



WAV Inspection Ltd. PO Box 595 Brooks, Alberta T1R 1B5  
 Office: 403.362.2008 Toll Free Fax: 866.873.8515  
 www.wavinspection.com Email: info@wavinspection.com

# ULTRASONIC CORROSION SURVEY

Equipment Owner  
 Location (LSD)  
 Vessel Type  
 Vessel A#  
 Vessel S/N  
 Inspection Date

Galleon  
 11-06-080-18W5  
 INLET SEPARATOR  
 483121  
 01-C5404-3000

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Vessel Photo



Vessel Data

Vessel Data														
Manufacturer HANOVER MALONEY				Year Built 1-Jan-02		Year Inst. 01-Jan-03		Length 230 Inch		Diameter 60 Inch		Service Sweet		
CRN P5114.21		Construction Code ASME		Code SEC.VIII, DIV.1		Radiography (If Applicable) RT1				Operation In Service				
Inlet NPS	Pipe Mat. A-106-B			Flange	Flange Rating 600		Outlet NPS		Outlet Type	Flange	Flange Rating 600			
Head Material SA-516-70N				Shell Material SA-516-70N				C.A. 0.125 Inch		SKID		PKG54928		
Head 1 NWT 2.4 Inch		Head 2 NWT 2.4 Inch		Shell 1 NWT 2.5 Inch		Shell 2 NWT		Manway Size (If Applicable) YES 20"						
Head Material ASME 2 Sec d Stress Value (psi) 20000				Shell Material ASME 2 Sec d Stress Value (psi) 20000				Orientation Horizontal		PWHT Yes				
MAWP 1445 psi	TEMP 125 F	MDMT -40	YEAR 2003	Pipe Material ASME 2 Sec d Stress Value (psi) 20000				E		1				



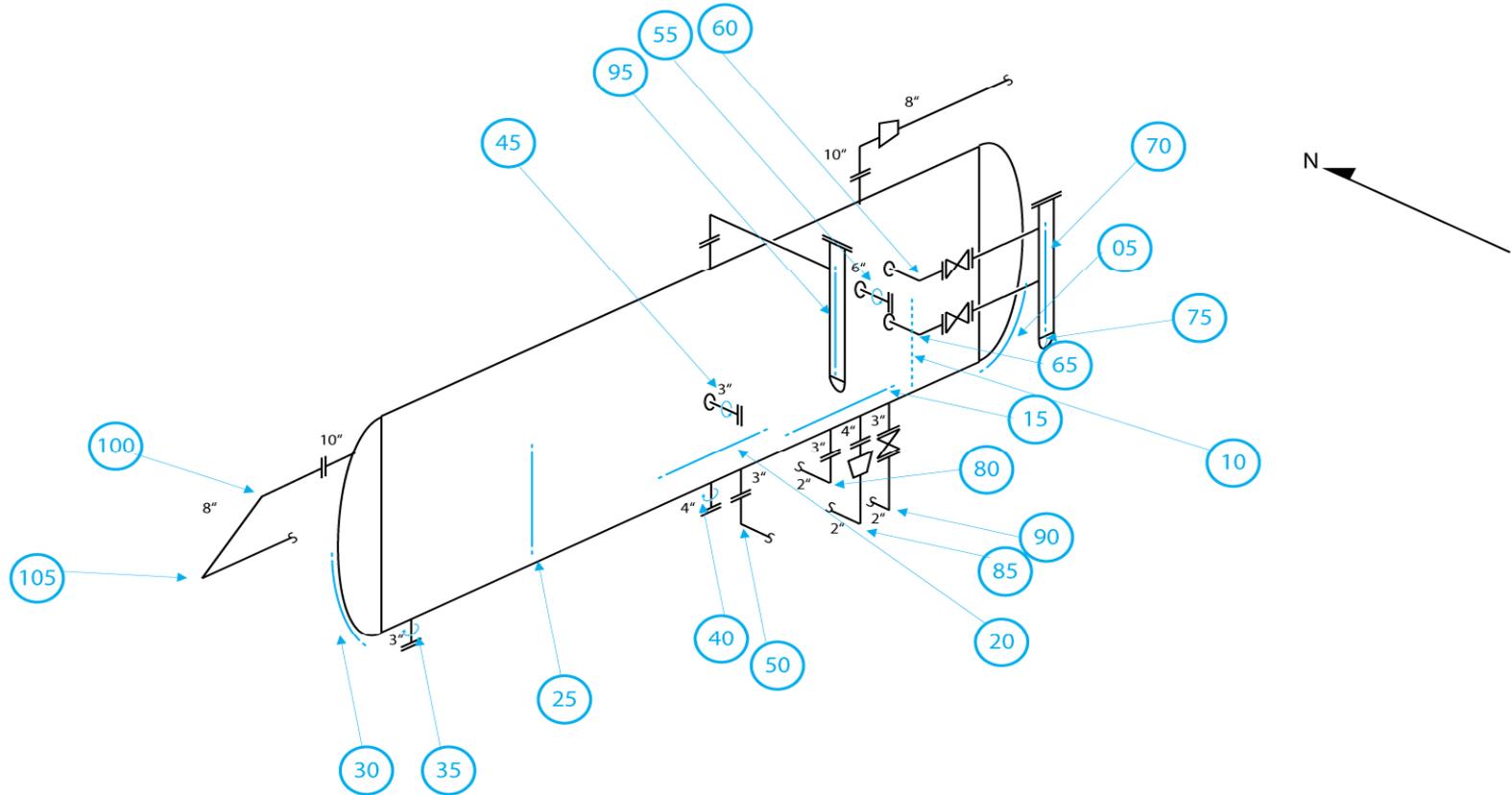
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# ISOMETRIC DRAWING

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# ASSOCIATED VESSEL SHELL TML REPORT

TML #	DATE		DATE		DATE		DATE	
TOP HEAD V BAND	7-Aug-09							
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)
	Nominal Thickness	61.0	2.400					
	Average Thickness	66.7	2.626					
Min Thickness	66.0	2.596						
TML #	DATE		DATE		DATE		DATE	
TOP SHELL V BAND	7-Aug-09							
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)
	Nominal Thickness	63.5	2.500					
	Average Thickness	66.3	2.610					
Min Thickness	65.9	2.593						
TML #	DATE		DATE		DATE		DATE	
MIDDLE SHELL V BAND	7-Aug-09							
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)
	Nominal Thickness	63.5	2.500					
	Average Thickness	66.0	2.598					
Min Thickness	65.7	2.588						
TML #	DATE		DATE		DATE		DATE	
BOTTOM SHELL V BAND	7-Aug-09							
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)
	Nominal Thickness	63.5	2.500					
	Average Thickness	66.2	2.606					
Min Thickness	65.8	2.591						
TML #	DATE		DATE		DATE		DATE	
BOTTOM HEAD H BAND	7-Aug-09							
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)
	Nominal Thickness	61.0	2.400					
	Average Thickness	66.2	2.606					
Min Thickness	65.9	2.596						
TML #	DATE		DATE		DATE		DATE	
BOTTOM HEAD H BAND	7-Aug-09							
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)
	Nominal Thickness	61.0	2.400					
	Average Thickness	67.2	2.646					
Min Thickness	66.1	2.602						

						Cor. Allowance		Tmin	
						(mm)	(inch)	(mm)	(inch)
						3.2	0.125	50.8	2.001
Short Term Cor Rate	Long Term Cor Rate		Flag Thickness				Remaing Life		
(mm)	(inch)	(mm)	(inch)	(mm)	(inch)			NO CORROSION	
0.00	0.000	-0.75	-0.030	57.8	2.275				
						Cor. Allowance		Tmin	
						(mm)	(inch)	(mm)	(inch)
						3.2	0.125	52.8	2.077
Short Term Cor Rate	Long Term Cor Rate		Flag Thickness				Remaing Life		
(mm)	(inch)	(mm)	(inch)	(mm)	(inch)			NO CORROSION	
0.00	0.000	-0.36	-0.014	60.3	2.375				
						Cor. Allowance		Tmin	
						(mm)	(inch)	(mm)	(inch)
						3.2	0.125	52.8	2.077
Short Term Cor Rate	Long Term Cor Rate		Flag Thickness				Remaing Life		
(mm)	(inch)	(mm)	(inch)	(mm)	(inch)			NO CORROSION	
0.00	0.000	-0.34	-0.013	60.3	2.375				
						Cor. Allowance		Tmin	
						(mm)	(inch)	(mm)	(inch)
						3.2	0.125	52.8	2.077
Short Term Cor Rate	Long Term Cor Rate		Flag Thickness				Remaing Life		
(mm)	(inch)	(mm)	(inch)	(mm)	(inch)			NO CORROSION	
0.00	0.000	-0.35	-0.014	60.3	2.375				
						Cor. Allowance		Tmin	
						(mm)	(inch)	(mm)	(inch)
						3.2	0.125	50.8	2.001
Short Term Cor Rate	Long Term Cor Rate		Flag Thickness				Remaing Life		
(mm)	(inch)	(mm)	(inch)	(mm)	(inch)			NO CORROSION	
0.00	0.000	-0.75	-0.030	57.8	2.275				
						Cor. Allowance		Tmin	
						(mm)	(inch)	(mm)	(inch)
						3.2	0.125	50.8	2.001
Short Term Cor Rate	Long Term Cor Rate		Flag Thickness				Remaing Life		
(mm)	(inch)	(mm)	(inch)	(mm)	(inch)			NO CORROSION	
0.00	0.000	-0.78	-0.031	57.8	2.275				



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 INLET SEPARATOR  
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 01-C5404-3000

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# ASSOCIATED PIPING TML REPORT

TML #	DATE	DATE	DATE	DATE	MAWP	NPS	Material	Stress	E	Cor. Allowance	Tmin
3" SCH 160 (11.1mm) CIRC	7-Aug-09				(psi)	OD		(psi)		(mm) (inch)	(mm) (inch)
	(mm) (inch)	(mm) (inch)	(mm) (inch)	(mm) (inch)	1445	3.5	SA 106 B	20000	1	1.4 0.055	3.2 0.126
	Nominal Thickness	11.1 0.437			Short Term Cor Rate		Long Term Cor Rate	Flag Thickness		Remaing Life	
	Average Thickness	18.0 0.709			(mm) (inch)	(mm) (inch)	(mm) (inch)	(mm) (inch)	2030		
Min Thickness	18.0 0.707			0.0	0.000	-1.036	-0.041	9.7	0.382		
4" SCH 160 (13.5mm) CIRC	7-Aug-09				(psi)	OD		(psi)		(mm) (inch)	(mm) (inch)
	(mm) (inch)	(mm) (inch)	(mm) (inch)	(mm) (inch)	1445	4.5	SA 106 B	20000	1	1.7 0.066	4.1 0.163
	Nominal Thickness	13.5 0.531			Short Term Cor Rate		Long Term Cor Rate	Flag Thickness		Remaing Life	
	Average Thickness	33.0 1.299			(mm) (inch)	(mm) (inch)	(mm) (inch)	(mm) (inch)	2030		
Min Thickness	32.6 1.284			0.0	0.000	-2.891	-0.114	11.8	0.465		
3" SCH 160 (11.1mm) CIRC	7-Aug-09				(psi)	OD		(psi)		(mm) (inch)	(mm) (inch)
	(mm) (inch)	(mm) (inch)	(mm) (inch)	(mm) (inch)	1445	3.5	SA 106 B	20000	1	1.4 0.055	3.2 0.126
	Nominal Thickness	11.1 0.437			Short Term Cor Rate		Long Term Cor Rate	Flag Thickness		Remaing Life	
	Average Thickness	18.4 0.724			(mm) (inch)	(mm) (inch)	(mm) (inch)	(mm) (inch)	2030		
Min Thickness	18.1 0.713			0.0	0.000	-1.059	-0.042	9.7	0.382		
2" SCH 80 (5.5mm) ELBOW	7-Aug-09				(psi)	OD		(psi)		(mm) (inch)	(mm) (inch)
	(mm) (inch)	(mm) (inch)	(mm) (inch)	(mm) (inch)	1445	2.375	SA 234 WPB	20000	1	0.7 0.027	2.2 0.086
	Nominal Thickness	5.5 0.217			Short Term Cor Rate		Long Term Cor Rate	Flag Thickness		Remaing Life	
	Average Thickness	5.4 0.213			(mm) (inch)	(mm) (inch)	(mm) (inch)	(mm) (inch)	2052		
Min Thickness	5.1 0.199			0.0	0.000	0.067	0.003	4.8	0.189		
6" SCH 160 (18.3mm) ELBOW	7-Aug-09				(psi)	OD		(psi)		(mm) (inch)	(mm) (inch)
	(mm) (inch)	(mm) (inch)	(mm) (inch)	(mm) (inch)	1445	6.625	SA 234 WPB	20000	1	2.3 0.090	6.1 0.239
	Nominal Thickness	18.3 0.720			Short Term Cor Rate		Long Term Cor Rate	Flag Thickness		Remaing Life	
	Average Thickness	53.9 2.122			(mm) (inch)	(mm) (inch)	(mm) (inch)	(mm) (inch)	2030		
Min Thickness	53.6 2.109			0.0	0.000	-5.334	-0.210	16.0	0.630		
2" SCH 80 (5.5mm) CIRC	7-Aug-09				(psi)	OD		(psi)		(mm) (inch)	(mm) (inch)
	(mm) (inch)	(mm) (inch)	(mm) (inch)	(mm) (inch)	1445	2.375	SA 106 B	20000	1	0.7 0.027	2.2 0.086
	Nominal Thickness	5.5 0.217			Short Term Cor Rate		Long Term Cor Rate	Flag Thickness		Remaing Life	
	Average Thickness	6.0 0.236			(mm) (inch)	(mm) (inch)	(mm) (inch)	(mm) (inch)	2030		
Min Thickness	5.6 0.222			0.0	0.000	-0.021	-0.001	4.8	0.189		



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Galleon  
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# ASSOCIATED PIPING TML REPORT

TML #	DATE		DATE		DATE		DATE		MAWP	NPS	Material	Stress	E	Cor. Allowance		Tmin	
2" SCH 80 (5.5mm) ELBOW	7-Aug-09								(psi)	OD		(psi)		(mm)	(inch)	(mm)	(inch)
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	1445	2.375	SA 234 WPB	20000	1	0.7	0.027	2.2	0.086
	Nominal Thickness		5.5	0.217					Short Term Cor Rate		Long Term Cor Rate		Flag Thickness		Remaing Life		
	Average Thickness		5.9	0.232					(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	2030		
Min Thickness		5.5	0.217					0.0	0.000	0.000	0.000	4.8	0.189				
4" SCH 80 (8.6mm) CIRC	7-Aug-09								(psi)	OD		(psi)		(mm)	(inch)	(mm)	(inch)
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	1445	4.5	SA 106 B	20000	1	1.1	0.042	4.1	0.163
	Nominal Thickness		8.6	0.339					Short Term Cor Rate		Long Term Cor Rate		Flag Thickness		Remaing Life		
	Average Thickness		9.4	0.370					(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	4956		
Min Thickness		8.6	0.338					0.0	0.000	0.002	0.000	7.5	0.296				
4" SCH 80 (8.6mm) CIRC	7-Aug-09								(psi)	OD		(psi)		(mm)	(inch)	(mm)	(inch)
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	1445	4.5	SA 106 B	20000	1	1.1	0.042	4.1	0.163
	Nominal Thickness		8.6	0.339					Short Term Cor Rate		Long Term Cor Rate		Flag Thickness		Remaing Life		
	Average Thickness		9.1	0.358					(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	2137		
Min Thickness		8.4	0.330					0.0	0.000	0.033	0.001	7.5	0.296				
2" SCH 80 (5.5mm) ELBOW	7-Aug-09								(psi)	OD		(psi)		(mm)	(inch)	(mm)	(inch)
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	1445	2.375	SA 234 WPB	20000	1	0.7	0.027	2.2	0.086
	Nominal Thickness		5.5	0.217					Short Term Cor Rate		Long Term Cor Rate		Flag Thickness		Remaing Life		
	Average Thickness		6.2	0.244					(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	2030		
Min Thickness		5.8	0.230					0.0	0.000	-0.050	-0.002	4.8	0.189				
2" SCH 160 (8.7mm) ELBOW	7-Aug-09								(psi)	OD		(psi)		(mm)	(inch)	(mm)	(inch)
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	1445	2.375	SA 234 WPB	20000	1	1.1	0.043	2.2	0.086
	Nominal Thickness		8.7	0.343					Short Term Cor Rate		Long Term Cor Rate		Flag Thickness		Remaing Life		
	Average Thickness		8.9	0.350					(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	2218		
Min Thickness		8.5	0.335					0.0	0.000	0.030	0.001	7.6	0.300				
2" SCH 80 (5.5mm) ELBOW	7-Aug-09								(psi)	OD		(psi)		(mm)	(inch)	(mm)	(inch)
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	1445	2.375	SA 234 WPB	20000	1	0.7	0.027	2.2	0.086
	Nominal Thickness		5.5	0.217					Short Term Cor Rate		Long Term Cor Rate		Flag Thickness		Remaing Life		
	Average Thickness		5.8	0.228					(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	2030		
Min Thickness		5.5	0.218					0.0	0.000	-0.005	0.000	4.8	0.189				



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# ASSOCIATED PIPING TML REPORT

TML #	95	DATE		DATE		DATE		DATE		MAWP	NPS	Material	Stress	E	Cor. Allowance		Tmin	
4" SCH 80 (8.6mm) ELBOW	7-Aug-09									(psi)	OD		(psi)		(mm)	(inch)	(mm)	(inch)
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	1445	4.5	SA 234 WPB	20000	1	1.1	0.042	4.1	0.163	
Nominal Thickness	8.6	0.339							Short Term Cor Rate		Long Term Cor Rate		Flag Thickness		Remaing Life			
Average Thickness	9.3	0.366							(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	2030			
Min Thickness	8.8	0.348							0.0	0.000	-0.036	-0.001	7.5	0.296				
TML #	100	DATE		DATE		DATE		DATE		MAWP	NPS	Material	Stress	E	Cor. Allowance		Tmin	
10" SCH 80 (9.3mm) ELBOW	7-Aug-09									(psi)	OD		(psi)		(mm)	(inch)	(mm)	(inch)
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	1445	10.75	SA 234 WPB	20000	1	1.6	0.063	9.9	0.388	
Nominal Thickness	12.7	0.500							Short Term Cor Rate		Long Term Cor Rate		Flag Thickness		Remaing Life			
Average Thickness	16.4	0.646							(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	2030			
Min Thickness	15.7	0.617							0.0	0.000	-0.451	-0.018	11.1	0.438				
TML #	105	DATE		DATE		DATE		DATE		MAWP	NPS	Material	Stress	E	Cor. Allowance		Tmin	
8" SCH 80 (12.7mm) ELBOW	7-Aug-09									(psi)	OD		(psi)		(mm)	(inch)	(mm)	(inch)
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	1445	8.625	SA 234 WPB	20000	1	1.6	0.063	7.9	0.312	
Nominal Thickness	12.7	0.500							Short Term Cor Rate		Long Term Cor Rate		Flag Thickness		Remaing Life			
Average Thickness	12.7	0.500							(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	2064			
Min Thickness	12.2	0.480							0.0	0.000	0.077	0.003	11.1	0.438				