QUALITY VALIDATION (QV) REPORT

Red Hill Bulk Fuel Storage Facility Defuel

Validation Firm	HDR Environmental, Operations and Construction, Inc.	Repair No.	INC 032
Address	9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112	Repair ID	FLC.VC.1
Contract No.	FA890315D0007, D.O. FA8903-19-F-0027	Report Date	7 JUL 2023
QV Engineer	(b) (6)		

VALIDATION

Source	PDF Page No.	Facility Geographic Area	Location Reference
DLA/FLC	N/A	Joint Base Pearl Harbor	(b) (3) (A)

Repair Description	Replace LPDs (b) (3) (A) required before defueling. Replace 15ft tee section with LPD on F-24 line.	Source Contract Reference	47QSHA18D000Y W912DY21F0025 Service Order 740E
Description of Contractor QC Method(s) Used	Methods outlined in detail in QCP. Pipe butt welds 100% inspection via Radiographic Testing (shop welds) and Phased Array Ultrasonic Testing (field tie-in). Socket welds on piping 100% inspection by VT and MT. Pneumatic test and hydrostatic testing completed on affected spools.	Contractor QC Records Reviewed	QCP and Daily Reports.
Description of QA Validation and Observations	QA methods outlined in QASP. JTF-RH secondary QA and 3rd Party QV completed. JTF-RH QV visually inspected repair & reviewed contractor QC documentation. Final acceptance by government. Date: 6 JUL 2023		

Rework Needed				Photo Record Attached	Repair Work Validated as Complete			
○	Yes	◉	No	See Page 2.	◉	Yes	○	No

Comments

Contractor shop fabricated new tee spool and reducer spool for the F-24 piping (b) (3) (A) installing low point drain (LPD) assemblies on the F-24 line. Prior to installation, contractor drained residual fuel, and cold cut existing piping for removal. Contractor installed new LPD assemblies on existing F-76 piping (b) (3) (A) Pneumatic testing (b) (3) (A) x 2 hours) and hydrostatic testing (b) (3) (A) x 4 hours) were completed on the affected spools. After hydrostatic testing, protective coatings were applied.

CERTIFICATION

I hereby certify that repair work validated in this report was personally substantiated and this report is true.	QV ENGINEER SIGNATURE	(b) (6)
	DATE	7 JUL 2023

QUALITY ASSURANCE VALIDATION REPORT

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

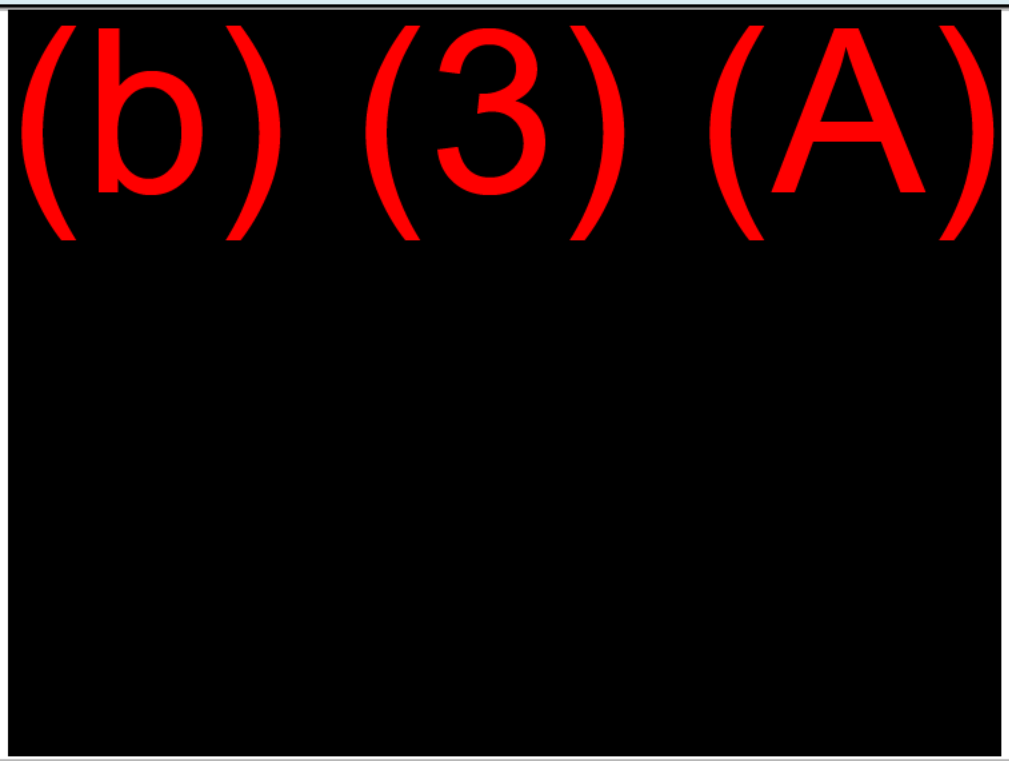
(b) (3) (A)

(b) (3) (A)

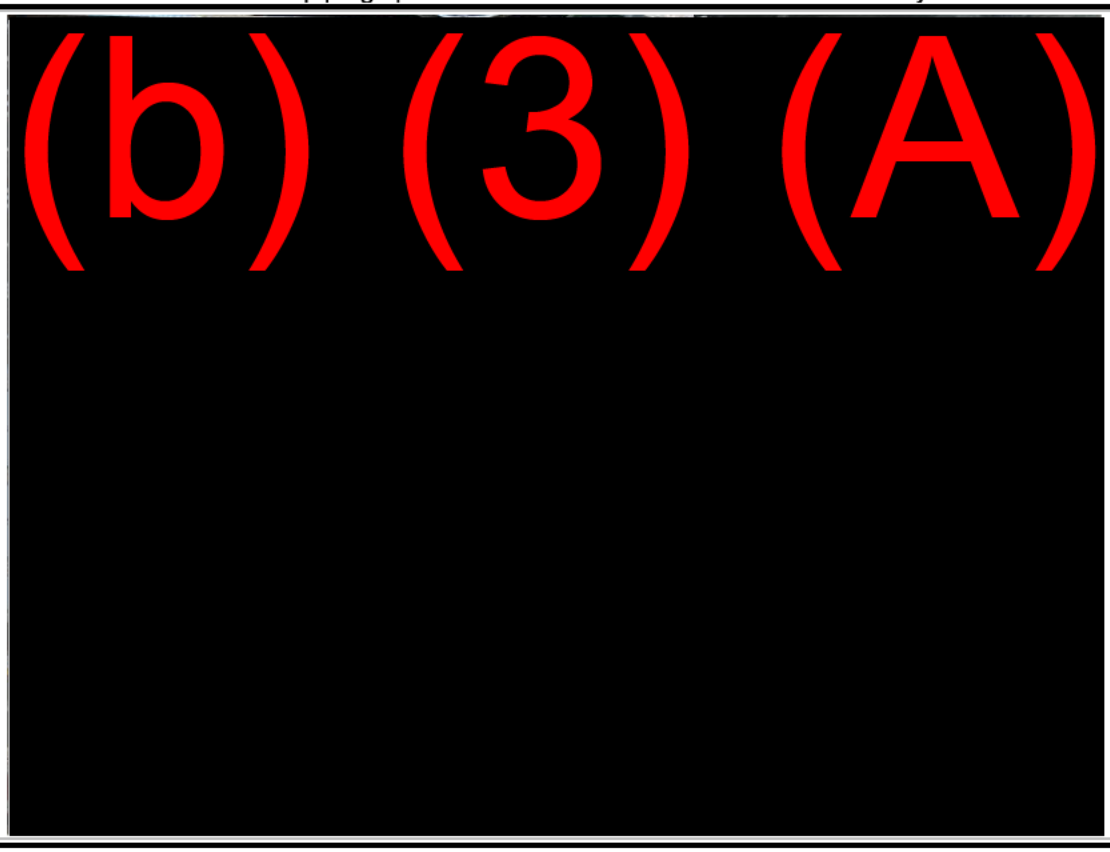
(b) (3) (A)

QUALITY ASSURANCE VALIDATION REPORT

Red Hill Bulk Fuel Storage Facility Defuel



New F-24 piping spool installed within VC-1 with LPD assembly.



New F-24 piping spool installed within VC-1 tie-in point at chamber wall.

[redacted]

Date: Saturday, June 3, 2023

Ticket No. CST 00005

Job Information

Customer:	[redacted]	Contractor:	PO No.:
Requestor Name:		Job No./Name: PRL-740E	Acceptance Criteria: ☐ API ☑ ASME ☐ AWS
Requestor Phone No.:		AFE No.: I0170	☑ B31.3 N ☐ B31.3 S ☐ B31.8 ☐ Section 8 ☐ Section 9
Job Location:		Work Order No:	☐ 1104 ☐ 650 ☐ D1.1 ☐ Other:

Radiographic

Procedure:		Material:			
Exposure:	☐ DWE	☐ SWE	☐ DWV	☐ SWV	
Film Speed:	☐ D-3	☐ D-4	☐ D-5	☐ D-7	
Film Size:	☐ 70 mm	☐ 3.5" x 10"	☐ 3.5" x 17"	☐ 8" x 10"	
	☐ 4.5" x 10"	☐ 4.5" x 17"	☐ 7" x 17"	☐ 14" x 17"	
Misc.:					

Dye Penetrant

Procedure:	Material:
Surface:	Technique:
Lighting:	Temp.:
Cleaner:	Batch No.:
Penetrant:	Batch No.:
Developer:	Batch No.:

Magnetic Particle

Procedure:	MT-2 Rev.3	Material:	Carbon Steel	Yoke Model No.
Surface:	As Welded	Technique:	Wet	B100
Lighting:	Natural	Temp.:	Ambeint	Yoke Serial No.
AC/DC: ☐ AC ☑ DC		Color:	Black	11395
Contrast:	WCP-2	Batch No.:	M5735	Yoke Cal. Date
Particle: ☑ WET ☐ DRY		Batch No.:	17L03K	12/2/2023

	X-Ray No.	Location	Within Code Yes	Within Code No	Pipe Size	Wall Thickness	No. of Exp.	IQI Wire Set	IQI Wire No.	IQI Hole Type	IQI Side S or F	VT Check	Comments (Welder Stencil, Defect, Location, etc.)
1	MT 1	100% of Weld	✓		(b) (3) (A) [redacted]								
2	MT 2	100% of Weld	✓										
3	MT 3	100% of Weld	✓										
4	MT 4	100% of Weld	✓										
5	MT 5	100% of Weld	✓										
6	MT 6	100% of Weld	✓										
7	MT 7	100% of Weld	✓										
8	MT 8	100% of Weld	✓										
9	MT 9	100% of Weld	✓										
10	MT 10	100% of Weld	✓										
11	MT 11	100% of Weld	✓										
12	MT 12	100% of Weld	✓										
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													

Terms and Abbreviations

IP	Inadequate Penetration	IF	Incomplete Fusion	SP	Spherical Porosity	HB	Hollow Bead	IC	Internal Concavity	NI	No Indication
IPD	Inadequate Penetration Due to High-Low	BT	Burn Through	CP	Cluster Porosity	ISI	Isolated Slag	IU	Internal Undercut	AD	Accumulation of Discontinuities
		PH	Pin Hole	CR	Crack	ESI	Elongated Slag	EU	External Undercut		

Billing Information

Total Hours: 2	R/T Mileage:
No. of Personnel: 2	Per Diem: N/A
Total No. of Welds: 12	

[redacted]

NOTICE

[redacted]

Customer Printed Name:	Customer Signature:	Date: 6/3/2023	Phone No.

(b) (4), (b) (6)

Date: Thursday, June 8, 2023

Report No. CST 00007

Job Information

Customer: (b) (4), (b) (6)	Contractor:	PO No.:	
Requestor Name:	Job No./Name: PRL-740E	Acceptance Criteria: ☐ API ☑ ASME ☐ AWS	
Requestor Phone No.:	AFE No.: I0170	☑ B31.3 N ☐ B31.3 S ☐ B31.8 ☐ Section 8 ☐ Section 9	
Job Location:	Work Order No:	☐ 1104 ☐ 650 ☐ D1.1 ☐ Other:	

Radiographic

Procedure:		Material:			
Exposure:	☑ DWE	☐ SWE	☐ DWV	☑ SWV	
Film Speed:	☐ D-3	☐ D-4	☑ D-5	☐ D-7	
Film Size:	☑ 70 mm	☐ 3.5" x 10"	☐ 3.5" x 17"	☐ 8" x 10"	
	☐ 4.5" x 10"	☐ 4.5" x 17"	☐ 7" x 17"	☐ 14" x 17"	
Misc.:					

Dye Penetrant

Procedure:	Material:
Surface:	Technique:
Lighting:	Temp.:
Cleaner:	Batch No.:
Penetrant:	Batch No.:
Developer:	Batch No.:

Magnetic Particle

Procedure:	MT-2 Rev.3	Material:	Carbon Steel	Yoke Model No.	
Surface:	As Welded	Technique:	Wet	B100	
Lighting:	Natural	Temp.:	Ambeint	Yoke Serial No.	
AC/DC:	☐ AC ☑ DC	Color:	Black	11395	
Contrast:	WCP-2	Batch No.:	M5735	Yoke Cal. Date	
Particle:	☑ WET ☐ DRY	Batch No.:	17L03K	12/2/2023	

	X-Ray No.	Location	Within Code Yes	Within Code No	Pipe Size	Wall Thickness	No. of Exp.	IQI Wire Set	IQI Wire No.	IQI Hole Type	IQI Side S or F	VT Check	Comments (Welder Stencil, Defect, Location, etc.)
1	XR 1	0-1-2-0	✓		(b) (3) (A)		3	B	6		F		
2	XR 2	0-1-2-0	✓				3	B	6		F		
3	XR 3	0-1-2-0	✓				3	B	6		F		
4	XR 4	0-1-2-0	✓				3	B	6		F		
5	XR 5	0-1-2-0	✓				3	B	7		F		
6	XR 6	0-1-2-0	✓				3	B	7		F		
7	XR 7	0-1-2-0	✓				3	B	7		F		
8	XR 8	0-1-2-0	✓				3	B	7		F		
9	XR 9	0-1-2-0	✓				3	B	7		F		
10													
11	MT 13	TOTAL WELD	✓										(b) (3) (A)
12	MT 14	TOTAL WELD	✓										
13	MT 15	TOTAL WELD	✓										
14	MT 16	TOTAL WELD	✓										
15	MT 17	TOTAL WELD	✓										
16	MT 18	TOTAL WELD	✓										
17	MT 19	TOTAL WELD	✓										
18	MT 20	TOTAL WELD	✓										
19	MT 21	TOTAL WELD	✓										
20	MT 22	TOTAL WELD	✓										
21													
22													
23													
24													
25													

Terms and Abbreviations

IP	Inadequate Penetration	IF	Incomplete Fusion	SP	Spherical Porosity	HB	Hollow Bead	IC	Internal Concavity	NI	No Indication
IPD	Inadequate Penetration Due to High-Low	BT	Burn Through	CP	Cluster Porosity	ISI	Isolated Slag	IU	Internal Undercut	AD	Accumulation of Discontinuities
		PH	Pin Hole	CR	Crack	ESI	Elongated Slag	EU	External Undercut		

Billing Information

Total Hours:	8	R/T Mileage:	170
No. of Personnel:	3	Per Diem:	N/A
Total No. of Welds:	19		

(b) (6)

(b) (6)

	Date:	Phone No.
	6/8/2023	

(b) (4)

(b) (4)

Inspection date: JUN/21/2023

(b) (3) (A)

Phased Array Ultrasonic Testing of
JBPHH, Vault Chamber 9, F-24 piping

(b) (4)

Accepted per ASME B31.3

(b) (6)

PAUT/TOFD Level II (SNT-TC-1A)

(b) (4)

SCOPE

(b) (4) conducted a Semi-automated Phased Array Ultrasonic Testing (PAUT) examination for Goshawk at JBPHH on Oahu, HI on JUN/22/2023. The purpose of this examination was to test for weld quality per ASME B31.3.

TECHNIQUE

(b) (3) (A)

Limitations

Weld volume and HAZ coverage was 100% scanned from both sides of weld centerline. Scans were recorded using an Olympus Mini-wheel encoder.

CALIBRATION

Wedge delay, Sensitivity, and TCG calibration

Steel NAVSHIPS calibration standard (S/N: 03-8269) with (b) (3) (A) side drilled holes.
Steel (b) (3) (A) piping calibration standard (S/N: TNE-EII-005) with I.D./O.D. notches

INSPECTION RESULTS

Specification: ASME Section V
Procedure: NDT-005.6, Rev. A
Acceptance: ASME B31.3

Description	Results
Weld No. 01, (b) (3) (B)	Accepted

(b) (4)

MAGNETIC PARTICLE EXAMINATION RECORD

(b) (4)

	Location: JBPHH	Date: JUN/21/2023
	Job No. 23-153	
	Code: ASME B31.3	

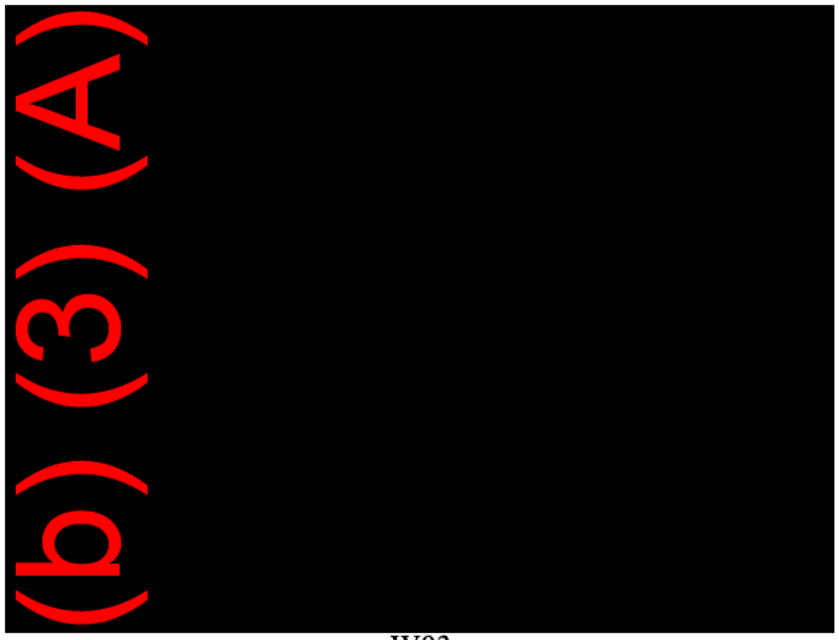
MATERIAL	MAGNETIZING TECHNIQUE	MAGNETIZING EQUIPMENT
Type: C/S	Yoke: ☒ AC ☐ DC Spacin (b) (3) (A)	Mfg.: Contour probe Serial #: 4778
Thickness: Variable	Amps Coil Dia. ____	Calibration Date JUN/21/2023
Geometry	Longitudinal Turns Amp Turns ____	Field Verification By: Pie Gauge
☒ Pipe ☐ Plate ☐ Rod	Direct	
☐ Other:	Circular ____	UV Meter : n/a
Item: See below…	Central Conductor ____	MODEL: n/a Serial #: n/a
	Amps ____	
Stage of Mfg.: See below…	Inspection Medium ☒ Dry Powder	Color: #8a (Red)
	☐ Wet Visible	Type Batch No.: 14B108
Surface Condition: Wire wheel prepped	Illumination ☒ White ☐ Ultraviolet	

Item(s)	Accept	Reject	Sketch/Notes
(b) (3) (A)	☒	☐	* No rejectable indications detected at time of inspection
	☒	☐	
	☒	☐	(b) (6)
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	

Performed By: (b) (6) Level: II Date JUN/21/2023 Reviewed By: Date:

W01

W02



W03

(b) (4)

MAGNETIC PARTICLE EXAMINATION RECORD

(b) (4)

Location: Red Hill (b) (3) (A) | Date: 06-19-2023

Job No. 23-153

Code: ASME B31.3

MATERIAL	MAGNETIZING TECHNIQUE	MAGNETIZING EQUIPMENT
Type: C/S	Prod: ☒ AC ☐ DC Spacing (b)(3)(A)	Mfg.: Parker Serial #: 23962
Thickness: STD	Amps fixed Coil Dia. ____	Calibration Date 06/01/2023
Geometry: ☒ Pipe ☐ Plate ☐ Rod ☐ Other: ____	Longitudinal Turns n/a Amp Turns ____	Field Verification By: Pie Gauge
Item: New Piping on (b) (3) (A)	Direct n/a	
	Circular n/a	UV Meter: n/a
	Central Conductor n/a	MODEL: n/a Serial #: n/a
	Amps n/a	
Stage of Mfg.: New	Inspection Medium ☒ Dry Powder	Color: RED
	☐ Wet Visible	Type Batch No.: 22A006
Surface Condition: Buffed Clean	Illumination ☒ White ☐ Ultraviolet	

Item(s)	Accept	Reject	Item(s)	Accept	Reject
(b) (3) (A)					
Weld #1	☒	☐			

Sketch/Notes

(b) (3) (A)

No relevant indications were found during this inspection.

Performed By: (b) (6) Date 06/19/2023 Reviewed By: Date: Page 1 of 1

LIQUID PENETRANT EXAMINATION RECORD

(b) (4) (b) (4)

Location: JBPHH (b) (3) (A) | Page 1 of 1

Job No.: 23-153

Code: ASME B31.3

ITEM: Socket Welds

MATERIAL		PENETRANT MATERIAL				TECHNIQUE
TYPE: Carbon Steel		BRAND	DESIGNATION	PO#	BATCH #	Preclean Drying Time: 5 Minutes
Surface Condition: ☒ As Welded ☒ Ground / Buffed ☐ Other _____ ☒ New weld	Cleaner	Magnaflux SpotCheck	SKC-S	N/A	19L06K	Method of Application: Brush
	Penetrant	Magnaflux SpotCheck	SKL-SP1	N/A	09L19K	Dwell Time: 15 Minutes
	Emulsifier	N/A	N/A	N/A		Emulsification Time: N/A
	Developer	Magnaflux SpotCheck	SKD-S2	N/A	09L01K	Developing Time: 15 Minutes
Temperature: 60° F – 125° F Other _____		Illumination: ☒ White FC ≥100				(b) (4) ntrol # UV Meter _____ N/A X

Item(s)	Accept	Reject
(b) (3) (A)		
	☒	☐

Sketch/Notes

PT Inspection performed on the Low Point socket weld (b) (3) (A)

No relevant indications noted.

Performed By (b) (6) Level II Date: 06-24-23

Reviewed By: Date:

Figure 9-6 VC1 P&ID

(b) (4)

Standard Form

Document No:
EXB-033

Rev. No. -00-
Rev. Date: 24-Nov-16
Print Date: 03-Jul-23

Title:	**Pipe Hydrostatic Test Report Form**				
Job No.:	I0170	**Project Name:**	(b) (4)	**Location/Client:**	Red Hill (b) (4)

Procedure Ref:	SOP 1.10.04			**Date:**	6/7/2023
Method (Soap/water, other):	N/A			**Test PSI:**	(b) (3) (A)
Light Source:	Ambient			**Mat. Type (CS,SS):**	CS
Metal Temp:	90.4°	**Code (API, AWWA):**	UFGS	**PWHT: (Y / N):**	N

Repad Leak Test and Inspection

Pipe Description / Weld Number	Welder ID	ACC or REJ	Tester Name	Tester Initials
(b) (3) (A)	(b) (6)	ACC	(b) (6)	

Comments

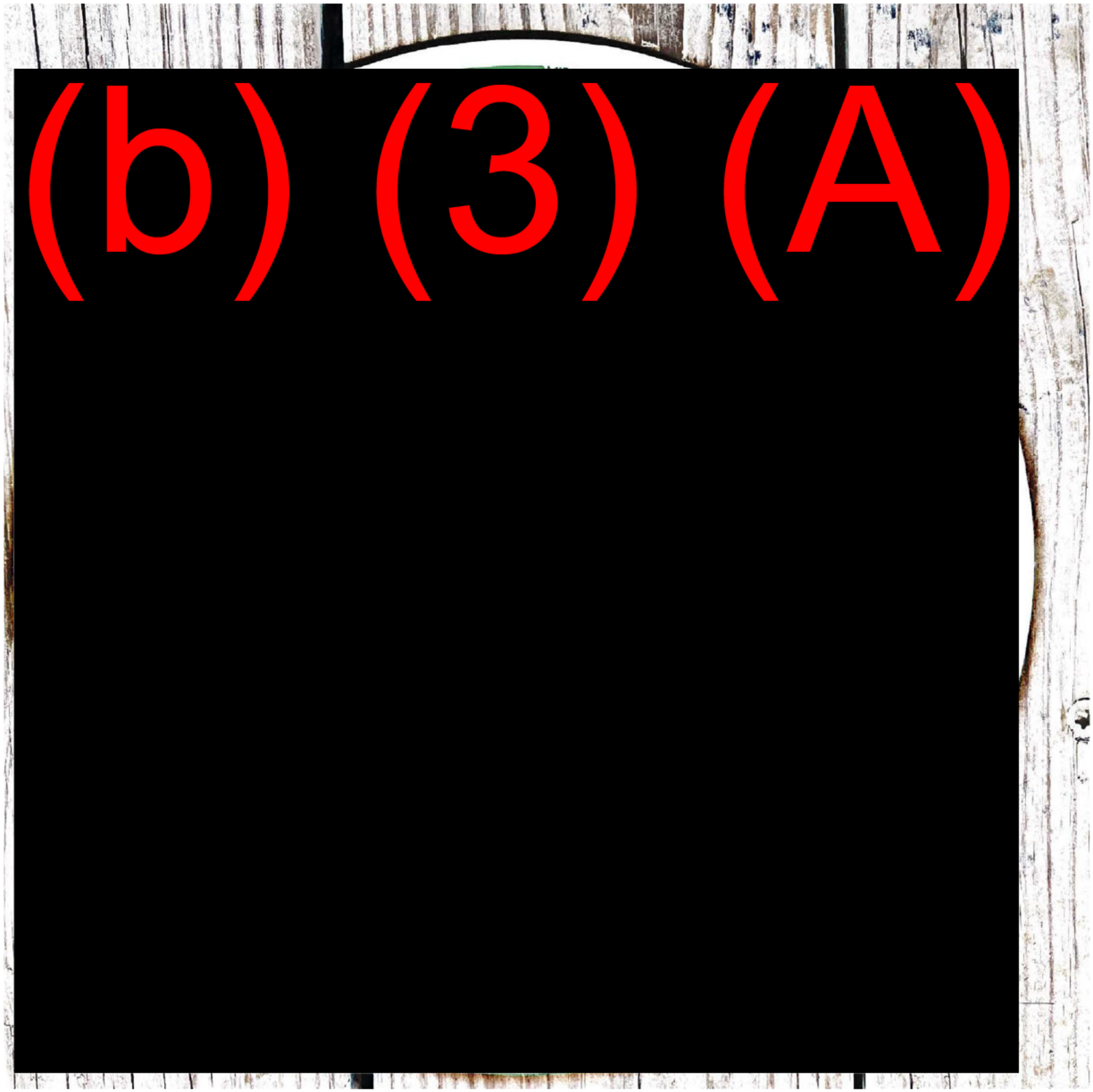
Piping was hydrostatically tested to (b) (3) (A) and held for 4 hours with no pressure drop

Acceptance: This certificate documents a Hydro Test was performed on the referenced part(s).
If any leaks, or other defects were found, they were corrected and retested prior to certificate sign off.

(b) (4)	(b) (6)	Date:	6/7/2023
Client Rep:		Sign:	Date:

NOTES:

The Tee Section and the straight section were bolted together and tested as a pairing. Piping was pressurized t (b) (3) (A) nd held for 4 hours with no pressure drop.


(b) (3) (A)

PIPE PRESSURE / Hydro TESTING LOG (On-site)

PROJECT TITLE (b) (4)

PROJECT LOCATION: Pearl Harbor HI. (VC1) | **CONTRACT/TO: POND**

PIPE ID	TEST CONDUCTED	DATE	PRESSURE (PSI)	TIME	RESULT	REF.	REMARKS
(b) (3) (A)	Pneumatic Test	06-22-23	(b) (3) (A)	1229 to 1441	PASS	(b) (4), (b) (6)	On-site test
	Pneumatic Test	06-22-23		1600 to 1802	PASS		On-site test
	Hydrostatic Test	06-27-23		1513 to 1913	PASS		On-site test
	Hydrostatic Test	06-27-23		1030 to 1432	PASS		On-site test
	(b) (6)	07-03-23					