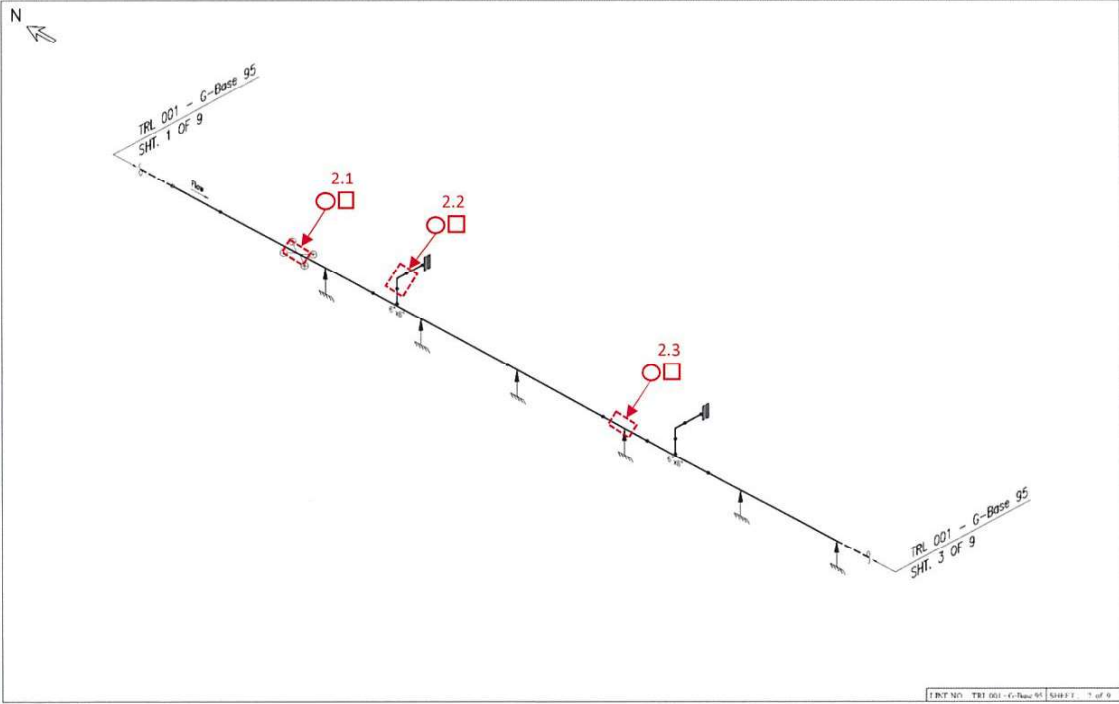
LRUT summary				
Approximate length :	-	Nr. of tool locations :	-	
Equipment type, s/n :	-	Probe collar, nr of channels :	-	
Nr of LRUT indications :	-	Category 1 :	-	Category 2 : - Category 3 : -




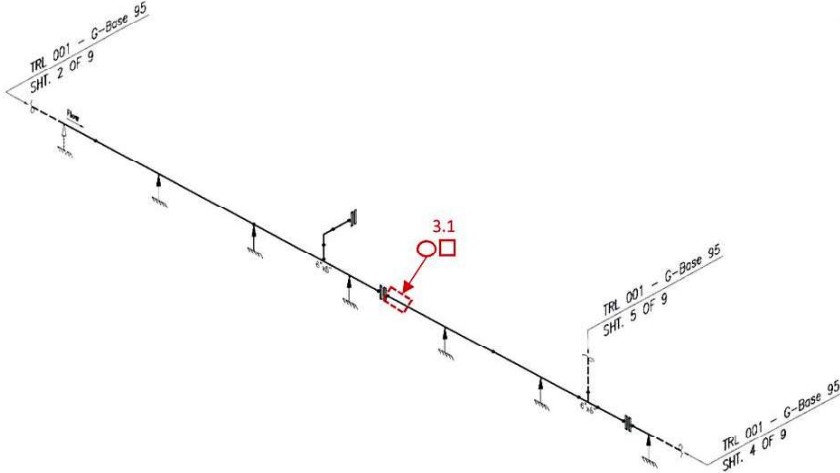
Pipe inspection summary
Visual Inspection (VT) - Painting deterioration and general corrosion on pipe.
Ultrasonic Thickness Measurement (UTM) - UTM : The actual minimum thickness found as 5.96 mm. - Maximum Corrosion rate: 0.347 mm/yr -Minimum Remaining Life: 10.04 yrs



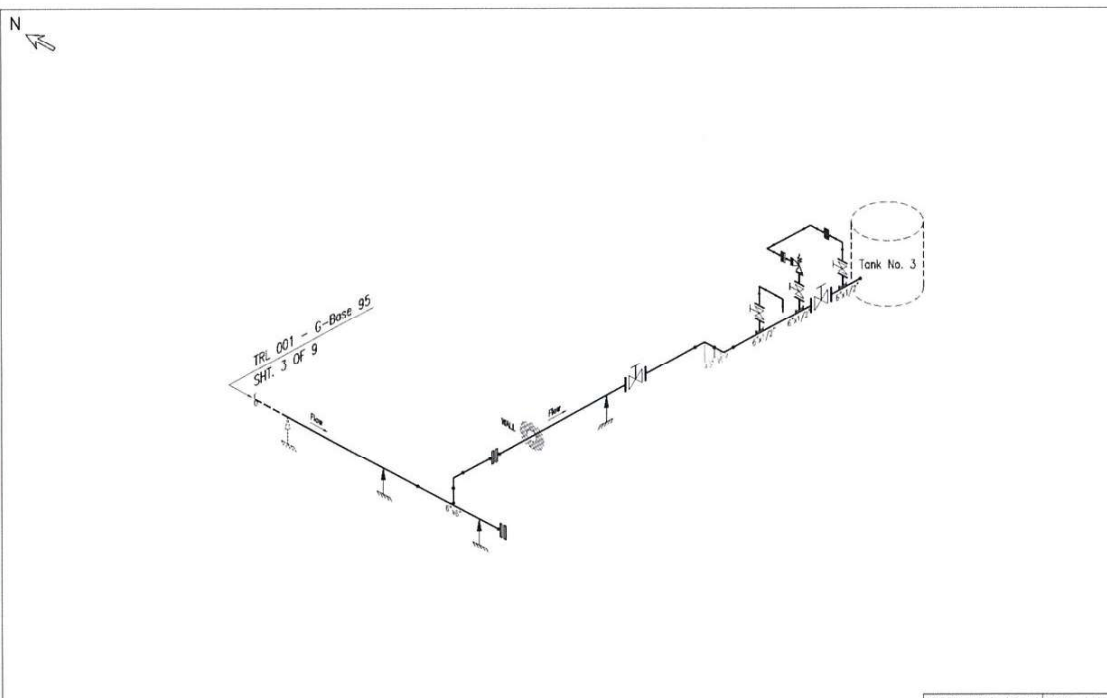
Recommendations
Visual Inspection (VT) -Recommendation to arrest corrosion by sufficient surface preparation (blasting preferred) and application of coating following approved procedures within 6 months.
Ultrasonic Thickness Measurement (UTM) - Thickness monitoring should be performed at next 5 yrs interval.



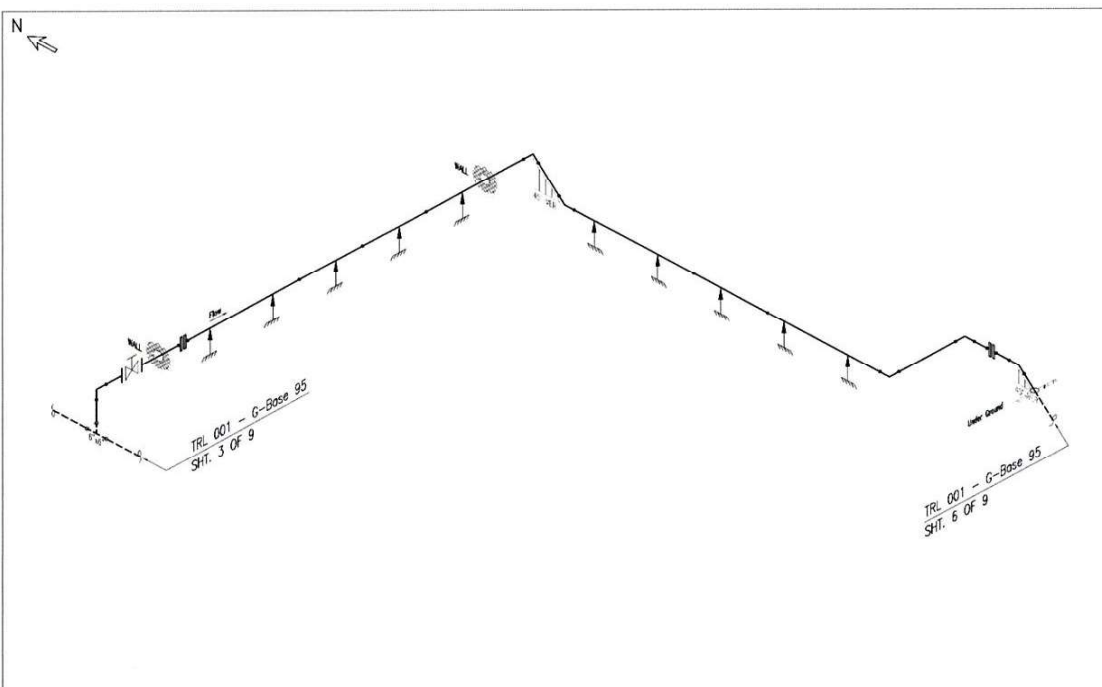
API inspector	LRUT Technician	UT Technician	Chevron
Name: [Redacted]	Name: -	Name: [Redacted]	Name: Teeranai P.
Date: [Redacted]	Date: -	Date: [Redacted]	Date: [Redacted]
Sign: [Redacted]	Sign: [Redacted]	Sign: [Redacted]	Sign: [Redacted]



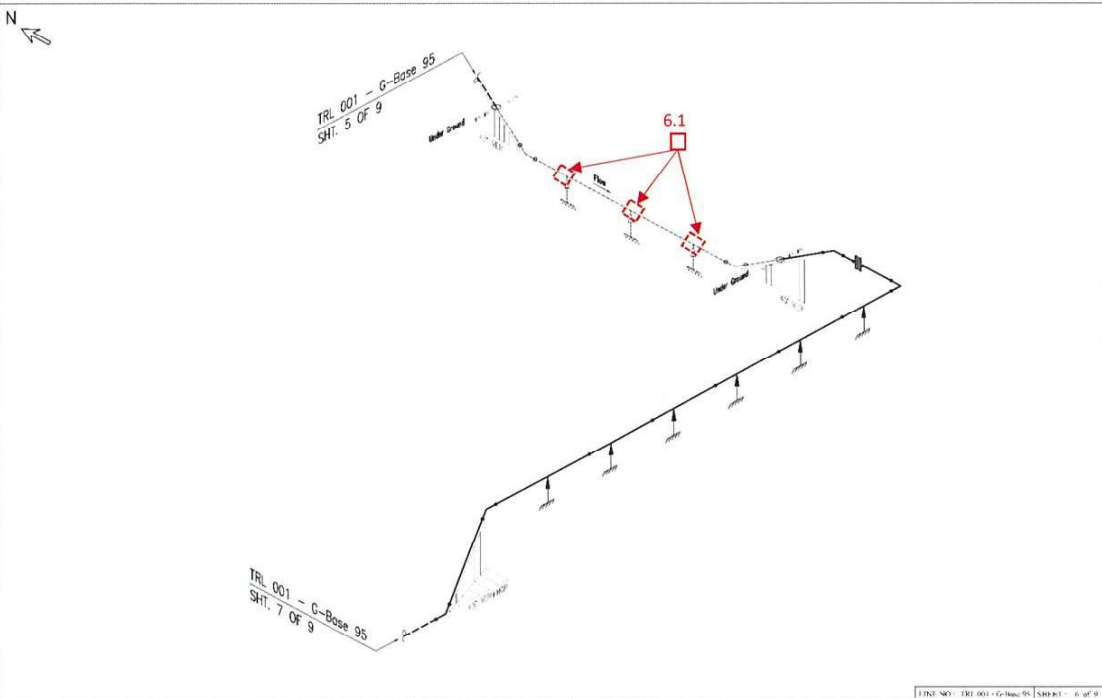
		PIPING VISUAL INSPECTION LOG						Report/ Project	Sheet
						2112012		VT 1/9	
STT-CC-001-02-01 (TRL 001 G-Base 95 Tank Receiving line (Jetty to Tank No.1,2,3))									
Degradation		N/A	Normal	Minor	Moderate	Severe	Remark		
<small>x,x-x,x,x mm</small> <input type="checkbox"/> Corrosion		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<input checked="" type="checkbox"/> CUS		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
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<input checked="" type="checkbox"/> Other		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Severity to be determined as follows: <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div> Minor: Moderate Severe </div> <div> For findings that don't require action For findings that require action (specify time) For findings that require immediate action </div> <div> Highlighted in yellow in ISO Highlighted in Orange in ISO </div> </div>									
<div style="border: 1px solid black; padding: 10px; min-height: 300px;">  </div>									
<div style="text-align: right; font-size: small;"> TRL 001 - G-Base 95 SHT. 2 OF 9 </div>									



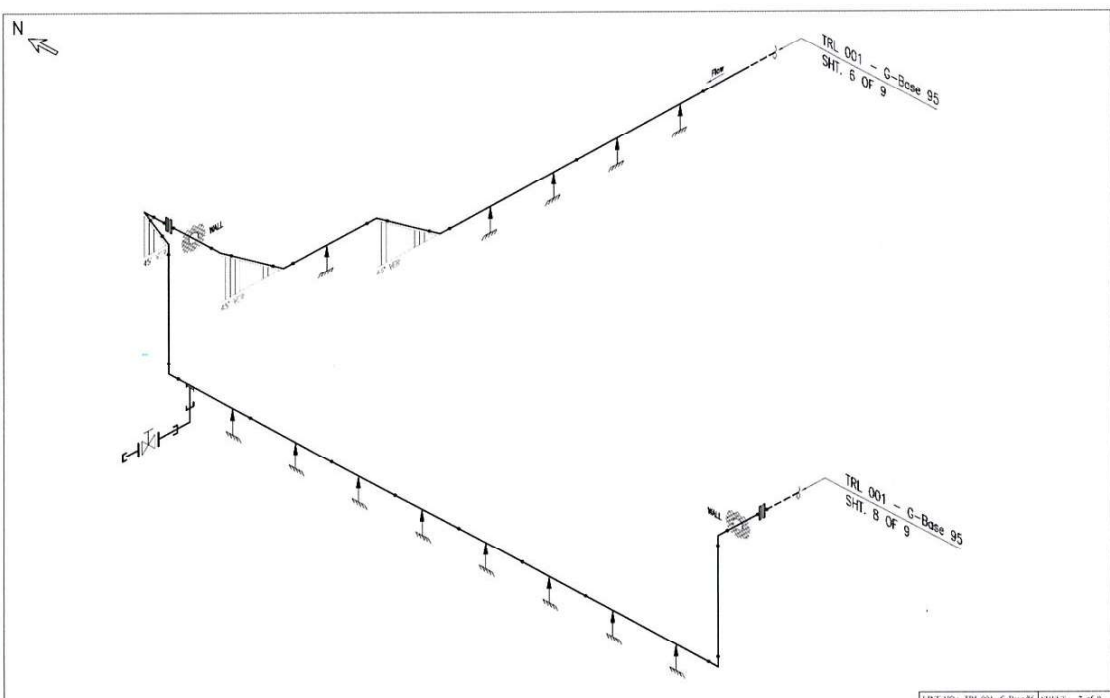
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
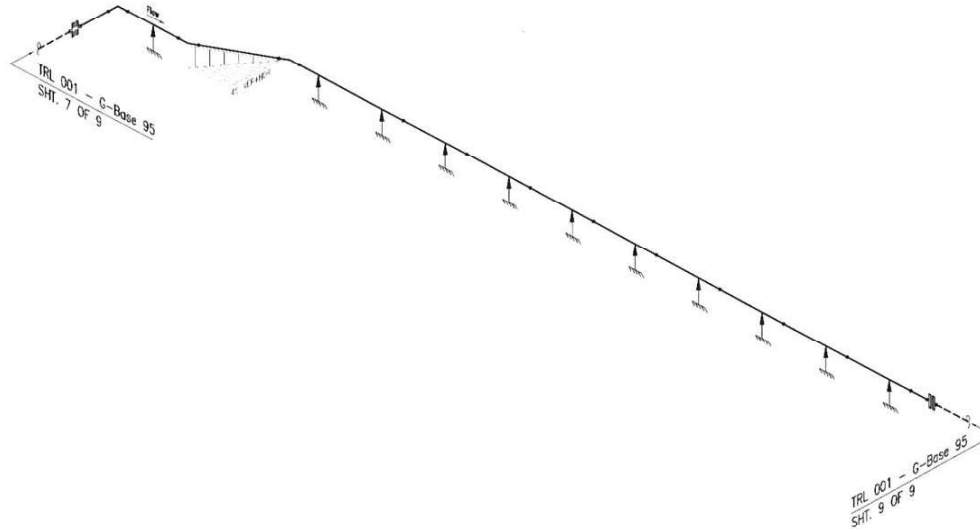
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<small>APPEND: TRL 001 - G-Base 95 Sheet 4 of 9</small>																			

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		PIPING VISUAL INSPECTION LOG							Report/ Project	Sheet									
									2112012	VT 8/9									
STT-CC-001-02-01 (TRL 001 G-Base 95 Tank Receiving line (Jetty to Tank No.1,2,3))																			
Degradation		N/A	Normal	Minor	Moderate	Severe	Remark												
<input type="checkbox"/> Corrosion <small>x.x-x.x mm</small>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input checked="" type="checkbox"/> CUS	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input type="checkbox"/> Paint	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input checked="" type="checkbox"/> Insulation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input type="checkbox"/> Supports	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input checked="" type="checkbox"/> Vibration	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input type="checkbox"/> Misalignment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input checked="" type="checkbox"/> Mech. Damage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input checked="" type="checkbox"/> Leak	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input checked="" type="checkbox"/> Other	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
Severity to be determined as follows: <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Minor:</td> <td style="width: 33%;">For findings that don't require action</td> <td style="width: 33%;">Highlighted in yellow in ISO</td> </tr> <tr> <td>Moderate</td> <td>For findings that require action (specify time)</td> <td></td> </tr> <tr> <td>Severe</td> <td>For findings that require immediate action</td> <td>Highlighted in Orange in ISO</td> </tr> </table>											Minor:	For findings that don't require action	Highlighted in yellow in ISO	Moderate	For findings that require action (specify time)		Severe	For findings that require immediate action	Highlighted in Orange in ISO
Minor:	For findings that don't require action	Highlighted in yellow in ISO																	
Moderate	For findings that require action (specify time)																		
Severe	For findings that require immediate action	Highlighted in Orange in ISO																	
<div style="border: 1px solid black; padding: 10px; height: 300px; position: relative;"> <div style="position: absolute; top: 10px; left: 10px;">  </div>  </div>																			

		PIPING INSPECTION PICTURE LOG				Report/ Project 2112012		Sheet PL 1/9			
STT-CC-001-02-01 (TRL 001 G-Base 95 Tank Receiving line (Jetty to Tank No.1,2,3))											
Name of part / Location			Findings			Name of part / Location			Findings		
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition			TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition		
Name of part / Location			Findings			Name of part / Location			Findings		
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition			TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition		
Name of part / Location			Findings			Name of part / Location			Findings		
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition			TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition		



PIPING INSPECTION PICTURE LOG



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Sheet

PL 2/9

STT-CC-001-02-01 (TRL 001 G-Base 95 Tank Receiving line (Jetty to Tank No.1,2,3))



Name of part / Location

Findings

TRL 001 Tank Receiving line
(Jetty to Tank No.3,10)
Anomaly no : 2.1Painting deterioration and
general corrosion on pipe

Name of part / Location

Findings

TRL 001 Tank Receiving line
(Jetty to Tank No.3,10)
Anomaly no : 2.1Painting deterioration and
general corrosion on pipe

Name of part / Location

Findings

TRL 001 Tank Receiving line
(Jetty to Tank No.3,10)
Anomaly no : 2.2Painting deterioration and
general corrosion on elbow

Name of part / Location

Findings

TRL 001 Tank Receiving line
(Jetty to Tank No.3,10)
Anomaly no : 2.2Painting deterioration and
general corrosion on elbow

Name of part / Location









Findings




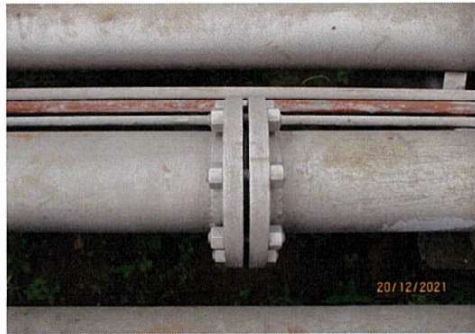




TRL 001 Tank Receiving line
(Jetty to Tank No.3,10)
Anomaly no : 2.3Painting deterioration and
general corrosion on pipe

Name of part / Location

Findings

TRL 001 Tank Receiving line
(Jetty to Tank No.3,10)
Anomaly no : 2.3Painting deterioration and
general corrosion on pipe

	PIPING INSPECTION PICTURE LOG			Report/ Project 2112012	Sheet PL 3/9
STT-CC-001-02-01 (TRL 001 G-Base 95 Tank Receiving line (Jetty to Tank No.1,2,3))					
					
Name of part / Location		Findings	Name of part / Location		Findings
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition	TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition
					
Name of part / Location		Findings	Name of part / Location		Findings
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition	TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition
					
Name of part / Location		Findings	Name of part / Location		Findings
TRL 001 Tank Receiving line (Jetty to Tank No.3,10) Anomaly no : 3.1		Painting deterioration and general corrosion on pipe	TRL 001 Tank Receiving line (Jetty to Tank No.3,10) Anomaly no : 3.1		Painting deterioration and general corrosion on pipe

		PIPING INSPECTION PICTURE LOG				Report/ Project	Sheet
						2112012	PL 4/9
STT-CC-001-02-01 (TRL 001 G-Base 95 Tank Receiving line (Jetty to Tank No.1,2,3))							
							
Name of part / Location		Findings		Name of part / Location		Findings	
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition		TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition	
							
Name of part / Location		Findings		Name of part / Location		Findings	
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition		TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition	
							
Name of part / Location		Findings		Name of part / Location		Findings	
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition		TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition	
Name of part / Location		Findings		Name of part / Location		Findings	
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition		TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition	

		PIPING INSPECTION PICTURE LOG				Report/ Project 2112012		Sheet PL 5/9	
STT-CC-001-02-01 (TRL 001 G-Base 95 Tank Receiving line (Jetty to Tank No.1,2,3))									
									
Name of part / Location			Findings		Name of part / Location			Findings	
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition		TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition	
									
Name of part / Location			Findings		Name of part / Location			Findings	
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition		TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition	
									
Name of part / Location			Findings		Name of part / Location			Findings	
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition		TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition	



PIPING INSPECTION PICTURE LOG



Report/ Project

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Sheet

PL 6/9

STT-CC-001-02-01 (TRL 001 G-Base 95 Tank Receiving line (Jetty to Tank No.1,2,3))



Name of part / Location	Findings	Name of part / Location	Findings
TRL 001 Tank Receiving line (Jetty to Tank No.3,10) Anomaly no : 6.1	general corrosion on U-bolt support	TRL 001 Tank Receiving line (Jetty to Tank No.3,10) Anomaly no : 6.1	general corrosion on U-bolt support



















Name of part / Location	Findings	Name of part / Location	Findings
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)	Still in normal condition	TRL 001 Tank Receiving line (Jetty to Tank No.3,10)	Still in normal condition

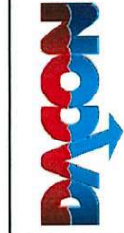


Name of part / Location	Findings	Name of part / Location	Findings
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)	Still in normal condition	TRL 001 Tank Receiving line (Jetty to Tank No.3,10)	Still in normal condition

		PIPING INSPECTION PICTURE LOG				Report/ Project 2112012		Sheet PL 7/9	
STT-CC-001-02-01 (TRL 001 G-Base 95 Tank Receiving line (Jetty to Tank No.1,2,3))									
									
Name of part / Location			Findings		Name of part / Location			Findings	
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition		TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition	
									
Name of part / Location			Findings		Name of part / Location			Findings	
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition		TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition	
									
Name of part / Location			Findings		Name of part / Location			Findings	
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition		TRL 001 Tank Receiving line (Jetty to Tank No.3,10)			Still in normal condition	

		PIPING INSPECTION PICTURE LOG			Report/ Project 2112012	Sheet PL 8/9
STT-CC-001-02-01 (TRL 001 G-Base 95 Tank Receiving line (Jetty to Tank No.1,2,3))						
						
Name of part / Location		Findings		Name of part / Location		Findings
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition		TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition
						
Name of part / Location		Findings		Name of part / Location		Findings
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition		TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition
						
Name of part / Location		Findings		Name of part / Location		Findings
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still In normal condition		TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition



		PIPING INSPECTION PICTURE LOG				Report/ Project	Sheet
						2112012	PL 9/9
STT-CC-001-02-01 (TRL 001 G-Base 95 Tank Receiving line (Jetty to Tank No.1,2,3))							
							
Name of part / Location		Findings		Name of part / Location		Findings	
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition		TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition	
							
Name of part / Location		Findings		Name of part / Location		Findings	
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition		TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition	
							
Name of part / Location		Findings		Name of part / Location		Findings	
TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition		TRL 001 Tank Receiving line (Jetty to Tank No.3,10)		Still in normal condition	





		Report/ Project	Sheet
		2112012	UTM 1/12

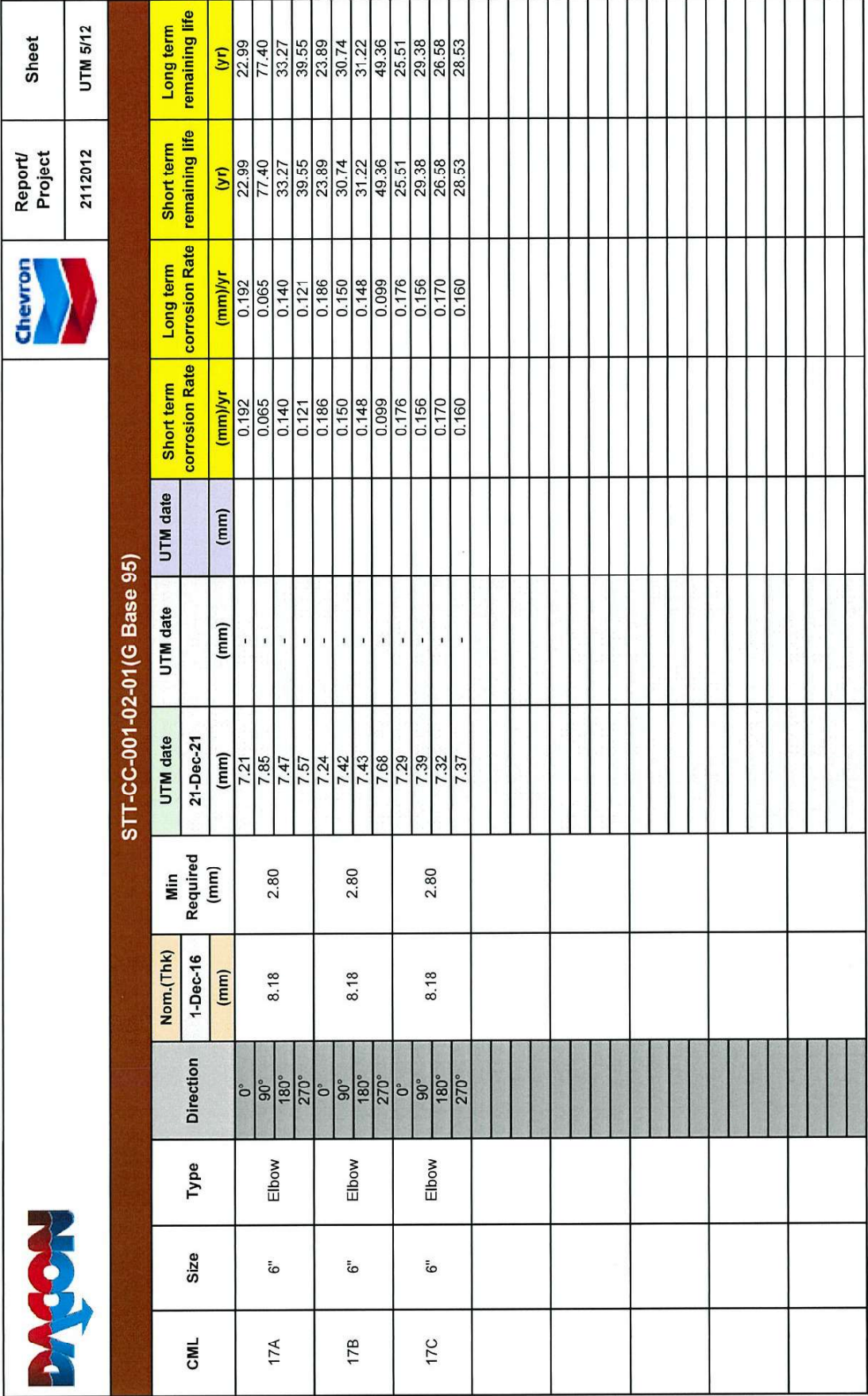
STT-CC-001-02-01(G Base 95)



CML	Size	Type	Direction	Nom.(Thk) 1-Jan-65 (mm)	Min Required (mm)	UTM date 6-Dec-16 (mm)	UTM date 20-Dec-21 (mm)	UTM date (mm)	Short term corrosion Rate (mm)/yr	Long term corrosion Rate (mm)/yr	Short term remaining life (yr)	Long term remaining life (yr)
1A	6"	Elbow	0°	7.11	2.80	6.55	6.59		-0.008	0.009	No Corrosion	415.48
			90°			6.68	6.99		-0.061	0.002	No Corrosion	1990.44
			180°			6.60	7.04		-0.087	0.001	No Corrosion	3452.90
			270°			6.52	6.99		-0.093	0.002	No Corrosion	1990.44
1B	6"	Elbow	0°	7.11	2.80	6.35	6.52		-0.034	0.010	No Corrosion	359.42
			90°			6.87	6.96		-0.018	0.003	No Corrosion	1580.95
			180°			6.76	7.07		-0.061	0.001	No Corrosion	6085.33
			270°			6.94	6.94		0.000	0.003	No Corrosion	1388.25
1C	6"	Elbow	0°	7.11	2.80	6.41	6.68		-0.054	0.008	No Corrosion	514.38
			90°			6.79	6.91		-0.024	0.004	No Corrosion	1171.46
			180°			6.55	6.71		-0.032	0.007	No Corrosion	557.23
			270°			6.24	6.82		-0.115	0.005	No Corrosion	790.21
2	6"	Pipe	0°	7.11	2.80	6.78	6.53		0.050	0.010	No Corrosion	366.60
			90°			6.97	6.71		0.052	0.007	75.81	557.23
			180°			6.88	6.76		0.024	0.006	166.36	644.98
			270°			6.51	6.92		-0.081	0.003	No Corrosion	1236.12
3A	6"	Elbow	0°	7.11	2.80	6.25	6.66		-0.081	0.008	No Corrosion	488.98
			90°			6.43	6.07		0.071	0.018	45.79	179.24
			180°			6.48	6.54		-0.012	0.010	No Corrosion	374.04
			270°			6.07	6.41		-0.067	0.012	No Corrosion	293.99
3B	6"	Elbow	0°	7.11	2.80	6.25	6.85		-0.119	0.005	No Corrosion	887.97
			90°			6.26	5.96		0.060	0.020	53.10	156.64
			180°			7.40	6.66		0.147	0.008	26.30	488.98
			270°			5.67	6.25		-0.115	0.015	No Corrosion	228.68
3C	6"	Elbow	0°	7.11	2.80	6.52	6.89		-0.073	0.004	No Corrosion	1059.78
			90°			6.33	6.30		0.006	0.014	588.13	246.32
			180°			7.29	6.83		0.091	0.005	44.16	820.47
			270°			6.16	6.27		-0.022	0.015	No Corrosion	235.49
4	6"	Pipe	0°	7.11	2.80	6.40	6.45		-0.010	0.012	No Corrosion	315.26
			90°			6.72	6.86		-0.028	0.004	No Corrosion	925.77
			180°			6.10	6.33		-0.046	0.014	No Corrosion	257.99
			270°			6.24	6.28		-0.008	0.015	No Corrosion	239.01



												Report/ Project	Sheet
STT-CC-001-02-01(G Base 95)													
CML	Size	Type	Direction	Nom. (Thk) 1-Jan-65 (mm)	Min Required (mm)	UTM date 6-Dec-16 (mm)	UTM date 20-Dec-21 (mm)	UTM date (mm)	Short term corrosion Rate (mm)/yr	Long term corrosion Rate (mm)/yr	Short term remaining life (yr)	Long term remaining life (yr)	
5	6"	Pipe	0°	7.11	2.80	6.66	6.64		0.004	0.008	967.89	465.75	
			90°			7.11	6.42		0.137	0.012	26.45	299.07	
			180°			6.56	6.49		0.014	0.011	265.74	339.27	
			270°			6.96	6.91		0.010	0.004	414.38	1171.46	
6A	6"	Elbow	0°	7.11	2.80	6.57	6.65		-0.016	0.008	No Corrosion	477.11	
			90°			6.47	6.74		-0.054	0.006	No Corrosion	607.03	
			180°			6.71	6.75		-0.008	0.005	No Corrosion	625.48	
			270°			6.70	6.15		0.109	0.017	30.70	198.93	
6B	6"	Elbow	0°	7.11	2.80	6.22	6.27		-0.010	0.015	No Corrosion	235.49	
			90°			6.90	6.82		0.016	0.005	253.32	790.21	
			180°			7.08	7.13		-0.010	0.000	No Corrosion	No Corrosion	
			270°			6.79	6.87		-0.016	0.004	No Corrosion	966.72	
6C	6"	Elbow	0°	7.11	2.80	6.36	6.39		-0.006	0.013	No Corrosion	284.24	
			90°			6.41	6.39		0.004	0.013	904.88	284.24	
			180°			6.92	6.94		-0.004	0.003	No Corrosion	1388.25	
			270°			6.63	6.67		-0.008	0.008	No Corrosion	501.39	
7	6"	Pipe	0°	7.11	2.80	6.50	6.56		-0.012	0.010	No Corrosion	389.71	
			90°			6.98	6.88		0.020	0.004	205.68	1011.23	
			180°			6.72	6.58		0.028	0.009	136.11	406.57	
			270°			6.66	6.71		-0.010	0.007	No Corrosion	557.23	
8	6"	Pipe	0°	7.11	2.80	6.73	6.45		0.056	0.012	65.71	315.26	
			90°			6.93	6.86		0.014	0.004	292.38	925.77	
			180°			6.64	6.33		0.061	0.014	57.40	257.99	
			270°			6.66	6.28		0.075	0.015	46.17	239.01	
9A	6"	TEE	0°	7.11	2.80	-	8.88		-	-	No Corrosion	No Corrosion	
			90°			-	8.10		-	-	No Corrosion	No Corrosion	
			180°			-	8.65		-	-	No Corrosion	No Corrosion	
			270°			-	8.66		-	-	No Corrosion	No Corrosion	
9B	6"	TEE	0°	7.11	2.80	-	9.07		-	-	No Corrosion	No Corrosion	
			90°			-	8.77		-	-	No Corrosion	No Corrosion	
			180°			-	-		-	-	No Corrosion	No Corrosion	
			270°			-	9.37		-	-	No Corrosion	No Corrosion	



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			STT-CC-001-02-01(G Base 95)										2112012	UTM 4/12
CML	Size	Type	Direction	Nom. (Thk) 1-Dec-16 (mm)	Min Required (mm)	UTM date 21-Dec-21 (mm)	UTM date (mm)	UTM date (mm)	Short term corrosion Rate (mm)/yr	Long term corrosion Rate (mm)/yr	Short term remaining life (yr)	Long term remaining life (yr)		
13A	6"	Elbow	0°	8.18	2.80	6.45	-		0.342	0.342	10.67	10.67		
			90°			7.55	-		0.125	0.125	38.13	38.13		
			180°			7.59	-		0.117	0.117	41.06	41.06		
			270°			7.38	-		0.158	0.158	28.95	28.95		
13B	6"	Elbow	0°	8.18	2.80	6.59	-		0.314	0.314	12.06	12.06		
			90°			7.79	-		0.077	0.077	64.71	64.71		
			180°			7.51	-		0.132	0.132	35.55	35.55		
			270°			7.56	-		0.123	0.123	38.83	38.83		
13C	6"	Elbow	0°	8.18	2.80	6.82	-		0.269	0.269	14.95	14.95		
			90°			7.56	-		0.123	0.123	38.83	38.83		
			180°			7.46	-		0.142	0.142	32.73	32.73		
			270°			7.24	-		0.186	0.186	23.89	23.89		
14	6"	Pipe	0°	8.18	2.80	6.76	-		0.281	0.281	14.10	14.10		
			90°			7.01	-		0.231	0.231	18.20	18.20		
			180°			7.09	-		0.216	0.216	19.91	19.91		
			270°			6.97	-		0.239	0.239	17.43	17.43		
15A	6"	Elbow	0°	8.18	2.80	7.69	-		0.097	0.097	50.47	50.47		
			90°			7.38	-		0.158	0.158	28.95	28.95		
			180°			7.57	-		0.121	0.121	39.55	39.55		
			270°			7.53	-		0.129	0.129	36.80	36.80		
15B	6"	Elbow	0°	8.18	2.80	7.28	-		0.178	0.178	25.18	25.18		
			90°			7.21	-		0.192	0.192	22.99	22.99		
			180°			7.65	-		0.105	0.105	46.28	46.28		
			270°			7.50	-		0.134	0.134	34.96	34.96		
15C	6"	Elbow	0°	8.18	2.80	7.51	-		0.132	0.132	35.55	35.55		
			90°			7.21	-		0.192	0.192	22.99	22.99		
			180°			7.85	-		0.065	0.065	77.40	77.40		
			270°			7.48	-		0.138	0.138	33.81	33.81		
16	6"	Pipe	0°	8.18	2.80	6.57	-		0.318	0.318	11.84	11.84		
			90°			6.61	-		0.310	0.310	12.27	12.27		
			180°			6.62	-		0.308	0.308	12.38	12.38		
			270°			6.61	-		0.310	0.310	12.27	12.27		





												Report/ Project	Sheet
STT-CC-001-02-01(G Base 95)													
CML	Size	Type	Direction	Nom. (Thk)		Min Required (mm)	UTM date	UTM date	UTM date	Short term corrosion Rate (mm)/yr	Long term corrosion Rate (mm)/yr	Short term remaining life (yr)	Long term remaining life (yr)
				1-Dec-16			21-Dec-21						
				(mm)	(mm)		(mm)	(mm)	(mm)				
18A	6"	Elbow	0°			0.00	-			0.129	0.129	36.80	36.80
			90°			7.51	-			0.132	0.132	35.55	35.55
			180°			7.33	-			0.168	0.168	26.95	26.95
			270°			7.61	-			0.113	0.113	42.68	42.68
18B	6"	Elbow	0°			7.14	-			0.206	0.206	21.11	21.11
			90°			7.85	-			0.065	0.065	77.40	77.40
			180°			7.20	-			0.194	0.194	22.71	22.71
			270°			7.75	-			0.085	0.085	58.22	58.22
18C	6"	Elbow	0°			7.10	-			0.214	0.214	20.14	20.14
			90°			7.81	-			0.073	0.073	68.48	68.48
			180°			7.64	-			0.107	0.107	45.33	45.33
			270°			7.72	-			0.091	0.091	54.09	54.09
19	6"	Pipe	0°			6.97	-			0.239	0.239	17.43	17.43
			90°			6.89	-			0.255	0.255	16.04	16.04
			180°			6.62	-			0.308	0.308	12.38	12.38
			270°			6.62	-			0.308	0.308	12.38	12.38
20	6"	Pipe	0°			7.28	-			0.178	0.178	25.18	25.18
			90°			7.16	-			0.202	0.202	21.62	21.62
			180°			7.33	-			0.168	0.168	26.95	26.95
			270°			7.56	-			0.123	0.123	38.83	38.83
21A	6"	Elbow	0°			7.20	-			0.194	0.194	22.71	22.71
			90°			7.29	-			0.176	0.176	25.51	25.51
			180°			7.59	-			0.117	0.117	41.06	41.06
			270°			7.38	-			0.158	0.158	28.95	28.95
21B	6"	Elbow	0°			7.18	-			0.198	0.198	22.15	22.15
			90°			7.31	-			0.172	0.172	26.22	26.22
			180°			7.32	-			0.170	0.170	26.58	26.58
			270°			7.75	-			0.085	0.085	58.22	58.22
21C	6"	Elbow	0°			7.04	-			0.225	0.225	18.81	18.81
			90°			7.44	-			0.146	0.146	31.71	31.71
			180°			7.37	-			0.160	0.160	28.53	28.53
			270°			7.43	-			0.148	0.148	31.22	31.22

						Report/ Project		Sheet				
						2112012		UTM 7/12				
STT-CC-001-02-01(G Base 95)												
CML	Size	Type	Direction	Nom. (Thk)	Min Required (mm)	UTM date	UTM date	UTM date	Short term corrosion Rate (mm)/yr	Long term corrosion Rate (mm)/yr	Short term remaining life (yr)	Long term remaining life (yr)
				1-Dec-16 (mm)		21-Dec-21 (mm)	(mm)	(mm)				
22	6"	Pipe	0°	8.18	2.80	7.41	-	0.152	0.152	0.152	30.28	30.28
			90°			7.18	-	0.198	0.198	0.198	22.15	22.15
			180°			7.00	-	0.233	0.233	0.233	18.00	18.00
			270°			7.35	-	0.164	0.164	0.164	27.73	27.73
23A	6"	Elbow	0°	8.18	2.80	7.80	-	0.075	0.075	0.075	66.55	66.55
			90°			7.41	-	0.152	0.152	0.152	30.28	30.28
			180°			7.61	-	0.113	0.113	0.113	42.68	42.68
			270°			7.91	-	0.053	0.053	0.053	95.72	95.72
23B	6"	Elbow	0°	8.18	2.80	7.34	-	0.166	0.166	0.166	27.33	27.33
			90°			7.44	-	0.146	0.146	0.146	31.71	31.71
			180°			7.62	-	0.111	0.111	0.111	43.53	43.53
			270°			7.88	-	0.059	0.059	0.059	85.64	85.64
23C	6"	Elbow	0°	8.18	2.80	7.19	-	0.196	0.196	0.196	22.43	22.43
			90°			7.58	-	0.119	0.119	0.119	40.29	40.29
			180°			7.48	-	0.138	0.138	0.138	33.81	33.81
			270°			7.95	-	0.045	0.045	0.045	113.24	113.24
24A	6"	Elbow	0°	8.18	2.80	7.69	-	0.097	0.097	0.097	50.47	50.47
			90°			7.50	-	0.134	0.134	0.134	34.96	34.96
			180°			7.42	-	0.150	0.150	0.150	30.74	30.74
			270°			8.26	-	-0.016	-0.016	No Corrosion	No Corrosion	No Corrosion
24B	6"	Elbow	0°	8.18	2.80	7.41	-	0.152	0.152	0.152	30.28	30.28
			90°			7.86	-	0.063	0.063	0.063	79.97	79.97
			180°			7.39	-	0.156	0.156	0.156	29.38	29.38
			270°			8.29	-	-0.022	-0.022	No Corrosion	No Corrosion	No Corrosion
24C	6"	Elbow	0°	8.18	2.80	7.27	-	0.180	0.180	0.180	24.84	24.84
			90°			7.73	-	0.089	0.089	0.089	55.41	55.41
			180°			7.41	-	0.152	0.152	0.152	30.28	30.28
			270°			7.95	-	0.045	0.045	0.045	113.24	113.24
25A	6"	Elbow	0°	8.18	2.80	6.78	-	0.277	0.277	0.277	14.38	14.38
			90°			7.24	-	0.186	0.186	0.186	23.89	23.89
			180°			7.19	-	0.196	0.196	0.196	22.43	22.43
			270°			7.34	-	0.166	0.166	0.166	27.33	27.33

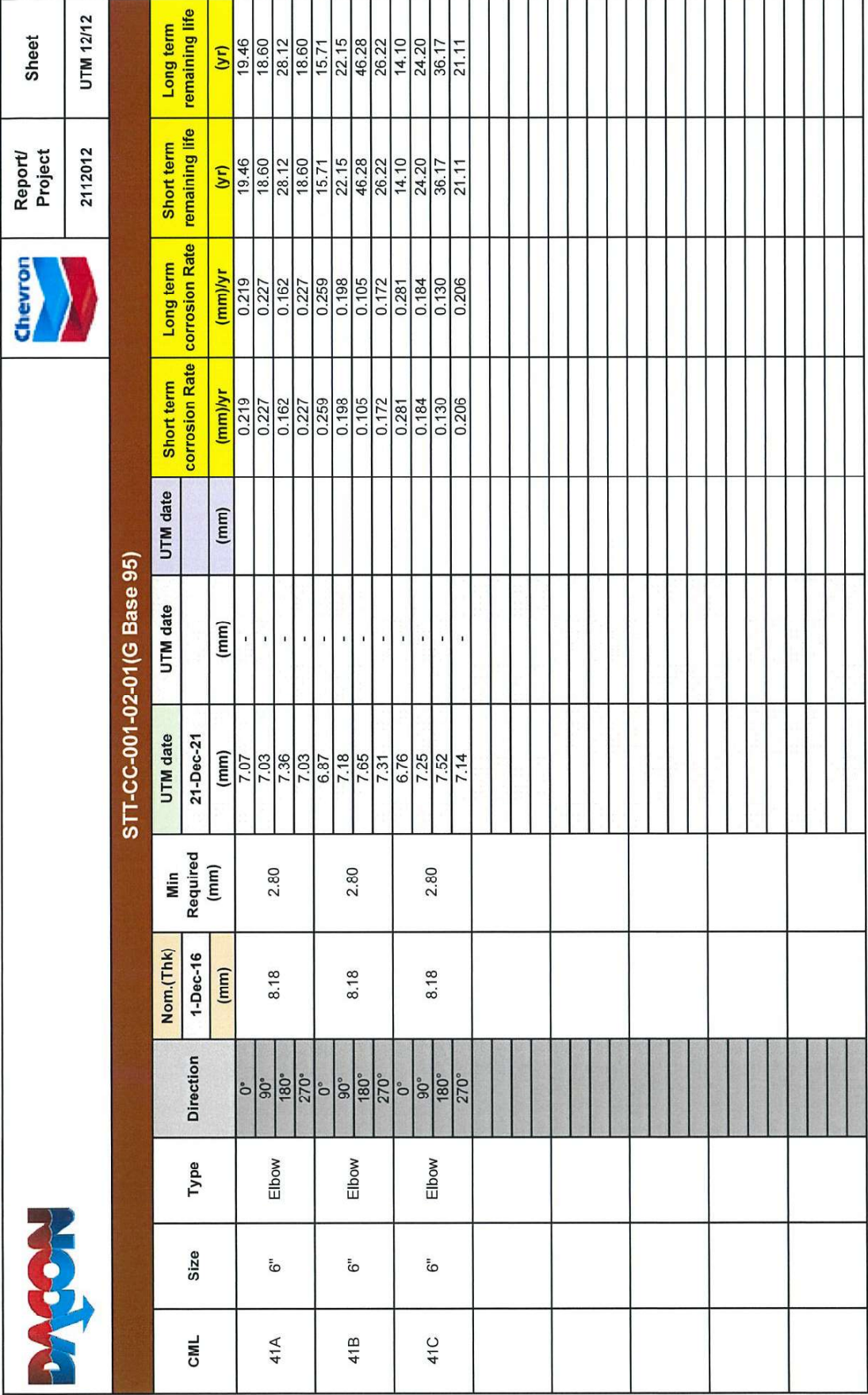
												Report/ Project	Sheet
STT-CC-001-02-01(G Base 95)													
CML	Size	Type	Direction	Nom. (Thk)		Min Required (mm)	UTM date	UTM date	UTM date	Short term corrosion Rate (mm)/yr	Long term corrosion Rate (mm)/yr	Short term remaining life (yr)	Long term remaining life (yr)
				1-Dec-16	(mm)		21-Dec-21	(mm)	(mm)				
				(mm)			(mm)	(mm)					
25B	6"	Elbow	0°				6.93	-		0.247	0.247	16.71	16.71
			90°				7.33	-		0.168	0.168	26.95	26.95
			180°				7.30	-		0.174	0.174	25.86	25.86
			270°				7.41	-		0.152	0.152	30.28	30.28
25C	6"	Elbow	0°				7.03	-		0.227	0.227	18.60	18.60
			90°				6.86	-		0.261	0.261	15.56	15.56
			180°				6.83	-		0.267	0.267	15.10	15.10
			270°				6.95	-		0.243	0.243	17.06	17.06
26	6"	Pipe	0°				7.40	-		0.154	0.154	29.83	29.83
			90°				7.04	-		0.225	0.225	18.81	18.81
			180°				7.15	-		0.204	0.204	21.36	21.36
			270°				7.13	-		0.208	0.208	20.86	20.86
27	6"	Pipe	0°				6.78	-		0.277	0.277	14.38	14.38
			90°				6.64	-		0.304	0.304	12.61	12.61
			180°				6.84	-		0.265	0.265	15.25	15.25
			270°				6.69	-		0.295	0.295	13.20	13.20
28A	6"	Elbow	0°				6.84	-		0.265	0.265	15.25	15.25
			90°				7.68	-		0.099	0.099	49.36	49.36
			180°				7.11	-		0.212	0.212	20.37	20.37
			270°				7.52	-		0.130	0.130	36.17	36.17
28B	6"	Elbow	0°				7.16	-		0.202	0.202	21.62	21.62
			90°				7.78	-		0.079	0.079	62.97	62.97
			180°				7.40	-		0.154	0.154	29.83	29.83
			270°				7.74	-		0.087	0.087	56.78	56.78
28C	6"	Elbow	0°				7.25	-		0.184	0.184	24.20	24.20
			90°				7.50	-		0.134	0.134	34.96	34.96
			180°				6.97	-		0.239	0.239	17.43	17.43
			270°				7.49	-		0.136	0.136	34.38	34.38
29A	6"	Elbow	0°				7.03	-		0.227	0.227	18.60	18.60
			90°				7.79	-		0.077	0.077	64.71	64.71
			180°				7.12	-		0.210	0.210	20.61	20.61
			270°				7.80	-		0.075	0.075	66.55	66.55


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STT-CC-001-02-01(G Base 95)													2112012	UTM 9/12
CML	Size	Type	Direction	Nom. (Thk) 1-Dec-16 (mm)	Min Required (mm)	UTM date	UTM date	UTM date	Short term corrosion Rate (mm)/yr	Long term corrosion Rate (mm)/yr	Short term remaining life (yr)	Long term remaining life (yr)		
						21-Dec-21 (mm)	(mm)	(mm)						
						(mm)	(mm)	(mm)						
29B	6"	Elbow	0°	8.18	2.80	6.78	-	0.277	0.277	0.277	14.38	14.38		
			90°			7.84	-	0.067	0.067	0.067	74.97	74.97		
			180°			7.24	-	0.186	0.186	0.186	23.89	23.89		
			270°			7.33	-	0.168	0.168	0.168	26.95	26.95		
29C	6"	Elbow	0°	8.18	2.80	7.09	-	0.216	0.216	0.216	19.91	19.91		
			90°			7.58	-	0.119	0.119	0.119	40.29	40.29		
			180°			6.53	-	0.326	0.326	0.326	11.43	11.43		
			270°			7.52	-	0.130	0.130	0.130	36.17	36.17		
30A	6"	Elbow	0°	8.18	2.80	7.41	-	0.152	0.152	0.152	30.28	30.28		
			90°			7.52	-	0.130	0.130	0.130	36.17	36.17		
			180°			7.45	-	0.144	0.144	0.144	32.22	32.22		
			270°			7.20	-	0.194	0.194	0.194	22.71	22.71		
30B	6"	Elbow	0°	8.18	2.80	7.40	-	0.154	0.154	0.154	29.83	29.83		
			90°			7.43	-	0.148	0.148	0.148	31.22	31.22		
			180°			7.47	-	0.140	0.140	0.140	33.27	33.27		
			270°			7.03	-	0.227	0.227	0.227	18.60	18.60		
30C	6"	Elbow	0°	8.18	2.80	7.48	-	0.138	0.138	0.138	33.81	33.81		
			90°			7.48	-	0.138	0.138	0.138	33.81	33.81		
			180°			7.41	-	0.152	0.152	0.152	30.28	30.28		
			270°			7.02	-	0.229	0.229	0.229	18.40	18.40		
31	6"	Pipe	0°	8.18	2.80	6.80	-	0.273	0.273	0.273	14.66	14.66		
			90°			6.75	-	0.283	0.283	0.283	13.97	13.97		
			180°			7.31	-	0.172	0.172	0.172	26.22	26.22		
			270°			6.81	-	0.271	0.271	0.271	14.80	14.80		
32	6"	Pipe	0°	8.18	2.80	6.91	-	0.251	0.251	0.251	16.37	16.37		
			90°			7.18	-	0.198	0.198	0.198	22.15	22.15		
			180°			6.86	-	0.261	0.261	0.261	15.56	15.56		
			270°			6.58	-	0.316	0.316	0.316	11.95	11.95		
33	6"	Pipe	0°	8.18	2.80	7.35	-	0.164	0.164	0.164	27.73	27.73		
			90°			7.25	-	0.184	0.184	0.184	24.20	24.20		
			180°			7.48	-	0.138	0.138	0.138	33.81	33.81		
			270°			7.28	-	0.178	0.178	0.178	25.18	25.18		

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										2112012	UTM 10/12
S TT-CC-001-02-01(G Base 95)											
CML	Size	Type	Direction	Nom.(Thk) 1-Dec-16 (mm)	Min Required (mm)	UTM date	UTM date	UTM date	Short term corrosion Rate (mm)/yr	Long term corrosion Rate (mm)/yr	Long term remaining life (yr)
						21-Dec-21 (mm)	(mm)	(mm)	(mm)/yr	(mm)/yr	(yr)
34A	6"	Elbow	0°	8.18	2.80	7.11	-	-	0.212	0.212	20.37
			90°			7.75	-	-	0.085	0.085	58.22
			180°			6.68	-	-	0.297	0.297	13.08
			270°			7.49	-	-	0.136	0.136	34.38
34B	6"	Elbow	0°	8.18	2.80	6.76	-	-	0.281	0.281	14.10
			90°			7.90	-	-	0.055	0.055	92.12
			180°			6.96	-	-	0.241	0.241	17.25
			270°			7.76	-	-	0.083	0.083	59.73
34C	6"	Elbow	0°	8.18	2.80	7.01	-	-	0.231	0.231	18.20
			90°			7.77	-	-	0.081	0.081	61.31
			180°			6.86	-	-	0.261	0.261	15.56
			270°			7.47	-	-	0.140	0.140	33.27
35	6"	Pipe	0°	8.18	2.80	7.73	-	-	0.089	0.089	55.41
			90°			7.28	-	-	0.178	0.178	25.18
			180°			6.52	-	-	0.328	0.328	11.33
			270°			7.06	-	-	0.221	0.221	19.24
36A	6"	Elbow	0°	8.18	2.80	7.17	-	-	0.200	0.200	21.88
			90°			7.50	-	-	0.134	0.134	34.96
			180°			7.04	-	-	0.225	0.225	18.81
			270°			6.99	-	-	0.235	0.235	17.81
36B	6"	Elbow	0°	8.18	2.80	6.98	-	-	0.237	0.237	17.62
			90°			7.62	-	-	0.111	0.111	43.53
			180°			7.37	-	-	0.160	0.160	28.53
			270°			7.18	-	-	0.198	0.198	22.15
36C	6"	Elbow	0°	8.18	2.80	6.92	-	-	0.249	0.249	16.54
			90°			7.44	-	-	0.146	0.146	31.71
			180°			7.18	-	-	0.198	0.198	22.15
			270°			6.98	-	-	0.237	0.237	17.62
37A	6"	Elbow	0°	8.18	2.80	6.53	-	-	0.326	0.326	11.43
			90°			7.60	-	-	0.115	0.115	41.86
			180°			7.24	-	-	0.186	0.186	23.89
			270°			7.45	-	-	0.144	0.144	32.22



DAGON			STT-CC-001-02-01(G Base 95)										Chevron		Report/ Project	Sheet
CML	Size	Type	Direction	Nom.(Thk) 1-Dec-16 (mm)	Min Required (mm)	UTM date (mm)	UTM date (mm)	UTM date (mm)	Short term corrosion Rate (mm)/yr	Long term corrosion Rate (mm)/yr	Short term remaining life (yr)	Long term remaining life (yr)	2112012	UTM 11/12		
37B	6"	Elbow	0°	8.18	2.80	6.55	-		0.303	0.303	12.73	12.73	2112012	UTM 11/12		
			90°			7.59	-		0.117	0.117	41.06	41.06				
			180°			7.36	-		0.162	0.162	28.12	28.12				
			270°			7.59	-		0.117	0.117	41.06	41.06				
37C	6"	Elbow	0°	8.18	2.80	7.27	-		0.180	0.180	24.84	24.84	2112012	UTM 11/12		
			90°			7.25	-		0.184	0.184	24.20	24.20				
			180°			7.10	-		0.214	0.214	20.14	20.14				
			270°			7.26	-		0.182	0.182	24.52	24.52				
38	6"	Pipe	0°	8.18	2.80	7.41	-		0.152	0.152	30.28	30.28	2112012	UTM 11/12		
			90°			7.07	-		0.219	0.219	19.46	19.46				
			180°			7.00	-		0.233	0.233	18.00	18.00				
			270°			6.78	-		0.277	0.277	14.38	14.38				
39A	6"	Elbow	0°	8.18	2.80	7.02	-		0.229	0.229	18.40	18.40	2112012	UTM 11/12		
			90°			7.63	-		0.109	0.109	44.41	44.41				
			180°			6.47	-		0.338	0.338	10.85	10.85				
			270°			7.83	-		0.069	0.069	72.68	72.68				
39B	6"	Elbow	0°	8.18	2.80	7.12	-		0.210	0.210	20.61	20.61	2112012	UTM 11/12		
			90°			7.79	-		0.077	0.077	64.71	64.71				
			180°			6.75	-		0.283	0.283	13.97	13.97				
			270°			7.95	-		0.045	0.045	113.24	113.24				
39C	6"	Elbow	0°	8.18	2.80	7.46	-		0.142	0.142	32.73	32.73	2112012	UTM 11/12		
			90°			7.22	-		0.190	0.190	23.29	23.29				
			180°			6.42	-		0.348	0.348	10.40	10.40				
			270°			7.50	-		0.134	0.134	34.96	34.96				
40	6"	Pipe	0°	8.18	2.80	7.58	-		0.119	0.119	40.29	40.29	2112012	UTM 11/12		
			90°			6.53	-		0.326	0.326	11.43	11.43				
			180°			7.01	-		0.231	0.231	18.20	18.20				
			270°			7.58	-		0.119	0.119	40.29	40.29				
			0°										2112012	UTM 11/12		
			90°													
			180°													
			270°													



	PIPING INSPECTION SUMMARY REPORT		Report/ Project	Sheet
			2112012	S 1/1

TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9)

Date of inspections: 16 December 2021

Piping data			
Line ID :	TRL 002 Tank Receiving line	Line Description :	Jetty to Tank No.9
Product :	G-Base 91	Diameter/Schedule :	6 inch, Sch. STD. T nom : 7.11 mm.
Material :	API 5L GR.B	Insulation :	N/A

Design and calculations				
Design Pressure P :	285 psi	$T_{min} = \frac{PD}{2(SE+PY)}$	Tmin (pressure) :	0.84 mm.
Diameter D :	6 inch.		Tmat (Table 6 API574) :	3.3 mm. T struc : 2.8 mm.
Stress S (Table A1) :	20.0 ksi		T minimum measured :	5.44 mm.
Q factor E (Table A1A or a1B) :	1		Service life (from last reading) :	1995 / 27 years
Coefficient Y: (Table 304.1.1) :	0.4		Corrosion Rate :	0.147 mm./year
The estimated remaining life for this line is: 23.18 years				



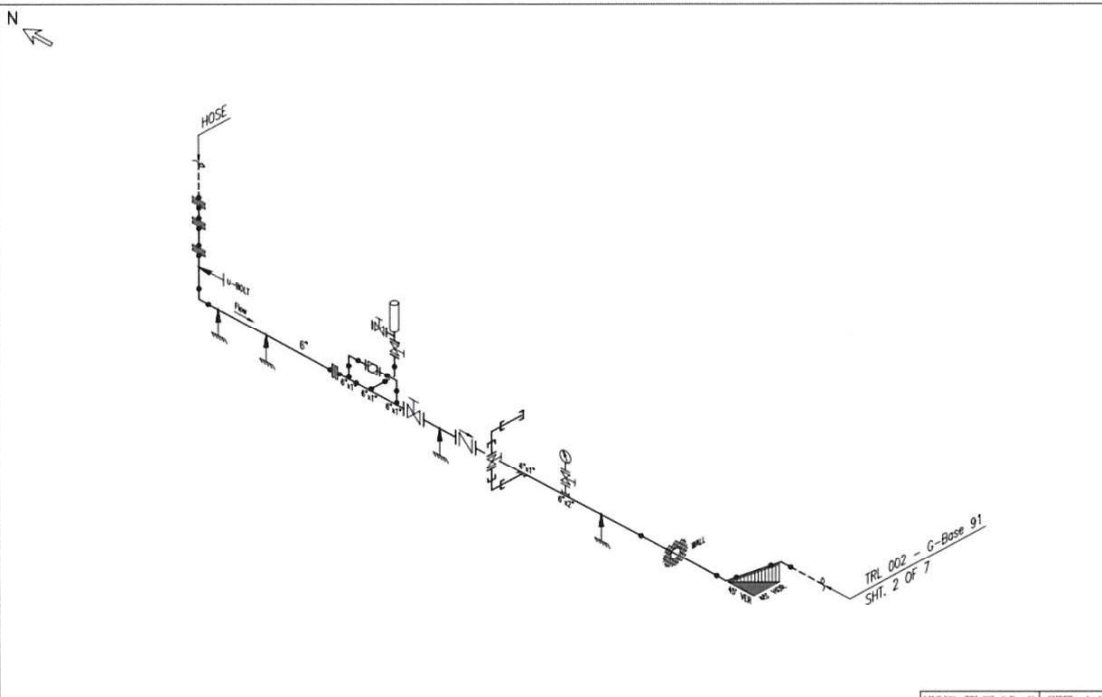
UT settings			
Procedure :	P-INT12 rev. 01	Material Temperature :	Ambient
Equipment type, s/n :	Olympus 38DL plus ,S/N.151036202	Probe type, s/n :	D790-SM 5 MHz.
Cal block, s/n :	CS 0541	Calibration step :	Low 6 mm. High 10 mm.



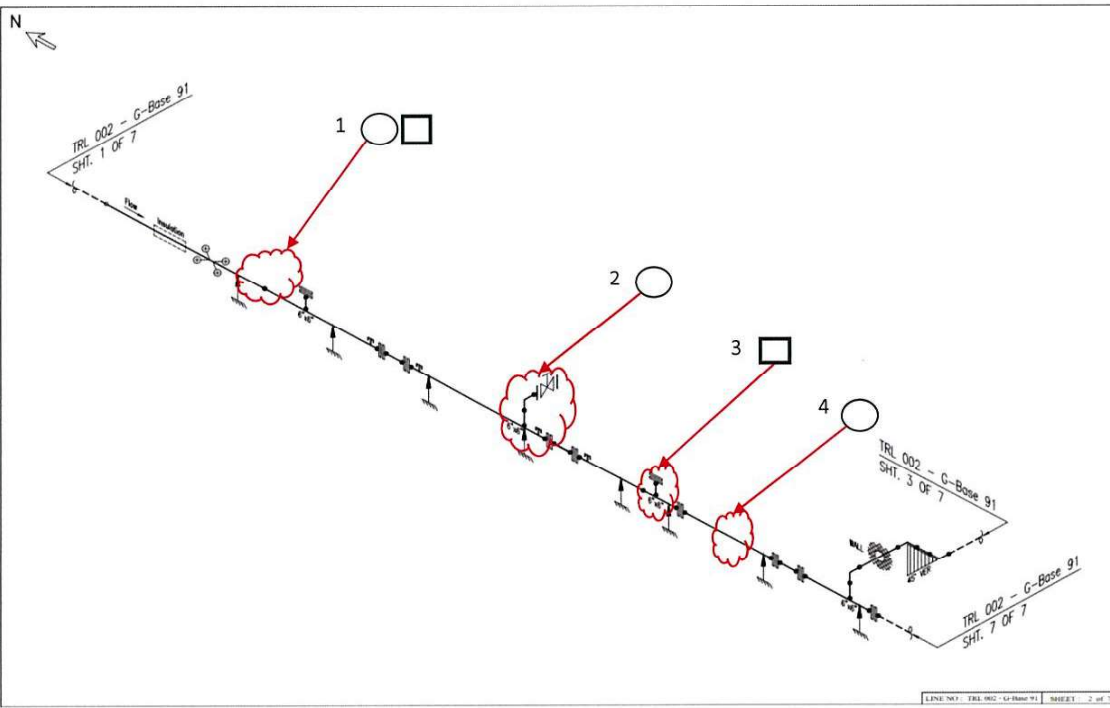
LRUT summary			
Approximate length :	-	Nr. of tool locations :	-
Equipment type, s/n :	-	Probe collar, nr of channels :	-
Nr of LRUT indications :	-	Category 1 :	-
		Category 2 :	-
		Category 3 :	-



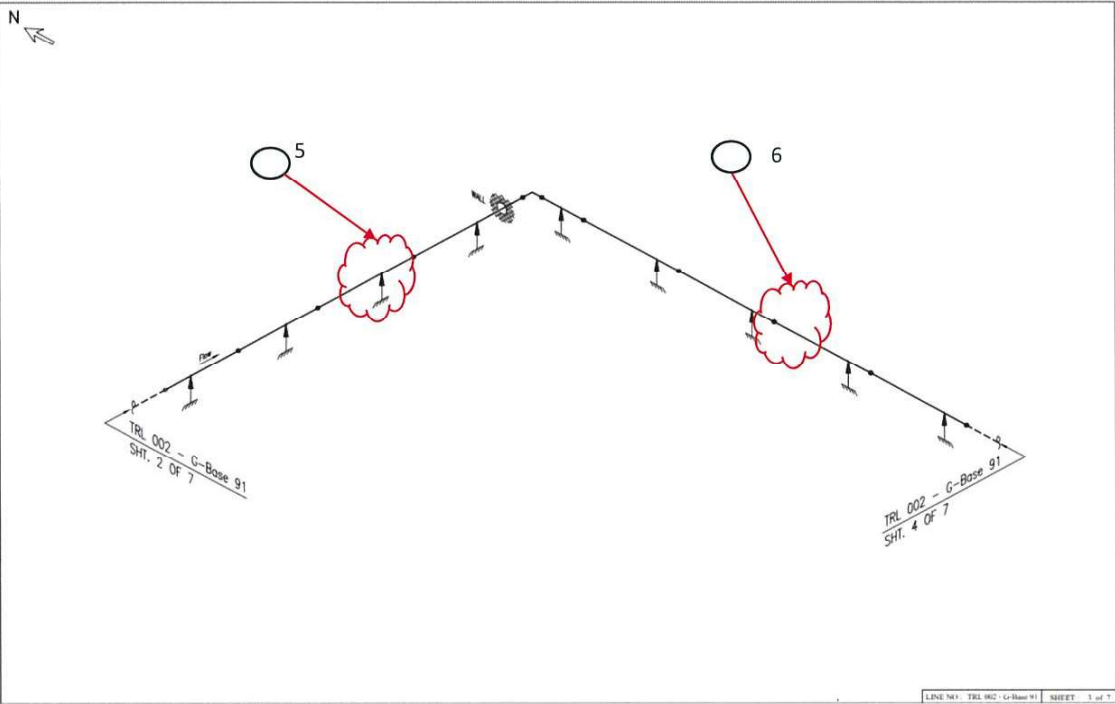
Pipe inspection summary
<p>Visual Inspection (VT)</p> <p>1. Sealing sleeve underground pipe was found degradation,damage and corrosion under sleeve underground pipe. Approximate corrosion depth 1.5 mm.</p> <p>Ultrasonic Thickness Measurement (UTM)</p> <p>- UTM : The actual minimum thickness found as 5.44 mm.</p> <p>- Maximum Corrosion rate: 0.147 mm/yr</p> <p>-Minimum Remaining Life: 23.18 yrs</p>



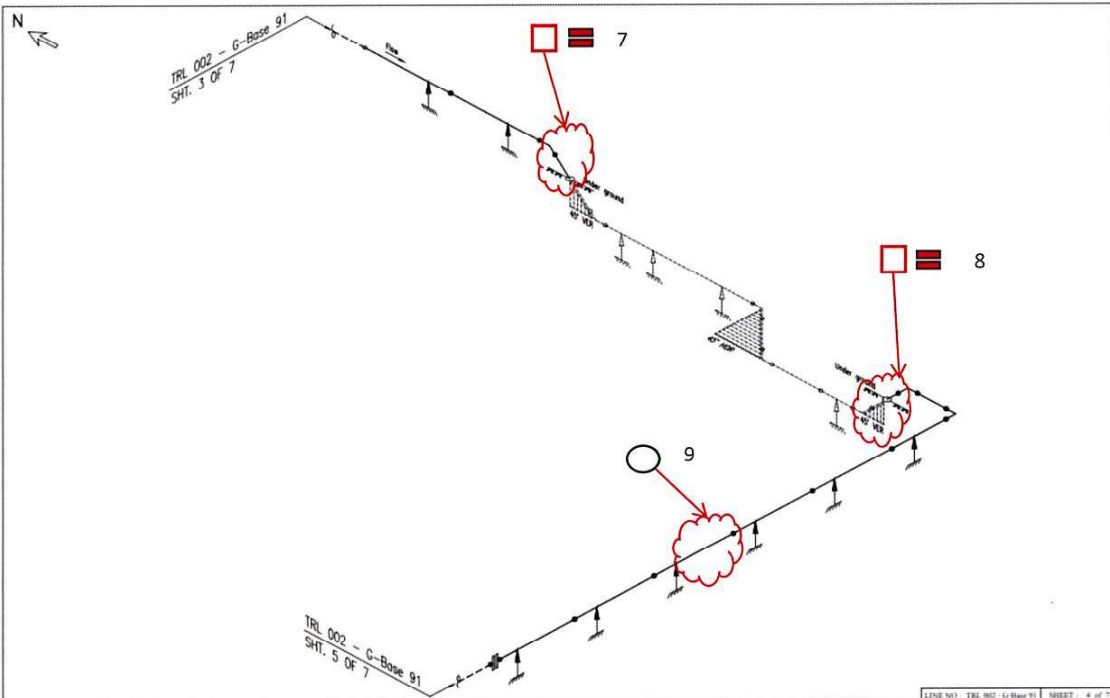
Recommendations
<p>Visual Inspection (VT)</p> <p>1. Carry out alternative NDE (LRUT) to determine condition within 2 months.,Then re-painting as per original design to prevention future corrosion.</p> <p>Ultrasonic Thickness Measurement (UTM)</p> <p>- Thickness monitoring should be performed at next 10 yrs interval.</p>



API inspector	LRUT Technician	UT Technician	Chevron
Name	Name	Name	Name
Date:	Date:	Date:	Date:
Sign:	Sign:	Sign:	Sign:

		PIPING VISUAL INSPECTION LOG							Report/ Project	Sheet									
									2112012	VT 1/7									
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)																			
Degradation	N/A	Normal	Minor	Moderate	Severe	Remark													
<input type="checkbox"/> x.x-x.x mm Corrosion	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
<input type="checkbox"/> CUS	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
<input type="checkbox"/> Paint	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
<input type="checkbox"/> Insulation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
<input type="checkbox"/> Supports	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
<input type="checkbox"/> Vibration	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
<input type="checkbox"/> Misalignment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
<input type="checkbox"/> Mech. Damage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
<input checked="" type="checkbox"/> Leak	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
<input checked="" type="checkbox"/> Other	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
Severity to be determined as follows: <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Minor:</td> <td style="width: 33%;">For findings that don't require action</td> <td style="width: 33%;">Highlighted in yellow in ISO</td> </tr> <tr> <td>Moderate</td> <td>For findings that require action (specify time)</td> <td>Highlighted in Orange in ISO</td> </tr> <tr> <td>Severe</td> <td>For findings that require immediate action</td> <td></td> </tr> </table>											Minor:	For findings that don't require action	Highlighted in yellow in ISO	Moderate	For findings that require action (specify time)	Highlighted in Orange in ISO	Severe	For findings that require immediate action	
Minor:	For findings that don't require action	Highlighted in yellow in ISO																	
Moderate	For findings that require action (specify time)	Highlighted in Orange in ISO																	
Severe	For findings that require immediate action																		
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		PIPING VISUAL INSPECTION LOG							Report/ Project	Sheet								
							2112012		VT 2/7									
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)																		
Degradation		N/A	Normal	Minor	Moderate	Severe	Remark											
<input type="checkbox"/> Corrosion	<small>A-A-A mm</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Slight corrosion on piping.											
<input checked="" type="checkbox"/> CUS		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input type="checkbox"/> Paint		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Painting deterioration on pipe was observed.											
<input checked="" type="checkbox"/> Insulation		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input type="checkbox"/> Supports		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Vibration		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input type="checkbox"/> Misalignment		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Mech. Damage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Leak		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Other		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
Severity to be determined as follows: <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Minor:</td> <td style="width: 33%;">For findings that don't require action</td> <td style="width: 33%;">Highlighted in yellow in ISO</td> </tr> <tr> <td>Moderate</td> <td>For findings that require action (specify time)</td> <td>Highlighted in Orange in ISO</td> </tr> <tr> <td>Severe</td> <td>For findings that require immediate action</td> <td></td> </tr> </table>										Minor:	For findings that don't require action	Highlighted in yellow in ISO	Moderate	For findings that require action (specify time)	Highlighted in Orange in ISO	Severe	For findings that require immediate action	
Minor:	For findings that don't require action	Highlighted in yellow in ISO																
Moderate	For findings that require action (specify time)	Highlighted in Orange in ISO																
Severe	For findings that require immediate action																	
																		

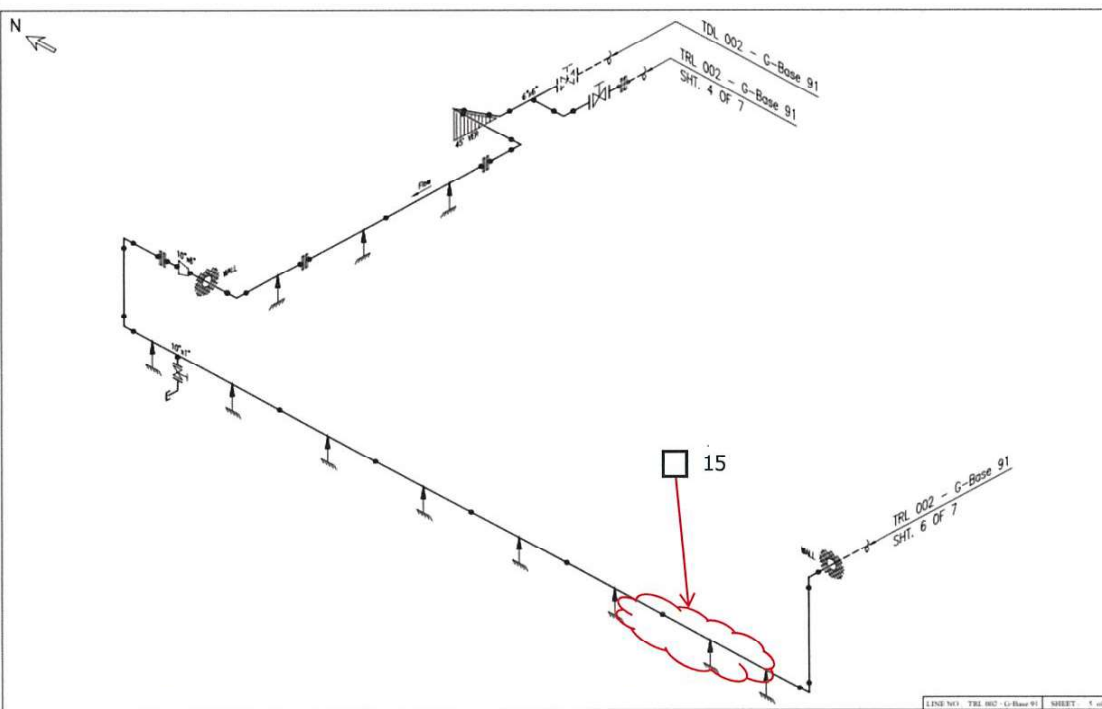
		PIPING VISUAL INSPECTION LOG						Report/ Project 2112012	Sheet VT 3/7									
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)																		
Degradation x.x-x.x mm	N/A	Normal	Minor	Moderate	Severe	Remark												
<input type="checkbox"/> Corrosion	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input checked="" type="checkbox"/> CUS	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input type="checkbox"/> Paint	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Painting deterioration on pipe was observed.												
<input checked="" type="checkbox"/> Insulation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input type="checkbox"/> Supports	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input type="checkbox"/> Vibration	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input type="checkbox"/> Misalignment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input type="checkbox"/> Mech. Damage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input checked="" type="checkbox"/> Leak	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input checked="" type="checkbox"/> Other	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
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Minor:	For findings that don't require action	Highlighted in yellow in ISO																
Moderate	For findings that require action (specify time)																	
Severe	For findings that require immediate action	Highlighted in Orange in ISO																
																		
<div style="text-align: right;"> LINE NO: TRL 002 - G-Base 91 SHEET: 3 of 7 </div>																		

		PIPING VISUAL INSPECTION LOG						Report/ Project	Sheet									
								2112012	VT 4/7									
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)																		
Degradation		N/A	Normal	Minor	Moderate	Severe	Remark											
<input type="checkbox"/> Corrosion <small>x.x-x.x mm</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Severe corrosion under sealing.											
<input checked="" type="checkbox"/> CUS	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input type="checkbox"/> Paint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Painting deterioration on pipe was observed. - Coating damage on whole underground pipe section was observed.											
<input checked="" type="checkbox"/> Insulation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input type="checkbox"/> Supports	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Vibration	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input type="checkbox"/> Misalignment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Mech. Damage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Leak	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Other	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sealing sleeve underground pipe damage was observed may cause to corrosion under pipe sleeve.											
Severity to be determined as follows: <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Minor:</td> <td style="width: 33%;">For findings that don't require action</td> <td style="width: 33%;">Highlighted in yellow in ISO</td> </tr> <tr> <td>Moderate:</td> <td>For findings that require action (specify time)</td> <td>Highlighted in Orange in ISO</td> </tr> <tr> <td>Severe:</td> <td>For findings that require immediate action</td> <td></td> </tr> </table>										Minor:	For findings that don't require action	Highlighted in yellow in ISO	Moderate:	For findings that require action (specify time)	Highlighted in Orange in ISO	Severe:	For findings that require immediate action	
Minor:	For findings that don't require action	Highlighted in yellow in ISO																
Moderate:	For findings that require action (specify time)	Highlighted in Orange in ISO																
Severe:	For findings that require immediate action																	
																		



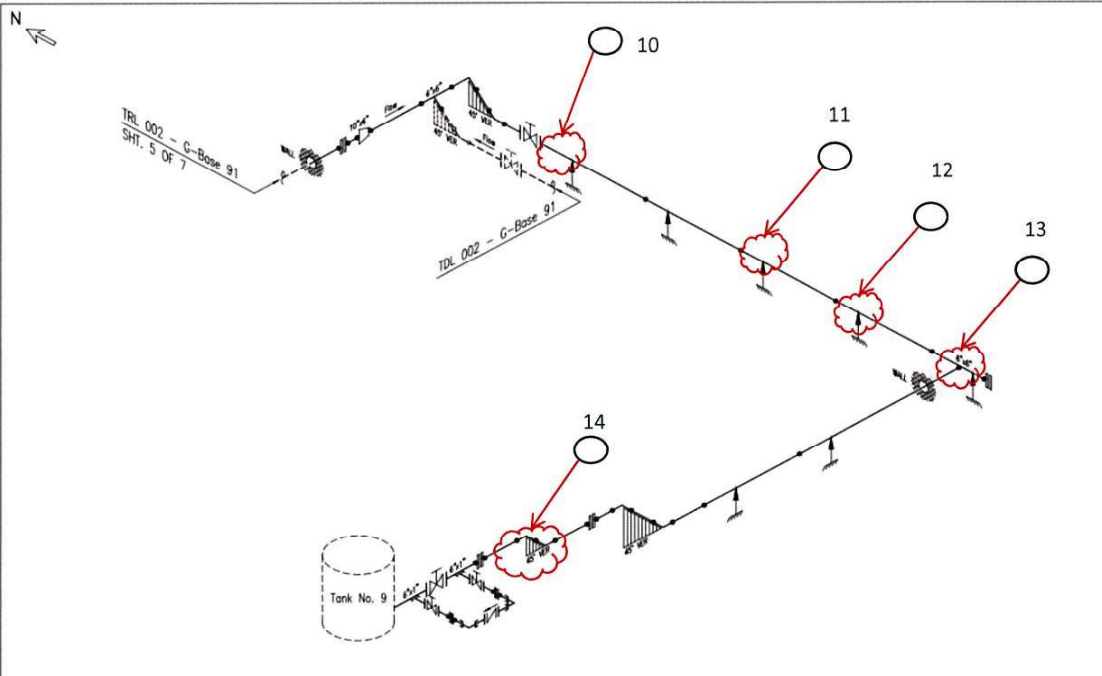
		PIPING VISUAL INSPECTION LOG							Report/ Project	Sheet
							2112012		VT 5/7	
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)										
Degradation		N/A	Normal	Minor	Moderate	Severe	Remark			
<input type="checkbox"/> Corrosion <small>x.x-x.x mm</small>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
<input checked="" type="checkbox"/> CUS	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
<input type="checkbox"/> Paint	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
<input checked="" type="checkbox"/> Insulation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
<input type="checkbox"/> Supports	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
<input checked="" type="checkbox"/> Vibration	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
<input type="checkbox"/> Misalignment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
<input checked="" type="checkbox"/> Mech. Damage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
<input checked="" type="checkbox"/> Leak	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
<input checked="" type="checkbox"/> Other	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				



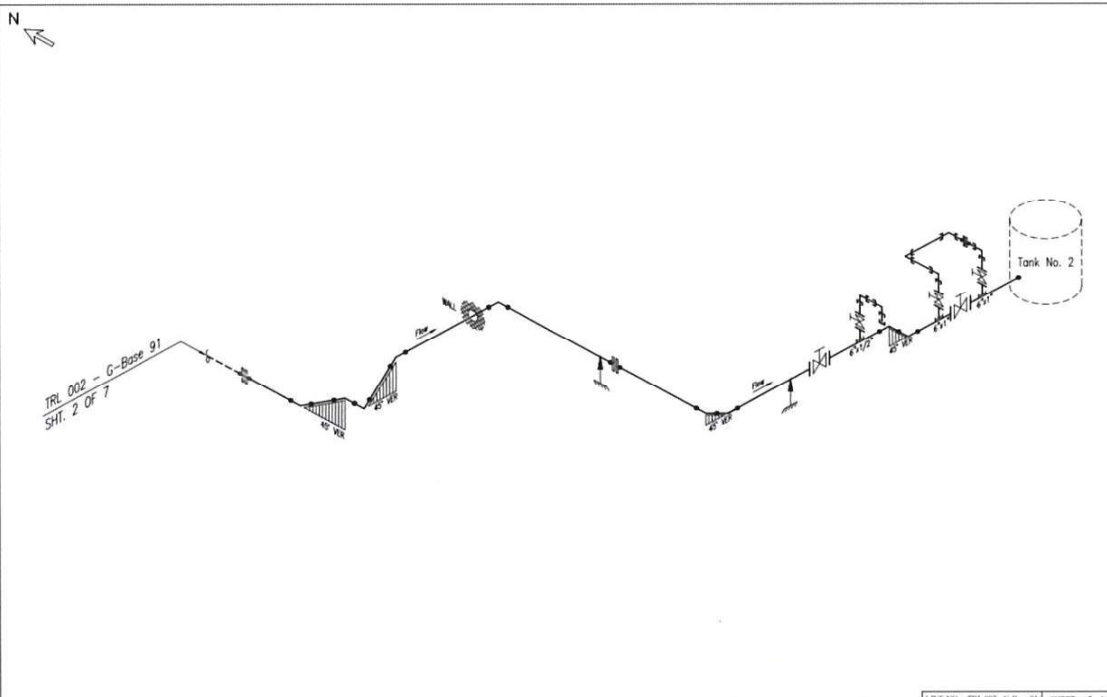
Severity to be determined as follows:









Minor:	For findings that don't require action	Highlighted in yellow in ISO
Moderate	For findings that require action (specify time)	Highlighted in Orange in ISO
Severe	For findings that require immediate action	













LINE NO. TRL 002 - G-Base 91 SHEET 5 of 7









		PIPING VISUAL INSPECTION LOG							Report/ Project	Sheet								
							2112012		VT 6/7									
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)																		
Degradation		N/A	Normal	Minor	Moderate	Severe	Remark											
<input type="checkbox"/> Corrosion	X.X-X.X mm	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> CUS		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input type="checkbox"/> Paint		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Painting deterioration on pipe was observed.											
<input checked="" type="checkbox"/> Insulation		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input type="checkbox"/> Supports		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Vibration		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input type="checkbox"/> Misalignment		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Mech. Damage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Leak		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Other		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
Severity to be determined as follows: <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Minor:</td> <td style="width: 33%;">For findings that don't require action</td> <td style="width: 33%;">Highlighted in yellow in ISO</td> </tr> <tr> <td>Moderate</td> <td>For findings that require action (specify time)</td> <td>Highlighted in Orange in ISO</td> </tr> <tr> <td>Severe</td> <td>For findings that require immediate action</td> <td></td> </tr> </table>										Minor:	For findings that don't require action	Highlighted in yellow in ISO	Moderate	For findings that require action (specify time)	Highlighted in Orange in ISO	Severe	For findings that require immediate action	
Minor:	For findings that don't require action	Highlighted in yellow in ISO																
Moderate	For findings that require action (specify time)	Highlighted in Orange in ISO																
Severe	For findings that require immediate action																	
																		
<div style="text-align: right;">LINE NO: TRL 002 - G-Base 91 SHEET: 6 of 7</div>																		





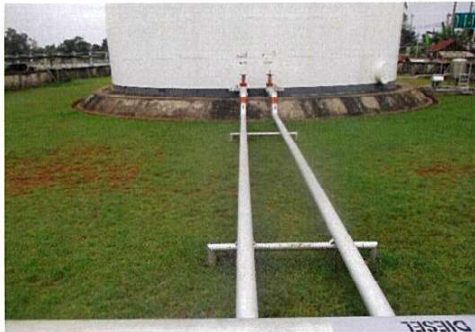



		PIPING VISUAL INSPECTION LOG							Report/ Project	Sheet								
							2112012		VT 7/7									
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)																		
Degradation		N/A	Normal	Minor	Moderate	Severe	Remark											
<input type="checkbox"/> Corrosion	X.X-X.X mm	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> CUS		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input type="checkbox"/> Paint		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Insulation		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input type="checkbox"/> Supports		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Vibration		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input type="checkbox"/> Misalignment		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Mech. Damage		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Leak		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input checked="" type="checkbox"/> Other		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
Severity to be determined as follows: <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Minor:</td> <td style="width: 33%;">For findings that don't require action</td> <td style="width: 33%;">Highlighted in yellow in ISO</td> </tr> <tr> <td>Moderate</td> <td>For findings that require action (specify time)</td> <td>Highlighted in Orange in ISO</td> </tr> <tr> <td>Severe</td> <td>For findings that require immediate action</td> <td></td> </tr> </table>										Minor:	For findings that don't require action	Highlighted in yellow in ISO	Moderate	For findings that require action (specify time)	Highlighted in Orange in ISO	Severe	For findings that require immediate action	
Minor:	For findings that don't require action	Highlighted in yellow in ISO																
Moderate	For findings that require action (specify time)	Highlighted in Orange in ISO																
Severe	For findings that require immediate action																	
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<small>LINE NO: TRL 002 - G-Base 91 SHEET 7 of 7</small>																		







	PIPING INSPECTION PICTURE LOG		Report/ Project 2112012	Sheet PL 1/7
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)				
				
Name of part / Location	Findings	Name of part / Location	Findings	
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)	Still in normal condition	TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)	Still in normal condition	
				
Name of part / Location	Findings	Name of part / Location	Findings	
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)	Still in normal condition	TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)	Still in normal condition	
				
Name of part / Location	Findings	Name of part / Location	Findings	
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)	Still in normal condition	TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)	Still in normal condition	



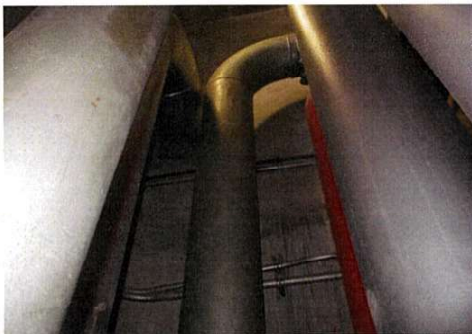
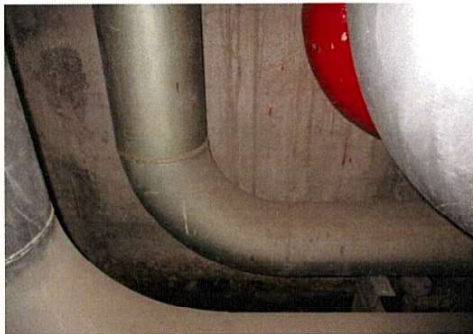




		PIPING INSPECTION PICTURE LOG				Report/ Project 2112012		Sheet PL 2/7			
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)											
											
Name of part / Location			Findings			Name of part / Location			Findings		
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)			Still in normal condition			TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)			Still in normal condition		
											
Name of part / Location			Findings			Name of part / Location			Findings		
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)			Slight corrosion on piping&Painting deterioration (1)			TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)			Still in normal condition		
											
Name of part / Location			Findings			Name of part / Location			Findings		
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)			Still in normal condition			TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)			Painting deterioration (2)		



		PIPING INSPECTION PICTURE LOG				Report/ Project	Sheet
						2112012	PL 3/7
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)							
							
Name of part / Location		Findings		Name of part / Location		Findings	
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Slight corrosion on flange (3)		TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Painting deterioration (4)	
							
Name of part / Location		Findings		Name of part / Location		Findings	
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Painting deterioration (5)		TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Painting deterioration (6)	
							
Name of part / Location		Findings		Name of part / Location		Findings	
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Severe corrosion under sealing&Sealing damage. (7)		TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Still in normal condition	

	PIPING INSPECTION PICTURE LOG			Report/ Project 2112012	Sheet PL 4/7		
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)							
							
Name of part / Location		Findings		Name of part / Location		Findings	
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Severe corrosion under pipe sleeve & Sealing damage. (8)		TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Still in normal condition	
				Name of part / Location		Findings	
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Still in normal condition		TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Painting deterioration (9)	
							
Name of part / Location		Findings		Name of part / Location		Findings	
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9)		Painting deterioration (10)		TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9)		Painting deterioration (11)	

		PIPING INSPECTION PICTURE LOG				Report/ Project 2112012	Sheet PL 5/7
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)							
							
Name of part / Location		Findings		Name of part / Location		Findings	
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Painting deterioration (13)		TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Still in normal condition	
							
Name of part / Location		Findings		Name of part / Location		Findings	
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Still in normal condition		TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Still in normal condition	
							
Name of part / Location		Findings		Name of part / Location		Findings	
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9)		Painting deterioration (14)		TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9)		Still in normal condition	

	PIPING INSPECTION PICTURE LOG		Report/ Project 2112012	Sheet PL 6/7
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)				
				
Name of part / Location	Findings	Name of part / Location	Findings	
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)	Still in normal condition	TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)	Still in normal condition	
				
Name of part / Location	Findings	Name of part / Location	Findings	
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)	Still in normal condition	TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)	Still in normal condition	
				
Name of part / Location	Findings	Name of part / Location	Findings	
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)	Still in normal condition	TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)	Still in normal condition	

	PIPING INSPECTION PICTURE LOG			Report/ Project	Sheet
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TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)					
					
Name of part / Location		Findings	Name of part / Location		Findings
TRL 002 G-Base 91 Tank Receiving line (Under road)		Still in normal condition	TRL 002 G-Base 91 Tank Receiving line (Under road)		Still in normal condition
					
Name of part / Location		Findings	Name of part / Location		Findings
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Still in normal condition	TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Still in normal condition
					
Name of part / Location		Findings	Name of part / Location		Findings
TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Slight corrosion on pipe. (15)	TRL 002 G-Base 91 Tank Receiving line (Jetty to Tank No.9&Tank No.2)		Still in normal condition

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CML	Size	Type	Direction	Nom. (Thk) 1-Jan-95 (mm)	Min Required (mm)	UTM date 6-Dec-16 (mm)	UTM date 16-Dec-21 (mm)	UTM date (mm)	Short term corrosion Rate (mm)/yr	Long term corrosion Rate (mm)/yr	Short term remaining life (yr)	Long term remaining life (yr)	
1A	6"	Elbow	0°	7.11	2.80	6.57	7.31		-0.147	-0.007	No Corrosion	No Corrosion	
			90°			6.98	7.51		-0.105	-0.015	No Corrosion	No Corrosion	
			180°			6.47	7.37		-0.179	-0.010	No Corrosion	No Corrosion	
			270°			6.99	7.86		-0.173	-0.028	No Corrosion	No Corrosion	
1B	6"	Elbow	0°	7.11	2.80	6.42	6.96		-0.107	0.006	No Corrosion	748.12	
			90°			6.95	7.51		-0.111	-0.015	No Corrosion	No Corrosion	
			180°			7.08	7.41		-0.066	-0.011	No Corrosion	No Corrosion	
			270°			6.76	7.44		-0.135	-0.012	No Corrosion	No Corrosion	
1C	6"	Elbow	0°	7.11	2.80	6.64	7.17		-0.105	-0.002	No Corrosion	No Corrosion	
			90°			6.87	7.36		-0.097	-0.009	No Corrosion	No Corrosion	
			180°			6.67	7.01		-0.068	0.004	No Corrosion	1135.66	
			270°			6.59	7.39		-0.159	-0.010	No Corrosion	No Corrosion	
2	6"	Pipe	0°	7.11	2.80	6.44	6.96		-0.103	0.006	No Corrosion	748.12	
			90°			6.65	6.80		-0.030	0.011	No Corrosion	348.07	
			180°			6.03	7.21		-0.235	-0.004	No Corrosion	No Corrosion	
			270°			6.99	7.22		-0.046	-0.004	No Corrosion	No Corrosion	
3A	6"	Elbow	0°	7.11	2.80	5.92	5.95		-0.006	0.043	No Corrosion	73.25	
			90°			5.70	6.05		-0.070	0.039	No Corrosion	82.71	
			180°			6.63	6.80		-0.034	0.011	No Corrosion	348.07	
			270°			6.30	6.58		-0.056	0.020	No Corrosion	192.39	
3B	6"	Elbow	0°	7.11	2.80	6.19	6.15		0.008	0.036	421.27	94.13	
			90°			6.29	6.65		-0.072	0.017	No Corrosion	225.77	
			180°			6.66	6.79		-0.026	0.012	No Corrosion	336.35	
			270°			6.38	6.04		0.068	0.040	47.93	81.68	
3C	6"	Elbow	0°	7.11	2.80	6.27	6.52		-0.050	0.022	No Corrosion	170.08	
			90°			6.57	6.61		-0.008	0.019	No Corrosion	205.55	
			180°			6.44	6.65		-0.042	0.017	No Corrosion	225.77	
			270°			6.33	6.16		0.034	0.035	99.42	95.41	
4	6"	Pipe	0°	7.11	2.80	6.83	6.66		0.034	0.017	114.21	231.39	
			90°			6.59	7.02		-0.085	0.003	No Corrosion	1264.84	
			180°			6.41	6.65		-0.048	0.017	No Corrosion	225.77	
			270°			6.42	6.81		-0.078	0.011	No Corrosion	360.57	





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CML	Size	Type	Direction	Nom. (Thk)		Min Required (mm)	UTM date	UTM date	Short term corrosion Rate (mm)/yr	Long term corrosion Rate (mm)/yr	Short term remaining life (yr)	Long term remaining life (yr)	
				1-Jan-95 (mm)	6-Dec-16 (mm)		16-Dec-21 (mm)	UTM date (mm)					
5	6"	Pipe	0°	7.11	2.80	6.90	6.91		-0.002	0.007	No Corrosion	554.34	
			90°			6.60	6.85		-0.050	0.010	No Corrosion	420.19	
			180°			6.50	6.88		-0.076	0.009	No Corrosion	478.52	
			270°			7.07	6.95		0.024	0.006	173.96	699.67	
6	6"	Pipe	0°	7.11	2.80	6.16	5.64	0.103	0.054	27.47	52.12		
			90°			5.91	6.17		-0.052	0.035	No Corrosion	96.71	
			180°			5.72	5.81		-0.018	0.048	No Corrosion	62.46	
			270°			5.73	6.16		-0.085	0.035	No Corrosion	95.41	
7	6"	Pipe	0°	7.11	2.80	6.87	6.93		-0.012	0.007	No Corrosion	618.93	
			90°			6.66	6.79		-0.026	0.012	No Corrosion	336.35	
			180°			6.82	6.62		0.040	0.018	96.08	210.30	
			270°			7.00	7.05		-0.010	0.002	No Corrosion	1910.75	
8	6"	Pipe	0°	7.11	2.80	6.87	7.08		-0.042	0.001	No Corrosion	3848.48	
			90°			6.42	6.87		-0.089	0.009	No Corrosion	457.46	
			180°			6.32	6.90		-0.115	0.008	No Corrosion	526.66	
			270°			6.74	6.91		-0.034	0.007	No Corrosion	554.34	
9A	6"	Elbow	0°	7.11	2.80	6.38	6.32		0.012	0.029	295.10	120.19	
			90°			6.19	6.21		-0.004	0.033	No Corrosion	102.21	
			180°			6.95	6.21		0.147	0.033	23.18	102.21	
			270°			7.32	7.31		0.002	-0.007	2268.59	No Corrosion	
9B	6"	Elbow	0°	7.11	2.80	6.47	6.61		-0.028	0.019	No Corrosion	205.55	
			90°			6.23	6.35		-0.024	0.028	No Corrosion	126.00	
			180°			6.49	6.28		0.042	0.031	83.36	113.10	
			270°			7.39	7.48		-0.018	-0.014	No Corrosion	No Corrosion	
9C	6"	Elbow	0°	7.11	2.80	6.49	6.69		-0.040	0.016	No Corrosion	249.84	
			90°			6.61	6.68		-0.014	0.016	No Corrosion	243.41	
			180°			6.23	6.28		-0.010	0.031	No Corrosion	113.10	
			270°			8.06	7.55		0.101	-0.016	46.85	No Corrosion	
10	6"	Pipe	0°	7.11	2.80	6.73	6.83		-0.020	0.010	No Corrosion	388.25	
			90°			6.73	6.64		0.018	0.017	214.62	220.39	
			180°			6.75	6.80		-0.010	0.011	No Corrosion	348.07	
			270°			6.99	6.43		0.111	0.025	32.61	144.00	



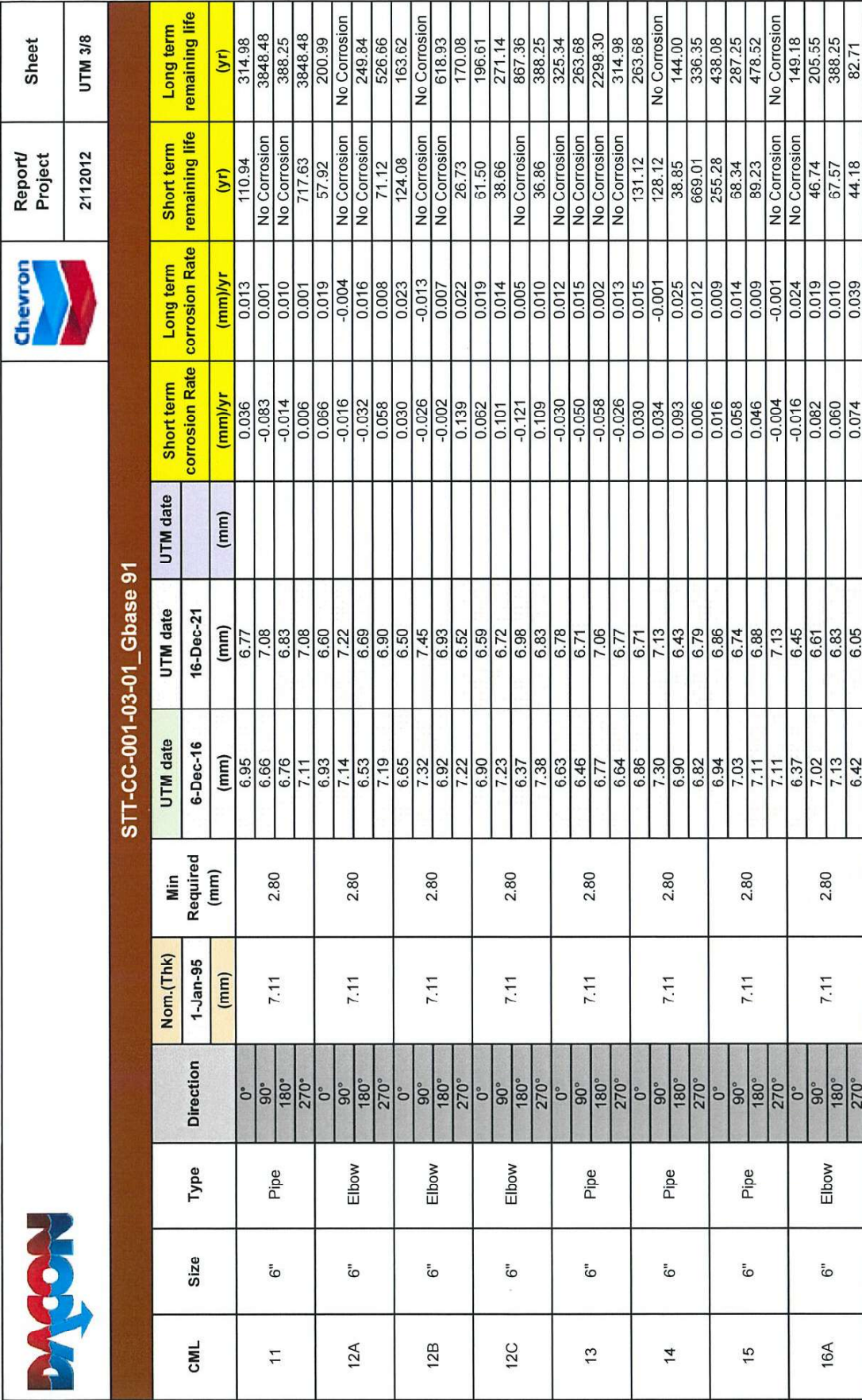
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CML	Size	Type	Direction	Nom. (Thk)		Min Required (mm)	UTM date	UTM date	UTM date	Short term corrosion Rate (mm)/yr	Long term corrosion Rate (mm)/yr	Short term remaining life (yr)	Long term remaining life (yr)			
				1-Jan-95 (mm)	6-Dec-16 (mm)		16-Dec-21 (mm)	UTM date (mm)								
16B	6"	Elbow	0°			2.80	7.00	6.39		0.121	0.027	29.60	134.50			
			90°		6.94		6.90		0.008	0.008	515.59	526.66				
			180°		7.12		6.70		0.083	0.015	46.71	256.59				
			270°		5.76		5.89		-0.026	0.045	No Corrosion	68.32				
16C	6"	Elbow	0°			2.80	6.32	6.32		0.000	0.029	No Corrosion	120.19			
			90°		7.19		6.97		0.044	0.005	95.34	803.48				
			180°		7.27		6.75		0.103	0.013	38.21	295.98				
			270°		5.22		5.44		-0.044	0.062	No Corrosion	42.64				
17	6"	Pipe	0°			2.80	7.04	7.16		-0.024	-0.002	No Corrosion	No Corrosion			
			90°		6.93		6.93		0.000	0.007	No Corrosion	618.93				
			180°		7.25		7.41		-0.032	-0.011	No Corrosion	No Corrosion				
			270°		6.87		7.08		-0.042	0.001	No Corrosion	3848.48				
18	6"	Pipe	0°			2.80	7.17	-		-0.003	-0.003	No Corrosion	No Corrosion			
			90°		6.95		-		0.007	0.007	569.20	569.20				
			180°		6.83		-		0.013	0.013	315.85	315.85				
			270°		6.67		-		0.020	0.020	193.02	193.02				
19A	6"	Elbow	0°			2.80	7.35	7.41		-0.012	-0.011	No Corrosion	No Corrosion			
			90°		7.68		7.66		0.004	-0.020	1222.32	No Corrosion				
			180°		7.29		7.68		-0.078	-0.021	No Corrosion	No Corrosion				
			270°		7.60		7.11		0.097	0.000	44.24	No Corrosion				
19B	6"	Elbow	0°			2.80	7.14	7.21		-0.014	-0.004	No Corrosion	No Corrosion			
			90°		7.57		7.38		0.038	-0.010	121.25	No Corrosion				
			180°		7.84		7.82		0.004	-0.026	1262.56	No Corrosion				
			270°		7.50		6.96		0.107	0.006	38.75	748.12				
19C	6"	Elbow	0°			2.80	7.19	7.77		-0.115	-0.024	No Corrosion	No Corrosion			
			90°		7.52		7.60		-0.016	-0.018	No Corrosion	No Corrosion				
			180°		7.66		7.66		0.000	-0.020	No Corrosion	No Corrosion				
			270°		7.49		6.91		0.115	0.007	35.64	554.34				
20	6"	Pipe	0°			2.80	7.06	7.07		-0.002	0.001	No Corrosion	2879.62			
			90°		7.05		7.30		-0.050	-0.007	No Corrosion	No Corrosion				
			180°		6.78		6.84		-0.012	0.010	No Corrosion	403.63				
			270°		7.12		7.18		-0.012	-0.003	No Corrosion	No Corrosion				

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CML	Size	Type	Direction	Nom. (Thk) 1-Jan-95 (mm)	Min Required (mm)	UTM date 6-Dec-16 (mm)	UTM date 16-Dec-21 (mm)	UTM date (mm)	Short term corrosion Rate (mm)/yr	Long term corrosion Rate (mm)/yr	Short term remaining life (yr)	Long term remaining life (yr)	
21	6"	Pipe	0°	7.11	2.80	6.95	6.77		0.036	0.013	110.94	314.98	
			90°			6.66	7.08	-0.083	0.001	No Corrosion	3848.48		
			180°			6.76	6.83	-0.014	0.010	No Corrosion	388.25		
			270°			7.11	7.08	0.006	0.001	717.63	3848.48		
22A	6"	Elbow	0°	7.11	2.80	7.04	7.17		-0.026	-0.002	No Corrosion	No Corrosion	
			90°			6.96	6.98	-0.004	0.005	No Corrosion	867.36		
			180°			6.71	6.60	0.022	0.019	173.77	200.99		
			270°			6.80	6.80	0.000	0.011	No Corrosion	348.07		
22B	6"	Elbow	0°	7.11	2.80	7.35	6.94		0.082	0.006	50.79	656.93	
			90°			7.68	7.37	0.062	-0.010	74.15	No Corrosion		
			180°			7.29	7.47	-0.036	-0.013	No Corrosion	No Corrosion		
			270°			7.60	7.18	0.083	-0.003	52.46	No Corrosion		
22C	6"	Elbow	0°	7.11	2.80	7.14	7.11		0.006	0.000	722.66	No Corrosion	
			90°			7.57	7.45	0.024	-0.013	194.92	No Corrosion		
			180°			7.84	7.42	0.083	-0.011	55.33	No Corrosion		
			270°			7.60	7.27	0.066	-0.006	68.14	No Corrosion		
23A	6"	Reducer	0°	7.11	2.80	0.00	7.10		-1.411	0.000	No Corrosion	11599.40	
			90°			0.00	7.43	-1.477	-0.012	No Corrosion	No Corrosion		
			180°			0.00	7.40	-1.471	-0.011	No Corrosion	No Corrosion		
			270°			0.00	7.36	-1.463	-0.009	No Corrosion	No Corrosion		
23B	6"	Reducer	0°	7.11	2.80	0.00	6.71		-1.334	0.015	No Corrosion	263.68	
			90°			0.00	7.13	-1.417	-0.001	No Corrosion	No Corrosion		
			180°			0.00	6.43	-1.278	0.025	No Corrosion	144.00		
			270°			0.00	6.79	-1.350	0.012	No Corrosion	336.35		
23C	6"	Reducer	0°	7.11	2.80	0.00	6.86		-1.364	0.009	No Corrosion	438.08	
			90°			0.00	6.74	-1.340	0.014	No Corrosion	287.25		
			180°			0.00	6.88	-1.368	0.009	No Corrosion	478.52		
			270°			0.00	7.13	-1.417	-0.001	No Corrosion	No Corrosion		
24A	6"	Elbow	0°	7.11	2.80	6.46	6.67		-0.042	0.016	No Corrosion	237.26	
			90°			6.64	6.87	-0.046	0.009	No Corrosion	457.46		
			180°			5.76	5.88	-0.024	0.046	No Corrosion	67.55		
			270°			6.87	7.21	-0.068	-0.004	No Corrosion	No Corrosion		

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STT-CC-001-03-01_Gbase 91													
CML	Size	Type	Direction	Nom. (Thk)		Min Required (mm)	UTM date 6-Dec-16 (mm)	UTM date 16-Dec-21 (mm)	UTM date (mm)	Short term corrosion Rate (mm)/yr	Long term corrosion Rate (mm)/yr	Short term remaining life (yr)	Long term remaining life (yr)
				1-Jan-95 (mm)									
24B	6"	Elbow	0°	7.11	2.80	6.35	6.45			-0.020	0.024	No Corrosion	149.18
			90°			6.55	6.92			-0.074	0.007	No Corrosion	584.94
			180°			5.72	6.31			-0.117	0.030	No Corrosion	118.35
			270°			6.75	7.06			-0.062	0.002	No Corrosion	2298.30
24C	6"	Elbow	0°	7.11	2.80	6.35	6.35			0.000	0.028	No Corrosion	126.00
			90°			6.54	6.87			-0.066	0.009	No Corrosion	457.46
			180°			5.74	6.00			-0.052	0.041	No Corrosion	77.77
			270°			6.80	6.09			0.141	0.038	23.31	No Corrosion
25	6"	Pipe	0°	7.11	2.80	6.66	6.96			-0.060	0.006	No Corrosion	748.12
			90°			6.11	6.95			-0.167	0.006	No Corrosion	699.67
			180°			6.54	6.88			-0.068	0.009	No Corrosion	478.52
			270°			6.84	7.11			-0.054	0.000	No Corrosion	No Corrosion
26	6"	Pipe	0°	7.11	2.80	7.09	7.14			-0.010	-0.001	No Corrosion	No Corrosion
			90°			6.84	7.14			-0.060	-0.001	No Corrosion	No Corrosion
			180°			6.94	6.97			-0.006	0.005	No Corrosion	803.48
			270°			7.34	6.67			0.133	0.016	29.05	No Corrosion
27	6"	Pipe	0°	7.11	2.80	6.73	6.79			-0.012	0.012	No Corrosion	336.35
			90°			6.52	6.78			-0.052	0.012	No Corrosion	325.34
			180°			6.69	6.87			-0.036	0.009	No Corrosion	457.46
			270°			6.76	7.02			-0.052	0.003	No Corrosion	1264.84
28A	6"	Elbow	0°	7.11	2.80	6.33	6.21			0.024	0.033	142.94	102.21
			90°			6.89	6.77			0.024	0.013	166.41	314.98
			180°			6.66	6.72			-0.012	0.014	No Corrosion	271.14
			270°			7.94	7.44			0.099	-0.012	46.68	No Corrosion
28B	6"	Elbow	0°	7.11	2.80	6.06	6.13			-0.014	0.036	No Corrosion	91.66
			90°			6.79	6.89			-0.020	0.008	No Corrosion	501.50
			180°			6.64	6.65			-0.002	0.017	No Corrosion	225.77
			270°			7.32	7.25			0.014	-0.005	319.77	No Corrosion
28C	6"	Elbow	0°	7.11	2.80	6.68	6.17			0.101	0.035	33.24	96.71
			90°			6.78	6.86			-0.016	0.009	No Corrosion	438.08
			180°			6.72	6.71			0.002	0.015	1966.78	263.68
			270°			7.97	7.33			0.127	-0.008	35.60	No Corrosion

													Report/ Project	Sheet
			STT-CC-001-03-01_Gbase 91										2112012	UTM 7/8
CML	Size	Type	Direction	Nom. (Thk) 1-Jan-95 (mm)	Min Required (mm)	UTM date 6-Dec-16 (mm)	UTM date 16-Dec-21 (mm)	UTM date (mm)	Short term corrosion Rate (mm)/yr	Long term corrosion Rate (mm)/yr	Short term remaining life (yr)	Long term remaining life (yr)		
29	6"	Pipe	0°	7.11	2.80	7.33	7.25		0.016	-0.005	279.80	No Corrosion		
			90°			7.05	7.10	-0.010	0.000	No Corrosion	11599.40			
			180°			7.46	6.98	0.095	0.005	43.80	867.36			
			270°			6.88	6.79	0.018	0.012	223.00	336.35			
30A	6"	Elbow	0°	7.11	2.80	-	6.11		0.199	0.199	16.65	16.65		
			90°			-	6.39	0.143	0.143	25.08	25.08			
			180°			-	6.10	0.201	0.201	16.44	16.44			
			270°			-	6.62	0.097	0.097	39.21	39.21			
30B	6"	Elbow	0°	7.11	2.80	-	6.05		0.211	0.211	15.42	15.42		
			90°			-	6.42	0.137	0.137	26.39	26.39			
			180°			-	6.24	0.173	0.173	19.89	19.89			
			270°			-	6.60	0.101	0.101	37.48	37.48			
30C	6"	Elbow	0°	7.11	2.80	-	6.08		0.205	0.038	16.02	85.90		
			90°			-	6.63	0.095	0.018	40.14	215.24			
			180°			-	6.19	0.183	0.034	18.53	99.40			
			270°			-	6.50	0.121	0.023	30.51	163.62			
31A	6"	Elbow	0°	7.11	2.80	-	7.56		-0.089	-0.089	No Corrosion	No Corrosion		
			90°			-	7.66	-0.109	-0.109	No Corrosion	No Corrosion			
			180°			-	6.80	0.062	0.062	64.90	64.90			
			270°			-	8.21	-0.219	-0.219	No Corrosion	No Corrosion			
31B	6"	Elbow	0°	7.11	2.80	-	7.40		-0.058	-0.058	No Corrosion	No Corrosion		
			90°			-	7.61	-0.099	-0.099	No Corrosion	No Corrosion			
			180°			-	7.16	-0.010	-0.010	No Corrosion	No Corrosion			
			270°			-	8.29	-0.235	-0.235	No Corrosion	No Corrosion			
31C	6"	Elbow	0°	7.11	2.80	-	7.36		-0.050	-0.050	No Corrosion	No Corrosion		
			90°			-	7.76	-0.129	-0.129	No Corrosion	No Corrosion			
			180°			-	7.23	-0.024	-0.024	No Corrosion	No Corrosion			
			270°			-	7.69	-0.115	-0.115	No Corrosion	No Corrosion			
32A	6"	Elbow	0°	7.11	2.80	-	7.22		-0.022	-0.022	No Corrosion	No Corrosion		
			90°			-	6.91	0.040	0.040	103.37	103.37			
			180°			-	7.07	0.008	0.008	536.97	536.97			
			270°			-	8.20	-0.217	-0.217	No Corrosion	No Corrosion			

[illegible]