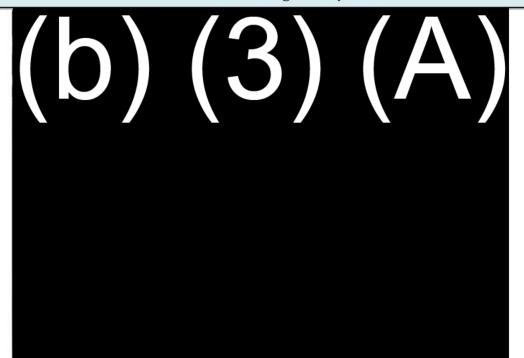
(b) (3) (A)

	QUALITY VALIDATION (QV) REPORT											
]	Red Hill B	Bulk Fuel Storage Fac	ility Defue	el					
Valida	ation Firm	HDR Env	ironmenta	, Operatio	ns and Construction,	Inc.		Repair No.	006			
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	(b) (4)28			
Со	ontract No.	FA89031	5D0007, D	.O. FA890)3-19-F-0027 ⊚∎			Report Date	25 MAY 2	2023		
QV	/ Engineer	(b) (6)			Phone		Email	(b) (6)	hdrir	nc.com		
					VALIDATION							
Sour	rce	I	PDF Page N	lo.	Facility Geograph	ic Area		Location	Reference			
(b) (4)		319			Tank Gallery		Oil Tight	Door				
Repair D	escription	loss of po) is part of	emain functional durir a PM program to imp d.		Sour	ce Contract Reference	N/A			
Description of Contractor QC Method(s) Used Contractor QC Method(s) Used							cklist -					
Valid	tion of QA dation and eservations				oor using primary pow Date: 13 APR 2023	er wi ll cont	tinue.					
	Rework	Needed	stance by go	y comment.	Photo Record Attached		Repair	Work Vali	dated as Co	mplete		
0	Yes	•	No		See Page 2.		•	Yes	0	No		
(b) (4) sen												
I hereby certif report was pe				QV ENG	INEER SIGNATURE	(b)	(6)					
report is true.	·				DATE	25 MAY 2	2023					

CILAL	ITV	ACCLID	ANICE	VAL IDA	TION	DEDODT
WUAL		ASSUR	ANGE	VALIDA	NULL	REPORT

Red Hill Bulk Fuel Storage Facility Defuel



While proven functional, the Oil Tight Door will remain unlocked in the OPEN position during de-fueling.

c. F-76 Line

JTF-RH determined that F-76 line repairs are no longer required since F-76 fuel will be rerouted through the JP-5 line. This deviation was approved by DOH on January 13, 2023, and EPA on March 10, 2023.

d. Oil Pressure Door

The Oil Pressure Door (OPD) at the bottom of the tank gallery is designed to automatically seal off the tank gallery from the rest of the facility in the event of a spill.

In this scenario, fuel would be trapped in the tank gallery until slow, manual removal could be executed. And notwithstanding JTF-RH's prior work to seal cracks and openings in the floor, there is moderate risk that large amounts of standing petroleum could release into the environment. Thus, JTF-RH conducted a risk analysis on the disposition of the OPD and determined that disabling the OPD and leaving it in the open position presents the lowest risk to the environment and aquifer. Based on this decision, JTF-RH does not intend to conduct repair Number 6 ((b) (4)28) to the OPD. Enclosure 3 provides a detailed analysis of OPD disposition.

e. Fire Suppression

JTF-RH's Defueling Fire Suppression Plan uses dry chemical (sodium bicarbonate) fire extinguishers, the existing water sprinkling system and Federal Fire to respond to a fire event in the vicinity of the UST during defueling. *See* Encl. (1). However, should the use of AFFF be mandated by regulatory agencies JTF-RH is conducting repairs to the AFFF pipe(b) (3) (A)

f. Main Fuel Oil Recovery (FOR) Sump and FOR (b) (3) (A) Sump Tank Tightness Testing (TTT)

In Supplement 1.B., DoD agreed to conduct EPA-compliant testing of two sumps in the LAT, the (b) (3) (A)

In Supplement 1.B., DoD agreed to conduct EPA-compliant testing of two sumps in the LAT, the (b) (3) (A)

In Supplement 1.B., DoD agreed to conduct EPA-compliant testing of two sumps in the LAT, the (b) (3) (A)

In Supplement 1.B., DoD agreed to conducted testing on the LAT, the (b) (3) (A)

In Supplement 1.B., DoD agreed to conducted testing on LATF-RH conducted tank tightness testing provided DOH and EPA during the DTWG to develop an alternate means to test the (b) (3) (A)

Sump, since it cannot be tested in accordance with the standard tank tightness testing procedure. On April 13, 2023, JTF-RH provided a recommended testing solution to DOH and EPA for review and concurrence. JTF-RH received EPA concurrence on May 1, 2023 and conducted testing on (b) (3) (A)

Sump on May 3-4, 2023. JTF-RH provided EPA and DOH with the test results on May 11, 2023. After testing, JTF-RH intends to epoxy the sump and sump pump replacement. JTF-RH will repeat the test upon completing repairs and will submit written results to DOH and EPA within thirty days of testing.

3. EA/OEA

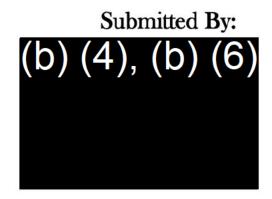
In accordance with the National Environmental Policy Act (NEPA), JTF-RH is preparing an EA/OEA to analyze the potential environmental effects associated with JTF and DLA's



Red Hill Fuel Storage Facility OPD | 22152 - Hawaii

Oil Pressure Door Test & Inspection Report

Submitted To: Red Hill Fuel Storage Facility



Reviewed by: (b) (6)

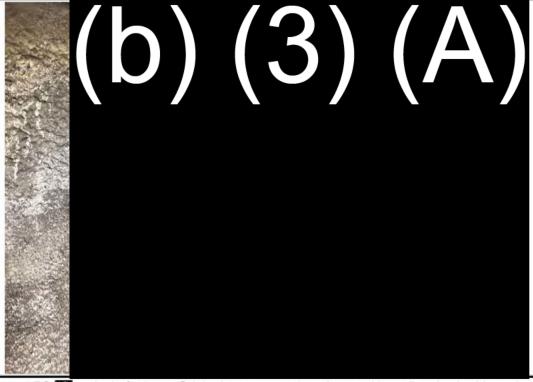
FLEET LOGISTICS CENTER OIL PRESSURE DOOR TEST AND INSPECTION

Date of Inspection	n: March 23, 2023	Technician: (b) (6) Title: Lead Technician/Alt PM								
Type of Inspection	on: Annual Semi-Annual									
	Protected Property		Inspec	tion Compa	ny					
Name:	Oil Pressure Door (OPD)	Name:								
Address:	Redhill Fuel Storage Facility	Address:			1 \					
City:	Honolulu	City:								
State:	Hawaii Zip: 96860	State:								
Contact:	(b) (6)	Contact:	(b)		- /					
Phone:	(b) (6)	Phone:								
		System Owner								
Name:	NAVFAC									
Location:	ЈВРНН									
City:	Honolulu	State: Hawaii		Zip: 968	360					
	1	meplate Informat								
Design:	Williams Machine Works, INC	Description:		High Pressure O	il Tight Door					
Serial Number:	151009 01	Clear Opening:	0.4554.0	(b) (3) (A)	Il Fred Sharana F					
Pressure Rating: Inspection:	74 PSIG Seating Only	Project:	P 1331 0	Yes	II Fuel Storage F No	N/A				
Is the door open up	non arrival?				140	IN/A				
Does the system h					- H -	+ +				
	puble condition on arrival?			- 		+ +				
	ris present throughout door entry way?			-	\boxtimes	+				
	ris present on scissor lift track?		7.45	-		+				
	now signs of damage?			-		+				
	ack in the normal position?					+				
	ack in the ON position?				- H -	 				
	ump in the ON (auto) position?		42 12		- H -	+				
Test:	unip in the Or (auto) position:			Yes	No	N/A				
	t switch initiate the door closing sequer	nce?	-			19/5				
	control panel OPD switch initiate the do		,	X	-	+				
	pump high-level float switch initiate the			X	-H $-$	 				
	appliance operate properly during the			X	-H	 				
	track properly lower during the door clo									
	sor lift track to lower during the door se		1		45 seconds	<u>к</u>				
	r properly release during door the closii									
	r holder to release during door the closi		*		140 seconds					
Did the door close			-							
Did the manual tes	t switch activation annunciate on FACP	?	5.5							
Did the FACP OPD	switch activation annunciate on FACP?		**		\boxtimes					
Did the OPD sump	pump high-level float activation annunc	ciate on FACP?								
Did all door closing	sequence events annunciate on FACP?				$\overline{\boxtimes}$					
Did all door closing	sequence events restore on FACP upor	reset of initiating d	evice?							
Did the door return	n to door holder and in the open positio	n?	734	\boxtimes						
Did the scissor lift	track return to normal position?		38.6	\boxtimes						
Did the dispatch ce	entral center receive the Oil Tight Pressu	ire Door supervisory	zone signal?	\boxtimes						
Final:										
Did the system tes	t satisfactory?		71	\boxtimes						
Is the system back	in original condition on departure?		_							
Inspection Defici	iencies:									
	on FACP initiates the OPD door closing s	sequence but does n	ot report at panel.							
Node 33 signals did	ode 33 signals did not report at panel.									

				QUALI	TY VALIDATION ((V) REPO	ORT				
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	el				
Vali	dation Firm	HDR Env	rironmental	, Operatio	ns and Construction,	Inc.		Repair No.	017		
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	(b) (4) 46		
C	Co ntract N	(∉ A89031	5D0007, D	.O. FA890	3-19-F-0027			Report Date	25 MAY 2	2023	
Q	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrir	nc.com	
					VALIDATION						
So	urce	1	PDF Page N	o.	Facility Geographi	c Area		Location	Reference		
(b) (4)		390			Tank Gallery		Pipe Sup	port <mark>(b) (3) (</mark>	A)		
Repair	Description				ded at end closer to the dect to tunnel wall.	ne tunnel	Sour	ce Contract Reference			
Co	escription of ntractor QC hod(s) Used		outlined in	detail in C	OCP.			ntractor QC s Reviewed			
Val	ption of QA lidation and observations		ictural repa	iir was not	required per SGH me	emo. See	comments	below.			
		Final accep	ptance by go	overnment.	Date: N/A		ı				
		Needed			Photo Record Attached				dated as Co		
O	Yes	•	No		See Page 2.		•	Yes	\cup	No	
Refer to S confirming corrosion the beam evaluation pipe segn	Refer to SGH Memorandum dated 01 MAY 2023. (b) (4) observed a steel column embedded in the tunnel wall at (b) (3) (A) confirming the PS was constructed according to Drawing Y&D 294162 (UF-S32). The beam was cleaned of coating and corrosion several feet back from the beam to wall connection; the corrosion does not appear to compromise the capacity of the beam. Currently, the Navy does not intend to use the (b) (3) (A) F-76 fuel line to defuel any of the tanks. The updated evaluation considers the combined weight of an empty (b) (3) (A) pipe segment, and combinations of a packed/unpacked (b) (3) (A) pipe segment and a packed/unpacked (b) (3) (A) pipe segment. Considering this strength and given the beam size and span, the moment and shear capacity of the beam are much greater than the updated demands. CERTIFICATION										
I hereby cer	tify that repair	work validat	ed in this	QV ENG	INEER SIGNATURE	(b)	(6)				
	personally sub				DATE	25 MAY 2	2023				



Red Hill Bulk Fuel Storage Facility Defuel



Exposed pipe support at PS typical of others. Original orange coating observed in wall embed, with vertical beam support.

(b) (3) (A)

Crews doweled in rebar and restored wall concrete.



Memorandum

Date: 1 May 2023

To: Capt. (b) (6) US Navy, NAVFAC, Joint Task Force, Red Hill

From: (b) (6)

CC: (b) (6)

Project: Project 221162 Red Hill Defueling Support, Joint Base Pearl Harbor-Hickam,

Honolulu, HI

Subject: Lower Access Tunnel Pipe Support Beam Replacement

This memorandum is provided to present an alternative to replacing (b)(3)(A) pipe support (PS) beam sections in the lower access tunnel (LAT) in Red Hill while meeting the objectives of the (b)(4) defueling priority (D1) rating. Our item LAT(b)(B)(A) recommended replacing sections of (b)(A) PS beams at PS (b) (3) (A) per (b) (4) retrofit concept drawings, due to visible corrosion on the beams at the wall connection and under the (b)(3)(A) fuel pipe (Figure 1).

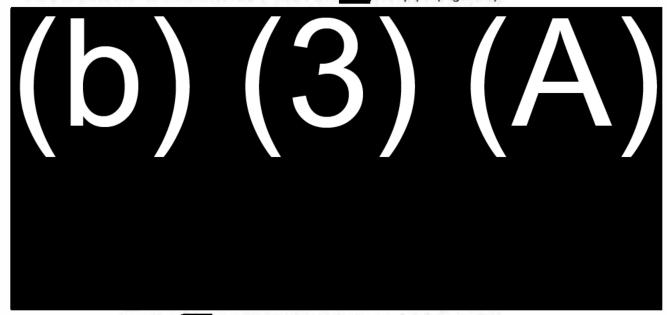


Figure 1 – (b) (4) April 2022 Observations – D1 Priority LAT-46 Item

1. BACKGROUND

Between January and April 2022, (b) (4) conducted an independent assessment of the fuel storage and transfer systems at JBPHH for the Naval Systems Supply Command (NAVSUP). This assessment comprised observing physical infrastructure and a review of drawings, specifications, past inspection reports, standards, and governing documents related to the JBPHH fuel system, as well as our own independent analyses. (b) (4) issued a report containing the results of our independent assessment, listing a number of 'defueling' recommendations to improve the condition of structural and mechanical components that are part of the JBPHH fueling system. We were expecting these recommendations to be completed prior to defueling Red Hill unless otherwise supported by new information generated as a result of new analysis, observations, or testing. These main recommendations were classified as Priority D1 ("D" for defueling). We additionally categorized numerous other (195 in total) recommendations classified as Priority P1 (implementation within twelve to twenty-four months), Priority P2 (implementation within twenty-four to forty-eight months), and Priority P3 (ongoing implementation as part of maintenance activities) if the facility was to remain in service. We did not consider items assigned to Priorities P1 through P3 as being necessary to be completed prior to defueling. P1, P2, and P3 category repairs are no longer considered critical.

2. INITIAL ASSESSMENT OF LAT PIPE SUPPORTS(b) (3) (A)

During our April 2022 Independent Assessment of the Red Hill fuel facility, we observed corrosion at the midspan and tunnel connection of some PS beams in the lower access tunnel. Where we observed multiple adjacent PS with corrosion at their midspan and wall connection, we assigned Priority D1 to the PS. This was due to the assumption, based on the knowledge at that time, that each tank product would be defueled via its specific fuel pipeline, i.e., that the F-76 fuel pipeline would be used in the defueling operation and that the beam end was pinned at the wall.

The PS downstream of PS extends into the lower access tunnel, with the connection embedded in the tunnel wall. As-built Drawing Y&D 294162 (3-UF-S-32) dated 22 October 1942, which is for designs prior to the addition of the F-24 fuel pipeline, indicates the PS beam is welded with (Figure 2). Also, according to these drawings, the end of the PS beam above the column connection has a extending through the web of the beam and anchoring into the tunnel wall. (b) (3) (A)

The PS beams directly support the [6] (3) (A) F-76 fuel pipeline and the [6] (3) (A) JP-5 fuel pipeline. The F-24 fuel pipeline is primarily supported at the cantilever in the middle of the access tunnel. The majority of the weight of both the JP-5 and F-24 fuel pipelines is supported by the support

column in the middle of the access tunnel, while the weight of the F-76 fuel pipeline is more evenly supported across both the exterior column and the embedded column. The JP-5 fuel pipeline is nominally one-third of the weight of the F-76 fuel pipeline, considering a packed fuel pipeline.

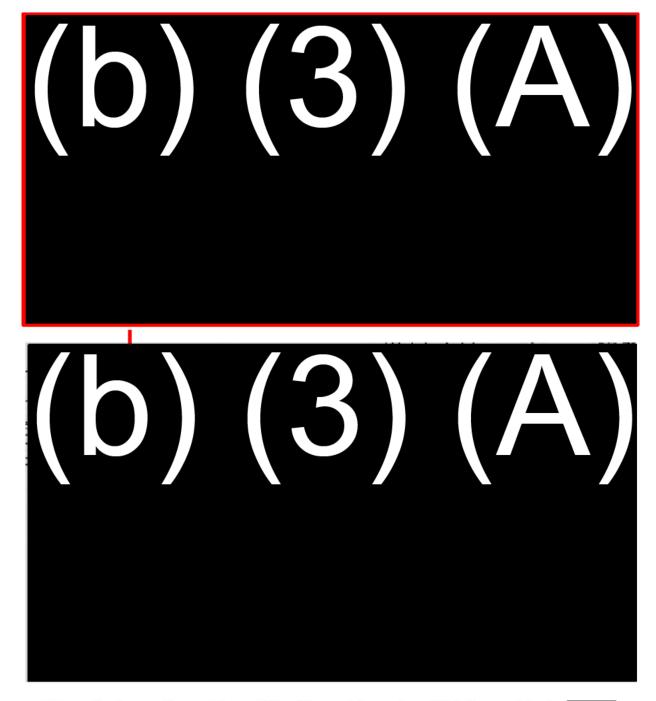


Figure 2 – Lower Access Tunnel Pipe Support Layout and Details near Tanks (b) (3) (A)

UPDATED ASSESSMENT OF LAT PIPE SUPPORTS 69 TO 71

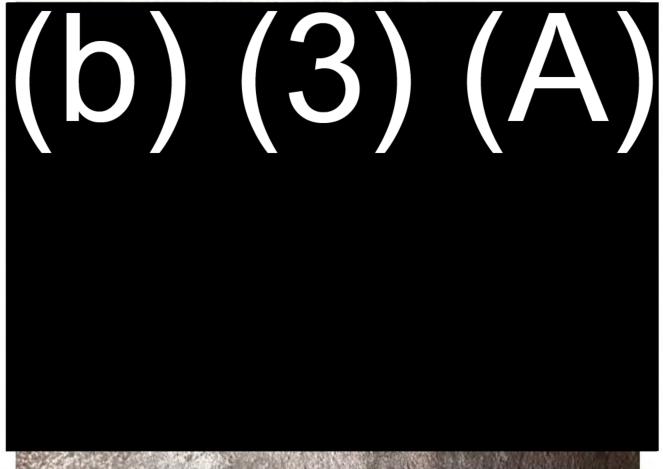


Figure 3 - Lower Access Tunnel Pipe Support - Beam Connection to Embedded Column

Currently, the Navy does not intend to use the (b)(3)(A) F-76 fuel line to defuel any of the tanks. Therefore, our updated evaluation considers the combined weight of an empty (b)(3)(A) pipe segment, and combinations of a packed/unpacked (b)(3)(A) pipe segment and a packed/unpacked (b)(3)(A) pipe segment, along with incidental conduit and other hanging appurtenances. We do not have information from historical drawings and specifications about the steel grade. Therefore, we referenced ASCE 41-17, which lists historic structural steel in the 1940s as A9 steel with a yield strength of 33ksi. Considering this strength and given the beam size and span, the moment and shear capacity of the beam are much greater than the updated demands.

4. CONCLUSIONS AND RECOMMENDATIONS

Based on the condition of the beams following the cleaning of surface corrosion and the reduced loading due to the permanently empty state of the F-76 line, (b) (5)

The beams are adequate in their current condition. Should defueling operations change in a way that impacts the loading on these PS, (b) (5)

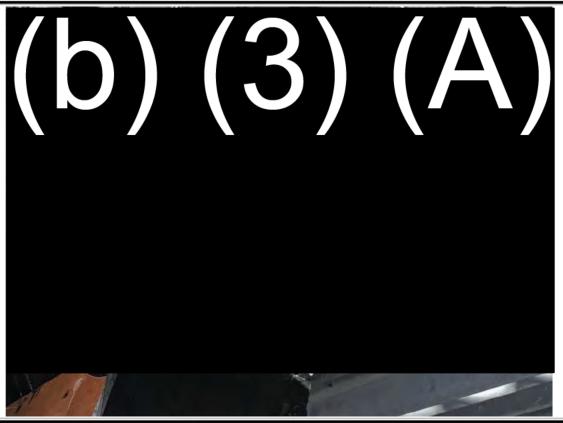
(b) (3) (A), (b) (6)

	QUALITY VALIDATION (QV) REPORT											
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	l					
Valie	dation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	037			
	Address	9781 S. N	leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID)) (3) (A)			
С	ontract No.	FA89031	5D0007, D	.O. FA890	3-19-F-0027			Report Date	22 MAY 2	2023		
Q	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrir	nc.com		
					VALIDATION							
Sou	ırce	F	DF Page N	o.	Facility Geograph	ic Area		Location	Reference			
NDAA		40			RHTF		PS (b) (3) (A)					
Repair l	Description	flange on) (3) (A) pip	ng point) attached to t eline. Replace valve		Sour	ce Contract Reference				
Description of Contractor QC Method(s) Used								ntractor QC s Reviewed	QCP and Reports.	Daily		
Val	otion of QA lidation and bservations		outlined in	QASP.								
	D		otance by go		Date: 20 MAR 2023	•	Daniel	. 3371- 3.7 - 1:	1.4.1C.	1.4.		
0	Yes	Needed	No		Photo Record Attached See Page 2.	1	Repair	Work Valid	Cated as Co	No		
fitting dow												
I horaby as d	ifu that race:	work volides	ad in this	QV ENG	INEER SIGNATURE	(b) (6)					
	ersonally sub	work validate estantiated an			DATE	22 MAY 2	2023					

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A) (b) (3) (A)

Previous condition: brass valve connected directly to fuel line

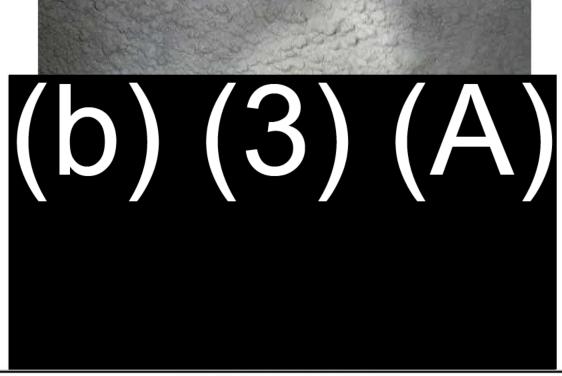


Completed repair: (b) (3) (A)

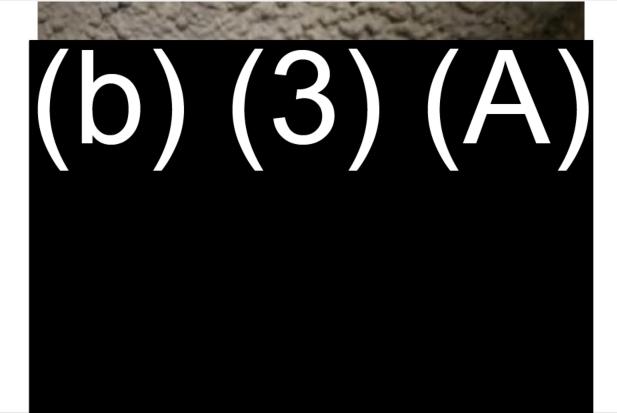
installed and locked out.

, in	QUALITY VALIDATION (QV) REPORT											
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	ı			.0		
Vali	dation Firm	HDR Env	rironmental	, Operation	ns and Construction,	Inc.		Repair No.	043	"		
	Address	9781 S. N	Meridian Bl	vd., Suite	400, Englewood, CO	80112	103	Repair ID	(b) (3) (A)	12		
C	Contract No.	FA89031	5D0007, D	.O. FA890	3 19 F 0027		45	Report Date	22 MAY 2	.023		
Q	V Engineer	(b) (6)			Phone	18	Email	(b) (6)	hdrir	ic.com		
					VALIDATION					1.6		
So	urce]	PDF Page N	0.	Facility Geograph	ic Area		Location	Reference	2		
NDAA		41			Red Hill Tank Farm	-0	Tank 6			i o		
Repair	Description		e joint harn on the (b) (3)			Sour	ce Contract Reference		7			
Con	scription of ntractor QC nod(s) Used	Methods	outlined in	detail in C	OCP.		ntractor QC s Reviewed	QCP and Reports.	Daily			
Va	ption of QA lidation and observations	Methods	outlined in	QASP.		,						
			ptance by go		Date: 17 FEB 2023							
_	Rework	Needed			Photo Record Attached	, , , , , , , , , , , , , , , , , , ,		Work Vali	dated as Co	mplete		
O	Yes	•	No		See Page 2.		•	Yes	O	No		
	All fasteners on the dresser coupling were tightened and dresser coupling was checked by JTF-RH QV team.											
					CERTIFICATION							
I hereby certify that repair work validated in this report was personally substantiated and this							6)					
report was p	•	sandated ar	iu li lis		DATE	22 MAY 2	2023			ō		

Red Hill Bulk Fuel Storage Facility Defuel



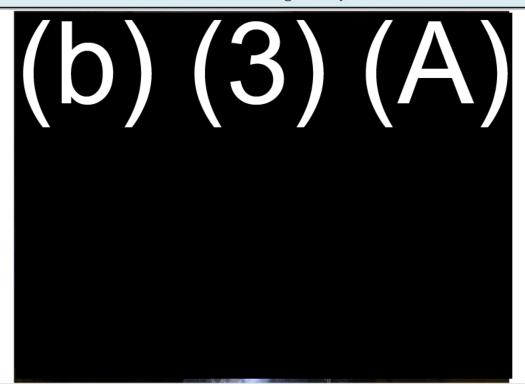
Loose joint fastener observed (1 of 2)



Tightened joint fastener on Dresser coupling tension rod assembly (typical).

	QUALITY VALIDATION (QV) REPORT										
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	el				
Vali	dation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	44		
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	(b) (3) (A)		
C	Contract No.	FA89031	5D0007, D	.O. FA890	03-19-F-0027			Report Date	22 MAY 2	2023	
Q	V Engineer	(b) (6)			Phone		Email	(b) (6)	hdrir	nc.com	
					VALIDATION						
So	urce	F	PDF Page N	o.	Facility Geograph	ic Area		Location	Reference		
NDAA		41			Red Hill Tank Farm		PS (b) (3	3) (A)			
Repair Description Reference Reference											
						QCP and Reports.	Daily				
Va	ption of QA lidation and observations	Methods	outlined in	QASP.							
			otance by go		Date: 17 FEB 2023		Ι				
		Needed			Photo Record Attached				dated as Co		
	Yes No See Page 2. Yes No No No See Page 2. Yes No No No See Page 2. Yes No										
					CERTIFICATION						
	hereby certify that repair work validated in this report was personally substantiated and this										
report is true		- Manager dir		DATE 22 MAY 2023							

Red Hill Bulk Fuel Storage Facility Defuel



Previous condition: lacking thread engagement on nuts.

(b) (3) (A)

Completed repair: changed studs and nuts for full engagement.

	QUALITY VALIDATION (QV) REPORT											
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	el					
Vali	dation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	049			
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	(b) (3) (A)			
C	Contract No.	FA89031	5D0007, D	.O. FA890	3-19-F-0027			Report Date	22 MAY 2	023		
Q	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrin	ic.com		
					VALIDATION							
Son	urce	I	PDF Page N	0.	Facility Geograph	ic Area		Location	Reference			
NDAA		42			Underground Pumpl	nouse	(b) (3) (A	.)	I			
Conduit plug is being used to plug tee fitting on pressure gauge assemblies. Install appropriate threaded pipe plugs on tee fittings. Source Contract Reference												
Co	escription of ntractor QC nod(s) Used		outlined in	detail in C	OCP.			ntractor QC s Reviewed	QCP and Reports.	Daily		
Val	ption of QA lidation and observations		outlined in	QASP.								
		Final accep	otance by go	vernment.	Date: 20 MAR 2023							
	Rework	Needed			Photo Record Attached		•	Work Valid	dated as Cor	mplete		
0	Yes	•	No		See Pages 2-5.		•	Yes	0	No		
	ion of new	_	•	-	by JTF-RH QV tear UGPH which has it			_				
	tify that repair personally sub			QV ENG	INEER SIGNATURE	(b) (6)					
report is true		sianualeu an	G 4113		DATE	22 MAY 2	2023					

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Conduit plug used on pressure gauge assemblies.

(b) (3) (A)

Typical repair, using either round or hexagonal plugs with fuel resistant sealant.

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

P-209 pressure gauge tee, installed hexagonal plugs with fuel resistant sealant.

(b) (3) (A)

P-209 pressure gauge tee, installed hexagonal plugs with fuel resistant sealant.

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

P-210 pressure gauge tee, installed round plugs with fuel resistant sealant.

(b) (3) (A)

P-210 pressure gauge tee, installed round plugs with fuel resistant sealant.

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

P-211 pressure gauge tee, installed round plugs with fuel resistant sealant.

(b) (3) (A)

P-211 pressure gauge tee, installed round plugs with fuel resistant sealant.

	QUALITY VALIDATION (QV) REPORT											
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	l			.0		
Vali	dation Firm	HDR Env	ironmental	, Operation	ns and Construction,	Inc.		Repair No.	086	"		
	Address	9781 S. M	Meridian Bl	vd., Suite	400, Englewood, CO	80112	Ì	Repair ID	(b) (3) (A)	0		
C	ontract No.	FA89031	5D0007, D	.O. FA890	3 19 F 0027			Report Date	22 MAY 2	023		
Q	V Engineer	(b) (6)			Phone (b) (6)	te l	Email	(b) (6)	hdrir	nc.com		
					VALIDATION							
Son	urce	I	PDF Page N	0.	Facility Geograph	ic Area		Location	Reference			
NDAA		51			Underground Pump	house	P (b) (3) ((A)				
Repair Description Conduit plug is being used to plug tee fitting on pressure gauge assemblies. Install appropriate threaded pipe plugs on tee fittings. Source Contract Reference									7			
Con	scription of ntractor QC nod(s) Used	Methods	outlined in	detail in C	OCP.	1	ntractor QC s Reviewed	QCP and Reports.	Daily			
Va	otion of QA lidation and bservations	Methods	outlined in	QASP.								
		Final accep	ptance by go	vernment.	Date: 20 MAR 2023		ř .					
_	Rework	Needed			Photo Record Attached	i	Repair	Work Vali	dated as Co	mplete		
O	Yes	•	No		See Pages 2 5.		•	Yes	O	No		
Installatio	Comments Installation of new plug was visually inspected by JTF-RH QV team for tightness and repair will be monitored during repacking. Additionally repair is in the UGPH which has its own secondary containment in place.											
					CERTIFICATION							
				QV ENG	INEER SIGNATURE	(b) (6)					
report was p	eby certify that repair work validated in this rt was personally substantiated and this rt is true.			DATE 22 MAY 2023								

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Conduit plug used on pressure gauge assemblies.

(b) (3) (A)

Typical repair, using either round or hexagonal plugs with fuel resistant sealant.

Red Hill Bulk Fuel Storage Facility Defuel

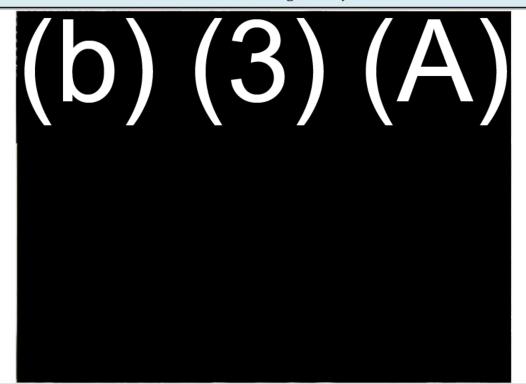
(b) (3) (A)

P-206 pressure gauge tee, installed round plugs with fuel resistant sealant.

(b) (3) (A)

P-206 pressure gauge tee, installed round plugs with fuel resistant sealant.

Red Hill Bulk Fuel Storage Facility Defuel



P-207 pressure gauge tee, installed round plugs with fuel resistant sealant.

(b) (3) (A)

P-207 pressure gauge tee, installed round plugs with fuel resistant sealant.

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

P-208 pressure gauge tee, installed hexagonal plugs with fuel resistant sealant.

(b) (3) (A)

P-208 pressure gauge tee, installed hexagonal plugs with fuel resistant sealant.

	QUALITY VALIDATION (QV) REPORT											
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	l					
Valid	lation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	094			
	Address	9781 S. N	1eridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	(b) (3) (A)			
Co	ontract No.	FA89031	5D0007, D	.O. FA890	3-19-F-0027			Report Date	22 MAY 2	2023		
QV	/ Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrir	nc.com		
					VALIDATION							
Sou	rce	P	DF Page N	o.	Facility Geograph	ic Area		Location	Reference			
NDAA		52			Underground Pumpl	nouse	Surge Ta	nk Piping				
The (b) (3) (A) that is mounted on the (b) (3) (A) low suction line at Surge Tank is missing a plug. Install plug. Repair Description The (b) (3) (A) that is mounted on the (b) (3) (A) low suction line at Surge Tank is missing a plug. Install plug. Source Contract Reference												
							QCP and Reports.	Daily				
Vali	tion of QA dation and oservations		out l ined in									
	Dawark	Final acception Needed	otance by go		Date: 20 MAR 2023 Photo Record Attached	ı	Danais	Work Vali	datad og Co	malata		
0	Yes	• Needed	No		See Pages 2-5.		(e)	Yes	O C	No		
I hereby certif				QV ENG	INEER SIGNATURE	(b) ((6)					
report is true.		- and the diff			DATE	22 MAY 2	2023					

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Existing condition; discharge hose connected to ball valve.

(b) (3) (A)

Hexagonal threaded plug installed with fuel resistant sealant.

	QUALITY VALIDATION (QV) REPORT											
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	el					
Vali	dation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	102			
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	(b) (3) (A)			
C	Contract No.	FA89031	5D0007, D	.O. FA890	03-19-F-0027			Report Date	22 MAY 2	2023		
Q	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrir	nc.com		
					VALIDATION							
Sor	urce	F	PDF Page N	o.	Facility Geograph	ic Area		Location	Reference			
NDAA		62			Underground Pumpl	nouse	Bypass I	_oop				
Lack of thread engagement was observed or fasteners on the bypass loop flanges associated with the (b) (3) (A) F-76 pipeline. Replace fasteners. Source Contract Reference												
Con	escription of ntractor QC nod(s) Used		outlined in	detail in C	QCP.			ntractor QC s Reviewed	QCP and Reports.	Daily		
Val	ption of QA lidation and observations		outlined in	QASP.								
			ptance by go	vernment.	Date: 24 MAR 2023		ı					
		Needed			Photo Record Attached		•		dated as Co			
Comment	Yes	\odot	No		See Page 2.		•	Yes	\circ	No		
New bol	New bolts and nuts installed and coated. Repair was visually inspected by JTF-RH QV team for tightness and the repair will be monitored during repacking for weeps. Additionally, repair is in the secondary containment in place.											
					CERTIFICATION		(0)					
	tify that repair personally sub			QV ENG	INEER SIGNATURE	(b) ((6)					
report is true		-ianiaiou dii			DATE	22 MAY 2	2023					

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

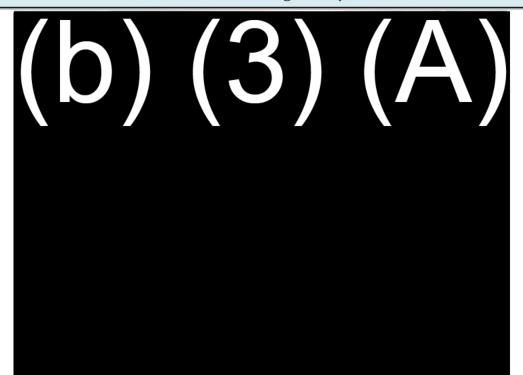
Previous condition: lackof thread engagement.

(b) (3) (A)

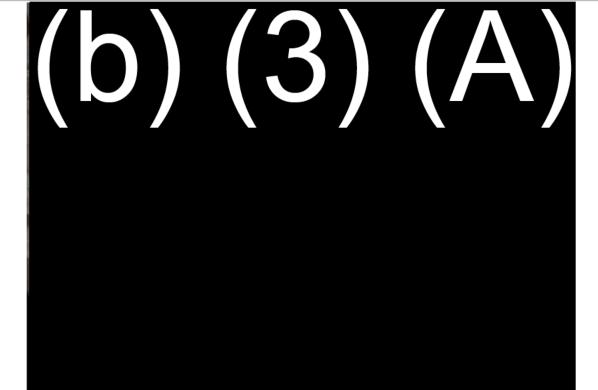
Completed repair: new bolts and nuts installed and coated.

	QUALITY VALIDATION (QV) REPORT											
]	Red Hill B	sulk Fuel Storage Fac	ility Defue	el					
Valie	dation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	107			
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	(b) (3) (A)			
С	ontract No.	FA89031	5D0007, D	.O. FA890	03-19-F-0027			Report Date	22 MAY 2	2023		
Q	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrin	nc.com		
					VALIDATION							
Sou	ırce	F	PDF Page N	o.	Facility Geograph	ic Area		Location	Reference			
NDAA		62			Underground Pumpl	nouse	(b) (3) (A)					
The (b) (3) (A) on the F-76 pipeline has state and fully engaged. Install stude properly. The (b) (3) (A) on the F-76 pipeline has state and fully engaged. Install stude properly. Source Contract Reference												
Description of Contractor QC Method(s) Used Method(s) Used Methods outlined in detail in QCP. Contractor QC Records Reviewed QCP and Done Reports.							Daily					
Val	otion of QA idation and bservations		outlined in	QASP.								
			otance by go		Date: 24 MAR 2023		l <u>.</u> .					
	Yes	Needed	No		Photo Record Attached See Page 2.	l	_	Yes	dated as Co	mplete No		
Yes No See Page 2. Yes No No Comments New bolts, washers and nuts installed, properly torqued, and coated. Repair was visually inspected by JTF-RH QV team and the repair will be monitored during repack for weeps. Additionally, repair is in the has its own secondary containment in place. CERTIFICATION												
		work validate		QV ENG	INEER SIGNATURE	(b) ((6)					
report was p		osamateu an	u una		DATE	22 MAY 2	2023					

Red Hill Bulk Fuel Storage Facility Defuel



Previous condition: threaded studs used in place of cap bolts.



Completed repair: Appropriate cap bolts and washers installed and torqued, coating applied.

QUALITY VALIDATION (QV) REPORT											
Red Hill Bulk Fuel Storage Facility Defuel											
Vali	dation Firm	HDR Environmental, Operations and Construction, Inc.						Repair No.	109		
	Address	9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112						Repair ID	(b) (3) (A)		
C	Contract No.	FA890315D0007, D.O. FA8903-19-F-0027						Report Date	22 MAY 2023		
Q	QV Engineer (b) (6)			Phone (b) (6)		Email	(b) (6)	hdrinc.com			
VALIDATION											
Source		PDF Page No.			Facility Geographic Area		Location Reference				
NDAA		63			Underground Pumpl	nd Pumphouse Surge T		ank Piping			
Repair Description		Lack of thread engagement on nuts and bolts associated with the (D)(3)(A) low suction pipe flange for Surge Tank at the pipe branch tie-in connection. Replace fasteners.					Source Contract Reference				
Description of Contractor QC Method(s) Used							Contractor QC Records Reviewed			Daily	
Val	ption of QA lidation and observations	Methods outlined in QASP.									
		Final acceptance by government. Date: 24 MAR 2023									
Rework				Photo Record Attached				dated as Co			
Yes No See Page 2. Yes No No Comments New bolts, washers, and nuts installed, properly torqued, and coated. Repair was visually inspected by JTF-RH QV team and the repair will be monitored during repacking for weeps. Additionally, repair is in the which has its own secondary containment in place.											
/b) /C)											
report was p	ersonally sub	r work validated in this ostantiated and this		QV ENG	V ENGINEER SIGNATURE		(0)				
report is true	e .			DATE 22 MAY 2023							

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Previous condition: lack of thread engagement on flange fasteners

(b) (3) (A)

Completed repair: New bolts/nuts/washers installed, coating applied.

	QUALITY VALIDATION (QV) REPORT Red Hill Bulk Fuel Storage Facility Defuel											
]	Red Hill B	ulk Fuel Storage Fac	cility Defue	el					
Vali	dation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	112			
	Address	9781 S. N	leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	FOF ^{(b) (3) (A)}			
C	Contract No.	FA89031	5D0007, D	.O. FA890	3-19-F-0027			Report Date	18 MAY 2	2023		
Q	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrir	nc.com		
					VALIDATION							
Sor	urce	P	DF Page N	o.	Facility Geograph	nic Area		Location	Reference			
NDAA		66			RHTF		Sump (b)	(3) (A)				
Repair :	Description	of the sun		out of cal	DR line on the discha ibration and the glass		Sour	ce Contract Reference				
								QCP and Reports.	Daily			
Val	ption of QA lidation and observations	Methods	out l ined in	QASP.								
			otance by go		Date: 20 MAR 2023		<u>, , , , , , , , , , , , , , , , , , , </u>	*** 1 ** 1	1.1.0			
0	Yes	Needed	No		Photo Record Attached See Page 2.	<u>a</u>	Repair	Work Vali Yes	dated as Co	No		
Comments Gauge replaced and visually inspected by JTF-RH QV team. Repair will be monitored during repacking for weeps.									or weeps.			
					CERTIFICATION	(b) /	(6)					
report was p	tify that repair personal l y sub			QV ENG	INEER SIGNATURE	(D) (0)					
report is true					DATE	18 MAY 2	2023					

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Previous condition; broken gauge face.

(b) (3) (A)

Replaced gauge.

	QUALITY VALIDATION (QV) REPORT Red Hill Bulk Fuel Storage Facility Defuel											
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	l					
Valid	dation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	113			
	Address	9781 S. N	leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	FOR.			
C	ontract No.	FA89031	5D0007, D	.O. FA890	3-19-F-0027			Report Date	18 MAY 2	2023		
Q'	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrin	nc.com		
					VALIDATION							
Sou	ırce	P	DF Page N	0.	Facility Geograph	ic Area		Location	Reference			
NDAA		66			RHTF		Door 🛮					
Repair I	Description	The (b) (3) (A) is This is incopiping.	Sour	ce Contract Reference								
Description of Contractor QC Method(s) Used							I	ntractor QC s Reviewed	QCP and Reports.	Daily		
Val	otion of QA idation and bservations	Methods	out l ined in	QASP.								
			otance by go		Date: 20 MAR 2023		Γ					
	Rework				Photo Record Attached			Work Vali	dated as Co	mplete		
Comments	Yes	•	No		See Page 2.		•	Yes	\circ	No		
New carbon steel fitting with fuel resistant thread sealant installed. Repair visually inspected by JTF-RH QV team and the repair will be monitored during repacking for weeps.								QV				
					CERTIFICATION							
	hereby certify that repair work validated in this eport was personally substantiated and this											
report was porting true		อเสทแสเ ย น สก	น แแช		DATE	18 MAY 2	2023					

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Previous condition, weeping threads.

(b) (3) (A)

Completed Repair with new carbon steel fittings, with fuel resistant thread sealant.

	QUALITY VALIDATION (QV) REPORT Red Hill Bulk Fuel Storage Facility Defuel											
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	l					
Valie	dation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	115			
	Address	9781 S. N	leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	FOR.			
С	ontract No.	FA89031	5D0007, D	.O. FA890)3-19-F-0027 ⊚∎			Report Date	22 MAY 2	2023		
Q	V Engineer	(b) (6)			Phone		Email	(b) (6)	hdrir	nc.com		
					VALIDATION							
Sou	urce	F	DF Page N	o.	Facility Geograph	ic Area		Location	Reference			
NDAA		67			Red Hill Tank Farm		Tank 15					
Repair l	Description	The (b) (3 fully enga) (A) ged. Repla		s three fasteners thaters.	are not	Sour	ce Contract Reference				
Description of Contractor QC Method(s) Used Method(s) Used Methods outlined in detail in QCP. Contractor QC Records Reviewed QCP and Dail Reports.								Daily				
Val	otion of QA lidation and bservations		out l ined in	QASP.								
	D		otance by go		Date: 17 FEB 2023		Daniel	. 3371- 3.7 - 1:	1-4-1 C-			
0	Yes	Needed	No		Photo Record Attached See Page 2.	ı	Repair	Yes	dated as Co	No		
Comments Multiple Repair v weeps.	Multiple studs and nuts replaced on (b) (3) (A) gate valve flanges for proper thread engagement. Repair visually inspected by JTF-RH QV team for tightness and repair will be monitored during repacking for											
					CERTIFICATION	(h) (6)					
report was p	ersonally sub			QV ENG	INEER SIGNATURE	(a) (o)					
report is true	port was personally substantiated and this port is true. DATE					22 MAY 2	2023					

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Joint fasteners lacking thread engagement.

(b) (3) (A), (b) (4)

Multiple studs and nuts replaced on both flanges of (b) (3) (A)

flanges for proper thread engagement.

	QUALITY VALIDATION (QV) REPORT Red Hill Bulk Fuel Storage Facility Defuel										
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	el				
Valid	dation Firm	HDR Env	ironmental	, Operatio	ons and Construction,	Inc.		Repair No.	118		
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	FOF ^{(D)(3)(A)}		
С	ontract No.	FA89031	5D0007, D	O. FA890	03-19-F-0027			Report Date	23 MAY 2	2023	
Q	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrin	nc.com	
					VALIDATION						
Soi	urce	F	PDF Page N	lo.	Facility Geographi	ic Area		Location	Reference		
NDAA		67			RHTF		Tank 9				
Repair 1	Description	signs of m piping has	ninor to mo s not been	oderate cor upgraded.	ociated with Tanks is s rrosion at areas where I. Tank 9 sample pipin es replacement.	e the	Sour	ce Contract Reference	N/A for in- labor.	-house	
Cor	scription of ntractor QC nod(s) Used		/ integrity v	erification/	n by FLC personnel.			ntractor QC s Reviewed	N/A		
Val	otion of QA lidation and bservations										
			stance by go		Date: 15 MAY 2023		Π.,				
		Needed	No		Photo Record Attached				dated as Cor		
Comments	Yes	•	No	<u> </u>	See Page 2.		•	Yes	\cup	No	
Repair Description cont. "Repair by replacement the small-bore tank sample piping with Tank 9. Reviewed for FFS. (b) (3) (A), (b) (5) It was determined the benefit of the repair was outweighed by the risk of disturbing isolation point should damage occur during repair. Valves were closed and placed in part of closure after Facility defueling completed.						active line	s to the live	e tank with	no		
CERTIFICATION											
	ereby certify that repair work validated in this port was personally substantiated and this				QV ENGINEER SIGNATURE (b) (6)						
report was p		istantiated an	u tilis		DATE	23 MAY 2	2023				

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

The tank sampling piping minor to moderate corrosion at areas where the piping has not been upgraded.

(b) (3) (A)

All four sample line valves have been closed and locked upstream of corroded segments, placed in LOTO.

	QUALITY VALIDATION (QV) REPORT Red Hill Bulk Fuel Storage Facility Defuel											
]	Red Hill B	ulk Fuel Storage F	cility Defue	el					
Vali	dation Firm	HDR Env	ironmental	, Operatio	ns and Constructio	, Inc.		Repair No.	119			
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, C	D 80112		Repair ID	FOR (D) (S) (A)			
C	ontract No.	FA89031	5D0007, D	.O. FA890	3-19-F-0027			Report Date	22 MAY 2	2023		
Q	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrir	nc.com		
					VALIDATION							
Son	urce	I	PDF Page N	o.	Facility Geogra	hic Area		Location	Reference			
NDAA		68			Red Hill Tank Fan	1	Sump (b) (s)	3) (A)				
Repair :	Description	flange is r	ed flange ar missing ser Replace fas	. The not	Sour	ce Contract Reference						
Cor	scription of ntractor QC nod(s) Used		outlined in	detail in C	OCP.		1	ntractor QC s Reviewed	QCP and Reports.	Daily		
Val	otion of QA lidation and observations	Methods	outlined in	QASP.								
		Final accep	otance by go	vernment.	Date: 17 FEB 2023		,					
	Rework	Needed			Photo Record Attach	ed	Repair	Work Vali	dated as Co	mplete		
O	Yes	•	No		See Page 2.		•	Yes	\circ	No		
Comments Flange connection will not be used for defueling, therefore the repair was modified to install a b fasteners instead of replacing fasteners on the existing flange and capping pipe nipple. Flange was visually inspected by JTF-RH QV team and repair will be monitored during												
					CERTIFICATIO		(0)					
	tify that repair personal l y sub			QV ENG	INEER SIGNATURE	(D)	(b)					
report is true					DATE	22 MAY 2	2023					

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Flange missing fasteners, with uncapped pipe nipple.

(b) (3) (A)

New blind flange installed with no pipe nipple penetration. All fasteners replaced.

	QUALITY VALIDATION (QV) REPORT Red Hill Bulk Fuel Storage Facility Defuel											
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	l					
Vali	dation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	121			
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	FOR.			
C	Contract No.	FA89031	5D0007, D	.O. FA890	03-19-F-0027			Report Date	22 MAY 2	2023		
Q	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrir	nc.com		
					VALIDATION							
So	urce	F	PDF Page N	o.	Facility Geograph	ic Area		Location	Reference			
NDAA		68			Red Hill Tank Farm		Sump (b) (6	B) (A)				
Repair	Description	A loose fa the pipe to	Sour	ce Contract Reference								
Methods outlined in detail in QCP. Description of Contractor QC Method(s) Used								ntractor QC s Reviewed	QCP and Reports.	Daily		
Val	ption of QA lidation and observations		outlined in	QASP.								
			otance by go		Date: 17 FEB 2023							
\cap	Rework Yes	Needed	No		Photo Record Attached See Page 2.		Repair	Work Vali Yes	dated as Co	mplete No		
Comments Loose fastener was replaced. JTF-QV team visually inspected the repair and the repair will be monitored during repacking for weeps.								during				
					CERTIFICATION	(1) - (
I hereby certify that repair work validated in this report was personally substantiated and this												
report is true					DATE	22 MAY 2	2023					

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Flange with loose fastener.

(b) (3) (A)

Fastener replaced on (b)(3)(A) pipe flange at Sump (b)(3)(A)

	QUALITY VALIDATION (QV) REPORT Red Hill Bulk Fuel Storage Facility Defuel										
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	l				
Vali	dation Firm	HDR Env	ironmental	, Operation	ns and Construction,	Inc.		Repair No.	123		
	Address	9781 S. N	leridian Bl	vd., Suite	400, Englewood, CO	80112			FOR.		
C	Contract No.	FA89031	5D0007, D	.O. FA890	3-19-F-0027			Report Date	22 MAY 2	2023	
Q	V Engineer	(b) (6)			Phone		Email	(b) (6)	hdrir	nc.com	
					VALIDATION						
Son	urce	I	DF Page N	o.	Facility Geograph	ic Area		Location	Reference		
NDAA		69			(b) (3) (A)		(b) (3) (A)				
Repair	(b) (3) (A) Low Point Drain — No cap on cam-lock fitting. fasteners are not fully engaged on the low point drain flange. Replace camlock cap. Provide fasteners.										
Co	escription of ntractor QC nod(s) Used	Methods	outlined in	detail in Q	OCP.			ntractor QC s Reviewed	QCP and Reports.	Daily	
Val	ption of QA lidation and observations	Methods	outlined in	QASP.							
		Final accep	otance by go	overnment.	Date: 17 FEB 2023						
		Needed			Photo Record Attached	l			dated as Co		
Comments	Yes	•	No		See Page 2.		•	Yes	\circ	No	
Studs and nuts replaced and cap lock cap installed. Repair was visually inspected by JTF-RH QV team and the repair will be monitored during repacking for weeps.								nd the			
				01151151	CERTIFICATION	(b) /	(6)				
report was p	tify that repair personal l y sub			QV ENG	INEER SIGNATURE	(n) ((O)				
report is true	э.				DATE 22 MAY 2023						

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Previous condition: lacking thread engagement on flange nuts, no dust cap.

(b) (3) (A)

Completed repair: changed studs and nuts for full engagement, installed dust cap.

	QUALITY VALIDATION (QV) REPORT Red Hill Bulk Fuel Storage Facility Defuel											
]	Red Hill Bulk Fuel S	Storage Fac	ility Defue	l					
Valid	lation Firm	HDR Env	ironmental	, Operations and Co	nstruction,	Inc.		Repair No.	124			
	Address	9781 S. N	leridian Bl	vd., Suite 400, Engle	ewood, CO	80112		Repair ID	FOR.®®			
Co	ontract No.	FA89031	5D0007, D	.O. FA8903-19-F-00	27			Report Date	22 MAY 2	2023		
QV	/ Engineer	(b) (6)		Phone	(641) 740	-7338	Email	(b) (6)	hdrir	nc.com		
				VALII	DATION							
Sou	rce	P	DF Page N	o. Facili	ty Geograph	ic Area		Location	Reference			
NDAA		69		(b) (3) (A)			(b) (3) (A)				
Repair D	Description	fasteners	are not ful	ain – No cap on cam ly engaged on the(b) nlock cap. Provide fa	(3) (A) low po		Source	ce Contract Reference				
Methods outlined in detail in QCP. Description of Contractor QC Method(s) Used Method(s) Used Methods outlined in detail in QCP. Contractor QC Records Reviewed QCP and Daily Reports.									Daily			
Vali	tion of QA dation and oservations	Methods	out l ined in	QASP.								
			otance by go	overnment. Date: 17 F			Γ					
	Rework	Needed		Photo Rec	ord Attached			Work Valid	dated as Co	mplete		
\circ	Yes	\odot	No	See I	Page 2.		\odot	Yes	\circ	No		
	New studs and nuts installed and fully engaged. New cam lock cap installed. Repair was visually inspected by JTF-RH QV team and repair will be monitored during repacking for weeps.											
				CERTIF	ICATION							
		work validate		QV ENGINEER SIG	NATURE	(b) ((6)					
report was pe report is true.	-	stantiated an	a this	DATE		22 MAY 2	2023					

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)(b) (3) (A)

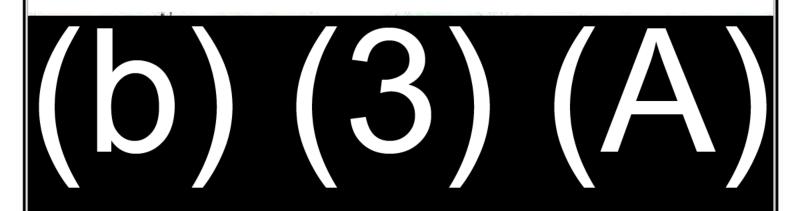
Previous condition: lacking thread engagement on flange nuts, no dust cap.

(b) (3) (A)

Completed repair: changed studs and nuts for full engagement, installed dust cap.

	QUALITY VALIDATION (QV) REPORT Red Hill Bulk Fuel Storage Facility Defuel											
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	l					
Valid	lation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	129			
	Address	9781 S. N	leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	FOR.			
Co	ntract N	l∉A89031!	5D0007, D	.O. FA890	3-19-F-0027			Report Date	22 MAY 2	2023		
QV	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrir	nc.com		
					VALIDATION							
Sou	rce	P	DF Page N	o.	Facility Geograph	ic Area		Location	Reference			
NDAA		69			(b) (3) (A)		Tank (b) (3)	(A)				
Repair D	Description	the (b) (3) of piping of atmosphe	(A) pipe downstrear	eline is dis m and sho de of the v	the (b) (3) (A) local charging to isolated so uld be discharging to valve. Replumb the botto (3) (A).	segment the	Sour	ce Contract Reference				
Description of Contractor QC Method(s) Used Method(s) Used Methods outlined in detail in QCP. Contractor QC Records Reviewed QCP and Dail Reports								Daily				
Vali	tion of QA dation and oservations	Methods	out l ined in	QASP.								
			otance by go		Date: 05 APR 2023		. .	*** 1 ** 1	1.1.0			
0	Yes	Needed	No		Photo Record Attached See Page 2.	1	Repair	Yes	dated as Co	No		
RH QV 1	Body cavity relief valve on the (b) (3) (A) was replaced. Repair was visually inspected by JTF-RH QV team and repair will be monitored during defueling operations. Additionally, this repair is above an in place secondary containment area near tank (b)(3)(A). CERTIFICATION											
I hereby certification				QV ENG	INEER SIGNATURE	(b) (6)					
report is true.					DATE	22 MAY 2	2023					

Red Hill Bulk Fuel Storage Facility Defuel



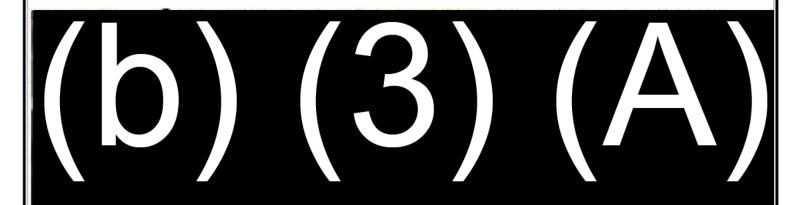
Body cavity relief previous configuration relieving to the downstream side of the valve, not towards the tank.

(b) (3) (A)

Body cavity bleed replaced with discharge replumbed to relieve to the tank.

	QUALITY VALIDATION (QV) REPORT Red Hill Bulk Fuel Storage Facility Defuel											
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	l						
Validation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	131				
Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	FOR (6) (3) (A)				
Co ntract N	(∓ A89031	5D0007, D	.O. FA890	3-19-F-0027			Report Date	22 MAY 2	2023			
QV Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrir	nc.com			
				VALIDATION								
Source	P	PDF Page N	o.	Facility Geograph	ic Area		Location	Reference				
NDAA	70			(b) (3) (A)		Tank (b) (3)	(A)					
Repair Description	atmosphe	(A) wnstream a	is disc and should de of the v	the (b) (3) (A) local harging to isolated set be discharging to the valve. Replumb the books (A)	gment of e	Sour	ce Contract Reference					
Description of Contractor QC Method(s) Used Method(s) Used Methods outlined in detail in QCP. Contractor QC Records Reviewed QCP and Daily Reports									Daily			
Description of QA Validation and Observations		out l ined in										
Payrork	Final accept Needed	otance by go	overnment.	Date: 05 APR 2023 Photo Record Attached	<u> </u>	Danais	r Work Vali	datad on Co	malata			
Yes	•	No		See Page 2.	ı	(e)	Yes	Cated as Co	No			
(b) (3) (A) on the (b) (3) (A) was replaced and properly plumbed. Repair was visually inspected by JTF-RH QV team and repair will be monitored during defueling operations. Additionally, this repair is above an in place secondary containment area near tank (b) (5) (A). 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 22 MAY 2023								as				

Red Hill Bulk Fuel Storage Facility Defuel



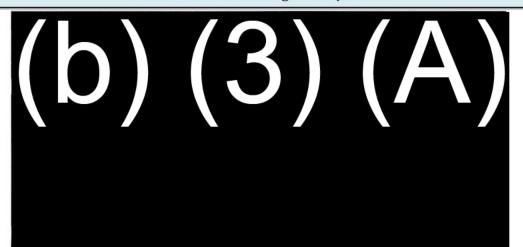
Body cavity relief previous configuration relieving to the upstream side of the valve, not towards the tank.

(b) (3) (A)

Body cavity bleed replaced with discharge replumbed to relieve to the tank.

	QUALITY VALIDATION (QV) REPORT Red Hill Bulk Fuel Storage Facility Defuel										
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	l				
Validat	tion Firm	HDR Envi	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	144		
	Address	9781 S. M	leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	(b) (3) (A)		
Cont	tract No.	FA89031	5D0007, D	.O. FA890	3-19-F-0027			Report Date	22 MAY 2	023	
QV I	Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrin	ıc.com	
					VALIDATION						
Source	e	P	DF Page N	o.	Facility Geograph	ic Area		Location	Reference		
NDAA		72			RHTF		Pipe Sup	port ^(b) (3) (4	A)		
Repair Des	escription	(b) (3) (A)		Rev	ate valve. Provide 2" view for mechanical in only if warranted.		Source	ce Contract Reference			
Description of Contractor QC Method(s) Used Method(s) Used Methods outlined in detail in QCP. Contractor QC Records Reviewed QCP and Daily Reports.								Daily			
	on of QA ation and ervations		outlined in								
	Rework		otance by go		Date: 20 MAR 2023 Photo Record Attached	ı	Dengir	Work Vali	dated as Co	mnlete	
0	Yes	•	No		See Page 2.		• Nepan	Yes	O	No	
(b) (3) (Installation	Beview for mechanical integrity. Disassemble and reassemble only if warranted" applies to the adapter downstream of the										
I hereby certify report was pers				QV ENG	INEER SIGNATURE	(b) ((6)				
report was pers	Johany Sub	Samateu all	G 11113		DATE	22 MAY 2	2023				

Red Hill Bulk Fuel Storage Facility Defuel



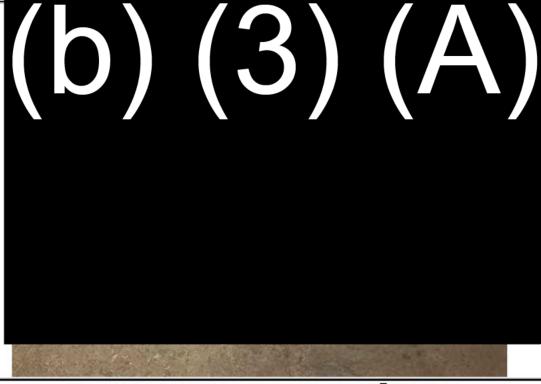
Bronze valve changed out with (b) (3) (A)

with plug.

Protective shield installed around (b) (3) (A)

	QUALITY VALIDATION (QV) REPORT Red Hill Bulk Fuel Storage Facility Defuel										
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	l				
Vali	dation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	233		
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	EPRC.K.y	,	
С	ontract No.	FA89031	5D0007, D	.O. FA890	03-19-F-0027			Report Date	25 MAY 2	023	
Q	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrin	c.com	
					VALIDATION						
Sou	urce	I	PDF Page N	o.	Facility Geograph	ic Area		Location	Reference		
NAVFAC	EXWC	EXWC Re	ecommend	ation	Tank Gallery		Pipe Sup	port [©]			
Repair 1	Description	Remove a	and replace	e broken g	rout at PS- <mark>≌</mark> base pla	ite.	Sour	ce Contract Reference			
Con	scription of ntractor QC nod(s) Used	Methods	outlined in	detail in C	CQCP.			ntractor QC s Reviewed	CQCP and Reports	d Daily	
Val	otion of QA lidation and observations	Form 429	96/2.		te is documented by to be	he QSR's i	in the daily	CQC repo	orts using N	IAVFAC	
	Rework	Needed	ptance by ge	verimient.	Photo Record Attached	l	Repair	Work Vali	dated as Cor	mplete	
0	Yes	•	No		See Page 2.		•	Yes	0	No	
Comments Based on EXWC recommendation, added to EPRC contract.											
					CERTIFICATION	(L)					
I hereby certify that repair work validated in this report was personally substantiated and this											
report is true					DATE	25 MAY 2023					

Red Hill Bulk Fuel Storage Facility Defuel

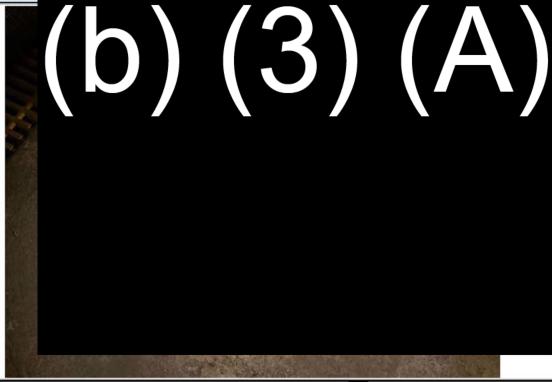


Removed and repaired broken grout at Pipe Support Base Plate.

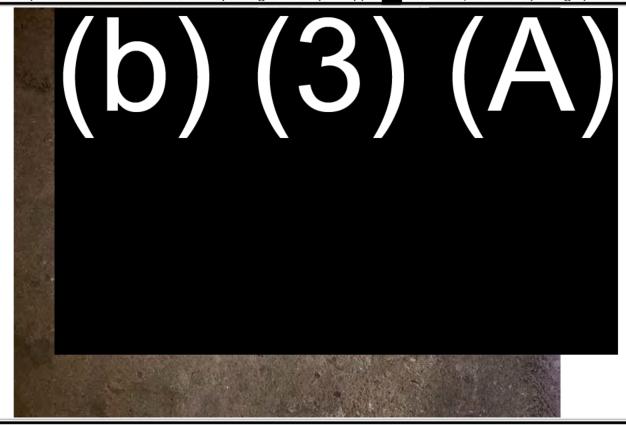
No Before Photograph.

				QUALI	TY VALIDATION (QV) REPO	ORT				
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	el				
Valie	dation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	234		
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112	Repair ID EPRC.K.z				
С	ontract No.	FA89031	5D0007, D	.O. FA890	3-19-F-0027 ⊚∎			023			
Q	V Engineer	(b) (6)			Phone		Email	(b) (6)	hdrin	c.com	
Sou	ırce	F		Location	Reference						
NAVFAC	EXWC	EXWC Re		Pipe Sup	port®						
Repair l	Description	Remove a	Ì	Sour	ce Contract Reference						
Cor	scription of ntractor QC nod(s) Used	Methods			ntractor QC s Reviewed	CQCP and Reports	d Daily				
Val	otion of QA lidation and bservations	Form 429	06/2.		e is documented by to	he QSR's	in the daily	CQC repo	orts using N	IAVFAC	
	Rework	Needed	otanie of ge		Photo Record Attached	i	Repair	Work Vali	dated as Cor	nplete	
0	Yes	•	No		See Page 2.		•	Yes	0	No	
Comments Based on EXWC recommendation, added to EPRC contract. New anchor bolts installed and grout replaced. Repair was visually inspected by JTF-RH QV team.											
					CERTIFICATION						
		work validate		QV ENG	INEER SIGNATURE	(b) ((6)				
report was p report is true		siantiated an	a this		DATE	23 MAY 2	2023				

Red Hill Bulk Fuel Storage Facility Defuel



Removed and replaced deformed anchors and replace grout at Pipe Suppor Base Plate; no before photograph. Side 1.



Removed and replaced deformed anchors and replace grout at Pipe Suppor Base Plate; no before photograph. Side 2.

				QUALI	TY VALIDATION (QV) REPO	ORT					
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	l					
Valie	dation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	235			
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		ments				
С	ontract No.	FA89031	5D0007, D	.O. FA890	3-19-F-0027			Report Date	25 MAY 2	023		
Q	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrin	ıc.com		
Sou	ırce	F		Location	Reference							
NAVFAC	EXWC	NDAA Pa	ge 53 and	73	Tank Gallery		Pipe Sup	port [©]				
Repair l	Description		damaged s up replace		the mainline at (b) (3) (A)	Sour	ce Contract Reference				
Cor	scription of atractor QC aod(s) Used	Methods	outlined in	detail in C	QCP.		1	ntractor QC s Reviewed	CQCP and Reports	d Daily		
Val	otion of QA idation and bservations	Form 429	96/2.		te is documented by to	he QSR's	in the daily	CQC repo	rts using N	IAVFAC		
	Rework	Needed	stance by go	y comment.	Photo Record Attached	l	Repair	Work Valie	dated as Co	mplete		
0	Yes	•	No		See Page 2.		•	Yes	0	No		
Comments Repair ID EPRC K.k NDAA (b) NDAA J(b) (b) (3) (A) NDAA(b) 1(b) (3) (A)	Pipe welds program. d JTF-RH epair will	Repair no QV team	on									
CERTIFICATION												
		work validate		QV ENG	INEER SIGNATURE	(b) ((6)					
report was p	-	samateu dii	G 11113		DATE	25 MAY 2	2023					

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Existing condition of pipe at Pipe Support Dent and gouge in existing pipe.

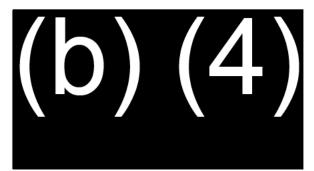
(b) (3) (A)

Replaced 4-foot segment of (b) (3) (A) pipe at Pipe Support

EMERGENT PIPELINE REPAIRS

REPAIR ID				ROOT PASS				Re	epair 23				COVER PASS					
K-1	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	р	03 / 15 / 2022	(b) (e	03 / 15 / 2022	P	(b)	03 / 16 / 2022	(b) (e	03 / 16 / 2022	P	03 / 17 / 2022	(b) (6	(b) (6	03 / 17 / 2022	(b) (6	F	03 / 29 / 2022	(b)
REWORK 1								(b)	05 / 03 / 2022	Р	05 / 03 / 2022	(b) (Р	05 / 16 / 2022	
REWORK 2													Р	02 / 28 / 2023	(b)	Arc strike noted by	EXWC	
REPAIR ID	ROOT PASS												COVER PASS					
K-2	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	Р	03 / 17 / 2022	(b) (ē	03/17/2022	Р	(b)	03 / 17 / 2022	(b) (6	03 / 17 / 2022	Р	03/18/2022	(b) (€	(b) (6	03 / 18 / 2022	(b) (6	F	03 / 29 / 2022	(b)
REWORK 1								(b)	05 / 03 / 2022	Р	05 / 03 / 2022	(b) (P	05 / 16 / 2022	
REWORK 2																		
REPARLED				PROOTHASS									OVERNASS					
V-1	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	Р	03 / 15 / 2022	(b) (E	03/15/2022	Р	(b)	03 / 15 / 2022	(b) (6	03 / 15 / 2022	Р	03/15/2022	(b) (E	(b) (6	03 / 15 / 2022	(b) (6	Р	03 / 29 / 2022	(b)
REWORK 1																		
REWORK 2																		
REPAIR ID	ROOT PASS								COVER PASS									
V-2	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	Р	03 / 17 / 2022	(b)	03 / 17 / 2022	Р	(b)	03 / 17 / 2022	(b)	03 / 17 / 2022	Р	03 / 18 / 2022	(b) (6	(b) (6	03 / 18 / 2022	(b) (E	F	03 / 29 / 2022	(b)
REWORK 1																Р	05 / 16 / 2022	
REWORK 2																		
REPAIR ID				ROOT PASS									COVER PASS					
H-19-1	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	Р	03 / 09 / 2022	(b) (6	03 / 09 / 2022	Р	(b)	03 / 09 / 2022	(b) (6	03 / 10 / 2022	р	03 / 10 / 2022	(b) (€	(b) (6	03 / 10 / 2022	(b) (ē	F		(b)
REWORK 1								(b)	05 / 03 / 2022	P	05 / 04 / 2022	(b) (Р	05/16/2022	
REWORK 2																		
REPAIR ID				ROOT PASS									COVER PASS					
H-19-2	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	Р	03 / 08 / 2022	(b) (t	03 / 08 / 2022	Р	(b)	03 / 08 / 2022	(b) (6	03 / 08 / 2022	Р	03 / 09 / 2022	(b) (6)	(b) (6	03 / 09 / 2022	(b) (6)	F		(b)
REWORK 1								(b)	05 / 03 / 2022	Р	05 / 04 / 2022	(b) (Р	05/16/2022	
REWORK 2																		
REPAIR ID	ROOT PASS												COVER PASS					
H-19-3	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	N/A							(b)	03 / 22 / 2022	Р	03 / 25 / 2022	(b) (£	(b) (6	03 / 25 / 2022	(b) (6	Р	03 / 29 / 2022	(b)
REWORK 1																		
REWORK 2																		

RHEmergentPipelineRepairs N39430-20-D-2225-N3943021F4207



RADIOGRAPHIC INSPECTION REPORT

(b)	(4)	
Date:	5/16/22	
Page	/ of 3	

FORM NDT-005.1

1 011111 1421-000.1														
customer (b) (4)		CUST JOE	3#	***************************************	s	PECIFI	CATION	· A	SME	EV	ACCEPTA	NCE ASME B31.3	1.	Single Wall
PROJECT Emergent	rbr.	DWG. NO.	•		Р	ROCE	URE		R	EV	ACC. PRO	^		
RT SOURCE DRIGZ	FILM ACT	5ADS	PENS	: As	TM	SHIM	IS MA	L'L/THE	KNS /	MATERIAL CS				
SOURCE STRENGTH 30	FRONT - DIS			TYPE			TEC	HNIQU	E USEI	9	THICKNESS (b) (3) (A)		Panoramic	
FOCAL SPOT SIZE	OCAL SPOT SIZE OF SINGLE LOA			<u> </u>	MATE	RIALS	SS	EXP	OSURI	TIME	5:00	JOINT TYPE BUT	2.	Single Wall
(b)(3)(A)	DOUBLE LO	AD[]	BACK (b)) (3) (A)	LOCA	TION	F	PRO	CESSI	NG	MANUAL AUTOMATIC	PIPE DIA (b) (3) (A)		
WELD#	VIEW#	GEOME UNSHAF			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				REMARKS	3.	Offset Double Wall
	D-14 42-0	2000	X	/							(b) (3) (A)			•
					1			1					4.	Double Wall 0/90
	75-42	2520	, X									3		
	14-28	2020	X		+		_	_			_			Elliptical
7	28-42		X		\dashv				1	_)	5.	Plate •
1 × × × × × ×	***	, , ,				بر	,	ىل	U	ىلىر	س	لور		
4,19-2121	(4-34	.02	2 X				/	4						
										\perp			6.	Other
W-19-1 P1 1	2-24	.020	, X	/						\perp			1	

(b) (6)

5/16/22

(b) (6)

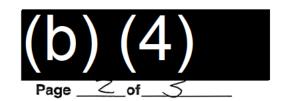
II

5/14/27
Date of Inspection

Customer

(b) (4)

RADIOGRAPHIC INSPECTION REPORT



WELD#	VIEW#	GEOMETRIC UNSHARPN *UG*	ESS		\$ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\$2 S.	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	10,000	See of			*/ */	REMARKS
w 20-3	6-13	,020	Χ					/					
	13-26	1	X							/			
	26-0		Χ										
				Ĺ									
WZ5-4	0-13	.620	X		L								
	13-26	1	X						\perp	\perp			
	26-0		X				\perp	_		\perp	\Box		
		1						\perp					
WKF-Z	0-13	,026	X			_/	4	_					
	13-26]	X					_		\perp			
	26-0	1	X					\perp		_	_		
							\perp	_					
WN-1	0-14	.050	X			_	\perp	\perp	\dashv	\dashv	_		
	14-28 28-42		X				\perp	_	_	_			
			X			_	_	4	_		_		
	42-0	/	X	_			_	4	\dashv	\perp			
			\sqcup		_	\perp	_	4	\perp	\dashv			
			\square		-	_	\dashv	\dashv	\dashv	_			
			\sqcup		_	_	\perp	\dashv	_	_			
							\perp						

(b) (6)

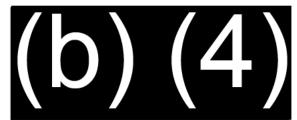
II

5-16-2022

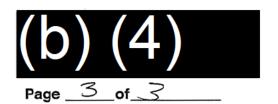
Film Interpreter

SNT-TC-1A Level

Date of Inspection



RADIOGRAPHIC INSPECTION REPORT



WELD#	VIEW#	GEOMETRIC UNSHARPN *UG*	/			10 00 00 00 00 00 00 00 00 00 00 00 00 0	To Sold To		10 10 10 10 10 10 10 10 10 10 10 10 10 1	Se S	\$\Z\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	14 4	*/	REMARKS
WN-Z	6-14	,020	X											
	14-28 28-42		X			\perp								
	28-42		X			\perp	_		4					
	42-0		K			\perp	_			_				
-					_	\bot				_	$ \bot $			
			\sqcup	_	_	\bot	-							
				_	_	\bot				_	_			
				\dashv	\perp	_				_				
			Ш	_	_	+	-	_						
				_	_	-	_							
			\sqcup	_	_	+	-	_		\dashv				
			$\vdash \vdash$	_	+	+	-	_						
			\vdash	_	+	+	+							
				_	_	+	+							
			\vdash		+	+	+-	-						
			-	_	-	+	+	-						
			\vdash	-	-	+	+-	-						
			\vdash	\dashv	-	+	+	-				_		
			\vdash		+	+	+	-						

(b) (6)

Film Interpreter

SNT-TC-1A Level

Date of Inspection

5-16-2022

SHEET NOTES:

- 1. COMPONENTS NOTED AS TEMPORARY (IDENTIFIED WITH CROSS HATCH) ARE FOR RESTRAINT OF PIPING WHILE TANKS ARE OUT OF SEMICE AND WILL NOT BE SUBJECT TO INTERNAL PRESSURES.
 LABEL PIPING TO INDICATE IT IS NOT FOR FUEL USE.

- LABEL PIPING TO INDICATE IT IS NOT FOR FUEL USE.

 RADIOSPRPIC EXAMINATION MUST BE PERFORMED ON ALL BUTT
 WELDS FOR TEMPERORY AND PERMANENT COMPONENTS.

 ALL SHOP PERFORMED WILDS, EXCEPT THESE IDENTIFIED FOR
 TEMPORARY COMPONENTS, MUST BE HYDROSIATICALLY TESTED
 WITH MATER TO IDSTAFT FOR NOT LESS TRIPL 4 HOURS.

 4. ALL WELDS, TOR TEMPORARY OR PERMANENT COMPONENTS,
 IDENTIFIED S. "THORO-EXEMPT TIE-IN WELDS" ARE SUBJECT TO
 TIE-IN WELD EXAMINATION.

TE-IN WELD EXAMINATION

- 1. IN ADDITION TO FINAL RADIOGRAPHIC EXAMINATION, TE-IN WELDS IDENTFIED AS "HYDRO EXEMPT TIE-IN WELDS" MUST RECEIVE AN EN-HANCED IN-PROCESS EXAMINATION IN ACCORDANCE WITH ASME
- BATJA SECTION 344.7.

 IN-PROCESS EXAMINATION MUST BE PERFORMED BY A CERTIFIED WELDING INSPECTOR AND INCLUDES VISUAL EXAMINATION OF:

- ELINIC INSPECTOR AND INCLUDES VISUAL EXAMINATION OF: JOHN PEPERATION AND CLEANINESS PREHEATING. IT-UP, JOHN CLEANINCE, AND INTERNAL AUGMENT PRIOR TO JOHNS. VARIABLES SPECIFIED IN JOINING PROCEDURE INCLUDING PILLES MATERIAL POSTON AND CLEATING AFTER CLEANING. DETERNAL CONTITION OF THE ROOT PASS AFTER CLEANING. 2.1. 2.2. 2.3.
- 2.4.

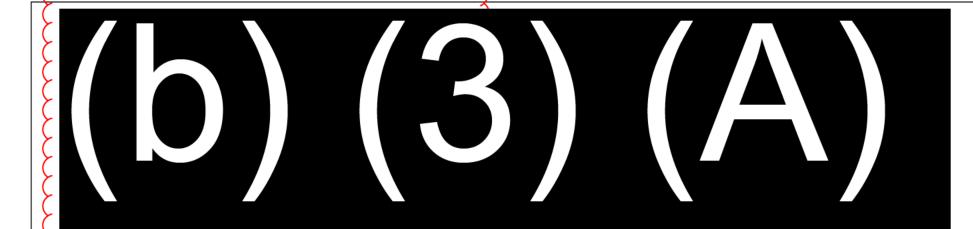
- 3. EXEMPLE COMMITTHE OF THE MOST PAGE OF THE SECTION OF THE PROPERTY OF THE FIRSTED JOINT.

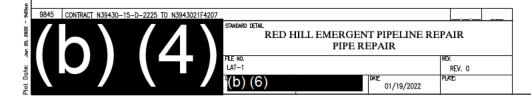
 7. APPEARANCE OF THE FINSTED JOINT.

 100% RADIOGRAPHIC EXAMINATION ARE EXEMPT FROM HYDROSTATIC TESTING IN ACCORDANCE WITH ASME B31.3 SECTION 345.2.3.

CONTRACT N39430-15-D-2225 TO N3943021F4207 STANDARD DETAIL RED HILL EMERGENT PIPELINE REPAIR GENERAL VIEW - UPPER PIPING G-1 REV. 1 (b) (6) PLATE: 03/18/2022

CONSTRUCTION SUBMITTAL







INDICATES PIPE BEING REPLACED

CONSTRUCTION SUBMITTAL

				QUALI	TY VALIDATION (QV) REPO	ORT				
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	l				
Valie	dation Firm	HDR Env	rironmental	, Operatio	ns and Construction,	Inc.		Repair No.	237		
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		See Comr	ments		
С	ontract No.	FA89031	5D0007, D	.O. FA890	03-19-F-0027			Report Date	25 MAY 2	023	
Q	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrin	ic.com	
Sou	urce	I	ic Area		Location	Reference					
NAVFAC	EXWC	NDAA Pa	ge 54 and	73	Tank Gallery		Pipe Sup	ports ^{(b) (3) (A})		
Repair l	Description		approximat				Sour	ce Contract Reference	N3943021	F4207	
Cor	scription of ntractor QC nod(s) Used		outlined in	detail in C	ntractor QC s Reviewed	CQCP and Reports	d Daily				
Val	otion of QA lidation and bservations	Form 429	96/2.		e is documented by t	he QSR's i	in the daily	CQC repo	orts using N	IAVFAC	
	Rework	Needed	ptance by go	overnment.	Date: 21 MAR 2023 Photo Record Attached	ı	Repair Work Validated as Complete				
0	Yes	•	No		See Page 2.		⊙	Yes	O	No	
Comments Repair ID EPRC K.r NDAA(b) (NDAA (b)	cont. n (3) (A)	were vis Repair n team. R	ually and nondestru epair was	radiograp ctive test : visually i	th a (b) (3) (A) phically inspected by results were inspect inspected by the JTF g repacking.	ed by NA	VFAC QÂ	team and	ir QC pro d JTF-RH	_	
					CERTIFICATION						
	tify that repair			QV ENG	INEER SIGNATURE	(b) ((6)				
report was p report is true	ersonally sub	stantiated an	ia this		DATE	25 MAY 2	2023				

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Existing condition of pipe between Pipe Suppor (b) (3) (A) ell connection to be removed.

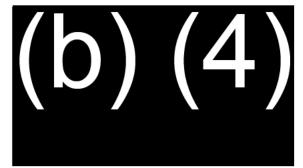
(b) (3) (A)

New pipe pup installed between Pipe Supports (D)(3)(A)

EMERGENT PIPELINE REPAIRS

REPAIR ID				ROOT PASS									COVER PASS					
D-20-3	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	Р	05 / 12 / 2022		05 / 12 / 2023	Р	(b) (05 / 12 / 2023	(b) (6	05 / 13 / 2023	Р	05 / 13 / 2023	(b) (Р	05 / 16 / 2022	(b) (3) (<i>t</i>
REWORK 1																		
REWORK 2																		
REPAIR ID				ROOT PASS									COVER PASS					
F-DL-1	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	FILLET WELD							(b) (3) (A)	05 / 06 / 2022	F	05 / 09 / 2022	(b) (3) (A)						
REWORK 1								(b)	05 / 10 / 2022	Р	05 / 10 / 2022	(D) (
REWORK 2																		
REPAIR ID				ROOT PASS									COVER PASS					
F-DL-2	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	P	05 / 05 / 2022	(b)	05 / 05 / 2022	P	(b) (05 / 05 / 2022	(b)	05 / 05 / 2022	P	05 / 05 / 2022	(b) (d)				P	05/16/2022	(b)
REWORK 1																		
REWORK 2																		
REPAIR ID				ROOT PASS									COVER PASS					
F-DL-3	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	FILLET WELD							PG	05 / 06 / 2022	F	05 / 09 / 2022	(b) (3) (A)						
REWORK 1								(b)	05 / 10 / 2022	P	05 / 10 / 2022	(b) (
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REPAIR ID				ROOT PASS				Repa	ir 237				COVER PASS					
N-1	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	Р	05 / 10 / 2022	(b) (b) (05 / 10 / 2022	Р	(b) (05 / 11 / 2022	(b) (3b)	05 / 11 / 2022	Р	05/11/2022	(b) (Р	05 / 16 / 2022	(b)
REWORK 1																		
REWORK 2																		
REPAIR ID				ROOT PASS									COVER PASS					
N-2	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	Р	05 / 10 / 2022	(b) (3b) (05 / 10 / 2022	Р	(b) (05/11/2022	(b) (b) (05/11/2022	Р	05/11/2022	(D) (d)				Р	05/16/2022	(b)
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REWORK 2																		
REPAIND				MOOTHS								كك	COVERDASS					
E-18-1	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	Р	05 / 17 / 2022	(b)	05 / 17 / 2022	Р	(b) (05 / 18 / 2022	(b) (b) (05 / 18 / 2022	Р	05 / 19 / 2022	(0) (Р	05 / 24 / 2022	(b)
REWORK 1																		
REWORK 2																		

RHEmergentPipelineRepairs N39430-20-D-2225-N3943021F4207



RADIOGRAPHIC INSPECTION REPORT

(b) (4)	
Date: 5/16/22	
Page / of 3	

FORM NDT-005.1

customer(b) (4	.)	CUST JO	B#			SPE	CIFIC	CATIO	u ,	ASM	Æ	V	ACCEPTA	NCE ASME B31.3	1.	Single Wall
PROJECT Emergy	your	DWG. NO				PRO	CED	URE			REV	,	ACC. PRO	c. 831.3 REVZO15		
RT SOURCE TRO	7 FILM AC	FADS	PB SCR	REENS	P	ENS:	AST	m	SH	HIMS N	fAT'l	JTHKI		MATERIAL CS		
SOURCE STRENGTH	30 SIZE,		FRONT	(b) (d		YPE	113		TE	CHNI	QUE	USED	3	THICKNESS (b) (3) (A)		Panoramic
FOCAL SPOT SIZE	SINGLE LO	AD [_]	MIDDLE		М	ATERI	ALS	:5	EX	POSL	JRE 1	ГІМЕ	5:00	JOINT TYPE BUT	2.	Single Wall
sfD (b) (3) (A	DOUBLE LO	DAD[]	васк	(b) (3) (A)	L	OCATI	ON	F	PF	ROCES	SIN	G ×	MANUAL AUTOMATIC	PIPE DIA.(b) (3) (A)		
WELD#	VIEW#	GEOME UNSHAI *UG*			£ 20 0		20 mg/20 mg/	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 5 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	id in the state of	nu de la	//	77/	REMARKS	3.	Offset Double Wall
KVZ RI	0-14	ore	X		7		T		T		T		(b) (3) (A)		1	()•
	42-0		X		/				1				~]	
															4.	Double Wall 0/90
KK-1 121	78-42	2020	X										(b) (3) (A)			
•																
KK-2 121	14-28	ww	X										(b) (3) (A)			Elliptical
	28-47		X								1				5.	Plate •
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W19-2R1	74-34	.02	, X						1							
															6.	Other
w19-1 21	12-24	1020	/ X													
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(b) (6)

5/14/22



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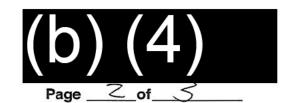
5/14/22

Date of Inspection

Customer

(b) (4)

RADIOGRAPHIC INSPECTION REPORT



WELD#	VIEW#	GEOMETRI UNSHARPN *UG*	C IESS		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	To the state of th		10 10 10 10 10 10 10 10 10 10 10 10 10 1	2000	\$ \Z	10000	#/ 2/	REMARKS
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	13-26	1	X											
	26-0		X		-									
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	13-26)	X			111								
	26-0	1	X											
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	14-28	1	X											
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(b) (6)

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5-16-2022

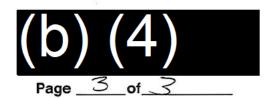
Film Interpreter

SNT-TC-1A Level

Date of Inspection

(b) (4)

RADIOGRAPHIC INSPECTION REPORT



		Control of the contro	1.90 September 1												
	WELD #	VIEW#	GEOMETRIC UNSHARPNE	ss		17 18 18 18 18 18 18 18 18 18 18 18 18 18	Sal July	Star Star Star Star Star Star Star Star	1000	16 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	10 00 00 00 00 00 00 00 00 00 00 00 00 0	S X		*/ */	REMARKS
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Film Interpreter

Date of Inspection

5-16-2022

SNT-TC-1A Level

SHEET NOTES:

- 1. COMPONENTS NOTED AS TEMPORARY (IDENTIFIED WITH CROSS HATCH) ARE FOR RESTRAINT OF PIPING WHILE TANKS ARE OUT OF SERVICE AND WILL NOT BE SUBJECT TO INTERNAL PRESSURES. LABEL PIPING TO INDICATE IT IS NOT FOR FUEL USE.

- LABEL PIPMS OF INDICATE IT IS NOT FOR FUEL USE.

 RADOGRAPHIC EXMANDION MUST BE PERFORMED ON ALL BUTT
 WELDS FOR TEMPFORM AND PERMANDENT COMPONENTS.

 ALL SHOP PERFORMED WELDS, EXCEPT THOSE IDDNIFTED FOR
 TEMPORARY COMPONENTS, MUST BE HYDROSTATICALLY TISSTED
 WITH MARTER TO INTERPORATE OF TERMANDING COMPONENTS,
 BUTTHED AS "THOSE—DELIMIT TIE—IN WELDS" ANE SUBJECT TO TIE-IN WELD EXAMINATION.

TE-IN WELD EXAMINATION

- 1. IN ADDITION TO FINAL RADIOGRAPHIC EXAMINATION, TE-IN WELDS IDENTFIED AS "HYDRO EXEMPT TIE-IN WELDS" MUST RECEIVE AN EN-HANCED IN-PROCESS EXAMINATION IN ACCORDANCE WITH ASME
 - BATJA SECTION 344.7.

 IN-PROCESS EXAMINATION MUST BE PERFORMED BY A CERTIFIED WELDING INSPECTOR AND INCLUDES VISUAL EXAMINATION OF:
- 2.1. 2.2. 2.3.
- ELINIC INSPECTOR AND INCLUDES VISUAL EXAMINATION OF: JOHN PEPERATION AND CLEANINESS PREHEATING. IT-UP, JOHN CLEANINCE, AND INTERNAL AUGMENT PRIOR TO JOHNS. VARIABLES SPECIFIED IN JOINING PROCEDURE INCLUDING PILLES MATERIAL POSTON AND CLEATING AFTER CLEANING. DETENAL CONTITION OF THE ROOT PASS AFTER CLEANING. 2.4.

- 3. EXEMPL COMMITTION OF THE MOST PRISE PRISE CERTIFIED.

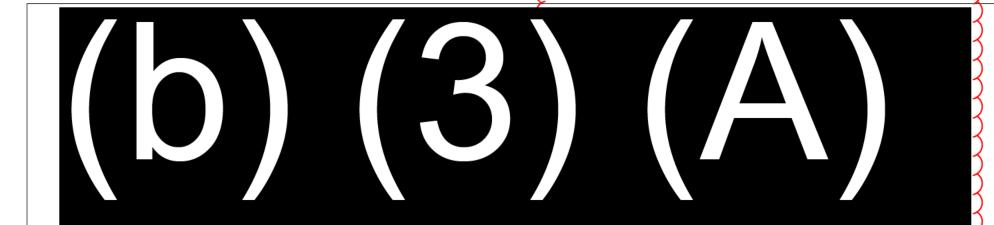
 1.6. SLAG FEMOVIL AND WELD CONDITION.

 7. APPEARANCE OF THE FINSHED JOINT.

 CLOSIFE WILDS THAT RECEIVE IN-PROCESS EVANIMATION AND 100% RADIOGRAPHIC EXAMINATION ARE EXEMPT FROM HYDROSTATIC TESTING IN ACCORDANCE WITH ASME B31.3 SECTION 345.2.3.

9845 CONTRACT N39430-15-D-2225 TO N3943021F4207 STANDARD DETAIL RED HILL EMERGENT PIPELINE REPAIR GENERAL VIEW - UPPER PIPING G-1 REV. 1 ^{(RN}(b) (6) PLATE: 03/18/2022

CONSTRUCTION SUBMITTAL



ITEM L

SCALE: NTS

ITEM V

SCALE: NTS





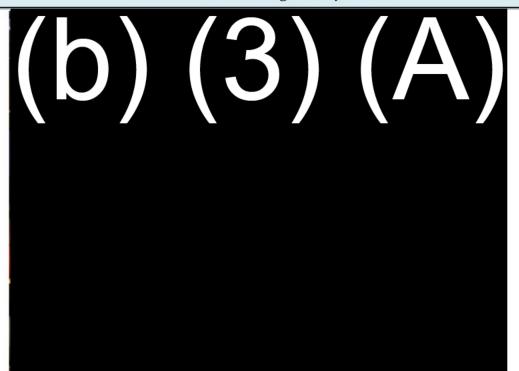
INDICATES PIPE BEING REPLACED

CONSTRUCTION SUBMITTAL

				QUALI	TY VALIDATION (QV) REPO	ORT			
]	Red Hill B	Sulk Fuel Storage Fac	ility Defue	l			
Valid	lation Firm	HDR Env	ironmenta	, Operatio	ns and Construction,	Inc.		Repair No.	245	
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	See Com	ments
Co	ontract No.	FA89031	5D0007, D	.O. FA890	3-19-F-0027			Report Date	25 MAY 2	2023
Q	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrir	nc.com
					VALIDATION					
Sou	irce	I	PDF Page N	o.	Facility Geograph	ic Area		Location	Reference	
NAVFAC	EXWC	NDAA Pa	ge 53 and	73	Tank Gallery		Pipe Sup	port [®]		
Repair I	Description	Replace (b) (3) (A)		egment of	the mainline at PS		Sour	ce Contract Reference		
Con	scription of stractor QC od(s) Used		outlined in	detail in C	CQCP.			ntractor QC s Reviewed	CQCP an Reports	d Daily
Vali	tion of QA idation and oservations	Form 429	96/2.		ce is documented by to	he QSR's i	in the daily	CQC repo	orts using N	NAVFAC
	Rework	Needed	otance by go	overmment.	Photo Record Attached	1	Repair	Work Vali	dated as Co	mplete
0	Yes	•	No		See Page 2.		•	Yes	0	No
Comments Repair ID EPRC K.v NDAA(b) (3 NDAA (b) NDAA (b)	3) (A) (3) (A)	visually Repair i team. F	and radio nondestru Repair was	ographica ctive test visually	replaced with a new lly inspected by the results were inspect inspected by the JTI ng repacking.	contracto ted by NA	r as part o VFAC Q	of their QO A team an	C program d JTF-RH	ı.
					CERTIFICATION					
I hereby certi				QV ENG	INEER SIGNATURE	(6)				
report was per report is true.		stantiated an	a this		DATE	25 MAY 2	2023			

OHAL	ITV	ACCITO	ANCE	VALIDA	TION	REPORT
WUAL		AGGUR	ANCE	VALIDA	VI OIV	REPURI

Red Hill Bulk Fuel Storage Facility Defuel



Replaced damaged pipe segment at Pipe Support No before photograph.

No Before Photograph.

EMERGENT PIPELINE REPAIRS

REPAIR ID				ROOT PASS									COVER PASS					
K-1	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	P	03 / 15 / 2022	(b) (c	03 / 15 / 2022	P	(b)	03 / 16 / 2022	(b) (c	03 / 16 / 2022	P	03/17/2022	(b) (t	(b) (6	03 / 17 / 2022	(b) (t	F	03 / 29 / 2022	(b)
REWORK 1								(b)	05 / 03 / 2022	Р	05 / 03 / 2022	(b) (Р	05/16/2022	(b)
REWORK 2													Р	02 / 28 / 2023	(b)	Arc strike noted by	y EXWC	
REPAIR ID				ROOT PASS									COVER PASS					
K-2	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	Р	03 / 17 / 2022	(b) (6	03 / 17 / 2022	Р	(b)	03 / 17 / 2022	(b) (6	03 / 17 / 2022	Р	03 / 18 / 2022	(b) (E	(b) (6	03/18/2022	(b) (6	F	03 / 29 / 2022	(b)
REWORK 1								(b)	05 / 03 / 2022	Р	05 / 03 / 2022	(b) (Р	05/16/2022	(b)
REWORK 2																		
REPAIR ID	\sim	\sim	\sim	ROOT PASS	\sim	\sim	\sim	\sim	\sim	\sim	\sim	\sim	COVER PASS	\sim	\sim	\sim	\sim	\sim
V-1	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	Р	03 / 15 / 2022	(b) (ē	03 / 15 / 2022	Р	(b)	03 / 15 / 2022	(b) (6	03 / 15 / 2022	Р	03 / 15 / 2022	(D) (E	(b) (6	03 / 15 / 2022	(b) (c	Р	03 / 29 / 2022	(b)
REWORK 1																		
REWORK 2																		
REPAIR ID				ROOT PASS				Rep	air 245				COVER PASS					
V-2	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	Р	03 / 17 / 2022	(b)	03 / 17 / 2022	Р	(b)	03 / 17 / 2022	(b)	03 / 17 / 2022	Р	03 / 18 / 2022	(b) (E	(b) (6	03 / 18 / 2022	(b) (E	F	03 / 29 / 2022	(D)
REWORK 1																Р	05 / 16 / 2022	(b)
REWORK 2																		
REPAIR ID				ROOT PASS									COVER PASS					
H-19-1	P/F	DATE	WELDER	DATE	P/F	INSPECTOR	DATE	WELDER	DATE	P/F	DATE	INSPECTOR	P/F	DATE	INSPECTOR	P/F	DATE	INSPECTOR
INITIAL	Р	03 / 09 / 2022	(D) (E	03 / 09 / 2022	Р	(b)	03 / 09 / 2022	(b) (c	03 / 10 / 2022	р	03 / 10 / 2022	(b) (€	(b) (6	03/10/2022	(b) (6)	F		(5)
REWORK 1								(b)	05 / 03 / 2022	Р	05 / 04 / 2022	(b) (Р	05 / 16 / 2022	(b)
REWORK 2																		
REPAIR ID	Ī			ROOT PASS									COVER PASS					
H-19-2	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	Р	03 / 08 / 2022	(b) (c	03 / 08 / 2022	Р	(b)	03 / 08 / 2022	(b) (6	03 / 08 / 2022	Р	03 / 09 / 2022	(b) (6)	(b) (6	03 / 09 / 2022	(b) (6)	F		(b)
REWORK 1								(b)	05 / 03 / 2022	Р	05 / 04 / 2022	(b) (Р	05/16/2022	(b)
REWORK 2																		
REPAIR ID				ROOT PASS									COVER PASS					
H-19-3	FITUP P/F	DATE	WELDER	DATE	VT P/F	INSPECTOR	DATE	WELDER	DATE	VT P/F	DATE	INSPECTOR	MT / PT P/F	DATE	INSPECTOR	RT P/F	DATE	INSPECTOR
INITIAL	N/A							(b)	03 / 22 / 2022	Р	03 / 25 / 2022	(b) (ē	(b) (6	03 / 25 / 2022	(b) (E	Р	03 / 29 / 2022	(b)
REWORK 1																		
REWORK 2																		

RHEmergentPipelineRepairs N39430-20-D-2225-N3943021F4207



RADIOGRAPHIC INSPECTION REPORT

(b)	$\overline{(4)}$	-)	
Date:	3-2	7-7		
Page	1	of	The same	

Customer

Radiographer

-ORM ND 1-005.1																
customen(b)(4)		CUST JOE	3#			SPE	CIFICA	non	AS.	ME	V		ACCEPTA	NCE ASME 1831.3	1.	Single Wall
PROJECT Engent	Pipelm	DWG. NO.					CEDUF							C. 1831.3 REVZOIS		
RT SOURCETR 193	FILM AC	EA DS	PB SCRE	ENS	1		4STA	-	SHIM					MATERIAL CS		
SOURCE STRENGTH	48 200		FRONT	D) (3) (A)	TYI	PE	13		TECH	INIQU	E US	ED	,3	THICKNESS (b) (3) (A)]	Panoramic
FOCAL SPOT SIZE (D)	(3) (A) SINGLE LO		MIDDLE		MA	TERM	11 SS	5	EXPC	SUR	E TIN	E_3	1:05	JOINT TYPE BUH	2.	Single Wall
SFD (b) (3) (A)	DOUBLE L	DAD[]	BACK	b) (3) (A)	LO	CATIC	on F	-	PROC	CESS	NG	K	MANUAL AUTOMATIC	PIPE DIA (b) (3) (A)		
Weld #	VIEW#	GEOMET UNSHAF			1000		200 miles	10 10 10 10 10 10 10 10 10 10 10 10 10 1	2000	** X & C & C & C & C & C & C & C & C & C &	2/0/00/00/00/00/00/00/00/00/00/00/00/00/	*/		REMARKS	3.	Offset Double Wall
KVI	0-14 14-28	1070	X			$\overline{+}$	+		Z				·			•
	28-42	1/	X										3		4.	Double Wall 0/90
·····	42-6		X							J	<u> </u>	<u></u>				
KVZ	0-14	10 20		x /	1	1	X		1			1.			1	Elliptical
	14-28	1	X	1/											5.	Plate •
	28-42 42-0		X	X/	1		X	/				-				
	<i>y</i>	1						+				7		•	6.	Other
								1								
(b) (C)			<u> </u>	ر د 		<u> </u>	/							-/ .	L	

SNT-TC-1A Level

Date of Inspection

Film Interpreter

Date

(b) (4)

RADIOGRAPHIC INSPECTION REPORT



Page 2_of____2_

WELD#	VIEW#	GEOMETRIC UNSHARPNE	ss (20 3	Se S		10 00 00 00 00 00 00 00 00 00 00 00 00 0	N. September 1	S Z	10 00 m	*/ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	REMARKS
KK - 1	0-14		χĹ										
	14-28	//	ΧL										
	28-42					<u>*</u>	7/20			XĮ.	_		
	42-6		X _	_		-	ļ			_		_	
							-		_		_		
KK-Z	6-14	,020	ΧĻ			-			$\overline{}$	\dashv		-	
	14-28		3	XIII			/		X		-		@ 28
	28-42	 / 	$\sqrt{2}$	<u> </u>		-X	\ <u>\</u>		거	X	-	8	Buens Then @ 28
	42-0		4			-	-			-			MW-min-man-man-man-man-man-man-man-man-man-ma
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Film Interpreter

SNT-TC-1A Level

Date of Inspection

3-29-22



Date

RADIOGRAPHIC INSPECTION REPORT

(b)	(4)
Date: _	5/16/22
Page _	/_ of 3

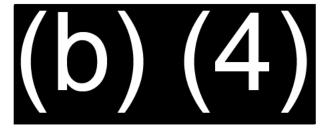
Customer

Radiographer

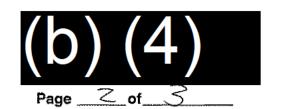
					1 1				1	1				
W19-171	12-24	,020	, X	/										***
6,19-2121	74-34	.0Ze	2 X	+				 					6.	Other
17 14-6 16	25-47	1020	X			_		1					5.	Elliptical Plate
KKZR1	14-28		X	 			\vdash				~		-	
KK-1/21	25-42	ررى			\bigcap	1	\sim	\nearrow	\sim	\sim				
													4. 0	ouble Wall 0/90
KVZ RI	42-0		X		+	_				H	-	1		
17.10.10.	0-14	-ore		$f_{i}f_{i}$	+	-	1	+	\leftarrow	/ /	(b) (3) (A)	3	-	0
	W TO THE TOTAL THE TOTAL TO THE	√JG√	TPNESS			36 S	(F)			27	The state of the s	REMARKS	3.	Double Wall
ELD #	# #	GEOME UNSHAF		[]		30/	10 10 10 10 10 10 10 10 10 10 10 10 10 1				The state of the s			Offset
<u>sfc</u> (b) (3) (A) DOUBLE L	OAD[]	BACK (b) (3)		LOCATI	7'7		ROCES	SING	- M	MANUAL AUTOMAT	(b) (3) (A)		
FOCAL SPOT SIZE	SINGLE LO		MIDDLE /		MATERI		_	XPOSU		ـــــد	5:00	JOINT TYPE BALL	2.	Single Wall
SOURCE STRENGTH	30 SIZE					13	1	ECHNIC	UE U	SED	3	THICKNESS (b) (3) (A)		Panoramic
RT SOURCE TRIC	77 FILM AG	FADS	PB SCREEN	18 1	PENS:	ASTM	1 5	ниѕ м	AT'L/T	THKNS		MATERIAL CS		
PROJECT Emergery		DWG. NO.			PRO	CEDUR	E		REV			ROC. 831.3 REVZO15	1	
customer (b) (4)	CUST JOE	3#		SPE	CIFICAT	ION	ASN	Έl	/	ACCEP	TANCE ASME B31.3	1.	Single Wall

SNT-TC-1A Level

Date of Inspection



RADIOGRAPHIC INSPECTION REPORT



WELD#	VIEW #	GEOMETRIC UNSHARPN *UG*	ESS		\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	16 16 16 16 16 16 16 16 16 16 16 16 16 1	**************************************		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	REMARKS
ω zo-3	0~13	.020	Χ						1				
	/3-26		Х								1		
	26-0		X	/	4								
								_	_		_		
w20-4	0-13	.020	X					_	_	_		 	
	13-26	-	X					_	-	_	_		
	26-0		X		_			_	_	_		 	
		1			-			_	_	_			
WKF-Z	0-13	,020	X		1	ļ		4	_	4	_		
	13-26		X			ļ,.		_	4			 	
	26-0		X	_	-			\dashv	\dashv	******			
								4	4				
WN-1	0-14		Х					_	_		_	 	
	14-28	/_	X					4		_	_		
	28-42		X					-			_		
	42-0	/	Χ,					_			_	 	
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(b) (6)

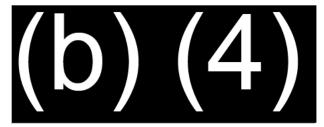
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5-16-2022

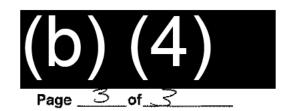
Film Interpreter

SNT-TC-1A Level

Date of Inspection



RADIOGRAPHIC INSPECTION REPORT



WELD#	VIEW #	GEOMETRIC UNSHARPN 'UG'	; ESS		Signal Signal	Sep Sep	2 20 20 20 20 20 20 20 20 20 20 20 20 20	100 S	Que de la constante de la cons	Sarri /] 	REMARKS
WN-Z	6-14	,020	X									
	14-28		Χ									
	28-42		X									
	42-0		X									
						_						
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							-					

(b) (6)

Film Interpreter SNT-TC-1A Level

Date of Inspection

5-16-2022

SHEET NOTES:

- 1. COMPONENTS NOTED AS TEMPORARY (IDENTIFIED WITH CROSS HATCH) ARE FOR RESTRAINT OF PIPING WHILE TANKS ARE OUT OF SERVICE AND WILL NOT BE SUBJECT TO INTERNAL PRESSURES. LABEL PIPING TO INDICATE IT IS NOT FOR FUEL USE.
- LABEL PIPMS OF INDICATE IT IS NOT FOR FUEL USE.

 RADOGRAPHIC EXMANDION MUST BE PERFORMED ON ALL BUTT
 WELDS FOR TEMPFORM AND PERMANDENT COMPONENTS.

 ALL SHOP PERFORMED WELDS, EXCEPT THOSE IDDNIFTED FOR
 TEMPORARY COMPONENTS, MUST BE HYDROSTATICALLY TISSTED
 WITH MARTER TO INTERPORATE OF TERMANDING COMPONENTS,
 BUTTHED AS "THOSE—DELIMIT TIE—IN WELDS" ANE SUBJECT TO
- TIE-IN WELD EXAMINATION.

TE-IN WELD EXAMINATION

- 1. IN ADDITION TO FINAL RADIOGRAPHIC EXAMINATION, TE-IN WELDS IDENTFIED AS "HYDRO EXEMPT TIE-IN WELDS" MUST RECEIVE AN EN-HANCED IN-PROCESS EXAMINATION IN ACCORDANCE WITH ASME
 - BATJA SECTION 344.7.

 IN-PROCESS EXAMINATION MUST BE PERFORMED BY A CERTIFIED WELDING INSPECTOR AND INCLUDES VISUAL EXAMINATION OF:
 - JOINT PREPARTION AND CLEANLINESS
 PREHEATING.

 ETT—UP, JOINT CLEARANCE, AND INTERNAL ALIGNMENT PRIOR
- 2.1. 2.2. 2.3.
- 2.4.
- PIT-UP, JOHN CLEWARLE, AND MICHAEL AUGMENT PRICE TO JOHNNG. VARHELES SPECIFIED BY JOHNG PROCEDURE INCLUDING FILLER MATERIAL POSTION, AND ELECTRODE EXTERNAL CONDITION OF THE ROOT PASS AFTER CLEANING.

- 3. EXEMPL COMMITTION OF THE MOST PRISE PRISE CERTIFIED.

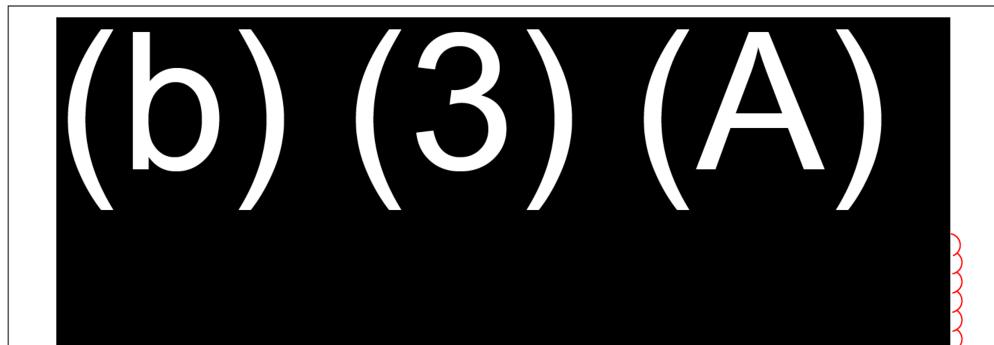
 1.6. SLAG FEMOVIL AND WELD CONDITION.

 7. APPEARANCE OF THE FINSHED JOINT.

 CLOSIFE WILDS THAT RECEIVE IN-PROCESS EVANIMATION AND 100% RADIOGRAPHIC EXAMINATION ARE EXEMPT FROM HYDROSTATIC TESTING IN ACCORDANCE WITH ASME B31.3 SECTION 345.2.3.

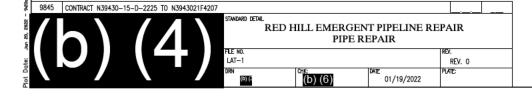
CONTRACT N39430-15-D-2225 TO N3943021F4207 STANDARD DETAIL RED HILL EMERGENT PIPELINE REPAIR GENERAL VIEW - UPPER PIPING G-1 REV. 1 PLATE: 03/18/2022

CONSTRUCTION SUBMITTAL



SCALE: NTS

SCALE: NTS





INDICATES PIPE BEING REPLACED

CONSTRUCTION SUBMITTAL

				QUALI	TY VALIDATION (QV) REPO	ORT			1.0
			1	Red Hill B	Sulk Fuel Storage Fac	ility Defue	el			
Vali	idation Firm	HDR Env	vironmenta	l, Operatio	ns and Construction,	Inc.		Repair No.	050	
	Address	9781 S. I	Meridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	(b) (3) (A)	
C	Contract No.	FA89031	5D0007, D	.O. FA890	3 19 F 0027			Report Date	I 25 MAY 2	2023
Q	V Engineer	(b) (6)			Phone (b) (6)	8	Email	(b) (6)	hdrir	nc.com
	,				VALIDATION					
So	urce]	ic Area		Location	Reference				
NDAA 43 Underground Pumphouse							Various			
Repair Description Repair Descri							Source Contract Reference			house
Co	Description of Contractor QC Method(s) Used NAVFAC EXWC perform identify existing hazards necessary to mitigate the contractor QC method (s) Used				defueling and the rep			ntractor QC s Reviewed	N/A	
Va	ption of QA lidation and Observations	FLCPH ex verification	ecuted a wo	ork order to ided to JTF	confirm all valves we					party
		Final acce	ptance by go	overnment.	Date: 15 MAY 2023		r -			₽
<u> </u>	Rework	Needed	ľ		Photo Record Attached	1		r Work Vali	dated as Co	mplete
\circ	Yes	•	No		See Pages 2 6.		•	Yes	O	No
following (b) (3) Reference mitigation	Repair Description cont. "Disassemble threaded connections, retape, and reassemble to prevent future weeps. The following locations should addressed: (b) (3) (A) (b) (3) (A) Reference 19 MAY 2023 Memo in which (b) (4) re assessed deficiency items for mechanical integrity. The recommended mitigation for these repairs are "FLC will tighten packing; monitor during de fueling operations; use drip pans and absorbents as a precautionary measure." CERTIFICATION									
				OV ENG		(h) /	(6)			
report was	tify that repair personally sub			QV ENG	INEER SIGNATURE	(D) ((6)			
report is true	е.				DATE	25 MAY 2	2023			

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

(b) (3) (A) inspected, no active weeps noted.

(b) (3) (A)

(b) (3) (A) inspected, staining visible but no active weeps noted.

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Packing on (b) (3) (A) tightened; no active weeps noted.

(b) (3) (A), (b) (4)

Packing on (b) (3) (A) tightened; no active weeps noted.

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Packing on (b) (3) (A) tightened; no active weeps noted.

(b) (3) (A)

Packing on (b) (3) (A)

ightened; no active weeps noted.

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Packing on (b) (3) (A) lightened; no active weeps noted.

(b) (3) (A)

Packing on (b) (3) (A) tightened; no active weeps noted.

QUALITY	ASSURANCE	VALIDATION	REPORT
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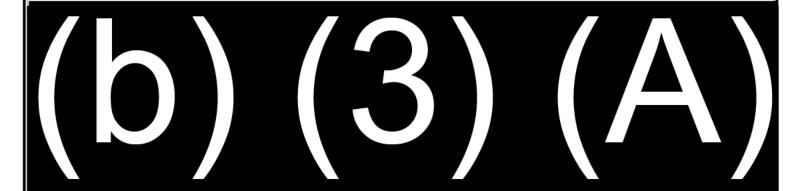
Red Hill Bulk Fuel Storage Facility Defuel



Packing on (b) (3) (A) tightened; no active weeps noted.

				QUALI	TY VALIDATION (QV) REPO	ORT			
]	Red Hill B	Bulk Fuel Storage Fac	cility Defue	el			
Vali	dation Firm	HDR Env	ironmenta	l, Operatio	ns and Construction,	Inc.		Repair No.	051	
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	(b) (3) (A)	
C	Contract No.	FA89031	5D0007, D	O. FA890)3-19-F-0027			Report Date	25 MAY 2	2023
Q	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrir	nc.com
					VALIDATION					
Sor	urce	F	PDF Page N	Io.	Facility Geograph	ic Area		Location	Reference	
NDAA	NDAA 43 Underground Pumphouse									
Several transducers are attached to the piping and the conduits do not have seal off fittings. Additionally, the conduits are rigid which could break under pipe movement. (continued in comments below).							Sour	ce Contract Reference		
Cor	Description of Contractor QC Method(s) Used NAVFAC EXWC performed a Haza identify existing hazards with defue necessary to mitigate the risks.							ntractor QC s Reviewed		
Val	ption of QA lidation and observations				d on integrity assessr	nent. See	comments	below.		
	D		otance by go		Date: N/A	1	D	. 3371- 37 - 1:	1-4-1	1.4.
0	Yes	Needed	No		Photo Record Attached See Page 2.	1	Repair	r Work Vali Yes	dated as Co	No
(b) (3) (A) Reference conduits v	Repair Description cont. "Provide appropriate seal fittings and flexible conduit connections at transducers. Remove and cap (b) (3) (A) sensor." Reference 19 MAY 2023 Memo in which (b) (4) re-assessed deficiency items for mechanical integrity. The affected conduits were cross-referenced with NAVSUP FLC and DLA and confirmed to be inactive/de-energized. The recommended mitigation for these repairs are "PITs have been in place for years with thermo wells attached to the pipeline. Leave in place									
					CERTIFICATION					
		r work validate estantiated an		QV ENG	SINEER SIGNATURE	(b) ((6)			
report is true					DATE	25 MAY 2	2023			

Red Hill Bulk Fuel Storage Facility Defuel



Representative photographs.

			QUALI	TY VALIDATION (QV) REPO	ORT			
]	Red Hill B	sulk Fuel Storage Fac	cility Defue	el			
Validation Firm	HDR Envi	ronmental	, Operatio	ns and Construction,	Inc.		Repair No.	053	
Address	9781 S. M	leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID))(3) (A)	
Contract No.	FA890315	5D0007, D	.O. FA890	03-19-F-0027			Report Date	25 MAY 2	2023
QV Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrir	nc.com
				VALIDATION					
Source	P	DF Page N	o.	Facility Geograph	ic Area		Location	Reference	
NDAA	NDAA 43 Underground Pumphouse								
Repair Description There is staining and some minor drips noted on the (b) (3) (A) hroughout the UGPH. Drips appear to be coming from the stem injection port. Service valves. N/A for in-h labor. Reference								-house	
Description of Contractor QC Method(s) Used NAVFAC EXWC performed a Hazard Assessment Report to identify existing hazards with defueling and the repairs necessary to mitigate the risks. NAVFAC EXWC performed a Hazard Assessment Report to identify existing hazards with defueling and the repairs necessary to mitigate the risks. NAVFAC EXWC performed a Hazard Assessment Report to identify existing hazards with defueling and the repairs necessary to mitigate the risks. Two-party integrity verification by FLC personnel.									
	verification JTF-RH QV (b) (3)	team cond	ided to JTF-	confirm all valves were-RH QV. The visit on 24 May 2023 Date: 15 MAY 2023		<u></u>		with two-p	oarty
Rework	Needed			Photo Record Attached	d	Repair	Work Vali	dated as Co	mplete
Yes	\odot	No		See Page 2.		•	Yes	0	No
mitigation for these	repairs are I tighten pa ure."	"No significking; mon	cant stain	-assessed deficiency ing or drips. Servicing de-fueling operation CERTIFICATION	g of valves ns; use drip	is not nece pans and	essary. Tig	htening of	

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

(b) (3) (A)

(b) (3) (A)

(b) (3) (A)

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

(b) (3) (A)

tightened; no active weeps noted.

(b) (3) (A)

(b) (3) (A)

tightened; no active weeps noted.

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

(b) (3) (A)

ightened; no active weeps noted.

(b) (3) (A)

(b) (3) (A)

ightened; no active weeps noted.

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

(b) (3) (A)

ightened; no active weeps noted.

(b) (3) (A)

(b) (3) (A)

tightened; no active weeps noted.

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

(b) (3) (A)

tightened; no active weeps noted.

(b) (3) (A)

(b) (3) (A)

tightened; no active weeps noted.

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Drip pans and absorbent pads for monitoring.

			QUALI	TY VALIDATION (QV) REPO	ORT				
]	Red Hill B	Sulk Fuel Storage Fac	cility Defue	el				
Validation Firm	HDR Envi	ronmental	, Operatio	ns and Construction,	Inc.		Repair No.	087		
Address	9781 S. M	eridian Bl	vd., Suite	400, Englewood, CO	80112	10	Repair ID	(b) (3) (A)		
Contract No.	FA890315	D0007, D	.O. FA890	3 19 F 0027			Report Date	25 MAY 2	2023	
QV Engineer	(b) (6)			Phone (b) (6)	10	Email	(b) (6)	hdrir	nc.com	
				VALIDATION						
Source	PI	DF Page N	o.	Facility Geograph	ic Area		Location	Reference		
NDAA	51			Underground Pump	house					
Repair Description	Repair Description threaded connections associated with these fittings. (continued in comments below)							Source Contract Reference		
Description of Contractor QC Method(s) Used NAVFAC EXWC performed a Hazard Assessment Report to identify existing hazards with defueling and the repairs necessary to mitigate the risks. Two party integrity verification by FLC personnel.							ntractor QC s Reviewed	N/A		
Description of QA Validation and Observations	FLCPH exec verification JTF RH QV (b) (3) (A)	cuted a wo n was provi team cond been serv	ork order to ided to JTF ducted a sit iced.	o confirm all valves were RH QV. re visit on 24 May 2023				with two p		
Power	Final accept	tance by go	overnment.	Date: 16 MAY 2023 Photo Record Attached	4	Donois	Work Vali	detad on Co	+	
Yes	• Needed	No		See Pages 2 3.		• Repair	Yes	O	No	
Comments mechanical integrity measure."			(b) (4)	tions, retape, an only if warranted."	o) (3) (A	()	j	not		
				CERTIFICATION						
I hereby certify that repair			QV ENG	INEER SIGNATURE	(b)	(6)				
report was personally sul report is true.	ostantiated and	i this		DATE	25 MAY 2	` '				

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Packing tightened on (b) (3) (A)

no active weeps noted.

(b) (3) (A)

Packing tightened on (b) (3) (A)

no active weeps noted.

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Packing tightened on (b) (3) (A)

no active weeps noted.

(b) (3) (A)

Packing tightened on (b) (3) (A)

no active weeps noted.

				QUALI	TY VALIDATION (QV) REPO	ORT				
]	Red Hill B	Bulk Fuel Storage Fac	ility Defue	el				
Valid	dation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	088		
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112	-	Repair ID	(b) (3) (A)		
С	ontract No.	FA89031	5D0007, D	O. FA890)3-19-F-0027			Report Date	1 25 MAY 2	2023	
Q	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrin	nc.com	
					VALIDATION						
Soi	ırce	I	PDF Page N	lo.	Facility Geograph	ic Area		Location	Reference		
NDAA	NDAA 52 Undergro					nouse	Various				
Repair I	Repair Description Repair Descri							N/A Source Contract Reference			
Cor	Description of Contractor QC Method(s) Used				defueling and the repa		ntractor QC s Reviewed				
Val	otion of QA lidation and bservations		epair provid	led based (on integrity assessmen	t. See comr	nents belov	v.			
			otance by go	overnment.	Date: N/A		Π				
	Rework Yes	Needed	No		Photo Record Attached	L		Work Vali Yes	idated as Co	mplete No	
(b) (3) (A) Reference	escription of sens	or." 2023 Mem	ide approp	(b) (4) re	See Page 2. fittings and flexible co e-assessed deficiency and DLA and confirm	items for r	mechanical	transducer	The affecte	and cap	
										+	
					CERTIFICATION						
		r work validate estantiated an		QV ENG	INEER SIGNATURE	(6)					
report is true		uuuu uii			DATE	25 MAY 2	2023				

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Representative photographs.

				QUALI	TY VALIDATION (QV) REPO	ORT			1.
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	l			
Valid	ation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	090	
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	(b) (3) (A)	U.
Со	ntract No.	FA89031	5D0007, D	.O. FA890	3 19 F 0027			Report Date	25 MAY 2	023
QV	/ Engineer	(b) (6)			Phone		Email (b) (6) hdrinc.con			c.com
					VALIDATION					
Sour	rce	F	PDF Page N	0.	Facility Geograph	ic Area		Location	Reference	-
NDAA	52 Underground Pumphouse				(b) (3) ((A)				
Repair D	(b) (3) (A)				Source Contract Reference			house		
Description of Contractor QC Method(s) Used NAVFAC EXWC performed a Hazard Assessment Report to identify existing hazards with defueling and the repairs necessary to mitigate the risks. Two party integrity verification by FLC personnel.						ntractor QC s Reviewed	N/A	10		
Valid	tion of QA dation and servations	verificatio ЛF RH QV	n was provi	ided to JTF	e visit on 24 May 2023			work order	with two p	•
	Dawork	Final acception Needed	otance by go		Date: 16 MAY 2023 Photo Record Attached	1	Danair	Work Vali	dated as Cor	mplete
0	Yes	•	No		See Pages 2 4.	,43	()	Yes	O	No
Comments (b) (3) (A) Reference 19 MAY 2023 Memo in which (b) (4) re assessed deficiency items for mechanical integrity. (b) (5)										
I hereby certif				QV ENG	INEER SIGNATURE	(b) (<u>(6)</u>			
report was personally substantiated and report is true.			d this		DATE	25 MAY 2	2023			

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Packing on (b) (3) (A) tightened; no active weeps noted.

(3)

Packing or(b) (3) (A) lightened; no active weeps noted.

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Packing or (b) (3) (A)

ghtened; no active weeps noted.

(b) (3) (A)

Packing on (b) (3) (A)

thtened; no active weeps noted.

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Packing on (b) (3) (A) ghtened; Facility will monitor weeping.

(b) (3) (A)

Packing on (b) (3) (A)tightened; no active weeps noted.

	QUALITY VALIDATION (QV) REPORT									
]	Red Hill B	ulk Fuel Storage Fac	ility Defue	l			
Valid	dation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	093	
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	(b) (3) (A)	
Co	ontract No.	FA89031	5D0007, D	.O. FA890	3-19-F-0027			Report Date	25 MAY 2	023
Q	V Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrin	ıc.com
					VALIDATION					
Source PDF Page No			o.	Facility Geograph	ic Area		Location	Reference		
NDAA	AA 52 Undergr				Underground Pumpl	nouse	(b) (3) (A)			
(b) (3) (A)s weeping at bonn Repair Description				t bonnet. Service val	ve.	Sour	ce Contract Reference	N/A for in- labor.	house	
Contractor QC Method(s) Used identify existing haza necessary to mitigate				rformed a Hazard Assessment Report to ards with defueling and the repairs te the risks. verification by FLC personnel.			I	Contractor QC Records Reviewed		
Vali	tion of QA idation and bservations	verificatio JTF-RH QV	n was provi / team conc	ded to JTF-	e visit on 24 May 2023					
	Dl-		otance by go		Date: 16 MAY 2023	,	P in	3371 - 3.7 - 1:	1-4-1 0	
0	Rework Yes	Needed	No		Photo Record Attached See Page 2.	1	Repair	Yes	dated as Cor	No
Comments (b) (3) (A) Reference 19 MAY 2023 Memo in which (b) (4) re-assessed deficiency items for mechanical integrity. (b) (5) CERTIFICATION I hereby certify that repair work validated in this QV ENGINEER SIGNATURE (b) (6)										
report was personally substantia report is true.		stantiated an	d this		DATE	25 MAY 2				

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Weeping bonnet of (b) (3) (A) ate valve.

(b) (3) (A)

Packing tightened on (b) (3) (A)

no weeps noted.

QUALITY VALIDATION (QV) REPORT										
Red Hill Bulk Fuel Storage Facility Defuel										
Validation Fir	m HDR Env	rironmenta	l, Operatio	ns and Construction,	Inc.		Repair No.	100		
Addre	ss 9781 S. N	Meridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	(b) (3) (A)		
Contract N	o. FA89031	5D0007, D	O. FA890)3-19-F-0027			Report Date	25 MAY 2	2023	
QV Engine	er (b) (6)			Phone (b) (6)		Email	(b) (6)	hdrir	nc.com	
				VALIDATION						
Source PDF Page No. Facility Geographic Area				Location	Reference					
NDAA	62 Underground Pumphouse			house	Various					
Repair Description (b) (3) (A) Source Contract Reference					-house					
Description of Contractor QC Method(s) Used NAVFAC EXWC performed a Hazard Assessment Report to identify existing hazards with defueling and the repairs necessary to mitigate the risks. Two-party integrity verification by FLC personnel.						ntractor QC s Reviewed	N/A			
Description of Q Validation a Observatio	verification A ad JTF-RH QV ns serviced.	n was prov / team cond	ided to JTF	te visit on 24 May 2023		·			ty been	
		ptance by go	overnment.	Date: 18 MAY 2023		<u> </u>	*** 1 ** 1	1.1.6	.	
Yes	rk Needed	No		Photo Record Attached See Page 2.	.1	Repair	Yes	dated as Co	No	
Comments (b) (3) (A) Valves do not appear to be brass. Reference 19 MAY 2023 Memo in which (b) (4) re-assessed deficiency items for mechanical integrity. (b) (5) CERTIFICATION I hereby certify that repair work validated in this QV ENGINEER SIGNATURE (b) (6)										
report was personally s report is true.				DATE	25 MAY 2	2023				

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Tightened packing on (b) (3) (A) no weeps noted.

(b) (3) (A)

	QUALITY VALIDATION (QV) REPORT										
	Red Hill Bulk Fuel Storage Facility Defuel										
Validat	tion Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	101		
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	(b) (3) (A)		
Con	tract No.	FA89031	5D0007, D	.O. FA890	3-19-F-0027			Report Date	25 MAY 2	023	
QV I	Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrin	nc.com	
					VALIDATION						
Sourc	e	I	PDF Page N	o.	Facility Geograph	ic Area		Location	Reference		
NDAA		62			Underground Pumpl	nouse	Various				
Repair Description Fuel staining and weeping was noted on the pipe tie-ins associated with the temperature sensors, pressure sensors, high point vents, and low point drains. Weeping is present at threaded connections associated with these fittings. (continued in comments below).					sensors, resent at	Source Contract Reference			-house		
Description of Contractor QC Method(s) Used NAVFAC EXWC performed a Hazard Assessment Report to identify existing hazards with defueling and the repairs necessary to mitigate the risks. Two-party integrity verification by FLC personnel.							ntractor QC s Reviewed	N/A			
	on of QA ation and ervations	verificatio JTF-RH QV serviced.	n was provi	ided to JTF-	e visit on 24 May 2023					been	
	Rework		ptance by go		Date: 15 MAY 2023 Photo Record Attached	ı	Panair	. Work Voli	dated as Co	+ mplete	
0	Yes	•	No		See Page 2.	•	(e)	Yes	O	No	
Comments Repair Description cont. "Disassemble threaded connections, retape, and reassemble to prevent future weeps. (b) (3) (A) serviced. Reference 19 MAY 2023 Memo in which (b) (4) re-assessed deficiency items for mechanical integrity. (b) (5) CERTIFICATION											
I hereby certify that repair work validated in this report was personally substantiated and this report is true.				QV ENG	INEER SIGNATURE DATE	(b) 25 MAY 2	(6) 2023				

OLIAL ITY	ACCUIDANCE	VAL IDA	TIALL	DEDODT
QUALITY	ASSURANCE	VALIDA	AHUN	REPORT

Red Hill Bulk Fuel Storage Facility Defuel



	QUALITY VALIDATION (QV) REPORT										
	Red Hill Bulk Fuel Storage Facility Defuel										
Valida	ation Firm	HDR Env	ironmental	, Operatio	ns and Construction,	Inc.		Repair No.	103		
	Address	9781 S. N	/leridian Bl	vd., Suite	400, Englewood, CO	80112		Repair ID	(b) (3) (A)		
Со	ontract No.	FA89031	5D0007, D	.O. FA890	3-19-F-0027			Report Date	25 MAY 2	2023	
QV	/ Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrir	nc.com	
					VALIDATION						
Source PDF Page No.			lo.	Facility Geograph	ic Area		Location	Reference			
NDAA	DAA 62 Underground Pumphouse				nouse	Various					
Several transducers are attached to the piping and the conduits do not have seal off fittings. Additionally, the conduits are rigid which could break under pipe movement. (continued in comments below).					N/A Source Contract Reference						
Description of Contractor QC Method(s) Used NAVFAC EXWC performed a Hazard Assessment Report to identify existing hazards with defueling and the repairs necessary to mitigate the risks.							ntractor QC s Reviewed	N/A			
Valid	tion of QA dation and servations				d on integrity assessr	nent. See	comments	below.			
	Pework	Final acception Needed	otance by go		Date: N/A Photo Record Attached	ı	Denair	Work Vali	dated as Co	mplete	
0	Yes	•	No		See Page 2.	•	(a)	Yes		No	
Comments Repair Description cont. "Provide appropriate seal fittings and flexible conduit connections at transducers. Remove and cap (b) (3) (A) sensor." Reference 19 MAY 2023 Memo in which (b) (4) re-assessed deficiency items for mechanical integrity. The affected conduits were cross-referenced with NAVSUP FLC and DLA and confirmed to be inactive/de-energized. (b) (5)											
	+										
					CERTIFICATION	/ / / /	(C)				
I hereby certif				QV ENG	INEER SIGNATURE	(a)	(b) (6)				
report was personally sub- report is true.					DATE	25 MAY 2	2023				

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Representative photographs.

QUALITY VALIDATION (QV) REPORT											
Red Hill Bulk Fuel Storage Facility Defuel											
Validation Firm	HDR Env	rironmenta	l, Operatio	ns and Construction,	Inc.		Repair No.	105			
Address	9781 S. N	Meridian B l	vd., Suite	400, Englewood, CO	80112		Repair ID	(b) (3) (A)			
Contract No.	FA89031	5D0007, D	O. FA890	03-19-F-0027			Report Date	25 MAY 2	2023		
QV Engineer	(b) (6)			Phone (b) (6)		Email	(b) (6)	hdrir	nc.com		
VALIDATION											
Source PDF Page N			lo.	Facility Geograph	ic Area		Location	Reference			
NDAA 62 Underground Pumpho				house	Ball Valve	es					
Repair Description There is staining and some minor drips noted on the throughout the UGPH. Drips appear to be coming from the stem injection port. Service valves.					Source Contract Reference			-house			
Description of Contractor QC Method(s) Used NAVFAC EXWC performed a Hazard Assessment Report to identify existing hazards with defueling and the repairs necessary to mitigate the risks. Two-party integrity verification by FLC personnel.						N/A Contractor QC Records Reviewed					
Validation and	FLCPH executed a work order to confirm all valves were serviced. Completed work order with two-party verification was provided to JTF-RH QV. Description of QA Validation and Observations TF-RH QV team conducted a site visit on 24 May 2023 and confirmed VValves (b) (3) (A) (b) (3) (A) ad been serviced. Final acceptance by government. Date: 15 MAY 2023								earty		
Rework	Needed			Photo Record Attached	i	Repair	r Work Vali	dated as Co	mplete		
Yes	•	No		See Pages 2-3.		•	Yes	0	No		
Reference 19 MAY 2023 Memo in which (b) (4) re-assessed deficiency items for mechanical integrity. The recommended mitigation for these repairs are "No significant staining or drips. Servicing of valves is not necessary. Tightening of packing is sufficient. FLC will tighten packing; monitor during de-fueling operations; use drip pans and absorbents as a precautionary measure." CERTIFICATION Thereby certify that repair work validated in this report was personally substantiated and this report is true. DATE DATE DATE 25 MAY 2023											

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Tightened packing on (b) (3) (A) to weeps noted.

(b) (3) (A)

Red Hill Bulk Fuel Storage Facility Defuel

(b) (3) (A)

Tightened packing on (b) (3) (A) no weeps noted.

(b) (3) (A)

DEPARTMENT OF THE NAVY

NAVAL FACILITIES ENGINEERING AND EXPEDITIONARY WARFARE CENTER 1000 23RD AVENUE PORT HUENEME CA 93043-4301

5216 Ser TD/186 19 May 23

MEMORANDUM

From: Technical Director, Naval Facilities Engineering and Expeditionary Warfare Center

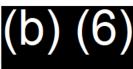
To: Joint Task Force Red Hill

Subj: JOINT TASK FORCE RED HILL CONCURRENCE

Encl: (1) Repairs Reassessed for Mechanical Integrity

- 1. This memorandum is intended to communicate Naval Facilities Engineering and Expeditionary Warfare Center's (NAVFAC EXWC's) concurrence with Joint Task Force Red Hill (JTF-RH) repair intentions pertaining to the Under Ground Pump House for defueling.
- 2. NAVFAC EXWC released a Hazard Assessment Report (HAR) report in October of 2022. The HAR identified existing hazards associated with defueling the Red Hill Bulk Fuel Storage Facility, and repairs necessary to mitigate those hazards. The JTF-RH Repair Directorate proposed inclusion of RiskTec-identified findings into the list of hazard-mitigation repairs. Those findings are identified in enclosure (1).
- 3. NAVFAC EXWC concurs with the findings and recommended mitigations identified in enclosure (1).

4. My point of contact for this action is (b) (6) at (b) (6) or (b) (6)



Subj: JOINT TASK FORCE RED HILL CONCURRENCE

Repairs Reassessed for Mechanical Integrity

	DEF ID	Description	Location	(b) (4) reassessed deficiency items on 29 April 2023	Recommended Mitigation
Repair #50	(b	(3)) (A)	No corrosion observed, no signs of weeping, disassembly and reassembly not warranted	(b) (5)
Repair #53				No significant staining or drips. Servicing of valves is not necessary. Tightening of packing is sufficient	
				Staining/weeping present; pressure relief port integrity in question	
Repair #87				No corrosion observed, minor signs of weeping, disassembly and reassembly not warranted	
Repair #90				No significant staining or drips. Servicing of valves is not necessary.	

Subj: JOINT TASK FORCE RED HILL CONCURRENCE

Di	EF ID	Description	Location	(b) (4) reassessed deficiency items on 29 April 2023	Recommended	Mitigation
	(b)	(3)	(A)	Staining/weeping present; pressure relief port integrity in question	(b)	(5)
Repair #100				no corrosion observed, no signs of weeping, replacement not warranted		
Repair #101				no corrosion observed, no signs of weeping, disassembly/replacment not warranted		
Repair #105				No significant staining or drips. Servicing of valves is not necessary.		
				Staining/weeping present; pressure relief port integrity in question		
Repair #93				Servicing of valve is not necessary		
				Existing corrosion present		

Subj: JOINT TASK FORCE RED HILL CONCURRENCE

DEF ID	Description	Location	(b) (4) reassessed deficiency items on 29 April 2023	Recommended Mitigation
(b	$\overline{)}$ (3)	(A)	Studs/bolts not seated properly at top and bottom of each side	(b) (5)
(D		(, ,	Staining/weeping present	
			Existing corrosion present	
Repair #51			PITs have been in place for years with thermo wells attached to the	
Repair #88 Repair #103			pipeline.	