



PRESSURE EQUIPMENT							AB-506 INTERVAL					
DISTRICT	AB - OIL & NATURAL GAS			SHELL	TUBE		LPG plant storage vessels					
FACILITY	Armada Gas Plant			MAWT	115	F	GRADE	YEARS			REG	
A#	A0227158	YR	1985	MAWP	250			Equip	PSV	UT		
SERIAL #	27635A					psi		3	10	6		0
CRN	C4936.2134			PSV			INSPECTION TYPE					
EQUIP#				PSV CRN			VE	VI	MT	PT	ET	UT
STATUS	OUT OF SERVICE			UNIT	NE YARD		X	X	X			X
MANUFACTURER	WESTERN ROCK BIT CO LTD						INSPECTION RESULT:					
DH LSD				L	Ft OD	9 Ft	NCR-OPERATIONS					
REPAD	UNIQUE ID						NCR-REGULATORY/ADMIN					
RESULTS OF INSPECTION: VE Inspection: Confirm nozzle Tmin Confirm securement doesn't require expansion and contraction Confirm pressure gauge is suitable for PSV set pressure Inspect PSV after installation Install threaded plug in liquid level piping valve VI Inspection:							ACTION ITEM RAISED					
							REPAIR REQUIRED					
							SUITABLE FOR SERVICE					
							RECOMMENDATIONS:					

Ultrasonic Report		Date	3/30/2022	Phone: 403-793-7697 PO Box 1173, Brooks, Alberta, T1R 19B grady.rustebakke@gmail.com	
LSD	01-18-017-18W4M	Facility	Armada Gas Plant		
DH-LSD		Field	Red Deer District		
Jurisdiction # A0227158					
Serial # 27635A					
Ultrasonic Report #: A#0227158_GRADY INSPECTION LTD VE VI MT UT INSP_2MAY2022					

ULTRASONIC SET			COMPONENT DETAILS				CODE					
EQUIPMENT	CALIBRATION DUE	SERIAL NUMBER	MATERIAL GRADE	SURFACE PREP		TEMP	THICKNESS	CALIBRATION	EVALUATION			
EPOCH 600	2/25/2023	120388107	Carbon Steel	Painted		0C		ASME V	ASME VIII Div 1			
CALIBRATION BLOCK		PROBE							COUPLING		METHOD	
TYPE	SERIAL#	REF dB	SCAN dB	FREQ.	SIZE.	ANGLE	SERIAL #	TYPE	COUPLANT	CABLE	TECHNIQUE	PROCEDURE
10 Step Metric	14-2065	60	66	5 Mhz	0.25 "	0	15B00DU3	Dual	UT-X	6' BNC to Micro	LW Dual	UT01T1R4
SCOPE		As requested by Dustin Rumohr an ultrasonic inspection was completed on the BULLET										
LIMITATIONS		Limited correlation on shell CMLs with historical data due to size of vessel. Nozzles are heavily painted, no corrosion allowance.										
RESULTS		22% (1.2 mm) wall loss found on Nozzle CML 080 T-Nominal: (5.5 mm) T-Actual: (4.3 mm) T-Required: (4.8 mm) CR: .03RL: (-15.57 years) Isolated pit 20% (1.1 mm) wall loss found on Nozzle CML 115 T-Nominal: (5.5 mm) T-Actual: (4.4 mm) T-Required: (4.8 mm) CR: .03RL: (-13.58 years) corrosion @ 7:00										

Technician Name	Certification Body	Certification #	Expiry	Technician Signature					
3 ToddM	CGSB	9234	12/15/2030						
				Client Name			Dustin Rumohr	Company Name	CNRL
				Client Signature					

Magnetic Particle Report

LSD 01-18-017-18W4M

DH-LSD

Jurisdiction # A0227158

Serial #

MT Report #: A0227158_ARMADA GAS PLANT_2MAY2022_MT_UT_VE_VI_GRADYINSPECTIONLTD

Date

5/2/2022

Facility

Armada Gas Plant


Field


Red Deer District

Phone:403-793-7697

PO Box 1173, Brooks,
Alberta, T1R 19B
grady.rustebakke@gmail.com**GRADY**
INSPECTION LTD

YOKE INFO					APPLICATION		CONSUMABLES	
EQUIPMENT	EQUIPMENT SERIAL	YOKE BRAND	YOKE MODEL	AC/DC	APPLICATION	MEDIUM	CONSUMABLE TYPE	BATCH NUMBER
AC YOKE	27217	Contour Probe	B300	AC	Aerosol	MAGANVIS	14 AM	21G03U
CALIBRATION BLOCK			COMPONENT DETAILS					
CAL BLOCK TYPE	LIFT TEST [Y/N]	LIFT TEST DATE	THICKNESS	MATERIAL	SURFACE PREP			
TB-10 TEST BAR	Y	5/2/2022	20.4	Carbon Steel	Wire Wheel			
LIGHTING				LIGHT VERIFICATION				
EQUIPMENT	SERIAL#	UV / VIS	LIGHT INTENSITY	LIGHT METER	METER SERIAL	CAL DUE		
UV-A FLASHLIGHT	CST-365	HEADLA	+1000 lux @ 18"	DLM-1000	141233A	02-28		
METHOD				CODE				
TECHNIQUE		PROCEDURE		CAL. STANDARD.	EVALUATION CODE			
MPI AC WET VISIBLE		MT01T01R5		ASME V	ASME VIII Div 1			
SCOPE	As requested by Dustin Rumohr a fluorescent magnetic particle inspection was completed on all Tee Joints, 30% of long and circ seams, all nozzles and attachment welds.							
LIMITATIONS	None.							
RESULTS	No relevant indications were found with the fluorescent magnetic particle inspection.							

Worker ID	Certification Body	Certification #	Expiry	Technician Signature			
32	CGSB	9234	12/15/2030				
Technician Name	CGSB	9234	12/15/2030		Client Name	Dustin Rumohr	Company Name
ToddM Mckenzie	NRCAN Card Back	9234	12/15/2030	Client Signature			

External Inspection - (Vessel)	Date	3/30/2022	Phone: 403-793-7697 PO Box 1173, Brooks, Alberta, T1R 19B grady.rustebakke@gmail.com	
LSD 01-18-017-18W4M	Facility	Armada Gas Plant		
DH-LSD	Field	Red Deer District		
Jurisdiction # A0227158				

Fit For Service:	Not Fit For Service.
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Inspection Summary:	Vessel is in good visual condition. 3" nozzles are below values outlined in UG45 table with no corrosion allowance.
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Recommendations:	Confirm nozzle Tmin Confirm securement doesn't require expansion and contraction Confirm pressure gauge is suitable for PSV set pressure Inspect PSV after installation Install threaded plug in liquid level piping valve
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External Inspection Items	G/F/P	Comments
General Condition:	Good	No notable mechanical damage, areas of wear/fretting, distortion, misalignment, or visible weld defects.
External Coating:	Good	Vessel is in good visual condition.
Insulation / Cladding:	N/A	Non insulated vessel
Nozzles, Piping and Connections:	Fair	Unplugged valve on liquid level piping
Buried Vessels:	N/A	Above Ground
Ladders, Platforms and Walkways:	Good	Building secure Skid is on metal plates. Unable to confirm if pilings are secure Ladder and platform are in good secure condition. Cage on ladder in good condition
Foundations and Supports:	Good	Anchor bolts fully engaged
Shell:.	Good	No notable mechanical damage, areas of wear/fretting, distortion, misalignment or visible weld defects.
Saddles / Skirts:	Good	Saddle is in good visual condition Saddles are welded to skid. No room for expansion or contraction
Grounding:	Good	Grounding is achieved through the skid.
Gauges and Instrumentation:	Fair	<div> Shell Gauge (0 - 200 @) Temp Gauge (-40 - 120 @ F) </div> <div>Gauge is not suitable for MAWP</div>
Pressure Protection:	N/A	PSV out for service at time of inspection
NDE Summary:	Poor	22% (1.2 mm) wall loss found on Nozzle CML 080 T-Nominal: (5.5 mm) T-Actual: (4.3 mm) T-Required: (4.8 mm) CR: .03RL: (-15.57 years) Isolated pit 20% (1.1 mm) wall loss found on Nozzle CML 115 T-Nominal: (5.5 mm) T-Actual: (4.4 mm) T-Required: (4.8 mm) CR: .03RL: (-13.58 years) corrosion @ 7:00 No relevant indications were found with the fluorescent magnetic particle inspection.
Manway Davits/Quick Closure:	Good	Manway is in good visual condition.
Nameplate:	Good	Nameplate is legible and readily accessible and securely affixed

External Inspection - (Vessel)
LSD 01-18-017-18W4M
DH-LSD
Jurisdiction # A0227158


Date
Facility
Field

3/30/2022
Armada Gas Plant
Red Deer District

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Code Variance:

Internal Inspection - (Vessel		Date	5/2/2022	Phone:403-793-7697 PO Box 1173, Brooks, Alberta, T1R 19B grady.rustebakke@gmail.com	
LSD	01-18-017-18W4M	FACILITY	Armada Gas Plant		
Jur #	A0227158	FIELD	Red Deer District		
Serial #	27635A				

Fit For Service:		Fit For Service.		
Inspection Summary: Overview of Inspection Findings		Minor corrosion in manway nozzle. Float is contacting overflow pipe, float is not in use.		
Internal Inspection Items		G/F/P	Comments	
Inlet Area:		Good		
Internal Piping:		Fair	Float is in contact with overflow pipe	
Baffles, Deflector Plates, Weir, etc:		N/A		
Trays:		N/A		
Demister Pad:		N/A		
Head (1):	North	Good	North head is in good visual condition	
Head (2):	South	Good	South head is in good visual condition	
Shell:	5	Good	Shell is in good visual condition.	
Tubesheet:		N/A		
Channel Section:		N/A		
Bundle / Tubes:		N/A		
Nozzles / Manways:		Fair	Corrosion found on manway nozzle	
Welds:		Good	MPI performed on all Tee Joints, 30% of long and circ seams, all nozzles and attachment welds. No relevant indications identified. See MT report.	
Vortex Breakers, Drains, etc:		N/A		
Internal Coating:	N/A	<input type="checkbox"/> NotCoated <input type="checkbox"/> Coated <input type="checkbox"/> CoatingFailure <input type="checkbox"/> Blisters		

Internal Inspection - (Vessel)**LSD** 01-18-017-18W4M**Jur #** A0227158**Serial #** 27635A**Date**

5/2/2022

FACILITY

Armada Gas Plant

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PO Box 1173, Brooks,
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grady.rustebakke@gmail.com**GRADY**
INSPECTION LTD☐ Cracks/Flake☐ Repaired☐ Replaced**Weld Repairs:**☐ Weld Repairs Required☐ None Required**Internal Anodes:**☐ Internal Anodes☐ None**Non-Conformances and Corrective Actions:****Preparatory Work Required for Next Inspection:****Recommendations for Next Inspection:**

Overview Photo

LSD 01-18-017-18W4M
Jur # A0227158
Serial # 27635A

Date

5/2/2022

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GRADY
INSPECTION LTD



Nameplate



Overview



Overview



Piping Overview

Overview Photo

LSD 01-18-017-18W4M
Jur # A0227158
Serial # 27635A

Date

5/2/2022

FACILITY

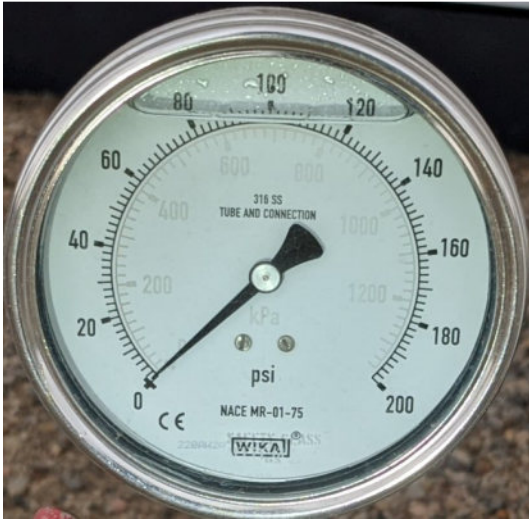
Armada Gas Plant

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GRADY
INSPECTION LTD**Pressure Gauge****Temperature Gauge****Ladder and Platform****Saddle is welded to skid**

Overview Photo

LSD 01-18-017-18W4M
Jur # A0227158
Serial # 27635A

Date

5/2/2022

FACILITY

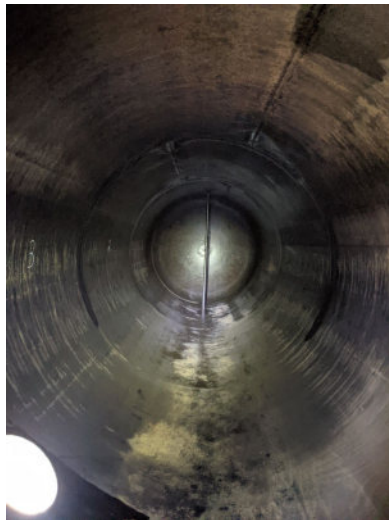
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GRADY
INSPECTION LTD**Manway nozzle corrosion****North head****North overview****Typical nozzle**

Overview Photo

LSD 01-18-017-18W4M
Jur # A0227158
Serial # 27635A

Date

5/2/2022

FACILITY

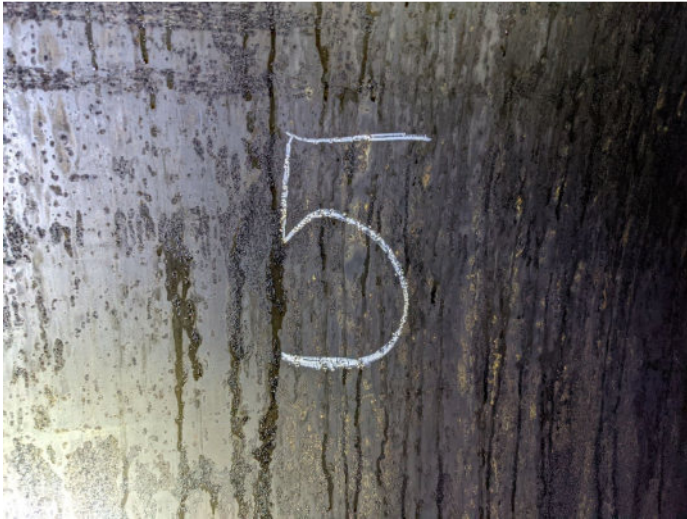
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GRADY
INSPECTION LTD**Typical shell condition****South head****South overview****Float is contacting overflow piping**

Overview Photo

LSD 01-18-017-18W4M
Jur # A0227158
Serial # 27635A

Date

5/2/2022

FACILITY

Armada Gas Plant

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GRADY
INSPECTION LTD



Unplugged valve on liquid level piping

REPORT # A#0227158_GRADY INSPECTION LTD VE VI MT UT INSP_2MAY2022

LSD 01-18-017-18W4M

FACILITY Armada Gas Plant

DH-LSD

FIELD Red Deer District

Jur # A0227158

DWG

Location:

Phone:403-793-7697

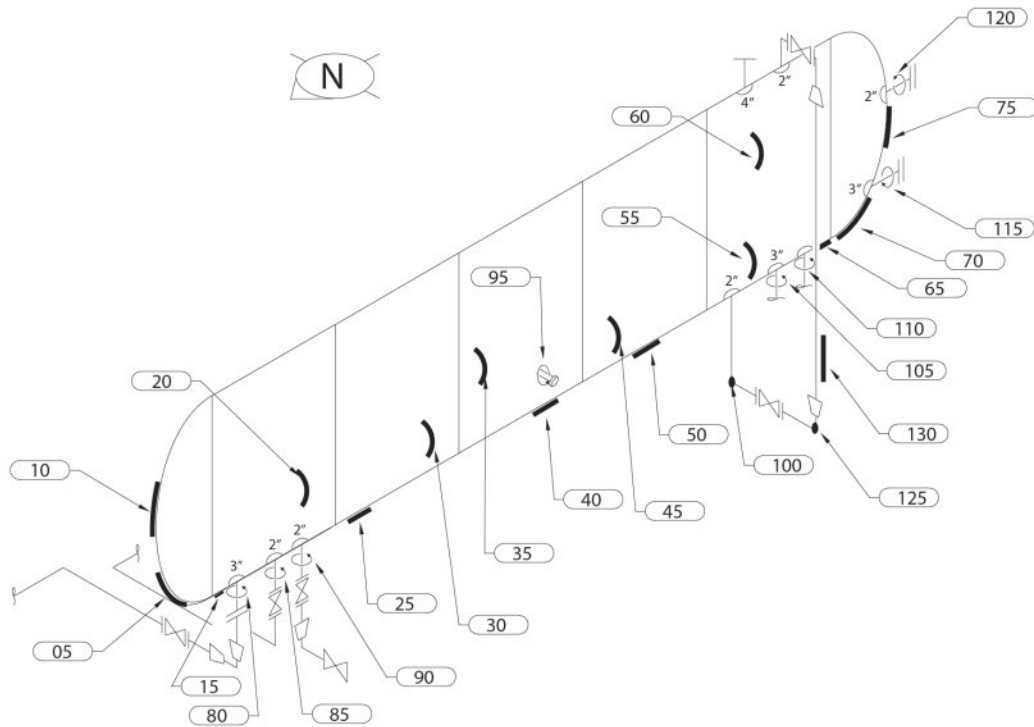
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Ser # 27635A

Inspection Dates and Thickness Values (mm)

CML#	Nom	CA/Tol	SFlag	STmin	PTmin	> Tmin	Comp Type	Pipe Size	Code	MOP	Baseline		3rd Last		2nd Last		Last		# of Insp	Non Wall Loss	Corrosion Rates			Rem Life Date	Rem Life (yrs)	Next Insp Date	Insp (yrs)	Inspection Comments
											Date	Min Ave	Date	Min Ave	Date	Min Ave	Date	Min Ave			ST	LTn	LTi					



CML	Min	Yrs	Date
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Nominal (mm)	Pipe Tolerance 12% (mm) Corrosion Allowance (mm)	API 574 Table 7 Flag Tmin	Pressure Tmin Structural Tmin
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%Nom -UT	10-20	20-30	Cor. Rates (mm/yr)	0.025 - 0.25	0.26 - 0.5
	30-50	>50		0.501 - 1	>1.0

Calculated Failure (years)	3-5	2-3
	1-2	< 1

Phone:403-793-7697

FACILITY Armada Gas Plant

FIELD Red Deer District

DWG 1 **Location:**

Location:

Phone:403-793-7697

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CML#	27635A			Inspection Dates and Thickness Values (mm)														# of Insp	% Nom Wall Loss	Corrosion Rates			Rem Life Date	Rem Life (yrs)	Next Insp Date	Insp Int (yrs)	Inspection Comments		
	Nom	CA/Tol	SFlag	STmin	PTmin	> Tmin	Comp Type	Pipe Size	Code	MOP	Baseline Date	Min Ave	2nd Last Date	Min Ave	3rd Last Date	Min Ave	Last Date			Min Ave	ST	LTn						LTi	
005	19.6	19.6	19.3	19.3	19.3	Head		UG32HeadEli	250		4/1/12	22.1	22.7			11/28/17	21.8	5/2/22	22.0	22.5	3	-12%					4/29/2032	10.0	
010	19.6	19.6	19.3	19.3	19.3	Head		UG32HeadEli	250		5/2/22	22.5	22.8								1	-15%					4/29/2032	10.0	
015	19.8	19.8	39.0	19.5	19.5	Shell		UG27ShellInt	250		5/2/22	20.4	20.5								1	-3%					4/29/2032	10.0	
020	19.8	19.8	39.0	19.5	19.5	Shell		UG27ShellInt	250		5/2/22	20.1	20.3								1	-2%					4/29/2032	10.0	
025	19.8	19.8	39.0	19.5	19.5	Shell		UG27ShellInt	250		5/2/22	20.4	20.6								1	-3%					4/29/2032	10.0	
030	19.8	19.8	39.0	19.5	19.5	Shell		UG27ShellInt	250		5/2/22	20.2	20.4								1	-2%					4/29/2032	10.0	
035	19.8	19.8	39.0	19.5	19.5	Shell		UG27ShellInt	250		5/2/22	20.1	20.3								1	-2%					4/29/2032	10.0	
040	19.8	19.8	39.0	19.5	19.5	Shell		UG27ShellInt	250		5/2/22	20.1	20.3								1	-2%					4/29/2032	10.0	
045	19.8	19.8	39.0	19.5	19.5	Shell		UG27ShellInt	250		5/2/22	20.2	20.4								1	-2%					4/29/2032	10.0	
050	19.8	19.8	39.0	19.5	19.5	Shell		UG27ShellInt	250		5/2/22	20.3	20.4								1	-3%					4/29/2032	10.0	
055	19.8	19.8	39.0	19.5	19.5	Shell		UG27ShellInt	250		5/2/22	20.1	20.3								1	-2%					4/29/2032	10.0	
060	19.8	19.8	39.0	19.5	19.5	Shell		UG27ShellInt	250		4/1/12	20.5	20.7				5/2/22	20.4	20.6	2	-3%	0.01					4/29/2032	10.0	
065	19.8	19.8	39.0	19.5	19.5	Shell		UG27ShellInt	250		5/2/22	20.1	20.3								1	-2%					4/29/2032	10.0	
070	19.6	19.6	19.3	19.3	19.3	Head		UG32HeadEli	250		4/1/12	21.9	22.4			11/28/17	21.8	5/2/22	21.9	22.5	3	-12%					4/29/2032	10.0	
075	19.6	19.6	19.3	19.3	19.3	Head		UG32HeadEli	250		5/2/22	22.2	22.4								1	-13%					4/29/2032	10.0	
080	5.5		4.8	4.8		Nozzle	3" STD 40--(5.5mm)	UG45Nozzle	250		5/2/22	4.3	6.5								1	22%	0.03		10/11/2006	-15.6	5/2/2022	0.0	Iso pit
085	3.9		3.4	3.4		Nozzle	2" STD 40--(3.9mm)	UG45Nozzle	250		5/2/22	4.1	4.3								1	-5%					4/29/2032	10.0	
090	3.9		3.4	3.4		Nozzle	2" STD 40--(3.9mm)	UG45Nozzle	250		5/2/22	3.9	4.3								1	0%					4/29/2032	10.0	
095	9.5					Nozzle	18" STD ----(9.5mm)	UG45Nozzle	250		5/2/22	9.3	10.5						0.01			3/29/3758				4/29/2032	10.0	assumed nom	
100	3.9	3.4	2.5	1.8	0.4	1.8	Elbow	2" STD 40--(3.9mm)	API570	250		4/1/12	4.1	4.2			5/2/22	3.7	4.1	2	5%	0.04					4/29/2032	10.0	
105	5.5		4.8	4.8		Nozzle	3" STD 40--(5.5mm)	UG45Nozzle	250		5/2/22	5.5	6.5								1	0%					4/29/2032	10.0	Iso pit
110	6.0		5.3	5.3		Nozzle	4" STD 40--(6mm)	UG45Nozzle	250		5/2/22	6.3	6.8								1	-5%					4/29/2032	10.0	
115	5.5		4.8	4.8		Nozzle	3" STD 40--(5.5mm)	UG45Nozzle	250		5/2/22	4.4	5.7								1	20%	0.03		10/3/2008	-13.6	5/2/2022	0.0	corr @ 7:00
120	5.2		4.5	4.5		Nozzle	2.5" STD 40--(5.2mm)	UG45Nozzle	250		5/2/22	7.3	8.3								1	-40%					4/29/2032	10.0	corr @ 6:00
125	5.5	4.8	2.5	1.8	0.4	1.8	Elbow	2" XS 80--(5.5mm)	API570	250		5/2/22	5.3	5.7							1	4%	0.01		8/19/2675		4/29/2032	10.0	
130	8.6	7.5	3.1	2.3	0.7	2.3	Pipe	4" XS 80--(8.6mm)	API570	250		4/1/12	9.0	9.2			5/2/22	9.0	9.3	2	-5%						4/29/2032	10.0	