

**AI TAKAMUL COMPANY FOR ENGINEERING TESTS
AND PROFESSIONAL SAFETY LIMITED**

Basra, North Rumaila, Quality Control Yard - Iraq



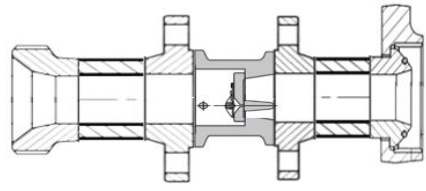
CERTIFICATE OF QUALIFICATION VISUAL AND WITNESS PRESSURE TEST

THIS REPORT COMPLIES WITH RECOGNIZED INTERNATIONAL STANDARDS & TECHNICAL REQUIEREMENTS

CLIENT:	HALLIBURTON	REPORT No.:	QC-24-12-TSS-NDT-038A
LOCATION:	TSS WORKSHOP & INSPECTION TEST AREA	JOB NO :	2122024
WORK ORDER #	***	SPECIFICATION:	ASME B31.1 / CUSTOMER SPECIFICATION
DATE OF INSPECTION :	Monday, December 2, 2024	INSP. DUE DATE:	Sunday, June 1, 2025
TYPE OF INSPECTION:	VISUAL INSPECTION AND WITNESS PRESSURE TEST		
DESCRIPTION:	CHECK VALVE 3" 600 CL (FLAPPER VALVE)	SERIAL NO:	111803
Pump NO.:	EQ_NO:13119220	CAL DUE DATE:	19.AUG.2025
Pressure Gauge NO.:	218230280019	CAL DUE DATE:	06.MAR.2025



ONLINE TRACEABILITY



INSPECTION RESULT

PRESSURE TEST 1:	The Above Item was Body Tested up to 300 PSI A low Pressure Hold for 5 min And Maximum Working pressure 1400 psi Hold 15 min no Leak was Realized while testing & Pressure Was Stable Accordance To Chart Recorder Attached
PRESSURE TEST 2:	The Above Item was Flapper Pressure Tested to 300 PSI A low Pressure Hold for 5 min And Maximum Working pressure 1440 psi Hold 15 min no Leak was Realized while testing & Pressure Was Stable Accordance To Chart Recorder Attached

PERSON DETAILS		REVIEW BY		
INSPECTOR NAME:	M.Shahzad Ahmed	SENIOR INSPECTOR:	NAVEED HUSSAIN	CLIENT:
QUALIFICATION:	ASNT CP-105	INSPECTION SUPERVISOR:	HANI ALI	HB&SIGN
SIGNATURE & STAMP:				DATE:

Original - Client Files Copy - Area Office QC/EN/PT/077 Rev.00 DATED 07.NOV. 2021



CERTIFICATE OF QUALIFICATION VISUAL AND MAGNETIC PARTICLE INSPECTION AND ULTRASONIC THICKNESS GAUGING INSPECTION

THIS REPORT COMPLIES WITH RECOGNIZED INTERNATIONAL STANDARDS & TECHNICAL REQUIREMENTS

CLIENT:	HALLIBURTON	REPORT NO.:	QC-24-12-TSS-NDT-038A
LOCATION:	TSS YARD	JOB NO:	2122024
WORK ORDER #	*****	STANDARD:	ASTM E709 & ASTM E797
DATE OF INSPECTION:	Monday, December 2, 2024	NEXT INSPECTION DATE:	Sunday, June 1, 2025
TYPE OF INSPECTION:	VISUAL INSPECTION AND MAGNETIC PARTICLE INSPECTION AND ULTRASONIC THICKNESS GAUGING		

DESCRIPTION:	CHECK VALVE 3" 600 CL (FLAPPER VALVE)	SERIAL NO:	111803
--------------	---------------------------------------	------------	--------

(a) Normal condition
(b) Corrosion present on back surface.
Reflection echo become wider small by diffused reflection caused by corroded scabrous surface.

* ALL READINGS IN INCH
**MINIMUM THICKNESS PROVIDED BY CUSTOMER

ONLINE TRACEABILITY

POINTS	THICKNESS AT POSITION		MINIMUM THICKNESS IN INCHES
	A		
0°	0.868		0.400 INCH
90°	0.849		
180°	0.861		
270°	0.839		

INSPECTION RESULT		
VT & MPI	Accepted	According to ASTM E709
UT	Accepted	According to ASTM E 797

Inspection Evaluation

MPI -The Above Item Has No Significant Discontinuous At The Time Of Inspection And Found Acceptable According to ASTM E709
Note:Magnetic Particle Inspection With A/C Hand Yoke Available Areas

U.T-The Above Item Was Found Acceptable As Per ASTM E797

INSPECTION EQUIPMENT DETAILS				TECHNICAL DETAILS			
AC YOKE S.N:	201504048	CAL DUE DATE	11-Apr-25	White Contrast WCP-2	MANUFACTURE	BATCH NO	EXPIRE DATE
Digital Lux Meter WHITE LIGHT	2722003	CAL DUE DATE	13-Apr-25		Magnaflux	220602	JUN,2025
UT THICKNESS GAUGE:	5500391	CAL DUE DATE	11-Apr-25	Black Magnetic Ink 7HF	MANUFACTURE	BATCH NO	EXPIRE DATE
UT TEST BLOCK:	NoBo5087	CAL DUE DATE	12-Apr-25		Magnaflux	220605	JULY,2025
ASTM Test Block:	1657	CAL DUE DATE	11-Apr-25	Concentration of 7HF:		1.2 to 2.4 ml/100 ml	
WHITE LIGHT INTENSITY:	3610 lux						

PERSON DETAILS		REVIEW BY				
INSPECTOR NAME:	M.Shahzad Ahmed	SENIOR INSPECTOR:	NAVEED HUSSAIN	CLIENT:		
QUALIFICATION:		INSPECTION SUPERVISOR:	HANI ALI	HB&SIGN		
SIGNATURE & STAMP:					DATE:	



AI TAKAMUL COMPANY FOR ENGINEERING TESTS AND PROFESSIONAL SAFETY LIMITED

Basra, North Rumaila, Quality Control Yard - Iraq



CERTIFICATE OF QUALIFICATION VISUAL AND MAGNETIC PARTICLE INSPECTION AND ULTRASONIC THICKNESS GAUGING INSPECTION

THIS REPORT COMPLIES WITH RECOGNIZED INTERNATIONAL STANDARDS & TECHNICAL REQUIREMENTS

CLIENT:	HALLIBURTON	REPORT NO.:	QC-24-12-TSS-NDT-039
LOCATION:	TSS YARD	JOB NO:	2122024
WORK ORDER #	*****	STANDARD:	ASTM E709 & ASTM E797
DATE OF INSPECTION:	Monday, December 2, 2024	NEXT INSPECTION DATE:	Sunday, June 1, 2025
TYPE OF INSPECTION:	VISUAL INSPECTION AND MAGNETIC PARTICLE INSPECTION AND ULTRASONIC THICKNESS GAUGING		

DESCRIPTION:	FLANGE: 3" 600 CL X 3" 206 WING	SERIAL NO:	111804
--------------	---------------------------------	------------	--------





* ALL READINGS IN INCH
**MINIMUM THICKNESS PROVIDED BY CUSTOMER



ONLINE TRACEABILITY



(a) Normal condition: Large reflection echo, Area of diffused echo, Detector, Surface, Target.

(b) Corroded condition: Small reflection echo, Area of diffused echo, Detector, Surface, Target. Underneath: Corrosion present on back surface. Reflection echo becomes very small by diffused reflection caused by corroded surface.

POINTS	THICKNESS AT POSITION		MINIMUM THICKNESS IN INCHES
	A		
0°	0.302		0.124 INCH
90°	0.293		
180°	0.297		
270°	0.309		

INSPECTION RESULT

VT & MPI	Accepted	According to ASTM E709
UT	Accepted	According to ASTM E 797

Inspection Evaluation

MPI -The Above Item Has No Significant Discontinuous At The Time Of Inspection And Found Acceptable According to ASTM E709

Note:MPI Wet Fluorescent inspection Thread With UltraViolet Light
Magnetic Particle Inspection With A/C Hand Yoke Welds & Avaliable Areas

U.T-The Above Item Was Found Acceptable As Per ASTM E797


INSPECTION EQUIPMENT DETAILS

TECHNICAL DETAILS

AC YOKE S.N:	201504048	CAL DUE DATE	11-Apr-25	White Contrast WCP-2	MANUFACTURE	BATCH NO	EXPIRE DATE
Digital Lux Meter WHITE LIGHT	2722003	CAL DUE DATE	13-Apr-25		Magnaflux	220602	JUN,2025
UT THICKNESS GAUGE:	5500391	CAL DUE DATE	11-Apr-25	Black Magnetic Ink 7HF	MANUFACTURE	BATCH NO	EXPIRE DATE
UT TEST BLOCK:	NoBo5087	CAL DUE DATE	12-Apr-25		Magnaflux	220605	JULY,2025
ASTM Test Block:	1657	CAL DUE DATE	11-Apr-25	Fluorescent Magnetic Ink 14HF	MANUFACTURE	BATCH NO	EXPIRE DATE
DC COIL:	22650	CAL DUE DATE	12-Apr-25		Magnaflux	220306	March,2025
UV BLACK LIGHT:	1898977	CAL DUE DATE	11-Apr-25	Concentration of 14HF:		0.1 to 0.4 ml/100 ml	
WHITE LIGHT INTENSITY:	3610 lux	UV BLACK LIGHT INTENSITY:	3070 μw/cm ²	Concentration of 7HF:		1.2 to 2.4 ml/100 ml	

PERSON DETAILS

REVIEW BY

INSPECTOR NAME:	M. Shalwan Ahmed	SENIOR INSPECTOR:	NAVEED HUSSAIN	CLIENT:	
QUALIFICATION:		INSPECTION SUPERVISOR:	HANI ALI	HD&SIGN	
SIGNATURE & STAMP:				DATE:	

Original - Client Files Copy - Area Office QC/FN/PT/077 Rev.00 DATED 07.NOV. 2021



AI TAKAMUL COMPANY FOR ENGINEERING TESTS AND PROFESSIONAL SAFETY LIMITED

Basra, North Rumaila, Quality Control Yard - Iraq

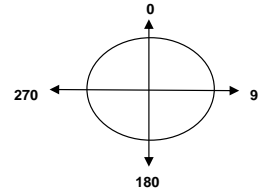
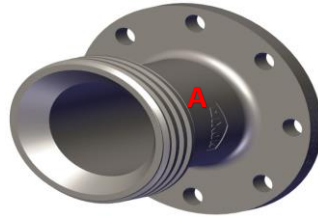
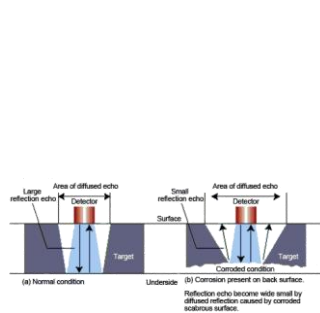


CERTIFICATE OF QUALIFICATION VISUAL AND MAGNETIC PARTICLE INSPECTION AND ULTRASONIC THICKNESS GAUGING INSPECTION

THIS REPORT COMPLIES WITH RECOGNIZED INTERNATIONAL STANDARDS & TECHNICAL REQUIREMENTS

CLIENT:	HALLIBURTON	REPORT NO.:	QC-24-12-TSS-NDT-040
LOCATION:	TSS YARD	JOB NO:	2122024
WORK ORDER #	*****	STANDARD:	ASTM E709 & ASTM E797
DATE OF INSPECTION:	Monday, December 2, 2024	NEXT INSPECTION DATE:	Sunday, June 1, 2025
TYPE OF INSPECTION:	VISUAL INSPECTION AND MAGNETIC PARTICLE INSPECTION AND ULTRASONIC THICKNESS GAUGING		

DESCRIPTION:	FLANGE: 3" 600 CL X 3" 206 THREAD	SERIAL NO:	111804
--------------	-----------------------------------	------------	--------



ONLINE TRACEABILITY

* ALL READINGS IN INCH
**MINIMUM THICKNESS PROVIDED BY CUSTOMER

POINTS	THICKNESS AT POSITION	MINIMUM THICKNESS IN INCHES
	A	
0°	0.316	0.124 INCH
90°	0.323	
180°	0.309	
270°	0.322	

INSPECTION RESULT

VT & MPI	Accepted	According to ASTM E709
UT	Accepted	According to ASTM E 797

Inspection Evaluation

MPI -The Above Item Has No Significant Discontinuous At The Time Of Inspection And Found Acceptable According to ASTM E709

Note:MPI Wet Fluorescent inspection Thread With UltraViolet Light
Magnetic Particle Inspection With A/C Hand Yoke Welds & Avaliable Areas

U.T-The Above Item Was Found Acceptable As Per ASTM E797

INSPECTION EQUIPMENT DETAILS

TECHNICAL DETAILS

AC YOKE S.N:	201504048	CAL DUE DATE	11-Apr-25	White Contrast WCP-2	MANUFACTURE	BATCH NO	EXPIRE DATE
Digital Lux Meter WHITE LIGHT	2722003	CAL DUE DATE	13-Apr-25		Magnaflux	220602	JUN,2025
UT THICKNESS GAUGE:	5500391	CAL DUE DATE	11-Apr-25	Black Magnetic Ink 7HF	MANUFACTURE	BATCH NO	EXPIRE DATE
UT TEST BLOCK:	NoBo5087	CAL DUE DATE	12-Apr-25		Magnaflux	220605	JULY,2025
ASTM Test Block:	1657	CAL DUE DATE	11-Apr-25	Fluorescent Magnetic Ink 14HF	MANUFACTURE	BATCH NO	EXPIRE DATE
DC COIL:	22650	CAL DUE DATE	12-Apr-25		Magnaflux	220306	March,2025
UV BLACK LIGHT:	1898977	CAL DUE DATE	11-Apr-25	Concentration of 14HF:	0.1 to 0.4 ml/100 ml		
WHITE LIGHT INTENSITY:	3610 lux	UV BLACK LIGHT INTENSITY:	3070 μw/cm ²	Concentration of 7HF:	1.2 to 2.4 ml/100 ml		

PERSON DETAILS

REVIEW BY

INSPECTOR NAME:	M. Shalwan Ahmed	SENIOR INSPECTOR:	NAVEED HUSSAIN	CLIENT:	
QUALIFICATION:		INSPECTION SUPERVISOR:	HANI ALI	HD&SIGN	
SIGNATURE & STAMP:				DATE:	

Original - Client Files Copy - Area Office QC/FN/PT/077 Rev.00 DATED 07.NOV. 2021

