(b) (3) (A)

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 006 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (4)28 |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 25 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) |
| Email | (b) (6) hdrinc.com | | |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| (b) (4) | 319 | Tank Gallery | Oil Tight Door |

| | | | |
|---|---|---|---|
| Repair Description | Ensure Oil Tight Door 1) will remain functional during the loss of power and 2) is part of a PM program to improve the reliability of closure on demand. | Source Contract Reference | N/A |
| Description of Contractor QC Method(s) Used | Contractor ((b) (4) performed semi-annual PM on the Oil Tight Door; report attached. Oil Tight Door passed operational inspection using primary power. | Contractor QC Records Reviewed | OPD Checklist - (b) (4) |
| Description of QA Validation and Observations | Semi-annual PMs for Oil Tight Door using primary power will continue.<br><br>Final acceptance by government. Date: 13 APR 2023 | | |

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

Comments

Door will be locked in the OPEN position during defueling operations.

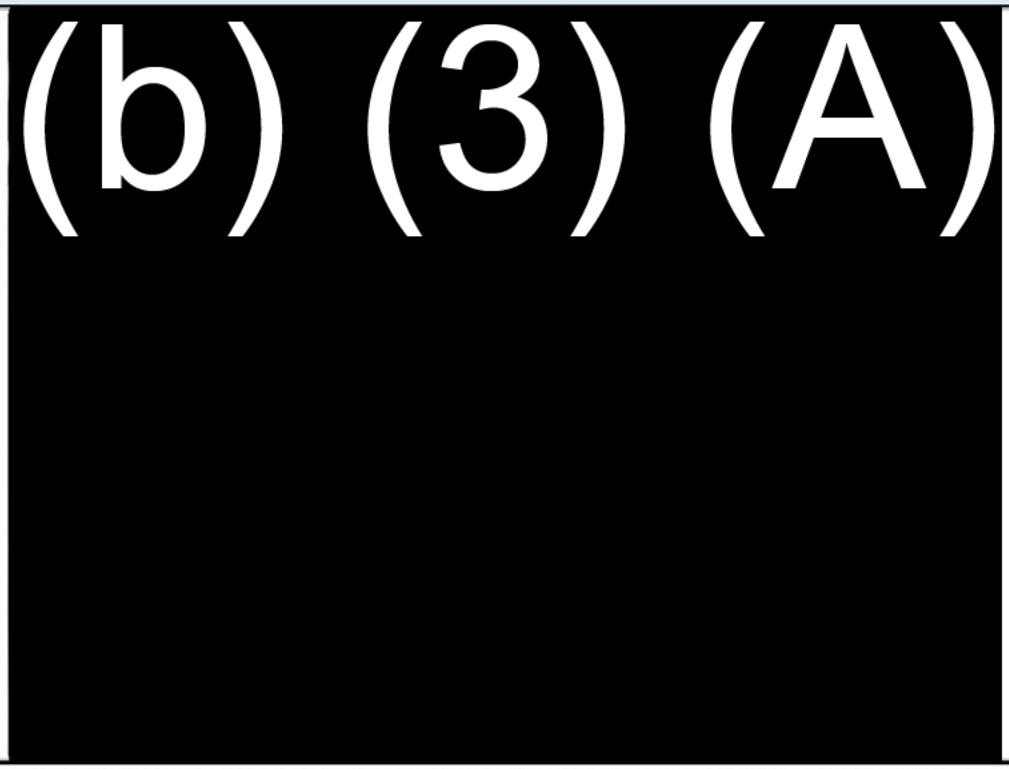
(b) (4) semi-annual PM indicates door functions properly. A review of as-built electrical drawings indicates the Oil Tight Door is connected to back-up power.

## 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 | 25 MAY 2023 |

## QUALITY ASSURANCE VALIDATION 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. (b) (3) (A) [redacted] 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) [redacted]

**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) [redacted]. JTF-RH conducted tank tightness testing on the Main FOR Sump on April 7, 2023 and provided DOH and EPA with a final report on May 10, 2023. JTF-RH collaborated with DOH and EPA during the DTWG to develop an alternate means to test the (b) (3) (A) [redacted] 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

(b) (4)

Red Hill Fuel Storage Facility OPD | 22152 - Hawaii

# Oil Pressure Door Test & Inspection Report

**Submitted To:**
Red Hill Fuel Storage Facility

**Submitted By:**
(b) (4), (b) (6)

**Reviewed by:**
(b) (6)

2023-03-23

# FLEET LOGISTICS CENTER OIL PRESSURE DOOR TEST AND INSPECTION

| | | | |
|---|---|---|---|
| Date of Inspection: March 23, 2023 | | Technician: (b) (6) | Title: Lead Technician/Alt PM |
| Type of Inspection: ☐ Annual ☒ Semi-Annual | | | |

| Protected Property | | Inspection Company | |
|---|---|---|---|
| Name: | Oil Pressure Door (OPD) | Name: | (b) (4) |
| Address: | Redhill Fuel Storage Facility | Address: | |
| City: | Honolulu | City: | |
| State: | Hawaii Zip: 96860 | State: | |
| Contact: | (b) (6) | Contact: | |
| Phone: | (b) (6) | Phone: | |

| System Owner | | | | | |
|---|---|---|---|---|---|
| Name: | NAVFAC | | | | |
| Location: | JBPHH | | | | |
| City: | Honolulu | State: | Hawaii | Zip: | 96860 |

| Nameplate Information: | | | |
|---|---|---|---|
| Design: | Williams Machine Works, INC | Description: | High Pressure Oil Tight Door |
| Serial Number: | 151009 01 | Clear Opening: | (b) (3) (A) |
| Pressure Rating: | 74 PSIG Seating Only | Project: | P 1551 Upgrade to Redhill Fuel Storage Facility |

| Inspection: | Yes | No | N/A |
|---|---|---|---|
| Is the door open upon arrival? | ☒ | ☐ | ☐ |
| Does the system have power? | ☒ | ☐ | ☐ |
| Is the system in trouble condition on arrival? | ☐ | ☒ | ☐ |
| Is obstruction/debris present throughout door entry way? | ☐ | ☒ | ☐ |
| Is obstruction/debris present on scissor lift track? | ☐ | ☒ | ☐ |
| Does the system show signs of damage? | ☐ | ☒ | ☐ |
| Is the scissor lift track in the normal position? | ☒ | ☐ | ☐ |
| Is the scissor lift track in the ON position? | ☒ | ☐ | ☐ |
| Is the OPD sump pump in the ON (auto) position? | ☒ | ☐ | ☐ |
| **Test:** | **Yes** | **No** | **N/A** |
| Did the manual test switch initiate the door closing sequence? | ☒ | ☐ | ☐ |
| Did the fire alarm control panel OPD switch initiate the door closing sequence? | ☒ | ☐ | ☐ |
| Did the OPD sump pump high-level float switch initiate the door closing sequence? | ☒ | ☐ | ☐ |
| Did the notification appliance operate properly during the door closing sequence? | ☒ | ☐ | ☐ |
| Did the scissor lift track properly lower during the door closing sequence? | ☒ | ☐ | ☐ |
| Enter time for scissor lift track to lower during the door sequence. | 45 seconds | | |
| Did the door holder properly release during door the closing sequence? | ☒ | ☐ | ☐ |
| Enter time for door holder to release during door the closing sequence. | 140 seconds | | |
| Did the door close? | ☒ | ☐ | ☐ |
| Did the manual test switch activation annunciate on FACP? | ☒ | ☐ | ☐ |
| Did the FACP OPD switch activation annunciate on FACP? | ☐ | ☒ | ☐ |
| Did the OPD sump pump high-level float activation annunciate on FACP? | ☒ | ☐ | ☐ |
| Did all door closing sequence events annunciate on FACP? | ☐ | ☒ | ☐ |
| Did all door closing sequence events restore on FACP upon reset of initiating device? | ☒ | ☐ | ☐ |
| Did the door return to door holder and in the open position? | ☒ | ☐ | ☐ |
| Did the scissor lift track return to normal position? | ☒ | ☐ | ☐ |
| Did the dispatch central center receive the Oil Tight Pressure Door supervisory zone signal? | ☒ | ☐ | ☐ |
| **Final:** | | | |
| Did the system test satisfactory? | ☒ | ☐ | ☐ |
| Is the system back in original condition on departure? | ☒ | ☐ | ☐ |

**Inspection Deficiencies:**

OPD status switch on FACP initiates the OPD door closing sequence but does not report at panel.
Node 33 signals did not report at panel.

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 017 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (4)46 |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 25 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) |
| Email | (b) (6) hdrinc.com | | |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| (b) (4) | 390 | Tank Gallery | Pipe Support (b) (3) (A) |

| | | | |
|---|---|---|---|
| Repair Description | Existing beam is heavily corroded at end closer to the tunnel wall. Replace beam and connect to tunnel wall. | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | N/A |
| Description of QA Validation and Observations | N/A - structural repair was not required per SGH memo. See comments below.<br><br>Final acceptance by government. Date: N/A | | |

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

Comments

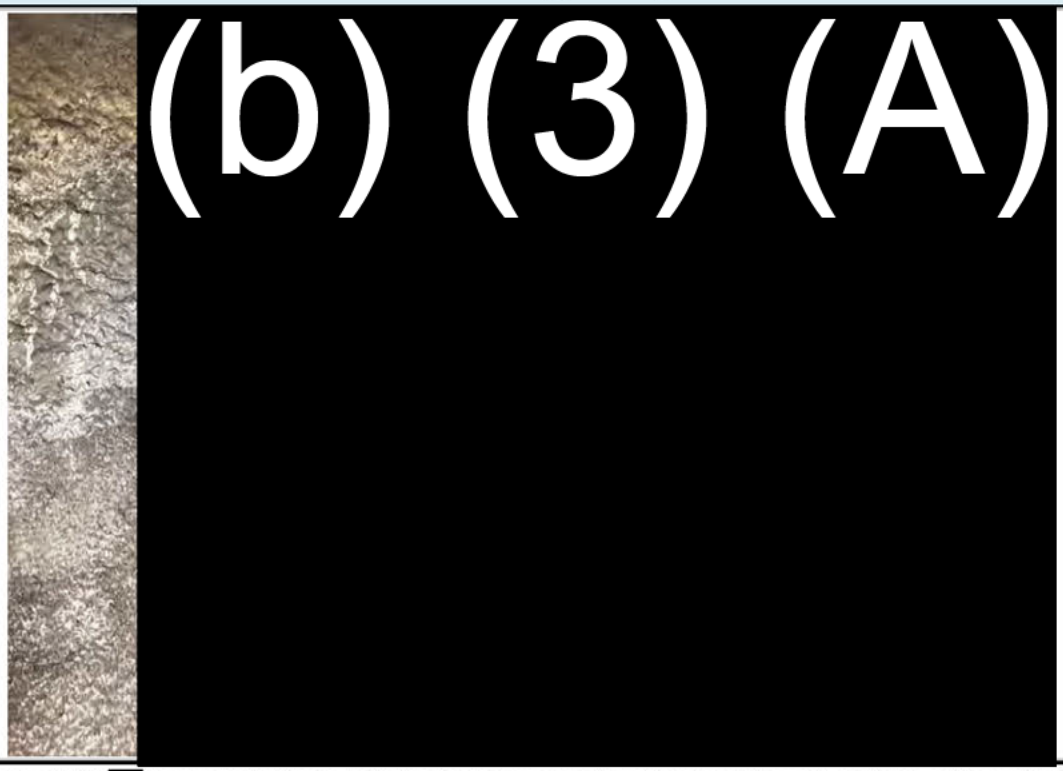
Refer to SGH Memorandum dated 01 MAY 2023. (b) (4) observed a steel column embedded in the tunnel wall at (b) (3) (A) confirming the PS was constructed according to Drawing Y&D 294162 (UF-S32). The beam was cleaned of coating and corrosion several feet back from the beam to wall connection; the corrosion 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

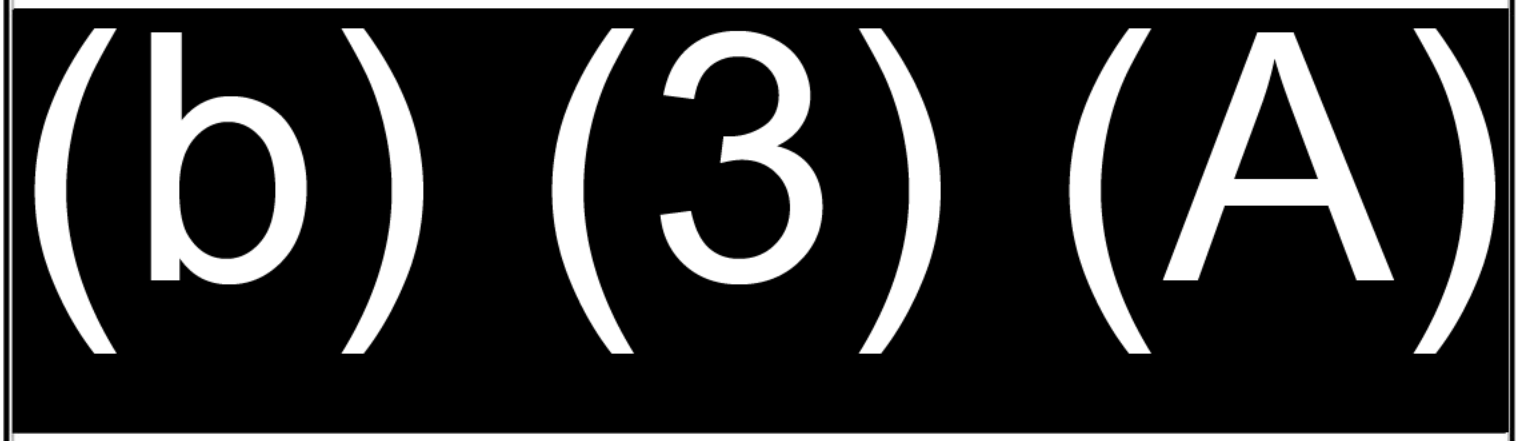
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 25 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




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




Crews doweled in rebar and restored wall concrete.

(b) (4)

# Memorandum

Date: 1 May 2023

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

From: (b) (6)

CC: (b) (6) (b) (4)

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) (3) (A) recommended replacing sections of (b) (3) (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).

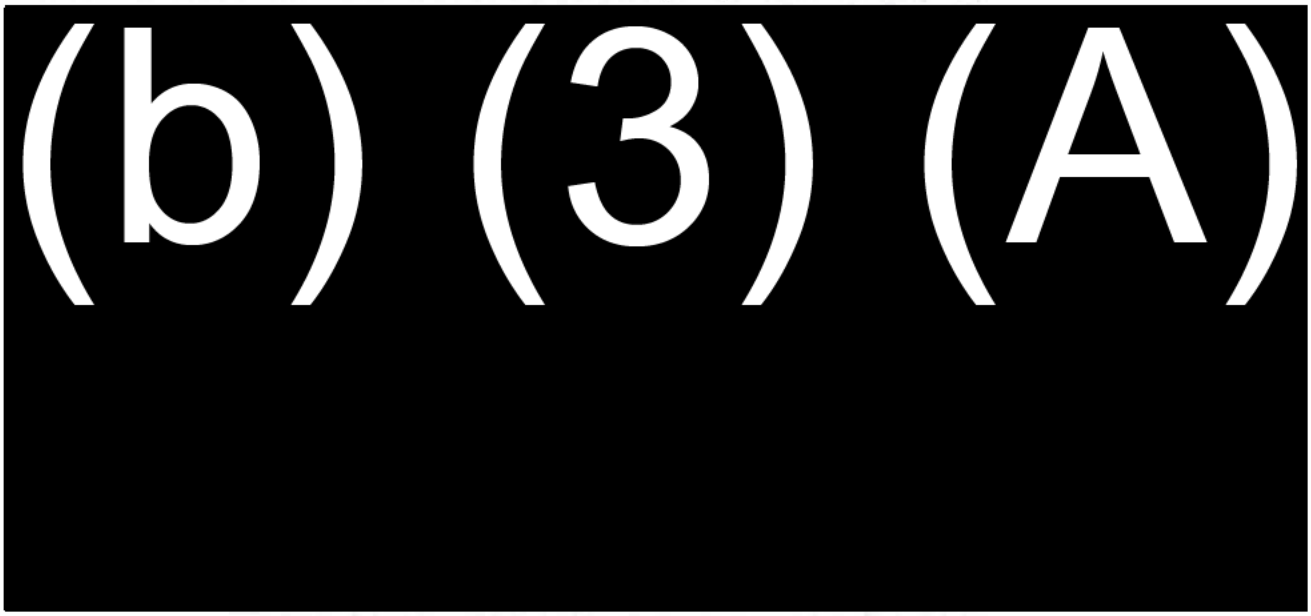



**Figure 1 – (b) (4) April 2022 Observations – D1 Priority LAT-46 Item**

## 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 (b)(3) 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 (b) (3) (A). fillet welds to an embedded column within the tunnel wall (Figure 2). Also, according to these drawings, the end of the PS beam above the column connection has a (b) (3) (A) extending through the web of the beam and anchoring into the tunnel wall. (b) (3) (A)

The PS beams directly support the (b) (3) (A) F-76 fuel pipeline and the (b) (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.

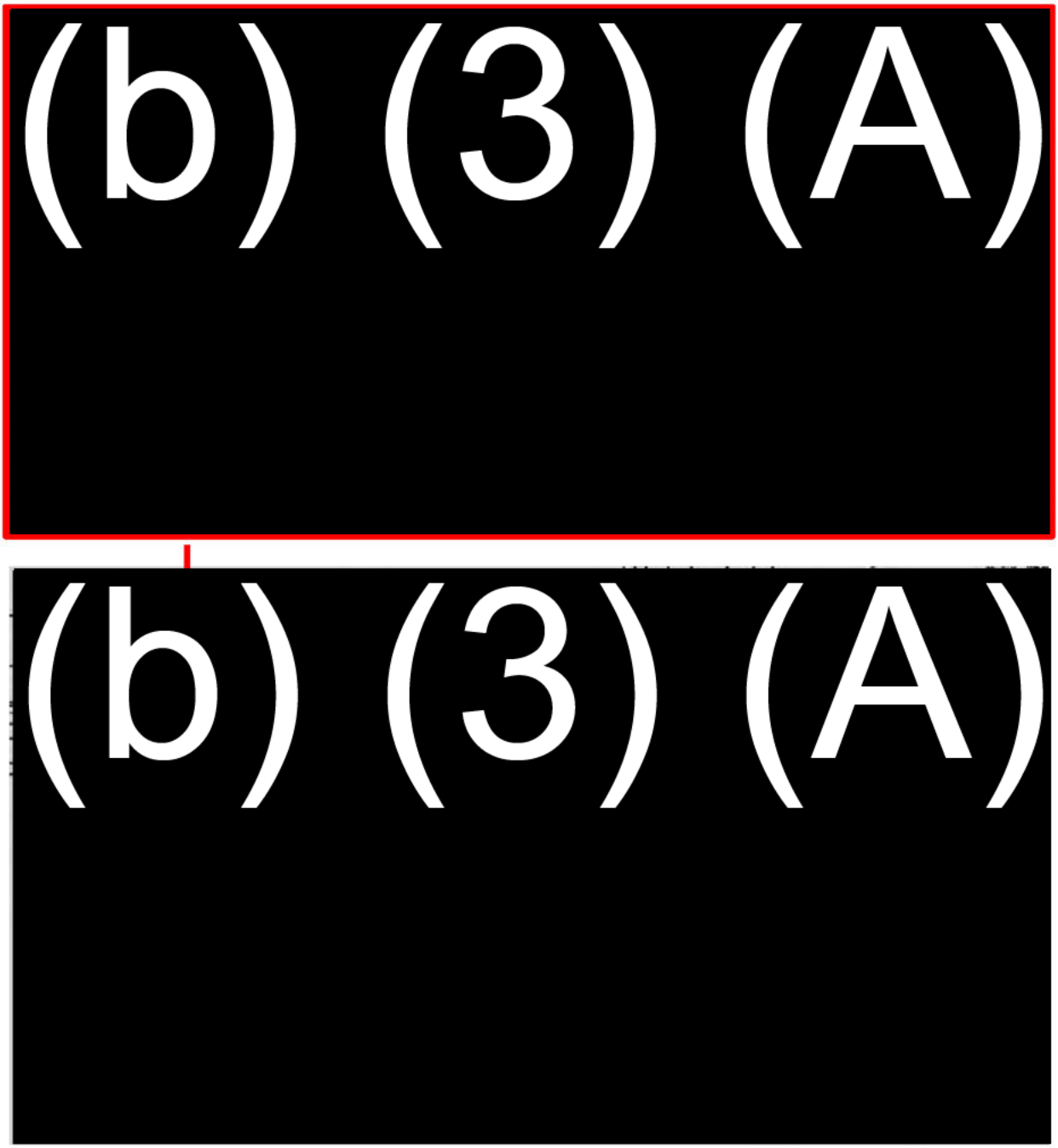



**Figure 2 – Lower Access Tunnel Pipe Support Layout and Details near Tanks (b) (3) (A)**

## 3. UPDATED ASSESSMENT OF LAT PIPE SUPPORTS 69 TO 71

While observing the ongoing repairs in the Red Hill lower access tunnel on 12 and 13 April 2023, we noted contractors ((b) (4) chipping out concrete/gunite around the beam wall penetration at PS(b) (3) (A) . At PS(b) (3) (A), this work revealed a steel column embedded in the tunnel wall, confirming the PS was constructed at this location according to Drawing Y&D 294162 (UF-S32). However, we did not observe the specified [redacted] pin at the web of the pipe support beam. A review of the beam and column segments that were embedded in the tunnel wall showed some surface corrosion within the wall thickness, along with a somewhat intact original orange coating on the column (Figure 3). In preparation for chipping out the concrete and replacing the beam, the beam was cleaned of coating and corrosion products several feet back from the beam to wall connection. Upon further review of on-site conditions, the corrosion does not appear to compromise the capacity of the beam.

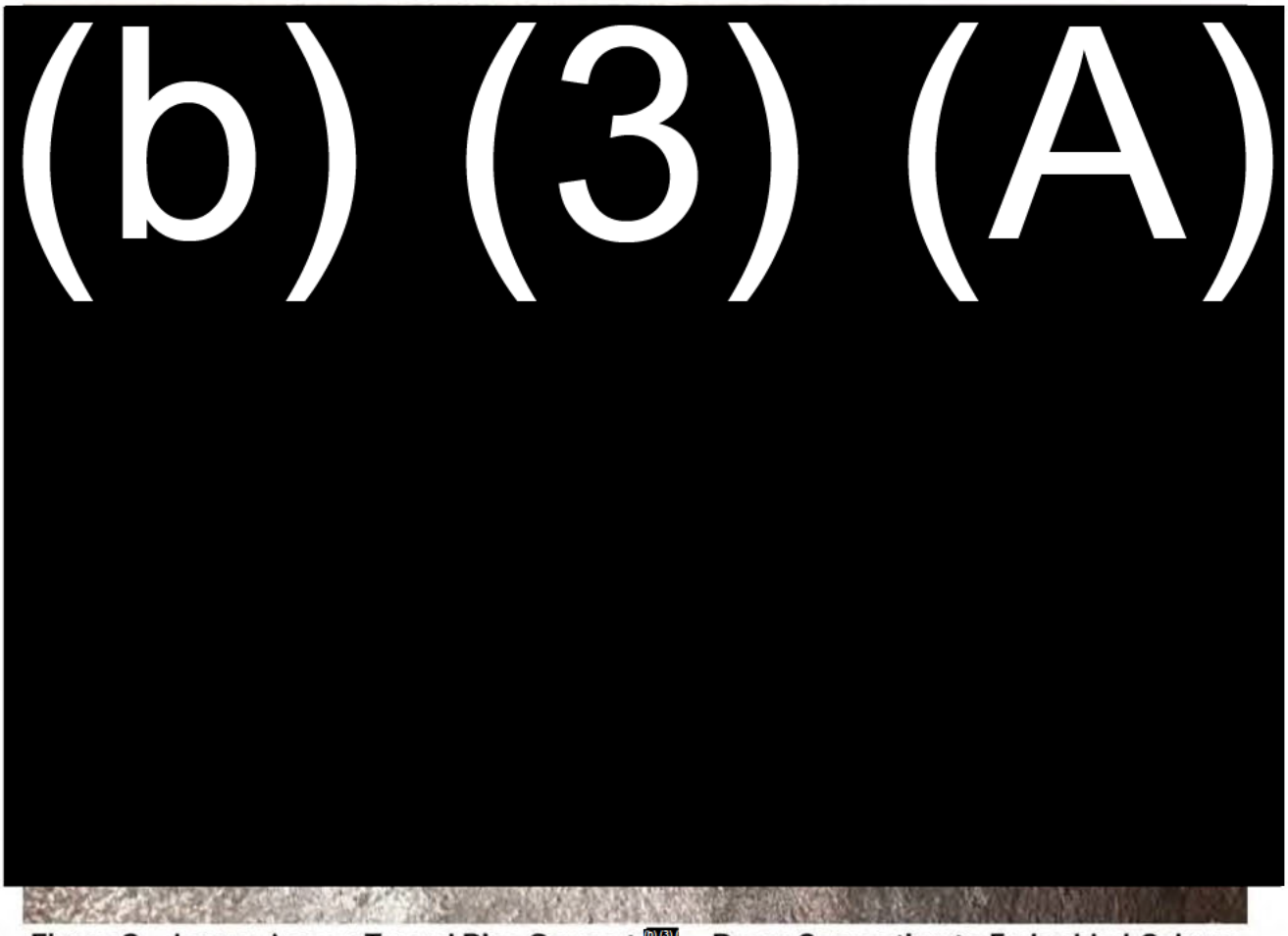



**Figure 3 – Lower Access Tunnel Pipe Support (b) (3) – Beam Connection to Embedded Column**

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)

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 037 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (3) (A) [redacted] |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 22 MAY 2023 |
| QV Engineer | (b) (6) [redacted] | Phone | (b) (6) [redacted] |
| Email | (b) (6) [redacted] hdrinc.com | | |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 40 | RHTF | PS (b) (3) (A) [redacted] |

| | | | |
|---|---|---|---|
| Repair Description | Brass/bronze valve (low melting point) attached to the blind flange on the F-24 (b) (3) (A) [redacted] pipeline. Replace valve with a Class 150 ball valve. | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports. |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 20 MAR 2023 | | |

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

Comments

Repair installation consists of a (b) (3) (A) [redacted] with a threaded plug. Completion photo has an adapter fitting downstream for temporary use by another contractor.

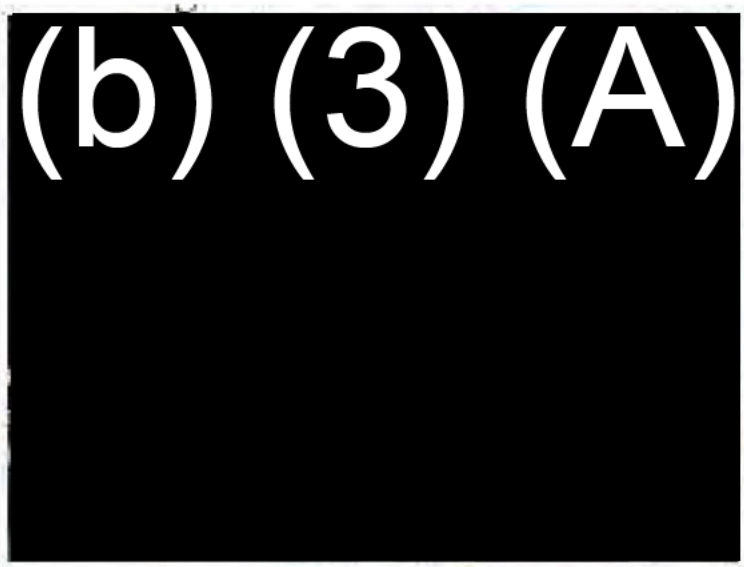
Valve visually inspected by JTF-RH QV team for tightnes and will be monitored for weeps during repacking.

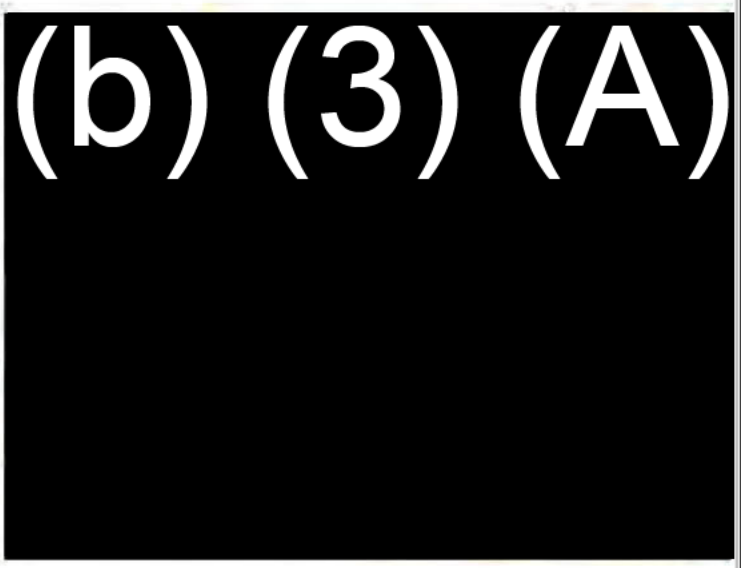
## CERTIFICATION

| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) [redacted] |
| | DATE | 22 MAY 2023 |

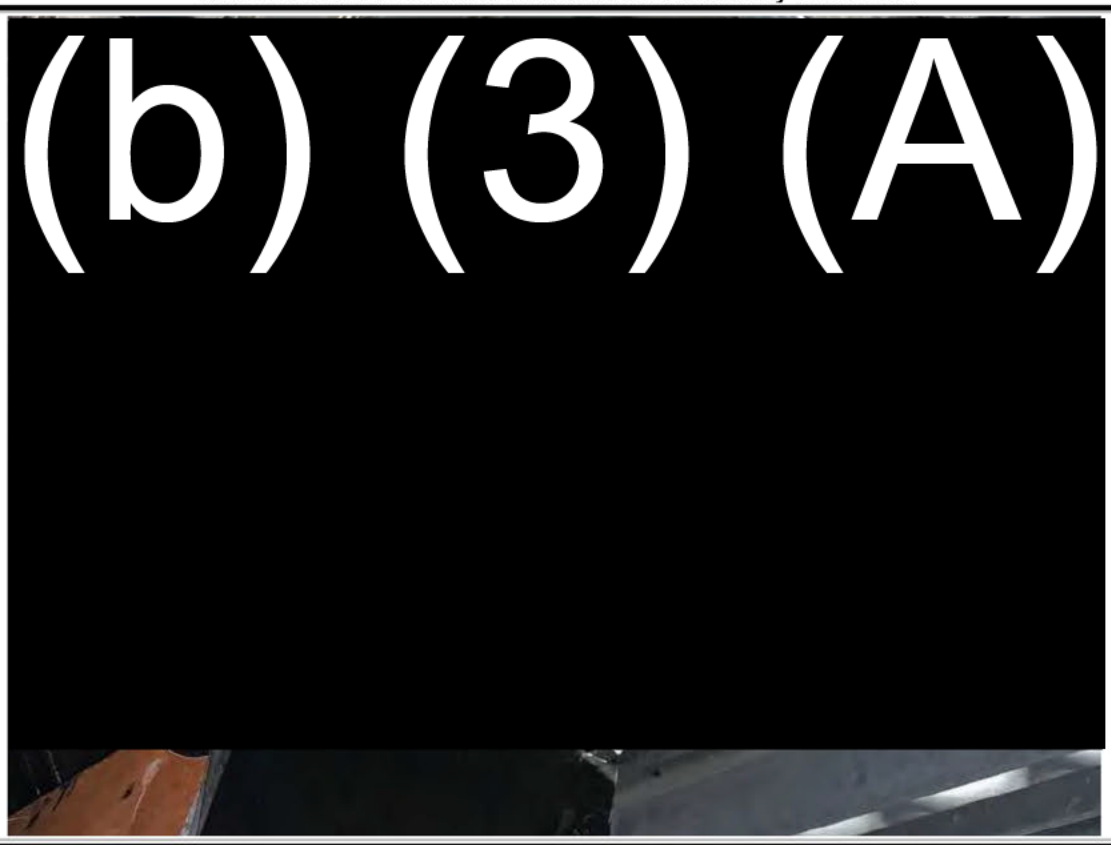
## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




Previous condition: brass valve connected directly to fuel line




Completed repair: (b) (3) (A) installed and locked out.

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 043 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903 19 F 0027 | Report Date | 22 MAY 2023 |
| QV Engineer | (b) (6) | Phone | [redacted] |
| Email | (b) (6) | | hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 41 | Red Hill Tank Farm | Tank 6 |

| | | | |
|---|---|---|---|
| Repair Description | Two loose joint harness fasteners were noted on the Dresser coupling on the (b) (3) (A) F 24 pipeline. Tighten fasteners. | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports. |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 17 FEB 2023 | | |

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

Comments

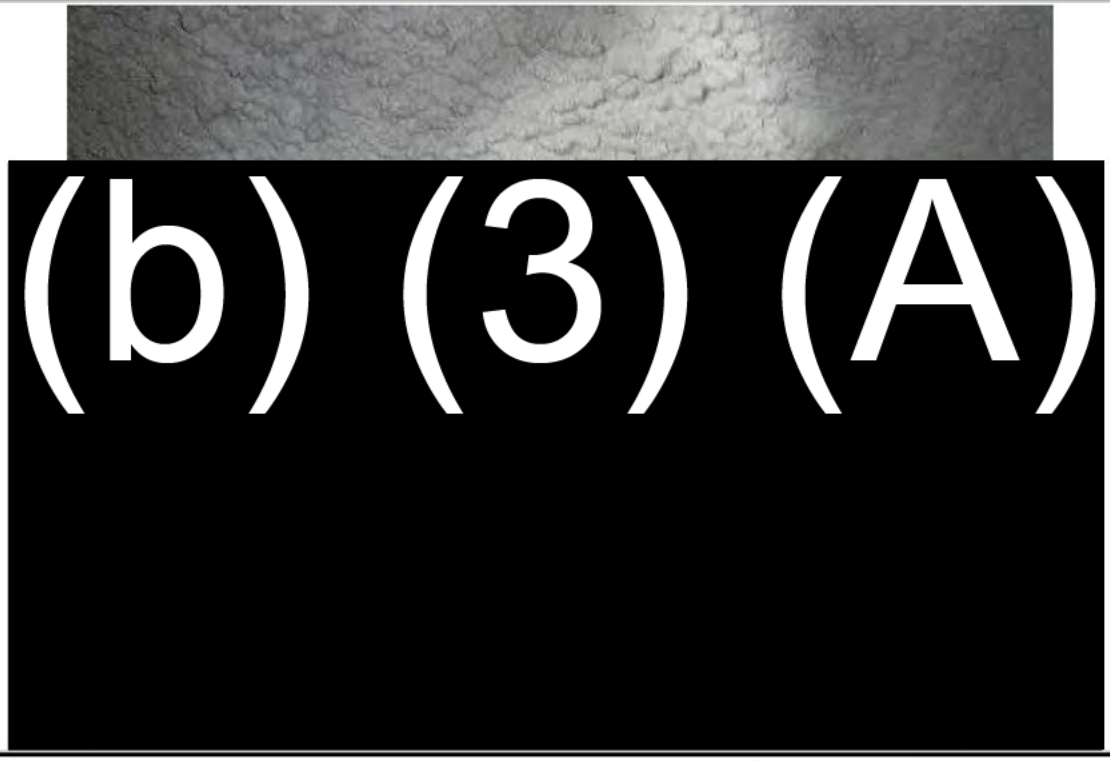
All fasteners on the dresser coupling were tightened and dresser coupling was checked by JTF-RH QV team.

## CERTIFICATION

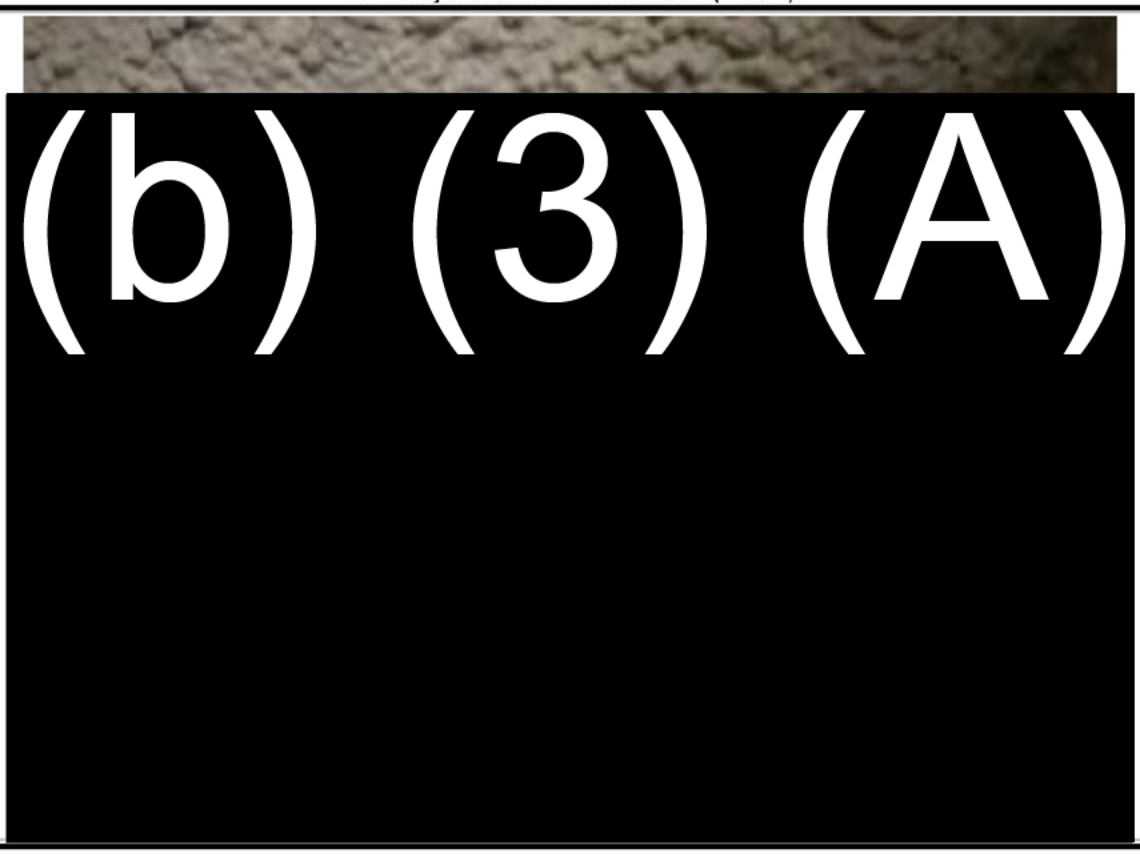
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 22 MAY 2023 |

**QUALITY ASSURANCE VALIDATION REPORT**

**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 Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 44 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 22 MAY 2023 |
| QV Engineer | (b) (6) | Phone | [redacted] |
| Email | (b) (6) | | hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 41 | Red Hill Tank Farm | PS (b) (3) (A) |

| | | | |
|---|---|---|---|
| Repair Description | (b) (3) (A) welded and flanged branch connection on top of F-24 pipeline. [redacted] flange fasteners are not fully engaged. Replace hardware to ensure fasteners are fully engaged (nuts are fully engaged with threaded bolts). | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports. |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 17 FEB 2023 | | |

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

Comments

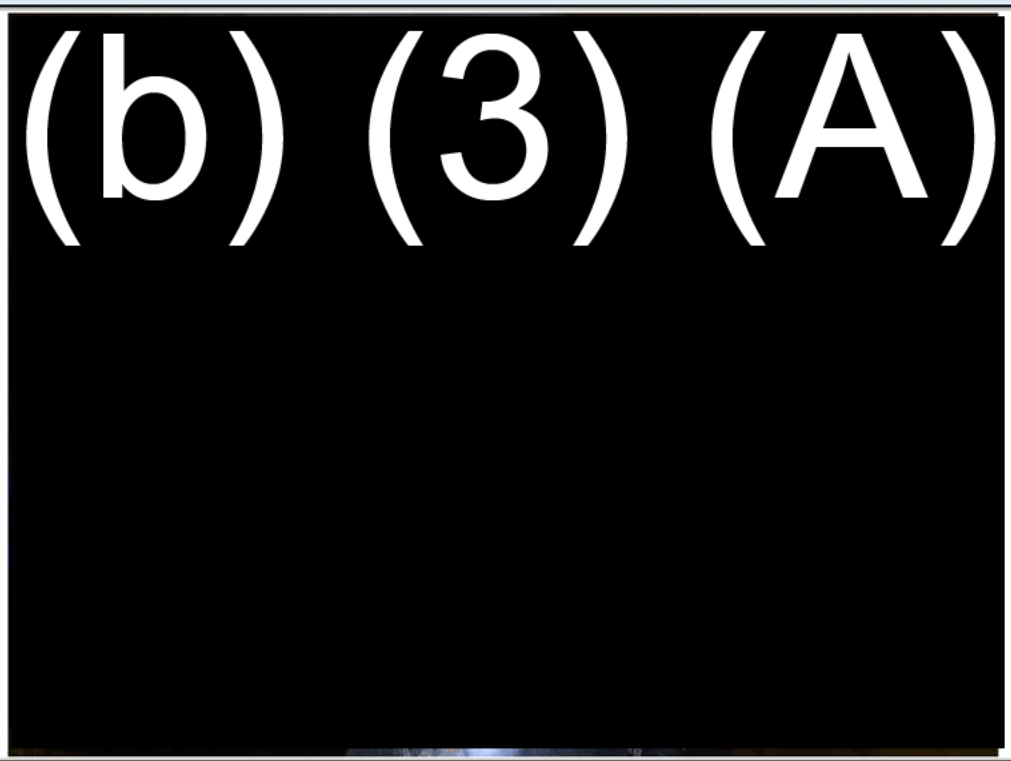
Studs and nuts replaced and fully engaged. Full engagement was visually checked by JTF-RH QV. Repair will be monitored during repacking for any weeping.

## CERTIFICATION

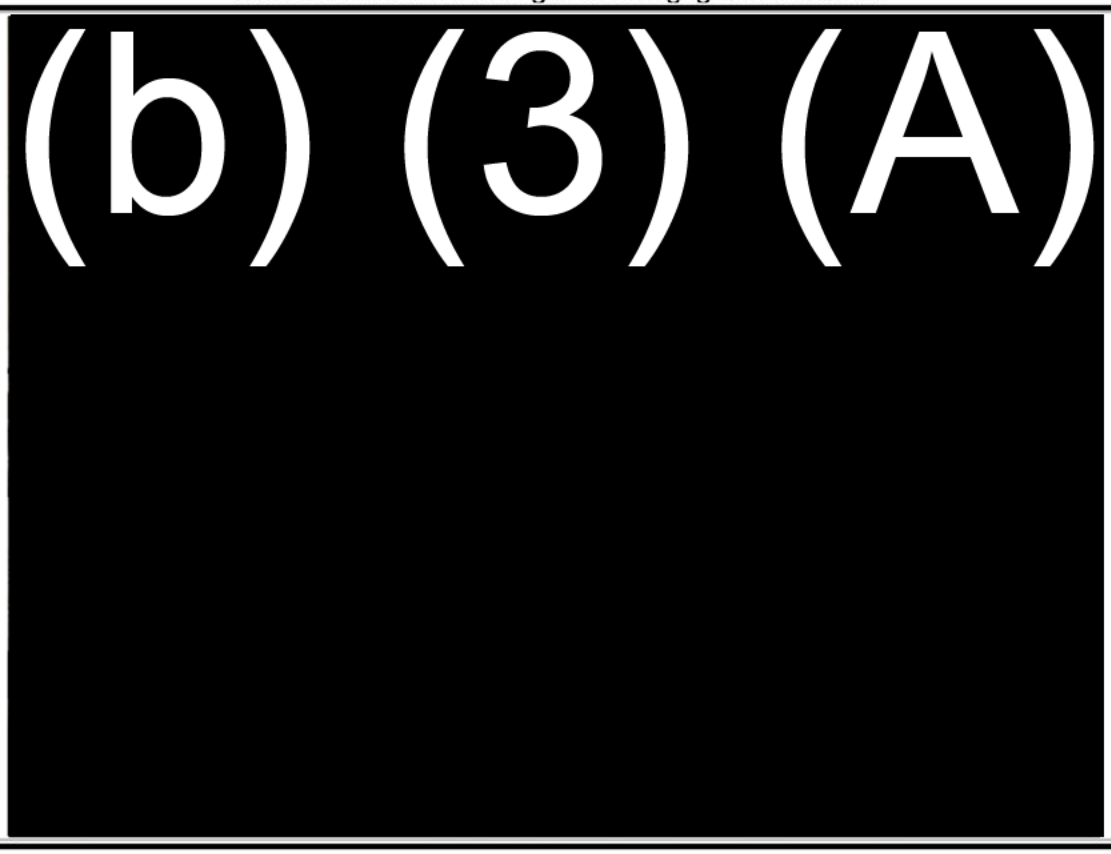
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 22 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




Previous condition: lacking thread engagement on nuts.




Completed repair: changed studs and nuts for full engagement.

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | | | |
|---|---|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | | | Repair No. | 049 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | | | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | | | Report Date | 22 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) | Email | (b) (6) hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 42 | Underground Pumphouse | (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 | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports. |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 20 MAR 2023 | | |

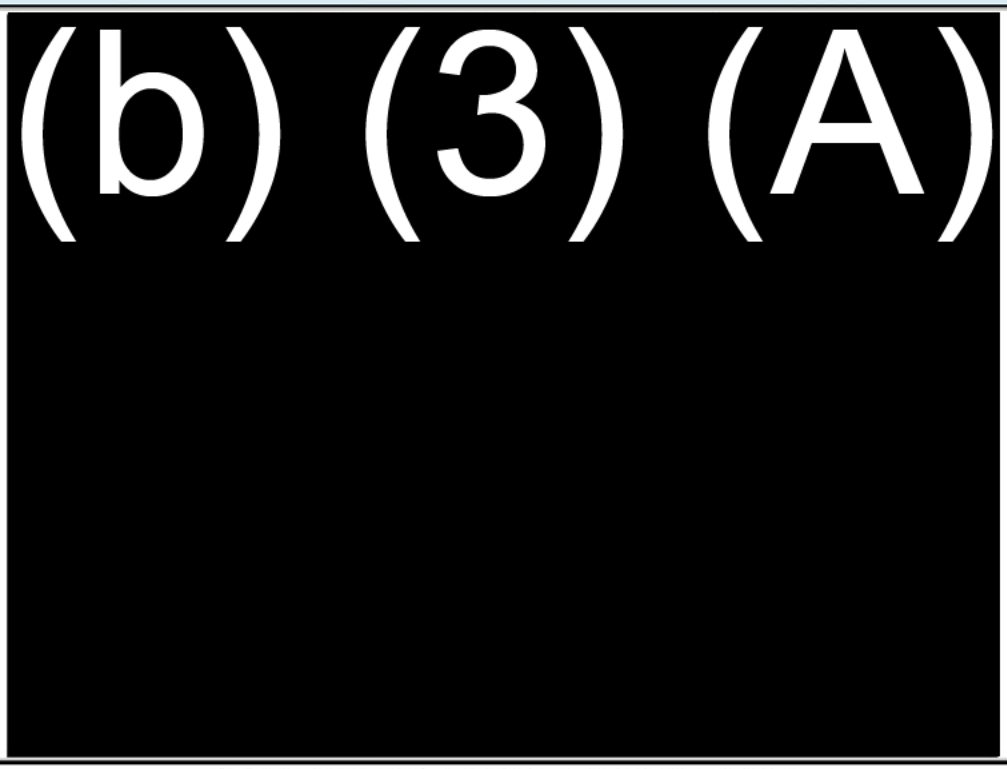
| Rework Needed | | | | Photo Record Attached | Repair Work Validated as Complete | | | |
|---|---|---|---|---|---|---|---|---|
| ○ | Yes | ◉ | No | See Pages 2-5. | ◉ | Yes | ○ | No |

Comments

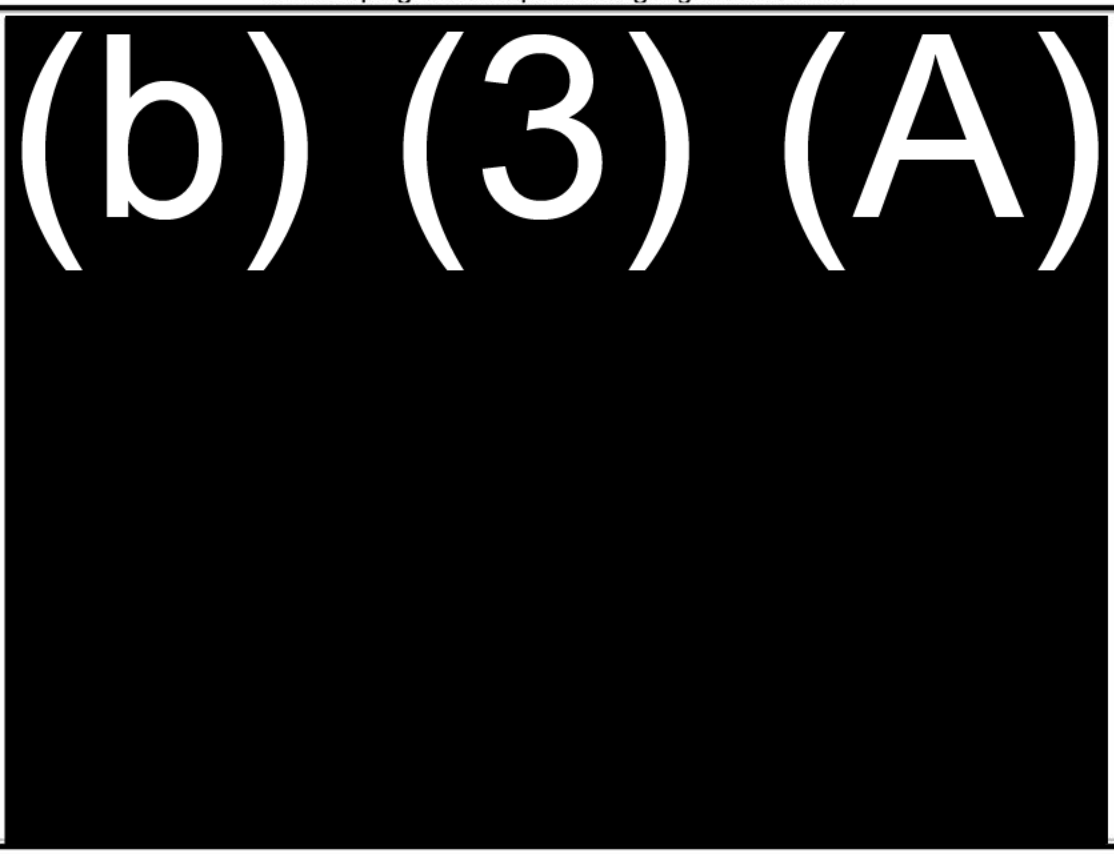
Installation of new plug was visually inspected by JTF-RH QV team for tightness and repair will be monitored during repacking. Additionally repair is in the UGPH which has its own secondary containment in place.

## CERTIFICATION

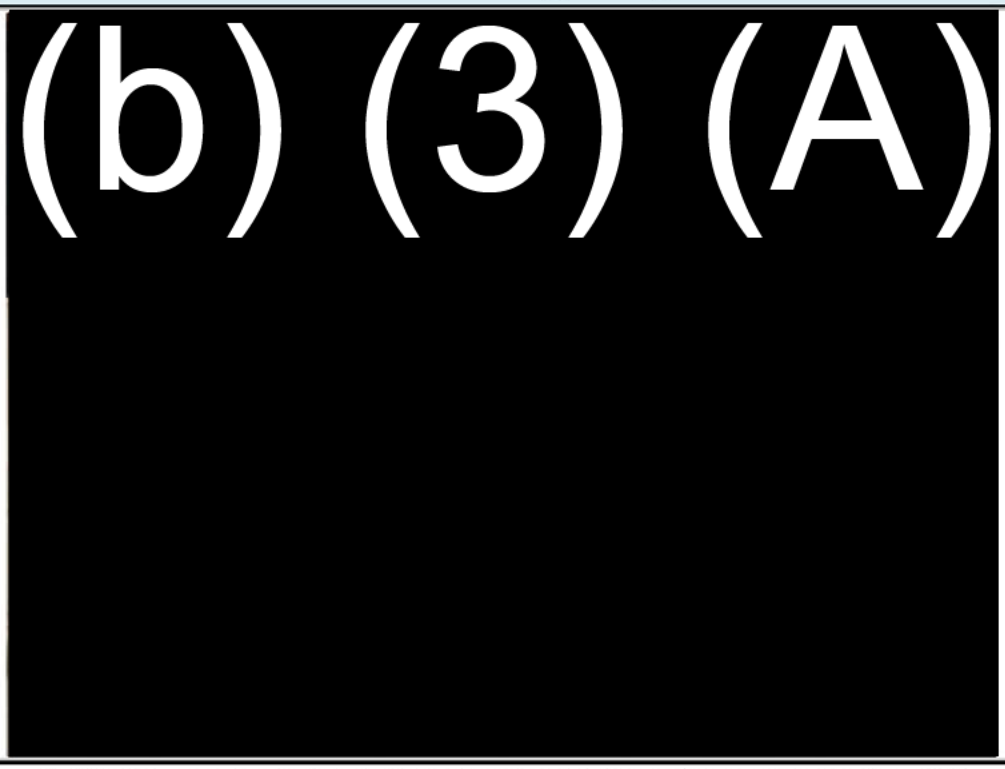
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 22 MAY 2023 |



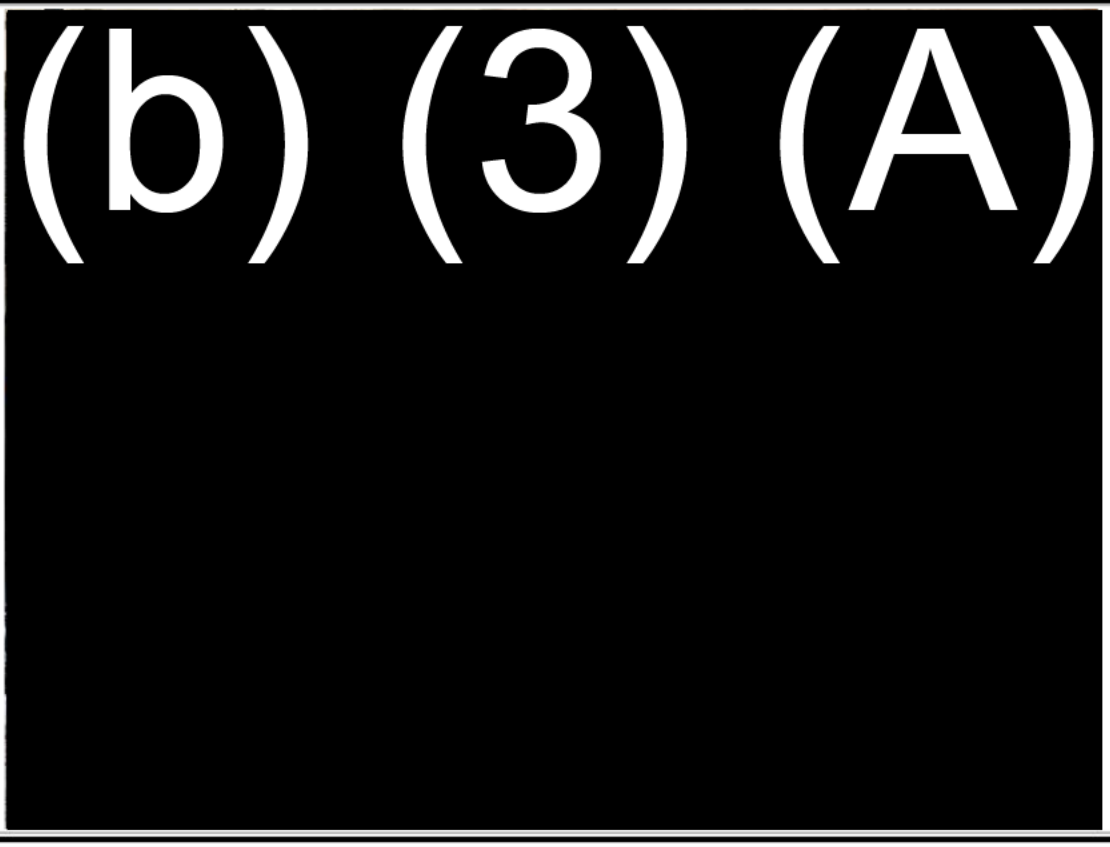

Conduit plug used on pressure gauge assemblies.




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



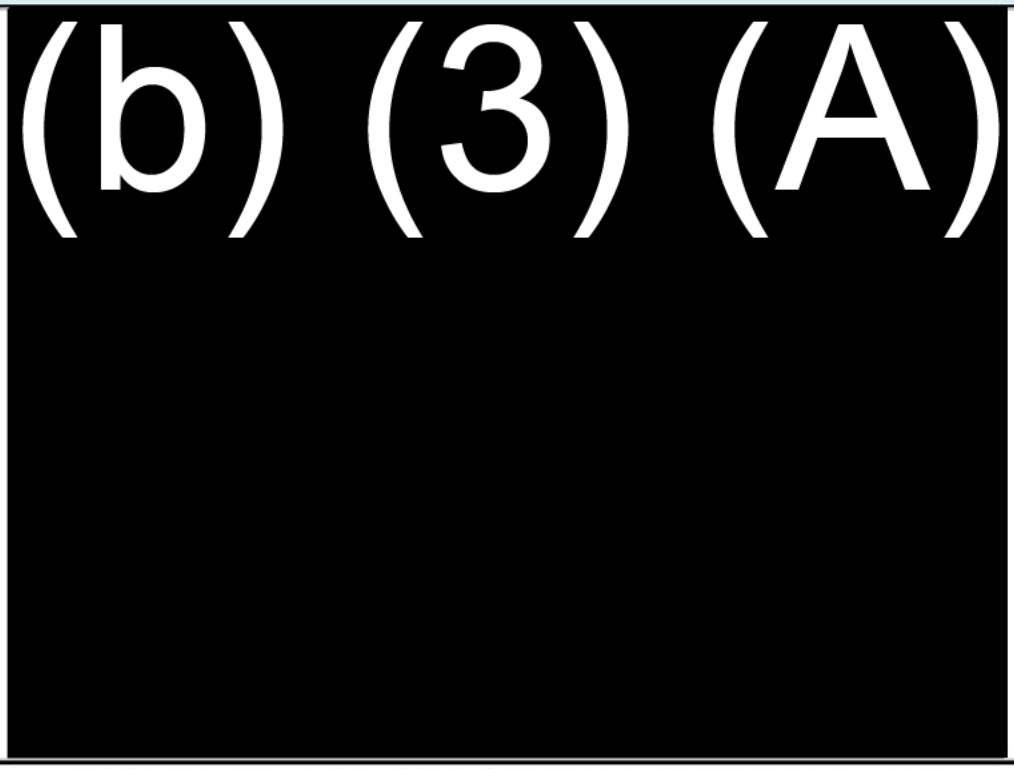

P-209 pressure gauge tee, installed hexagonal plugs with fuel resistant sealant.



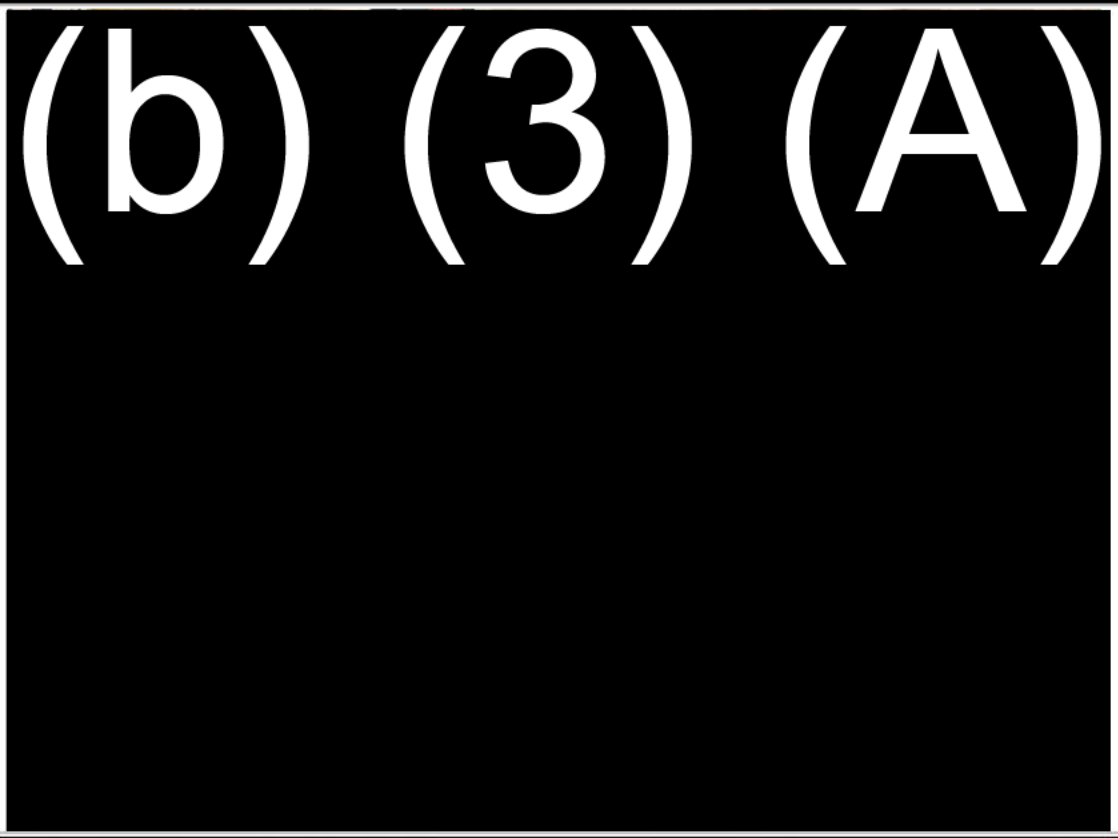

P-209 pressure gauge tee, installed hexagonal plugs with fuel resistant sealant.

**QUALITY ASSURANCE VALIDATION REPORT**

**Red Hill Bulk Fuel Storage Facility Defuel**



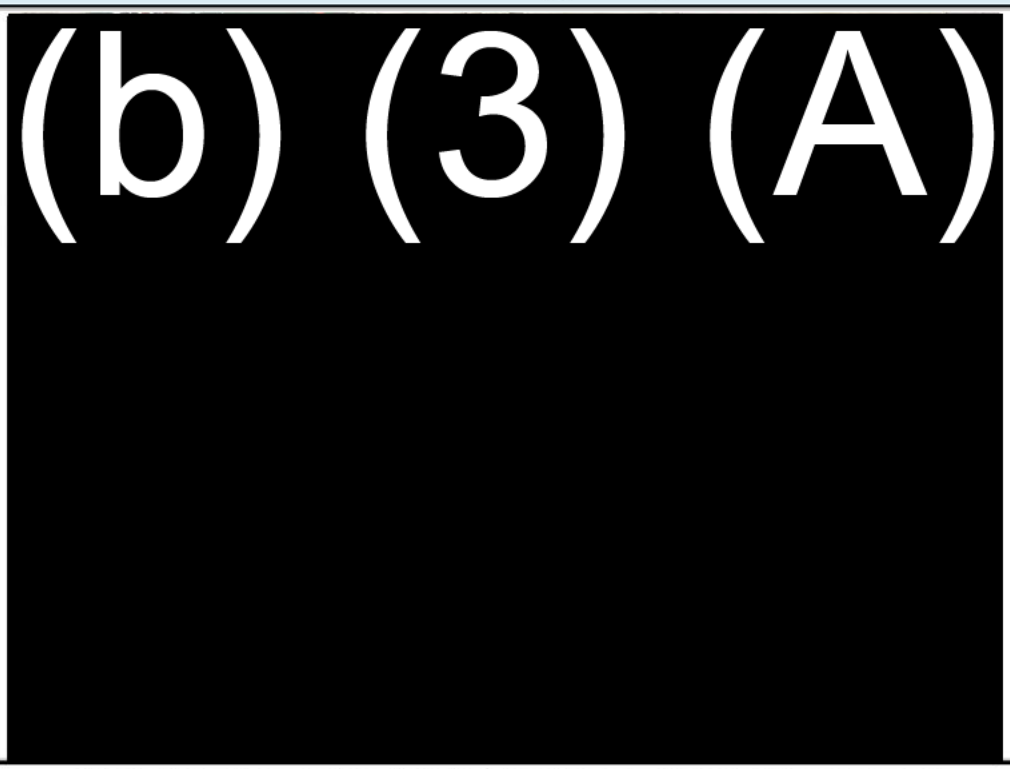

P-210 pressure gauge tee, installed round plugs with fuel resistant sealant.



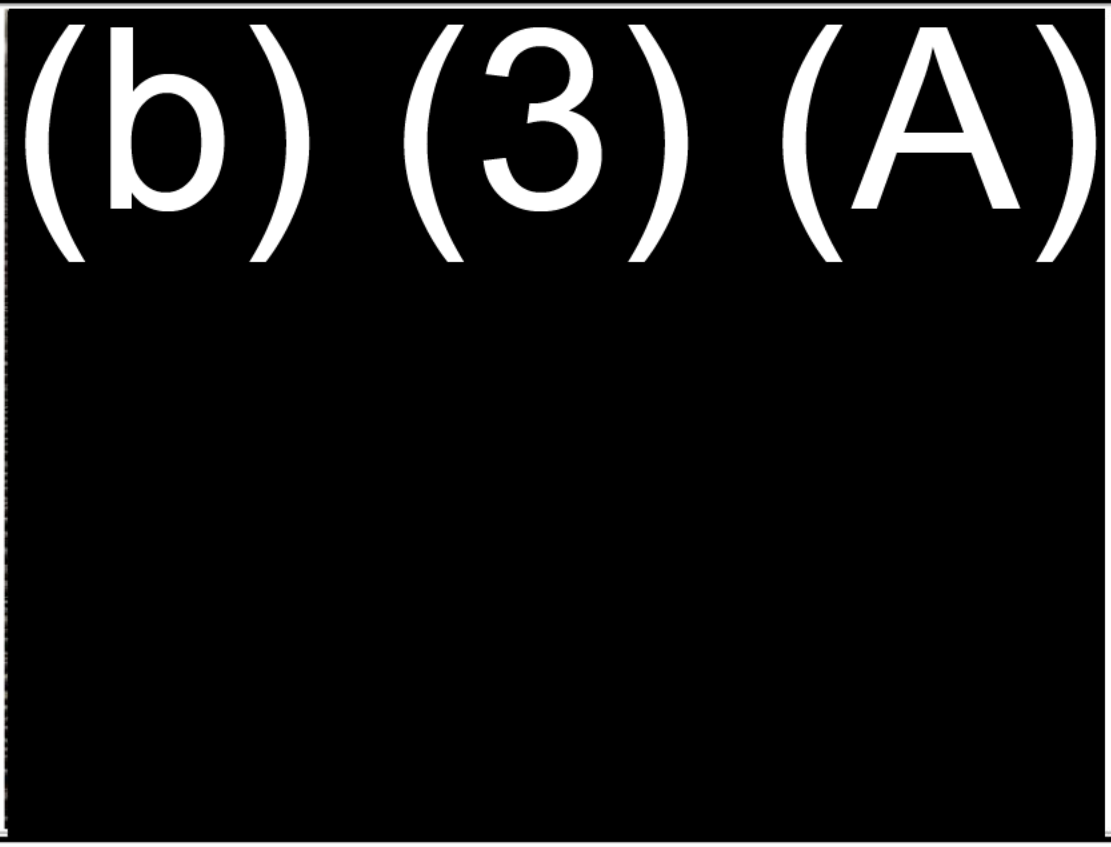

P-210 pressure gauge tee, installed round plugs with fuel resistant sealant.

**QUALITY ASSURANCE VALIDATION REPORT**

**Red Hill Bulk Fuel Storage Facility Defuel**




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




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

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | | | |
|---|---|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | | | Repair No. | 086 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | | | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903 19 F 0027 | | | Report Date | 22 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) | Email | (b) (6) hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 51 | Underground Pumphouse | 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 | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports. |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 20 MAR 2023 | | |

| Rework Needed | | | | Photo Record Attached | Repair Work Validated as Complete | | | |
|---|---|---|---|---|---|---|---|---|
| ○ | Yes | ◉ | No | See Pages 2 5. | ◉ | Yes | ○ | No |

Comments

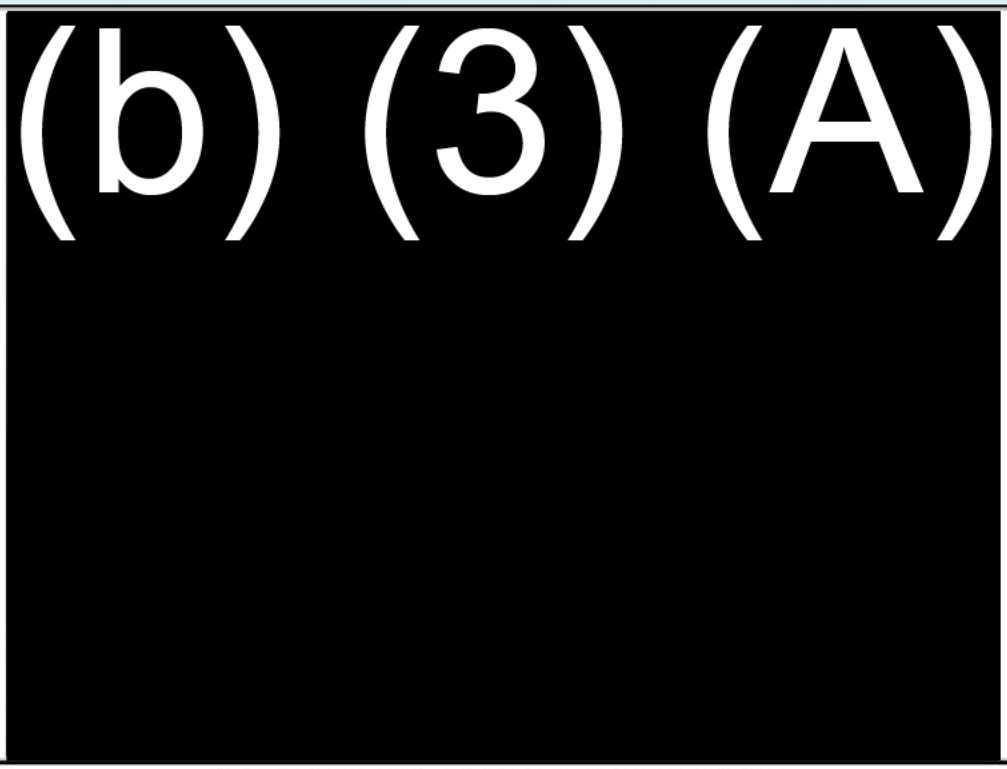
Installation of new plug was visually inspected by JTF-RH QV team for tightness and repair will be monitored during repacking. Additionally repair is in the UGPH which has its own secondary containment in place.

## CERTIFICATION

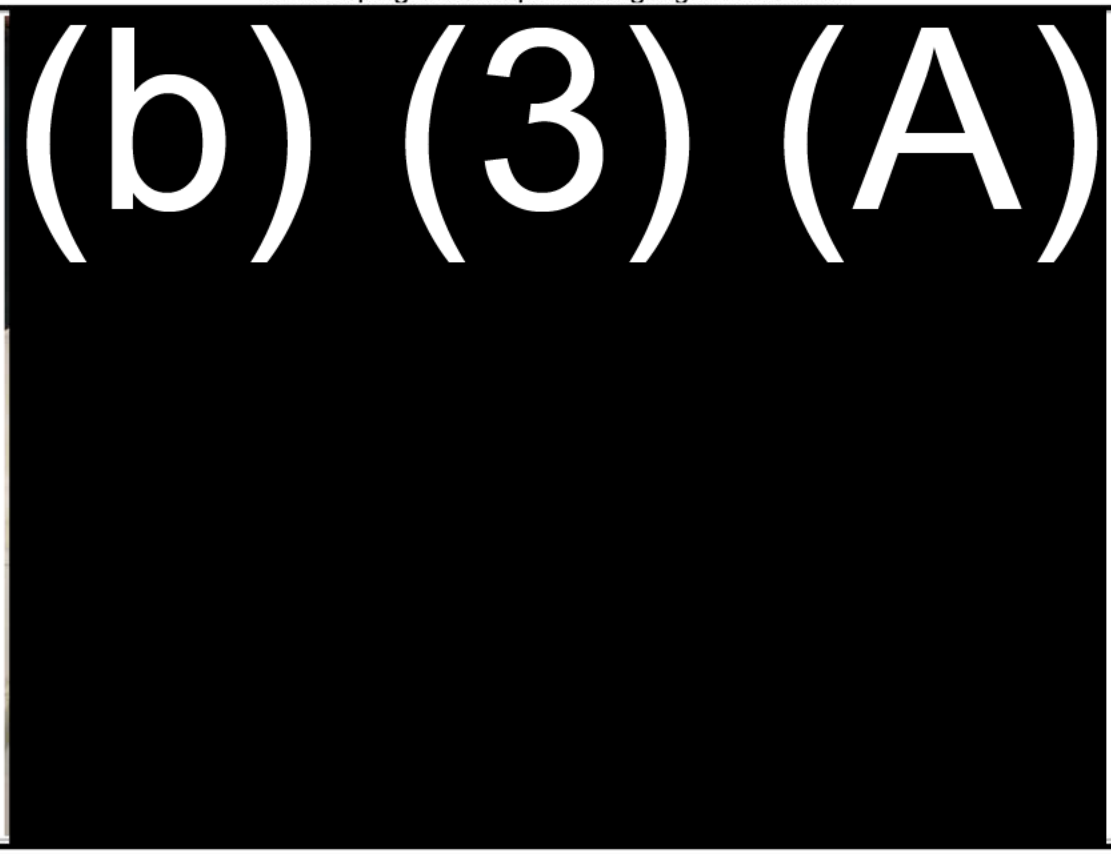
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 22 MAY 2023 |

**QUALITY ASSURANCE VALIDATION REPORT**

**Red Hill Bulk Fuel Storage Facility Defuel**



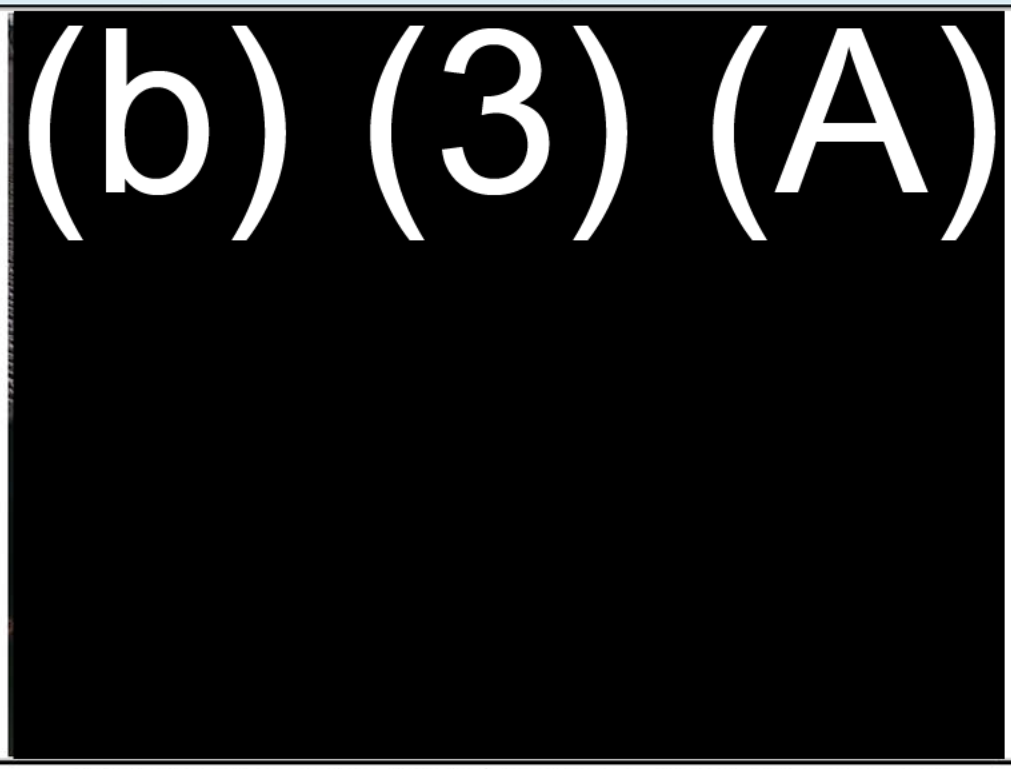

Conduit plug used on pressure gauge assemblies.



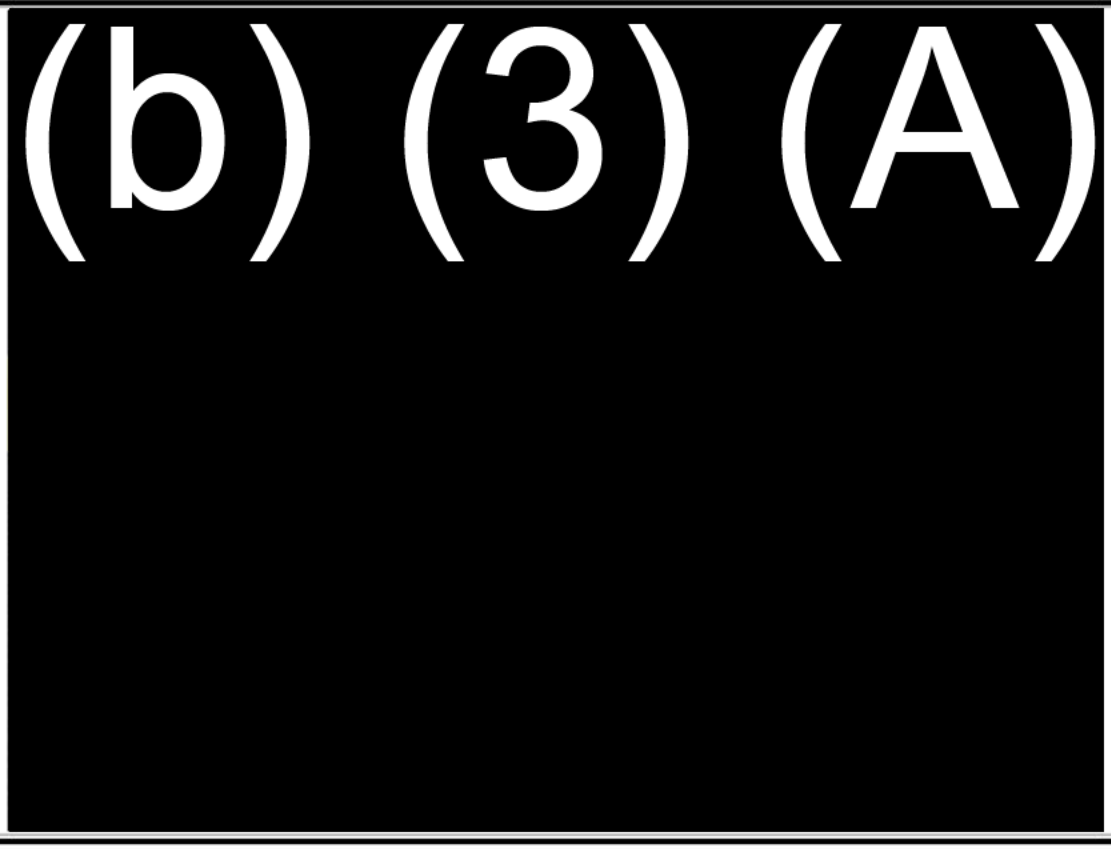

Typical repair, using either round or hexagonal plugs with fuel resistant sealant.

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**



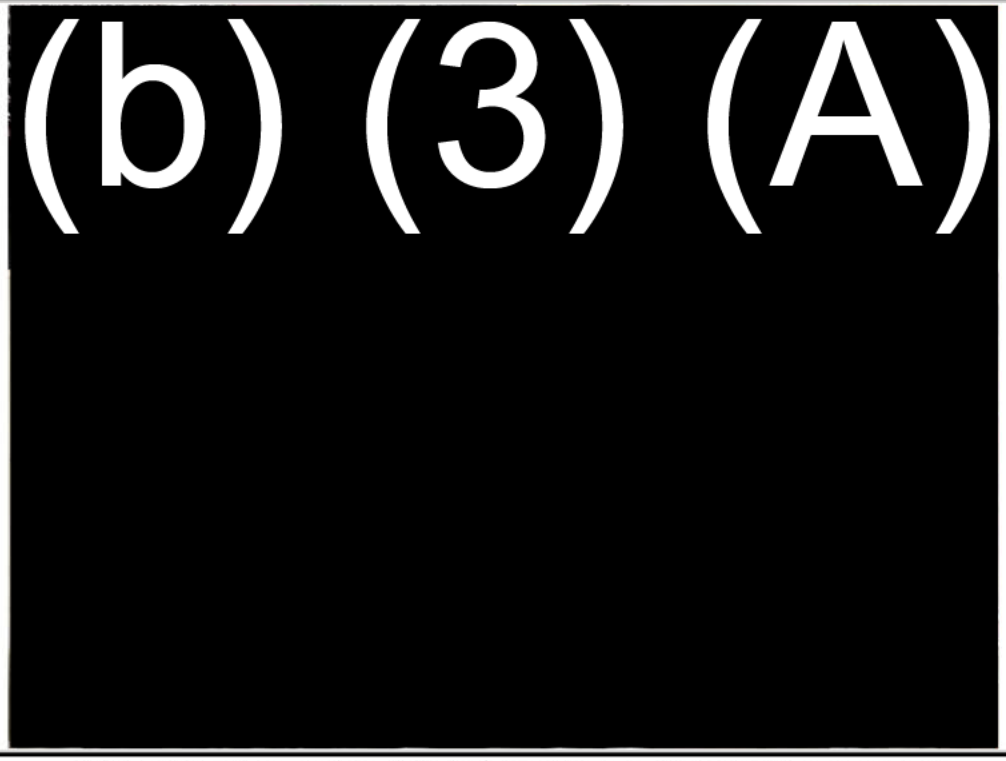

P-206 pressure gauge tee, installed round plugs with fuel resistant sealant.



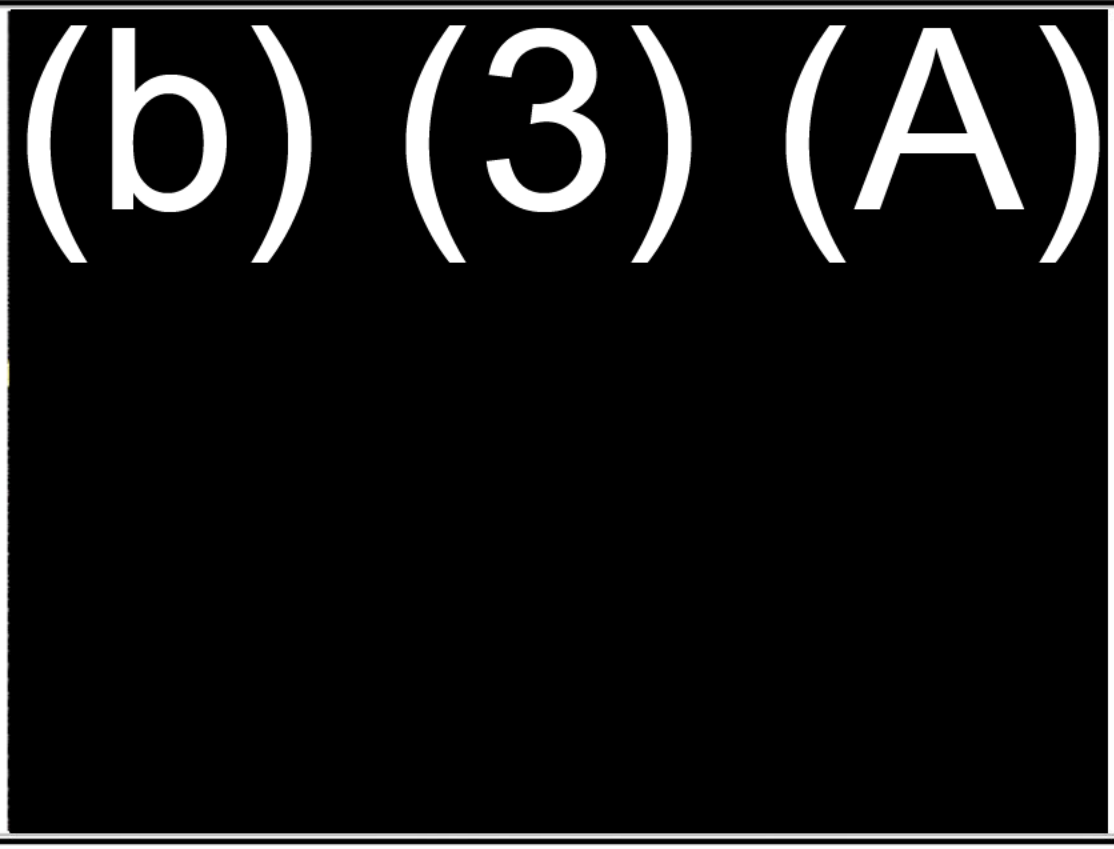

P-206 pressure gauge tee, installed round plugs with fuel resistant sealant.

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**



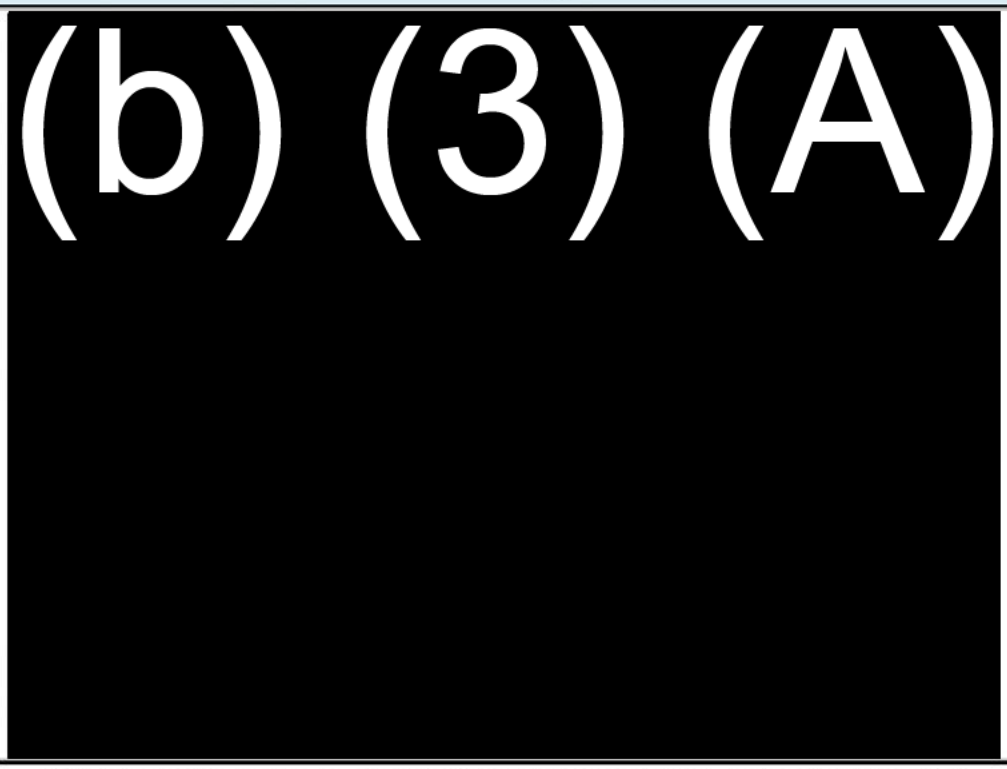

P-207 pressure gauge tee, installed round plugs with fuel resistant sealant.



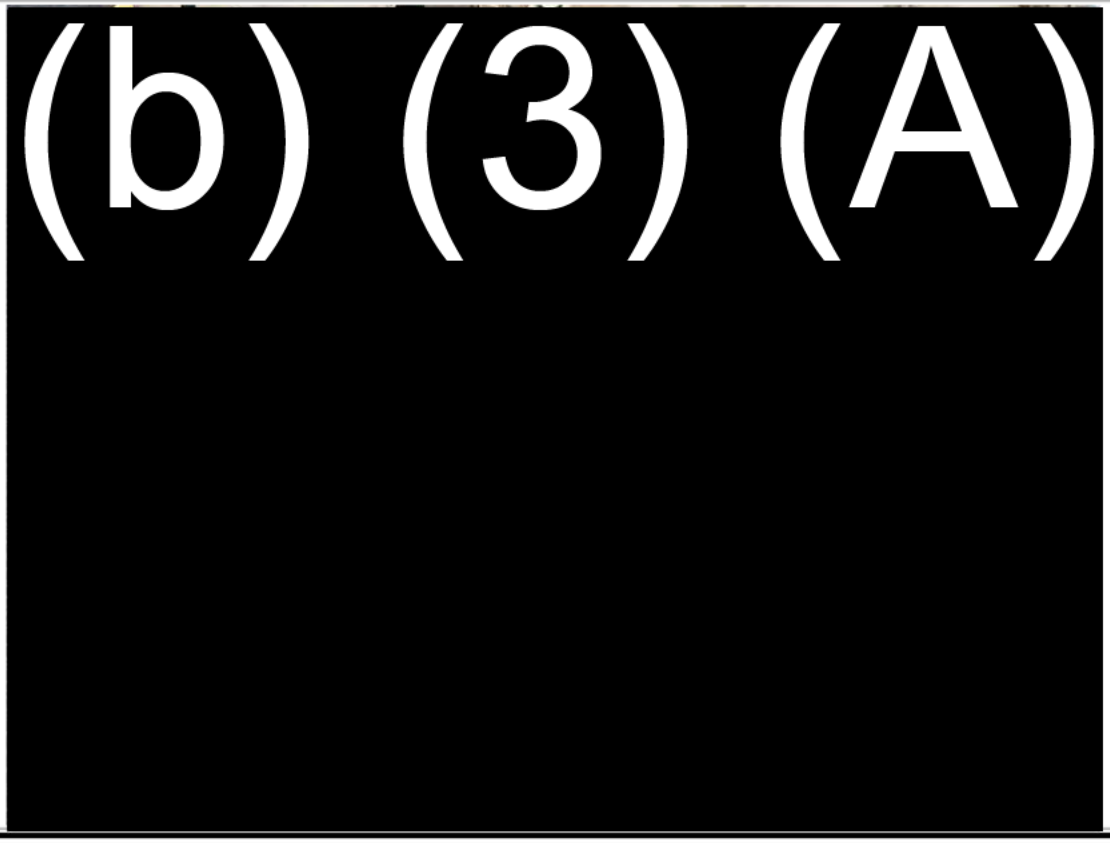

P-207 pressure gauge tee, installed round plugs with fuel resistant sealant.

**QUALITY ASSURANCE VALIDATION REPORT**

**Red Hill Bulk Fuel Storage Facility Defuel**




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




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

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 094 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 22 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) |
| Email | (b) (6) hdrinc.com | | |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 52 | Underground Pumphouse | Surge Tank Piping |

| | | | |
|---|---|---|---|
| Repair Description | The (b) (3) (A) that is mounted on the (b) (3) (A) low suction line at Surge Tank [redacted] is missing a plug. Install plug. | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports. |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 20 MAR 2023 | | |

| Rework Needed | | | | Photo Record Attached | Repair Work Validated as Complete | | | |
|---|---|---|---|---|---|---|---|---|
| ○ | Yes | ◉ | No | See Pages 2-5. | ◉ | Yes | ○ | No |

Comments

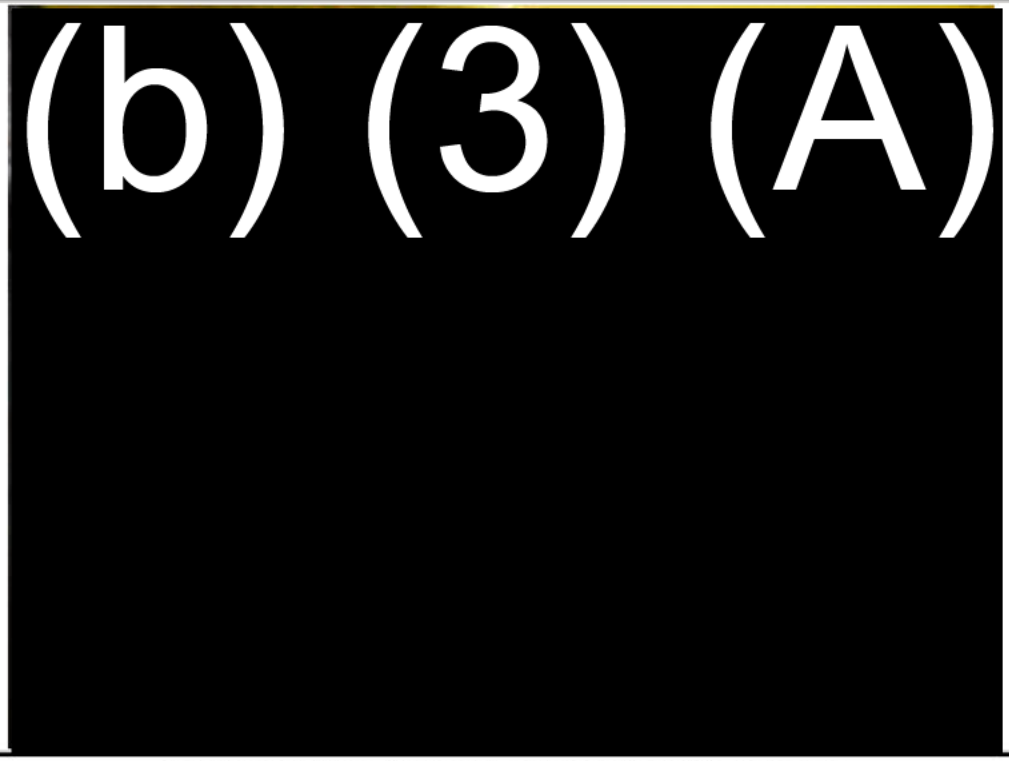
Installation of new plug was visually inspected by JTF-RH QV team for tightness and repair will be monitored during repacking.

## CERTIFICATION

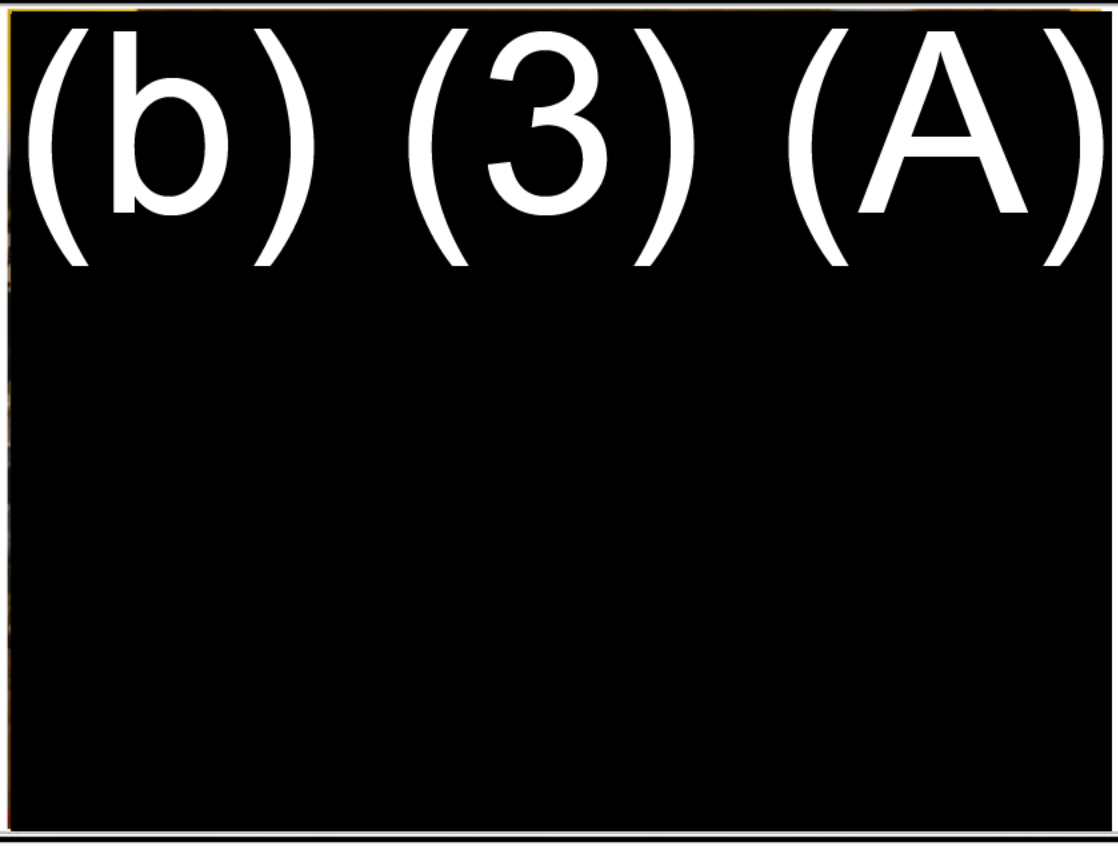
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 22 MAY 2023 |

**QUALITY ASSURANCE VALIDATION REPORT**

**Red Hill Bulk Fuel Storage Facility Defuel**




Existing condition; discharge hose connected to ball valve.




Hexagonal threaded plug installed with fuel resistant sealant.

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 102 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 22 MAY 2023 |

| | | | | | |
|---|---|---|---|---|---|
| QV Engineer | (b) (6) | Phone | (b) (6) | Email | (b) (6) hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 62 | Underground Pumphouse | Bypass Loop |

| | | | |
|---|---|---|---|
| Repair Description | Lack of thread engagement was observed on (b)(3)(A) fasteners on the bypass loop flanges associated with the (b) (3) (A) F-76 pipeline. Replace fasteners. | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports. |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 24 MAR 2023 | | |

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

Comments

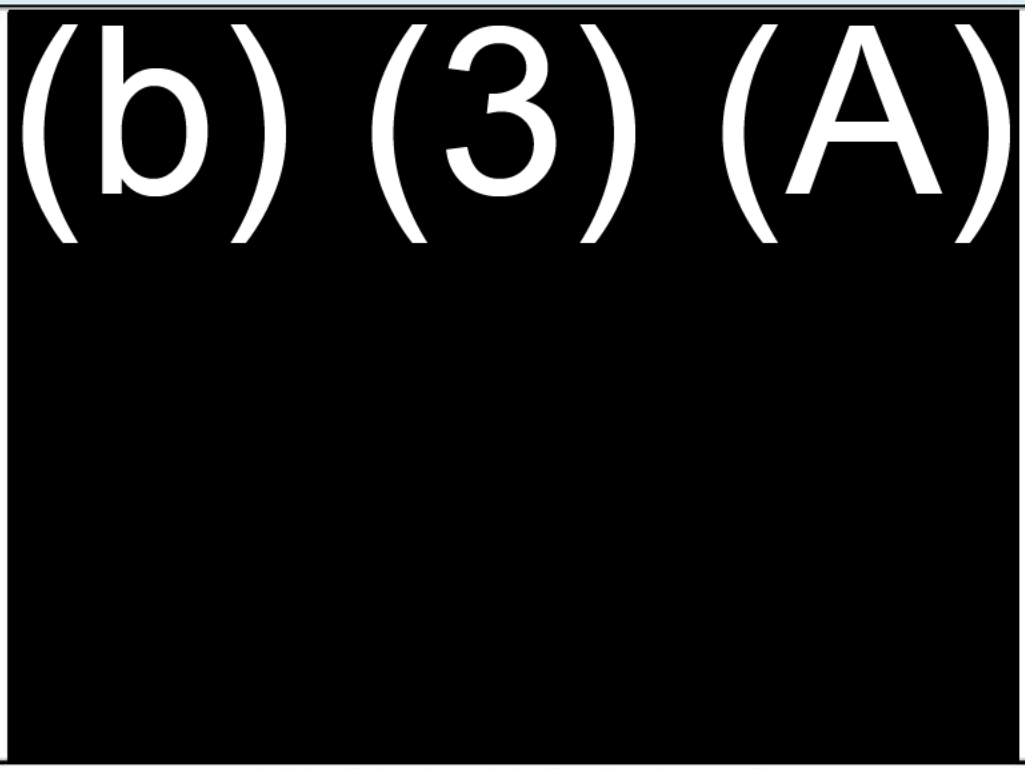
New bolts and nuts installed and coated. Repair was visually inspected by JTF-RH QV team for tightness and the repair will be monitored during repacking for weeps. Additionally, repair is in the (b) (3) (A) which has its own secondary containment in place.

## CERTIFICATION

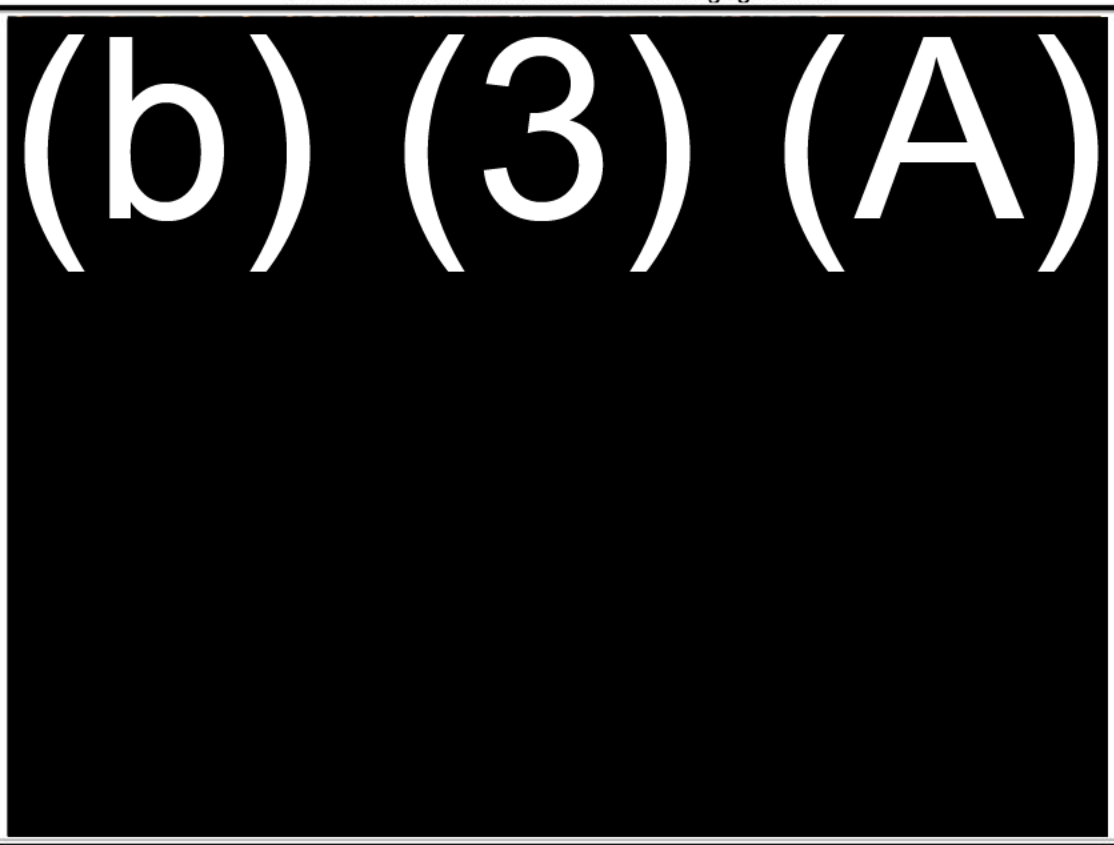
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 22 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




Previous condition: lackof thread engagement.




Completed repair: new bolts and nuts installed and coated.

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 107 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 22 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) |
| Email | (b) (6) hdrinc.com | | |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 62 | Underground Pumphouse | (b) (3) (A) |

| | | | |
|---|---|---|---|
| Repair Description | The (b) (3) (A) on the F-76 pipeline has (b)(3) fasteners/studs that are not fully engaged. Install studs properly. | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports. |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 24 MAR 2023 | | |

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

Comments

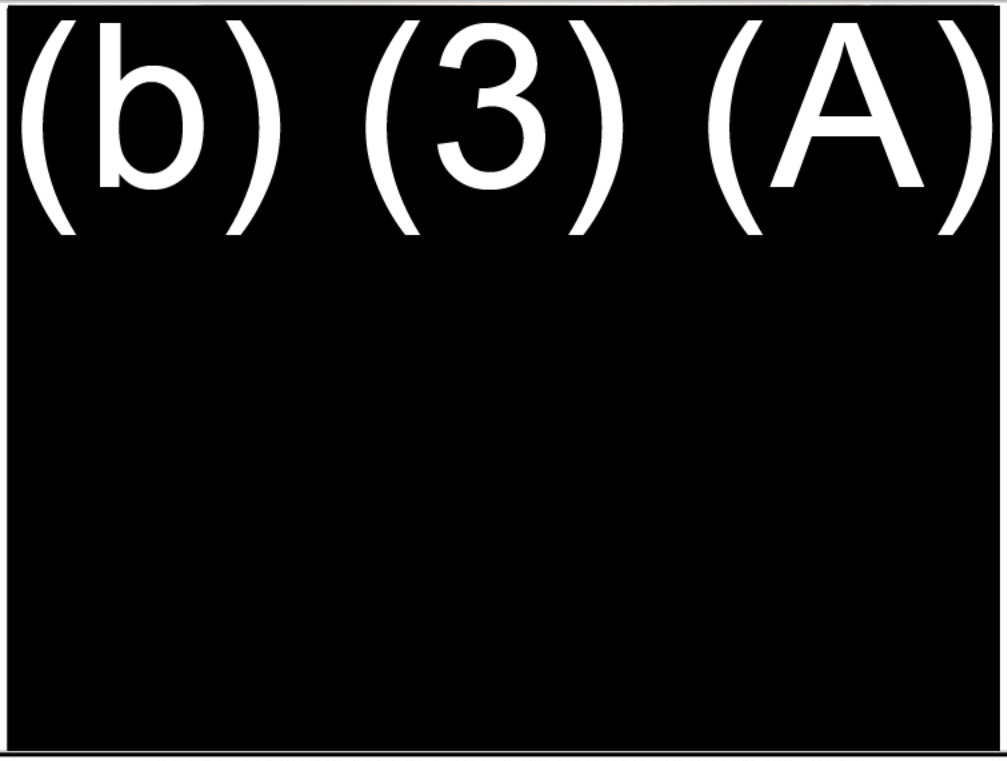
New bolts, washers and nuts installed, properly torqued, and coated. Repair was visually inspected by JTF-RH QV team and the repair will be monitored during repack for weeps. Additionally, repair is in the (b) (3) (A) which has its own secondary containment in place.

## CERTIFICATION

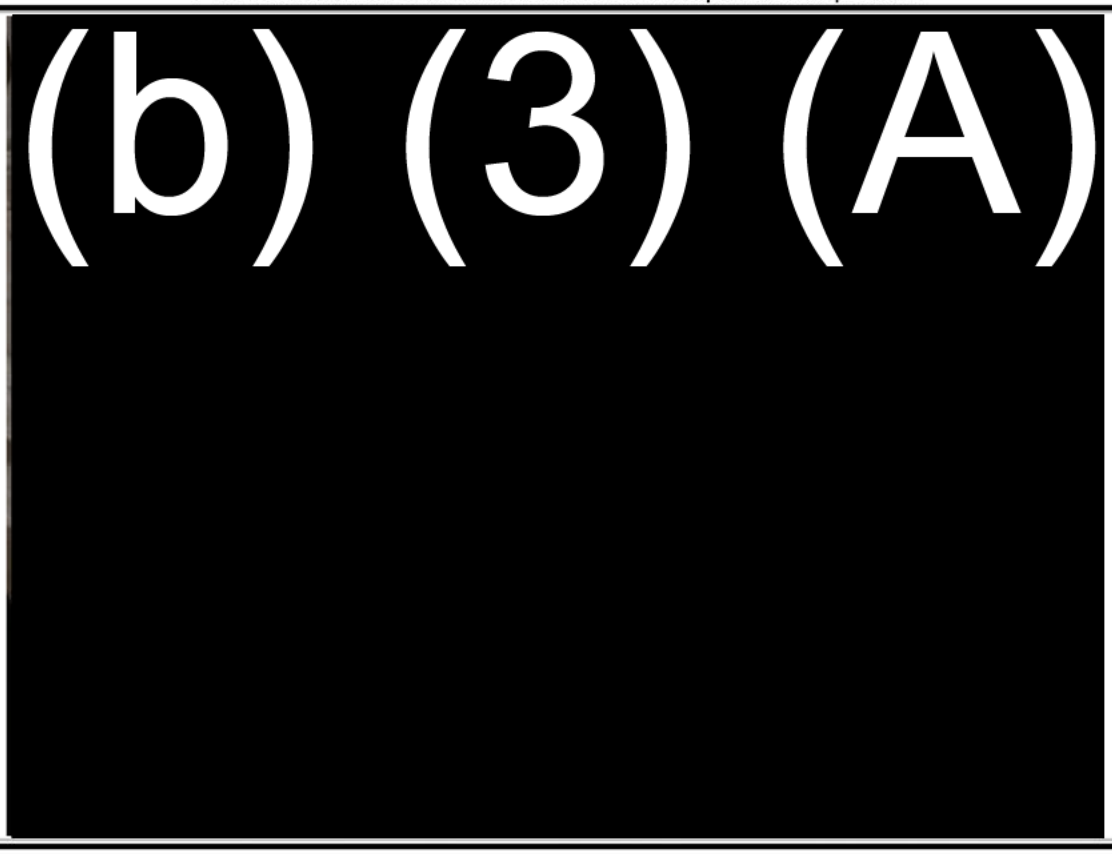
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 22 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**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

| | | | |
|---|---|---|---|
| Validation 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) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 22 MAY 2023 |
| 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 Pumphouse | Surge Tank Piping |

| | | | |
|---|---|---|---|
| Repair Description | Lack of thread engagement on nuts and bolts associated with the (b) (3) (A) low suction pipe flange for Surge Tank (b) (3) at the pipe branch tie-in connection. Replace fasteners. | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports. |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 24 MAR 2023 | | |

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

Comments

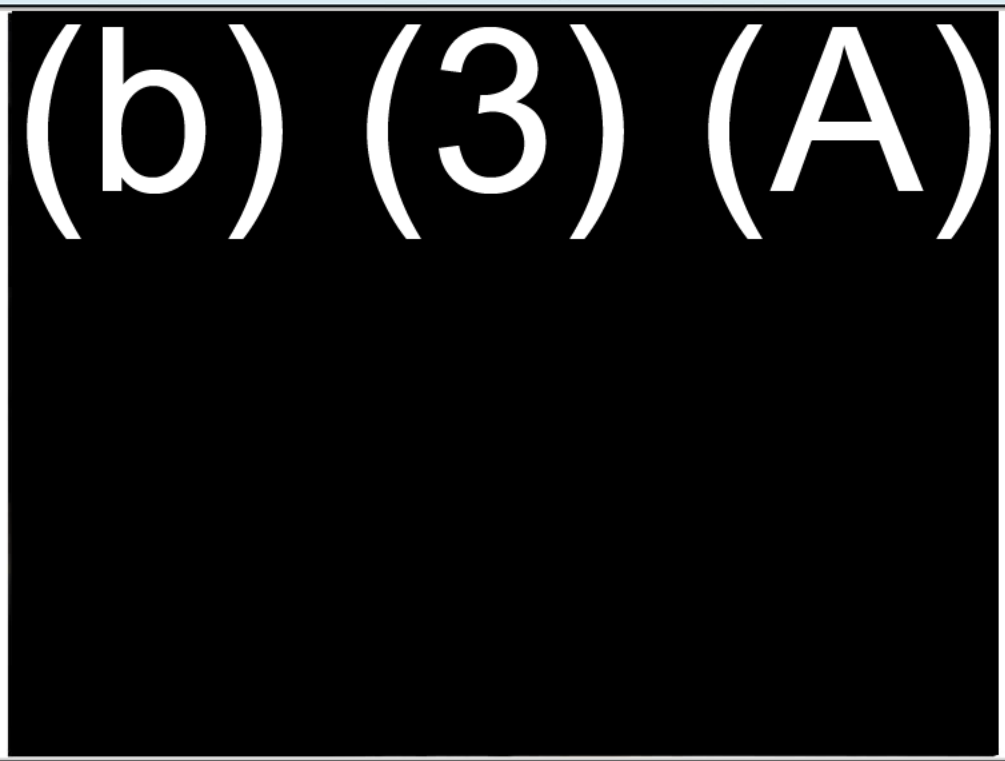
New bolts, washers, and nuts installed, properly torqued, and coated. Repair was visually inspected by JTF-RH QV team and the repair will be monitored during repacking for weeps. Additionally, repair is in the (b) (3) (A) which has its own secondary containment in place.

## CERTIFICATION

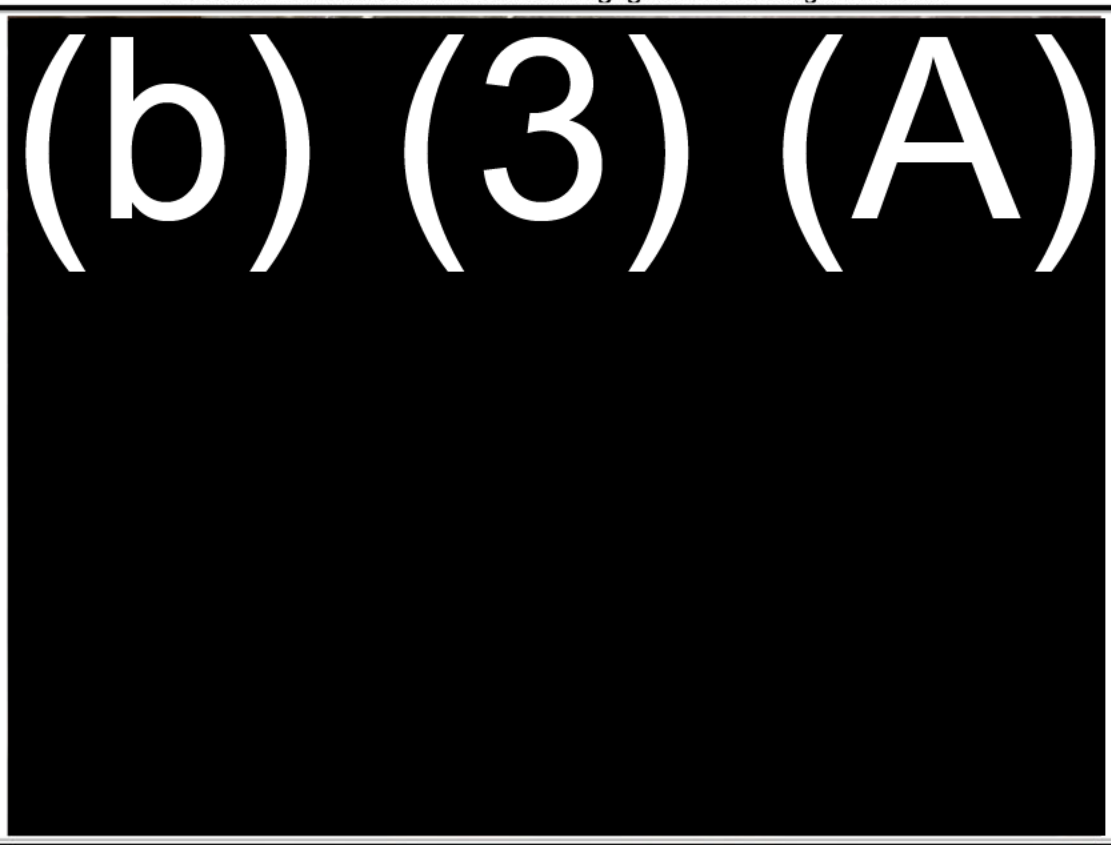
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 22 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




Previous condition: lack of thread engagement on flange fasteners




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

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 112 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | FOR(b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 18 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) |
| Email | (b) (6) hdrinc.com | | |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 66 | RHTF | Sump (b) (3) (A) |

| | | | |
|---|---|---|---|
| Repair Description | The pressure gauge on the FOR line on the discharge side of the sump pump is out of calibration and the glass gauge is cracked. Replace gauge. | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports. |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 20 MAR 2023 | | |

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

Comments

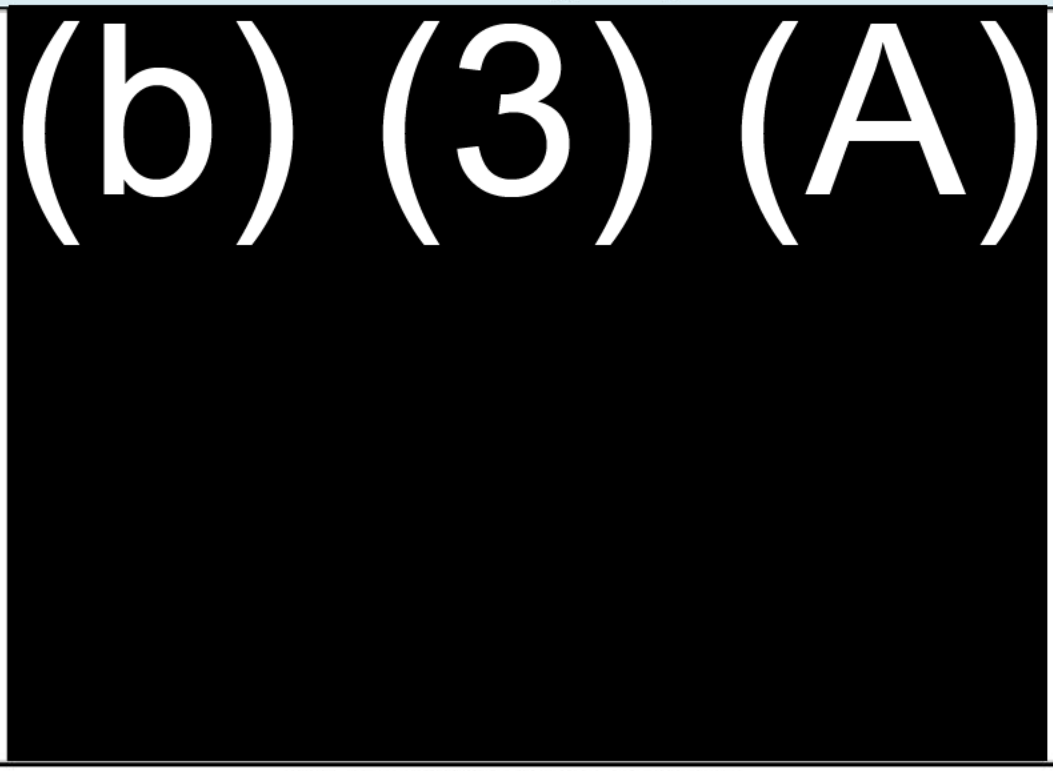
Gauge replaced and visually inspected by JTF-RH QV team. Repair will be monitored during repacking for weeps.

## CERTIFICATION

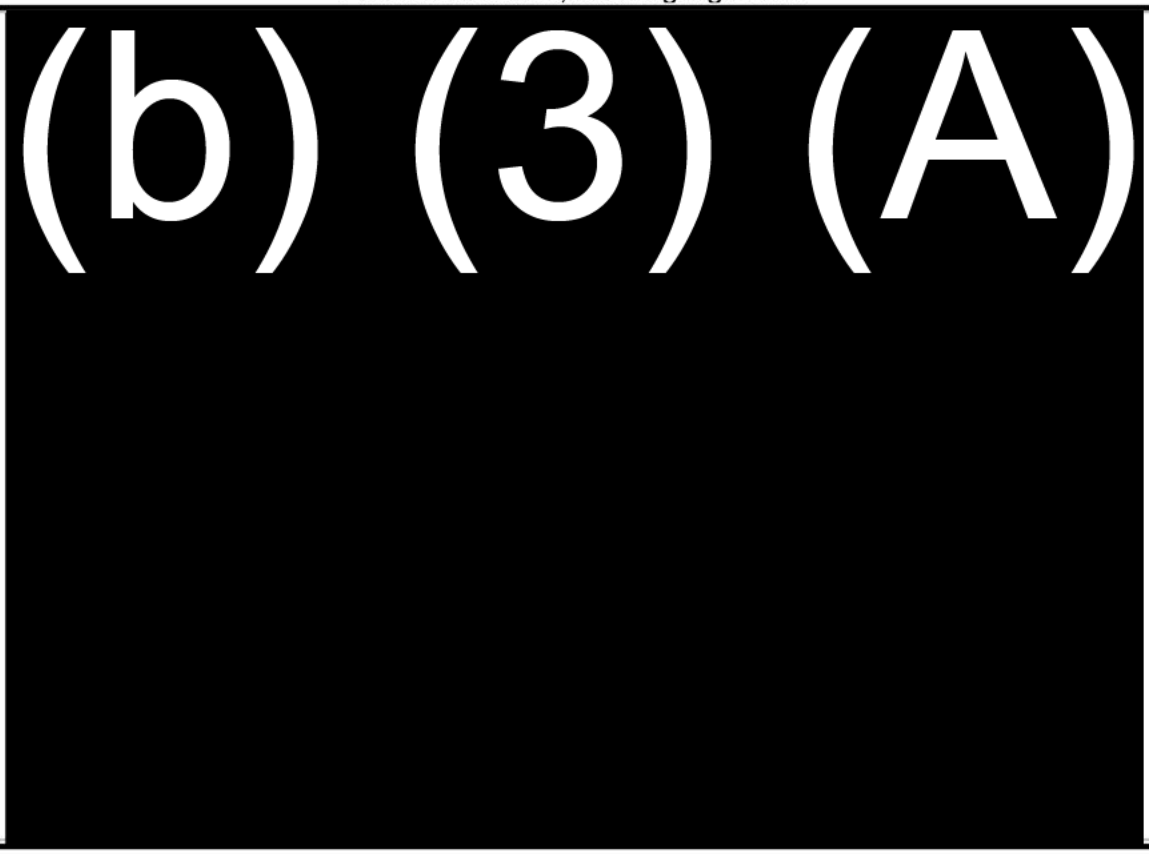
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 18 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




Previous condition; broken gauge face.




Replaced gauge.

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 113 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | FOR-(b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 18 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) |
| Email | (b) (6) hdrinc.com | | |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 66 | RHTF | Door (b) |

| | | | |
|---|---|---|---|
| Repair Description | The (b) (3) (A) FOR pipeline between the tee and (b) (3) (A) (b) (3) (A) is covered with a stained plastic wrap and c-clamps. This is indicating a weep at the threaded joint. Replace piping. | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports. |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 20 MAR 2023 | | |

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

Comments

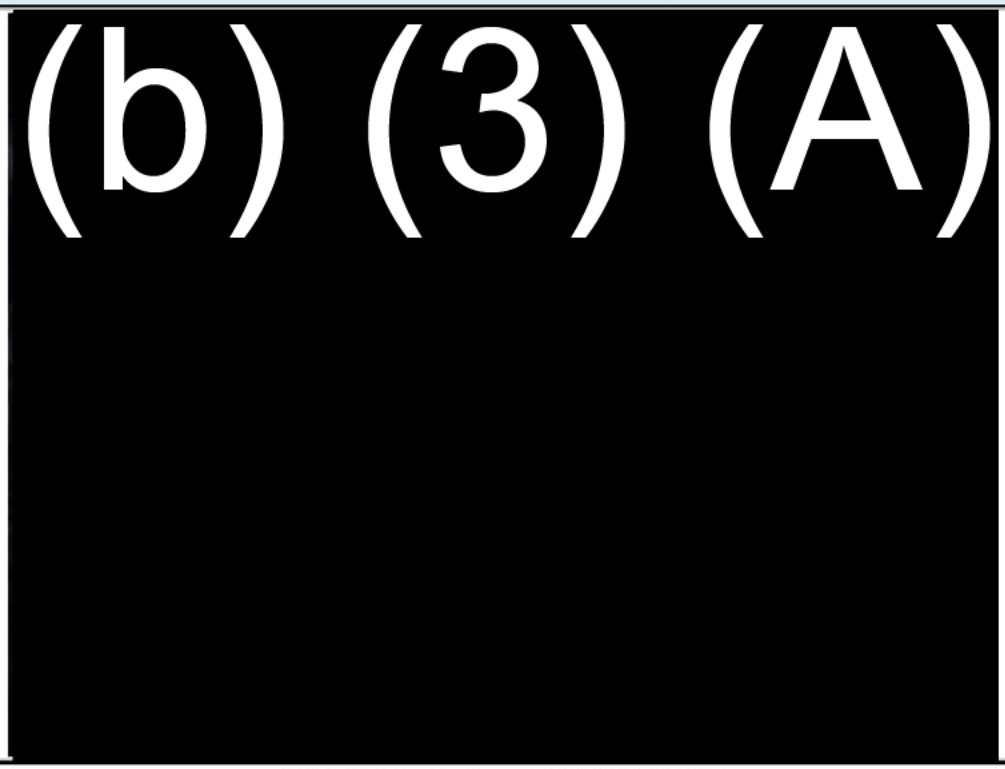
New carbon steel fitting with fuel resistant thread sealant installed. Repair visually inspected by JTF-RH QV team and the repair will be monitored during repacking for weeps.

## CERTIFICATION

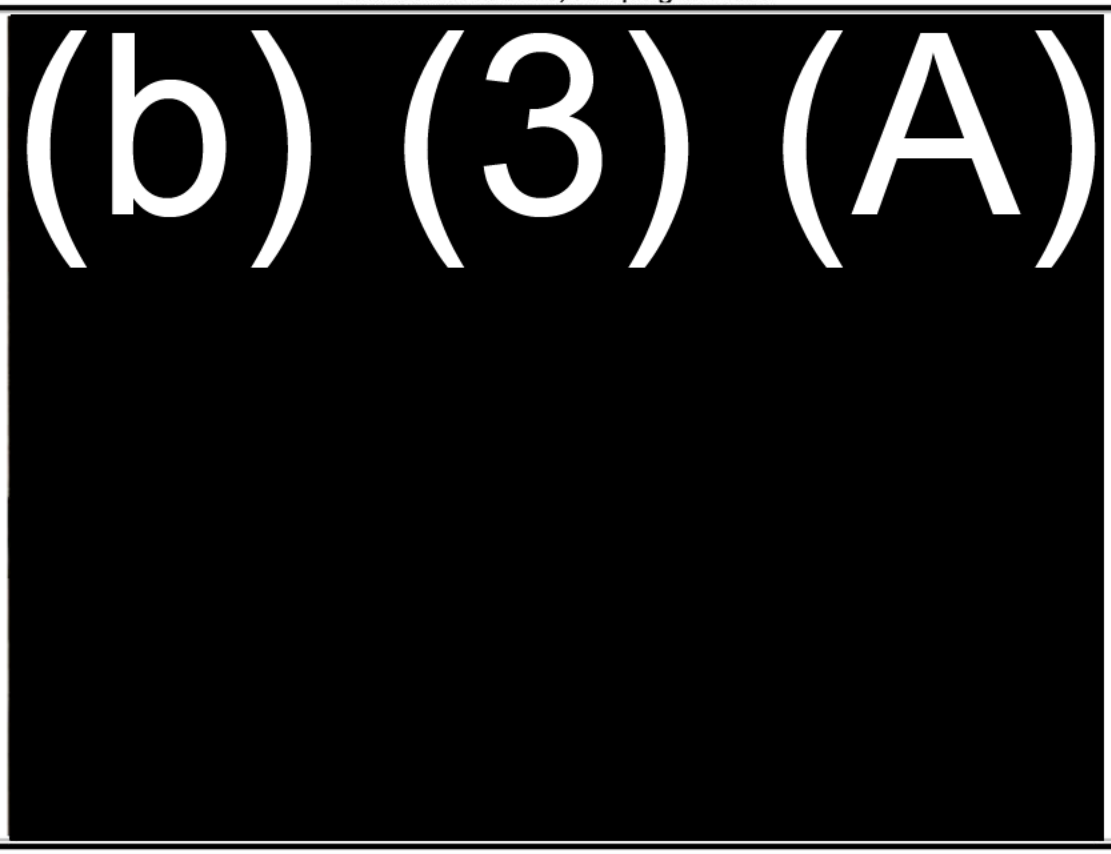
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 18 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




Previous condition, weeping threads.




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

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 115 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | FOR-(b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 22 MAY 2023 |
| QV Engineer | (b) (6) | Phone (b) (6) | Email (b) (6) hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 67 | Red Hill Tank Farm | Tank 15 |

| | | | |
|---|---|---|---|
| Repair Description | The (b) (3) (A) flange has three fasteners that are not fully engaged. Replace fasteners. | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports. |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 17 FEB 2023 | | |

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

Comments

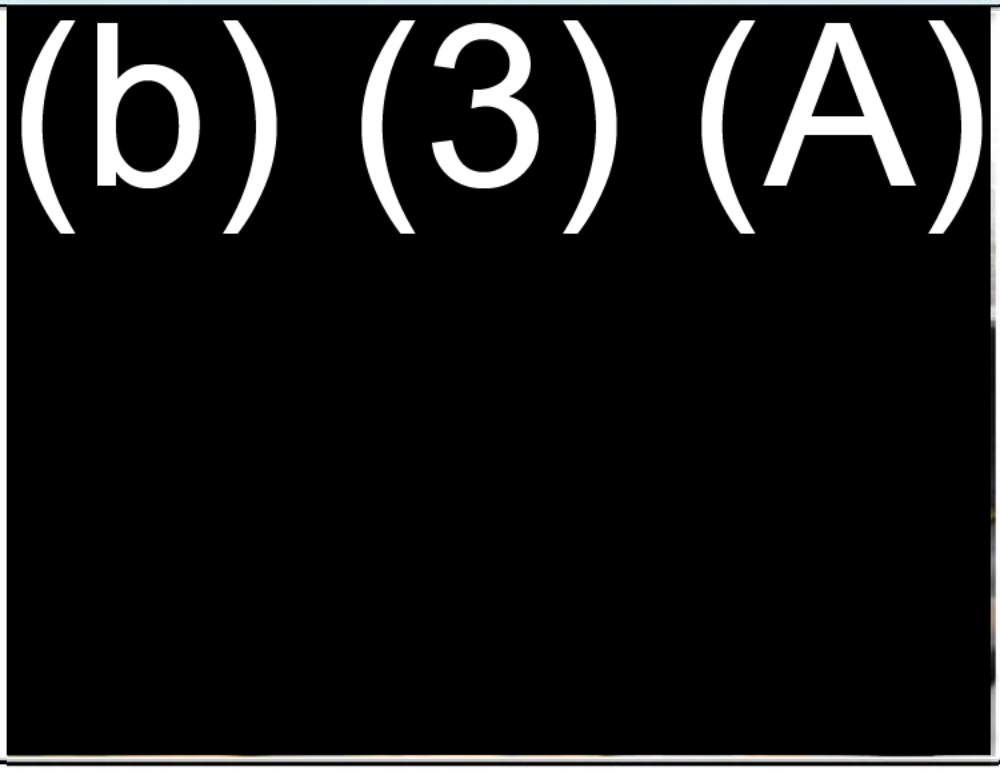
Multiple studs and nuts replaced on (b) (3) (A) gate valve flanges for proper thread engagement. Repair visually inspected by JTF-RH QV team for tightness and repair will be monitored during repacking for weeps.

## CERTIFICATION

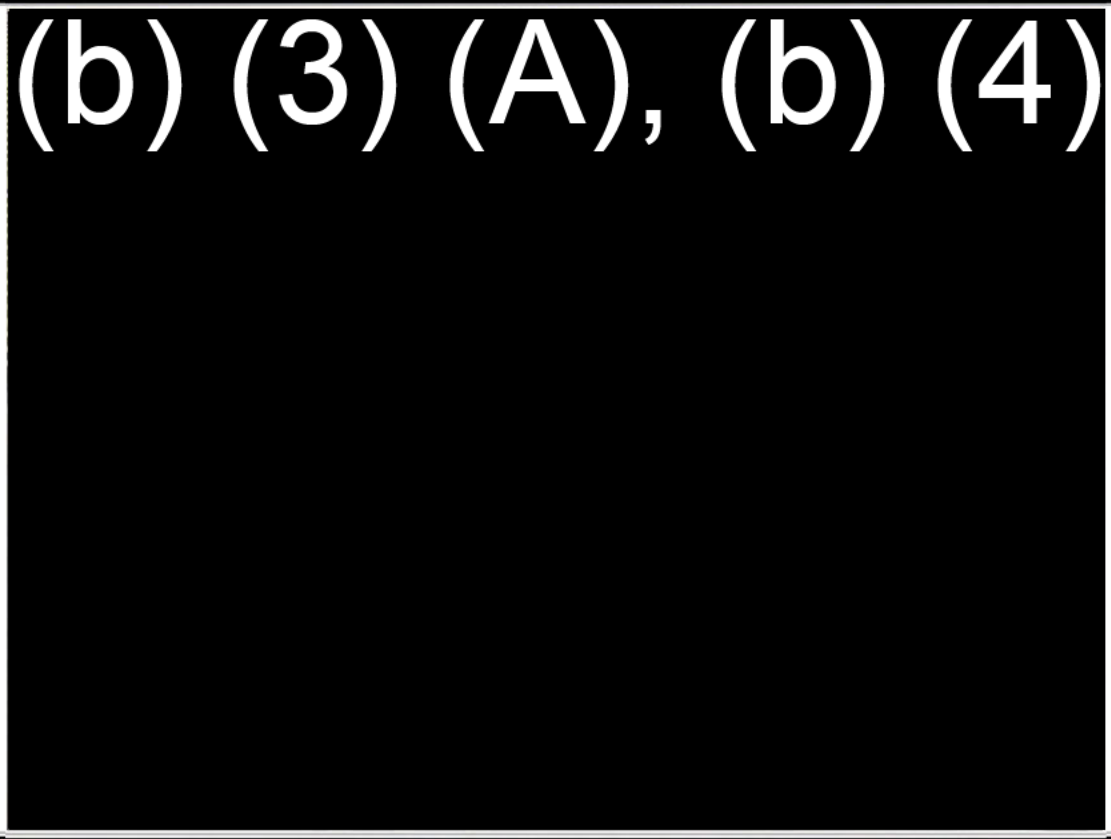
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 22 MAY 2023 |

**QUALITY ASSURANCE VALIDATION REPORT**

**Red Hill Bulk Fuel Storage Facility Defuel**




Joint fasteners lacking thread engagement.




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

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 118 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | FOF[redacted] |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 23 MAY 2023 |

| | | | | | |
|---|---|---|---|---|---|
| QV Engineer | (b) (6) | Phone | (b) (6) | Email | (b) (6) hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 67 | RHTF | Tank 9 |

| | | | |
|---|---|---|---|
| Repair Description | The tank sampling piping associated with Tanks is showing signs of minor to moderate corrosion at areas where the piping has not been upgraded. Tank 9 sample piping is severely corroded and requires replacement. | Source Contract Reference | N/A for in-house labor. |
| Description of Contractor QC Method(s) Used | Two-party integrity verification by FLC personnel. | Contractor QC Records Reviewed | N/A |
| Description of QA Validation and Observations | Site Visit.<br><br>Final acceptance by government. Date: 15 MAY 2023 | | |

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

Comments

Repair Description cont. "Repair by replacement the small-bore tank sample piping up to the sampling stations associated with Tank 9. Reviewed for FFS. (b) (3) (A), (b) (5) [redacted]

It was determined the benefit of the repair was outweighed by the risk of disturbing active lines to the live tank with no isolation point should damage occur during repair. Valves were closed and placed in LOTO; sample lines will be drained as part of closure after Facility defueling completed.

## 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 | 23 MAY 2023 |

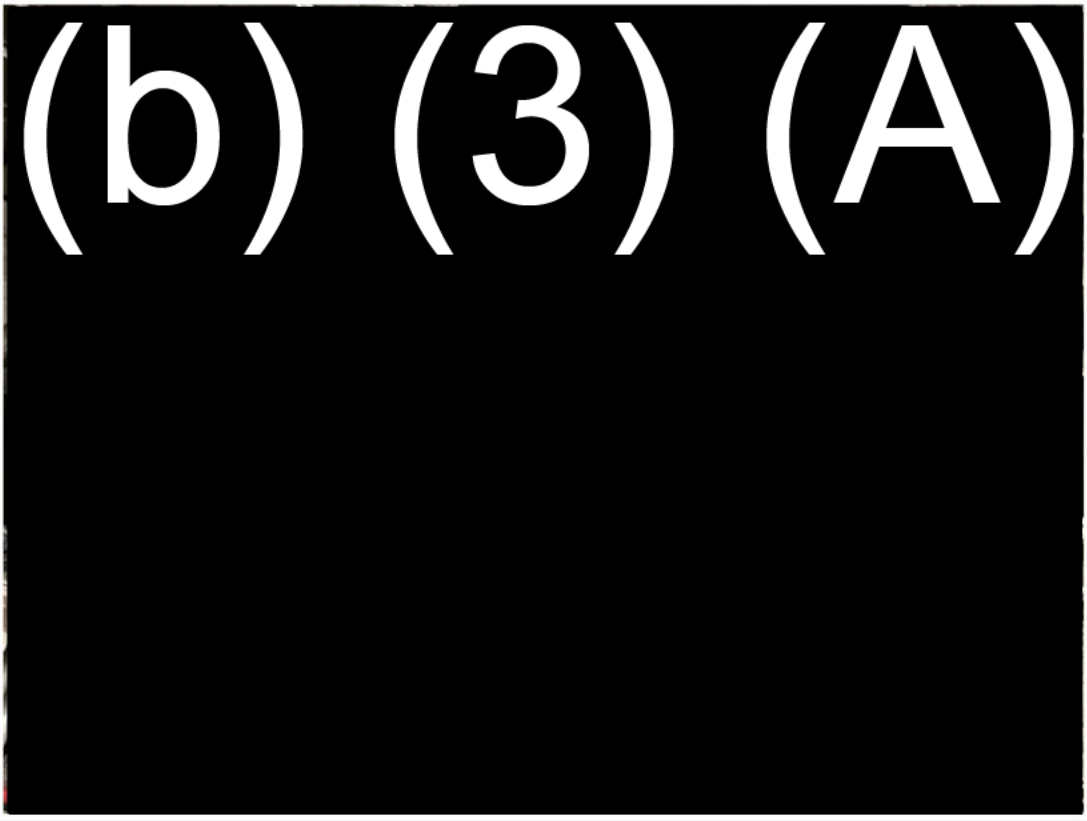
## QUALITY ASSURANCE VALIDATION REPORT

**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

| | | | | | |
|---|---|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | | | Repair No. | 119 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | | | Repair ID | FOR[redacted] |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | | | Report Date | 22 MAY 2023 |
| QV Engineer | [redacted] | Phone | [redacted] | Email | [redacted]hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 68 | Red Hill Tank Farm | Sump [redacted] |

| | | | |
|---|---|---|---|
| Repair Description | Unsecured flange and pipe nozzle at [redacted]. The flange is missing several fasteners and the pipe is not capped. Replace fasteners and provide cap. | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports. |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 17 FEB 2023 | | |

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

Comments

Flange connection will not be used for defueling, therefore the repair was modified to install a blind flange with new fasteners instead of replacing fasteners on the existing flange and capping pipe nipple.

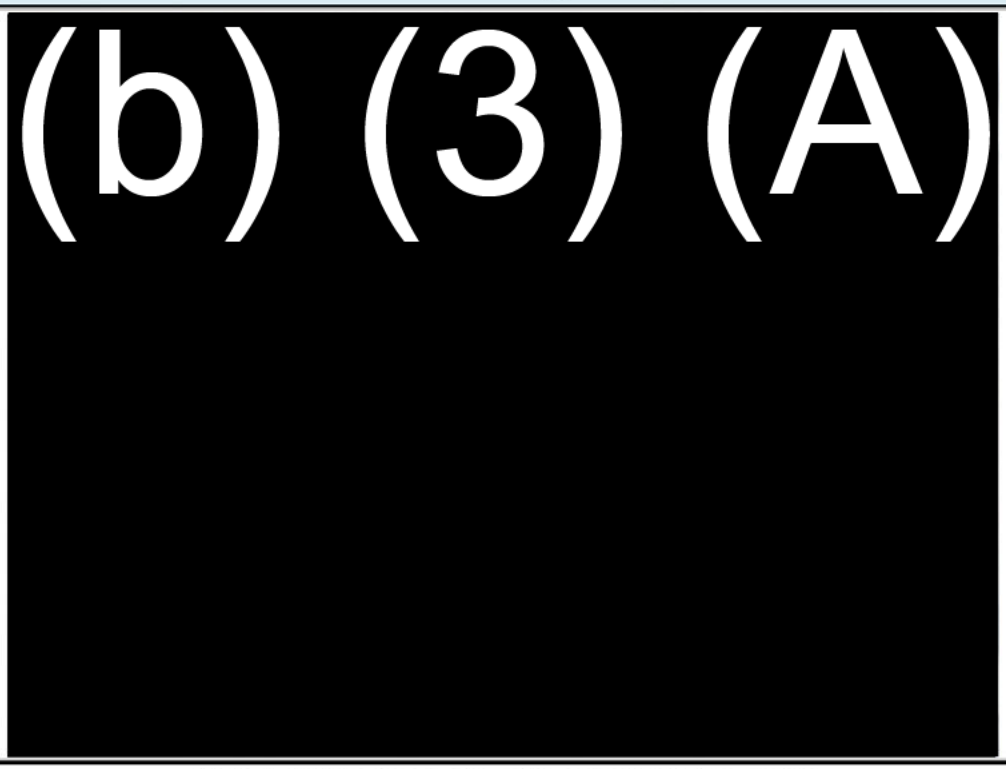
Flange was visually inspected by JTF-RH QV team and repair will be monitored during repacking for weeps.

## CERTIFICATION

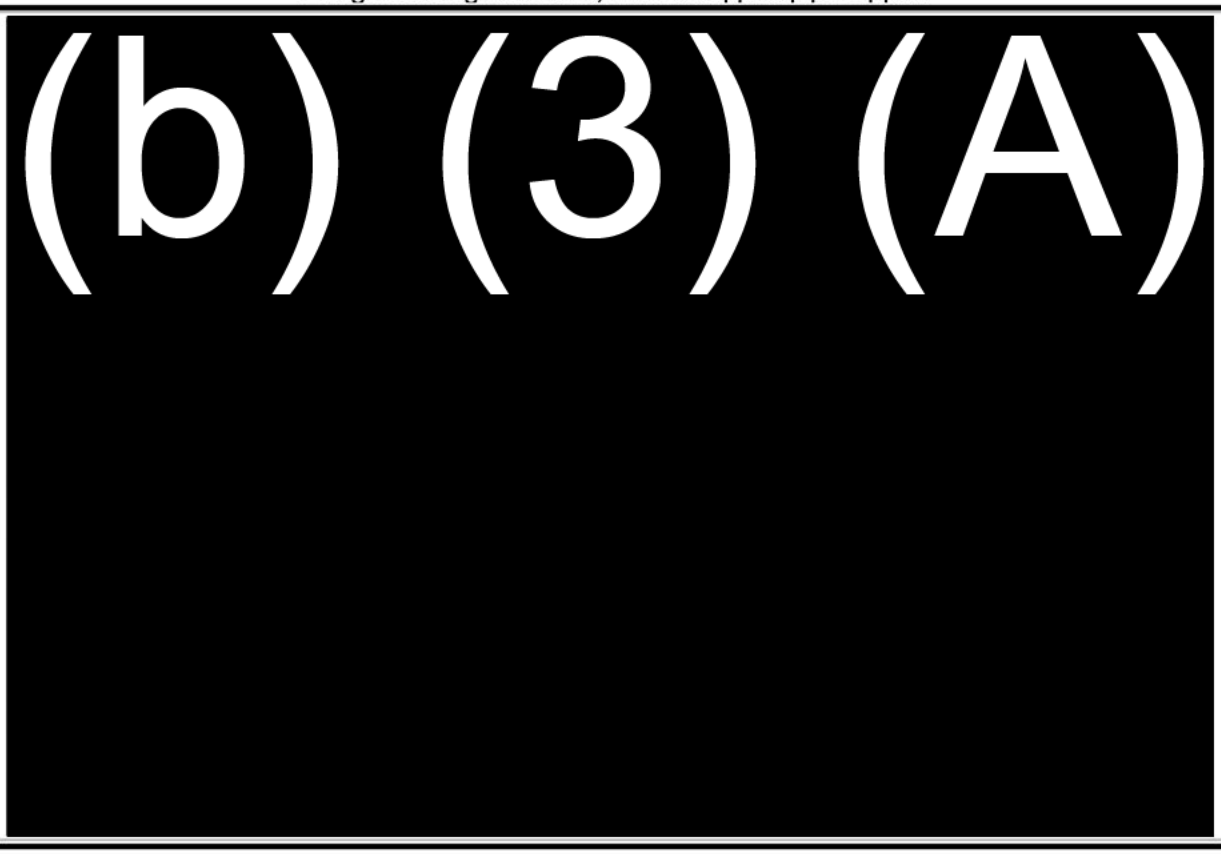
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 22 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




Flange missing fasteners, with uncapped pipe nipple.




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

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | | | |
|---|---|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | | | Repair No. | 121 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | | | Repair ID | FOR-(b)(3)(A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | | | Report Date | 22 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) | Email | (b) (6) hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 68 | Red Hill Tank Farm | Sump (b)(3)(A) |

| | | | |
|---|---|---|---|
| Repair Description | A loose fastener was observed on a (b)(3)(A) pipe flange within the pipe trench adjacent to (b)(3)(A). Tighten fastener. | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports. |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 17 FEB 2023 | | |

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

Comments

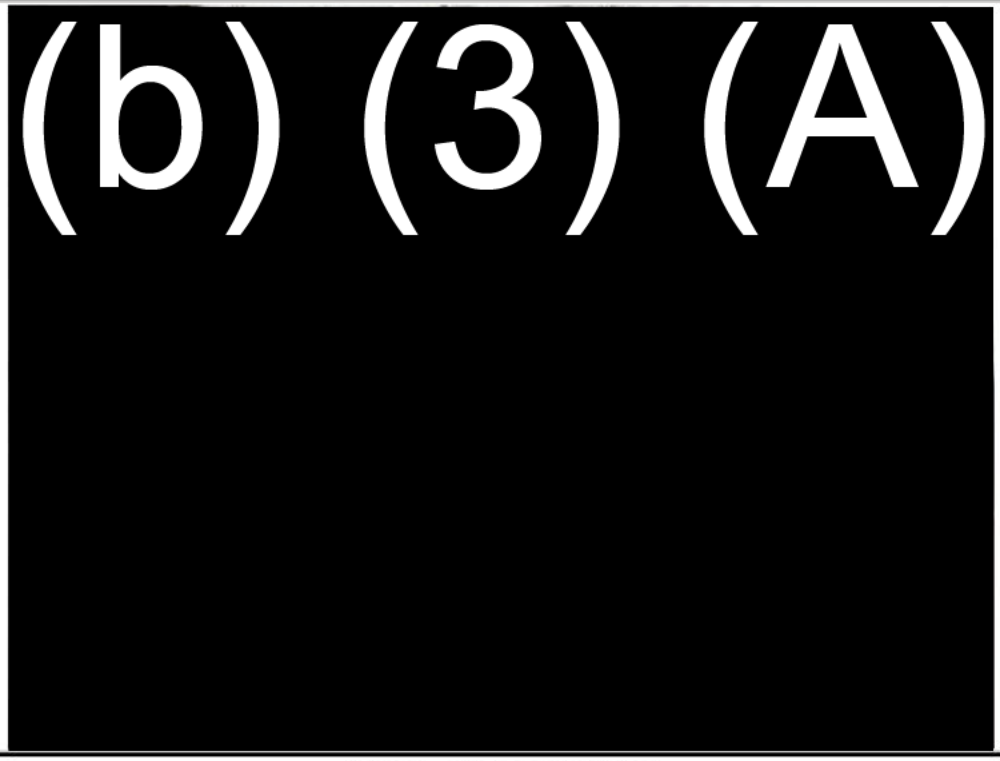
Loose fastener was replaced. JTF-QV team visually inspected the repair and the repair will be monitored during repacking for weeps.

## CERTIFICATION

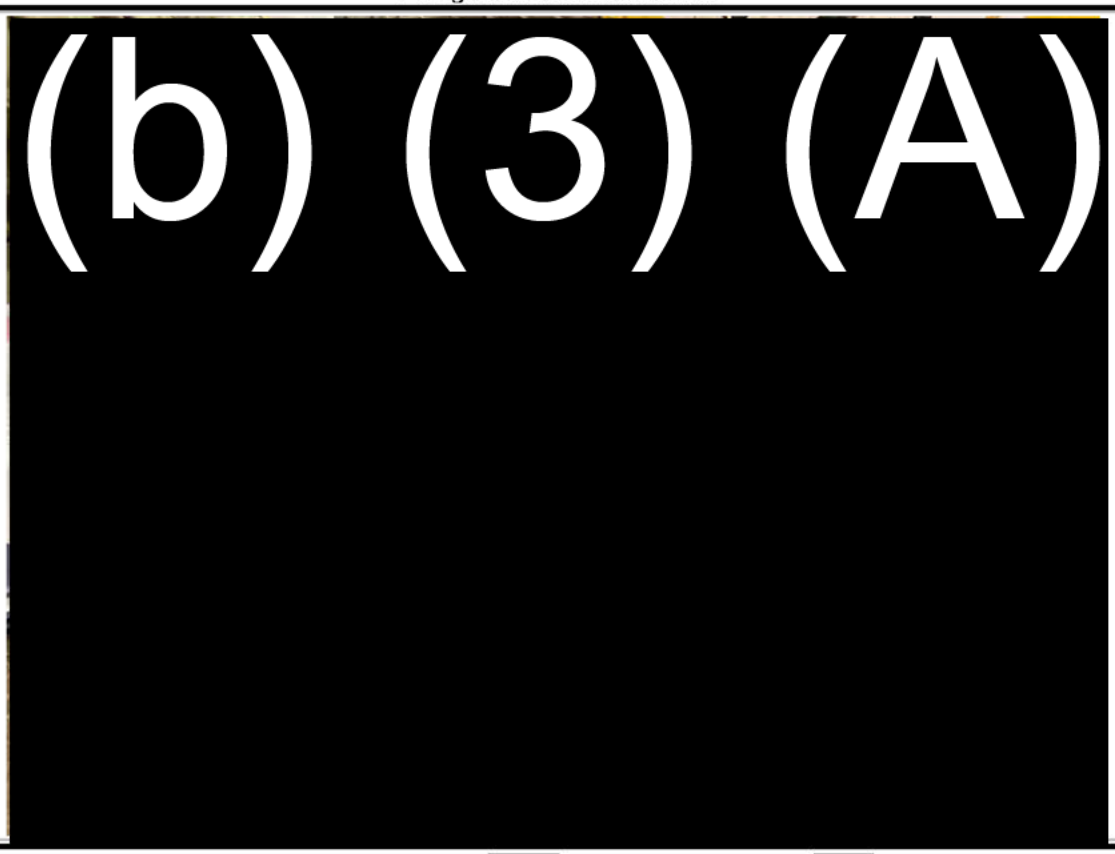
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 22 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




Flange with loose fastener.




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

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 123 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | FOR-(b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 22 MAY 2023 |
| QV Engineer | (b) (6) | Phone (b) | Email (b) (6) hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 69 | (b) (3) (A) | (b) (3) (A) |

| | | | |
|---|---|---|---|
| Repair Description | (b) (3) (A) Low Point Drain – No cap on cam-lock fitting. (b) (3) (A) fasteners are not fully engaged on the (b) (3) (A) low point drain flange. Replace camlock cap. Provide fasteners. | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports. |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 17 FEB 2023 | | |

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

Comments

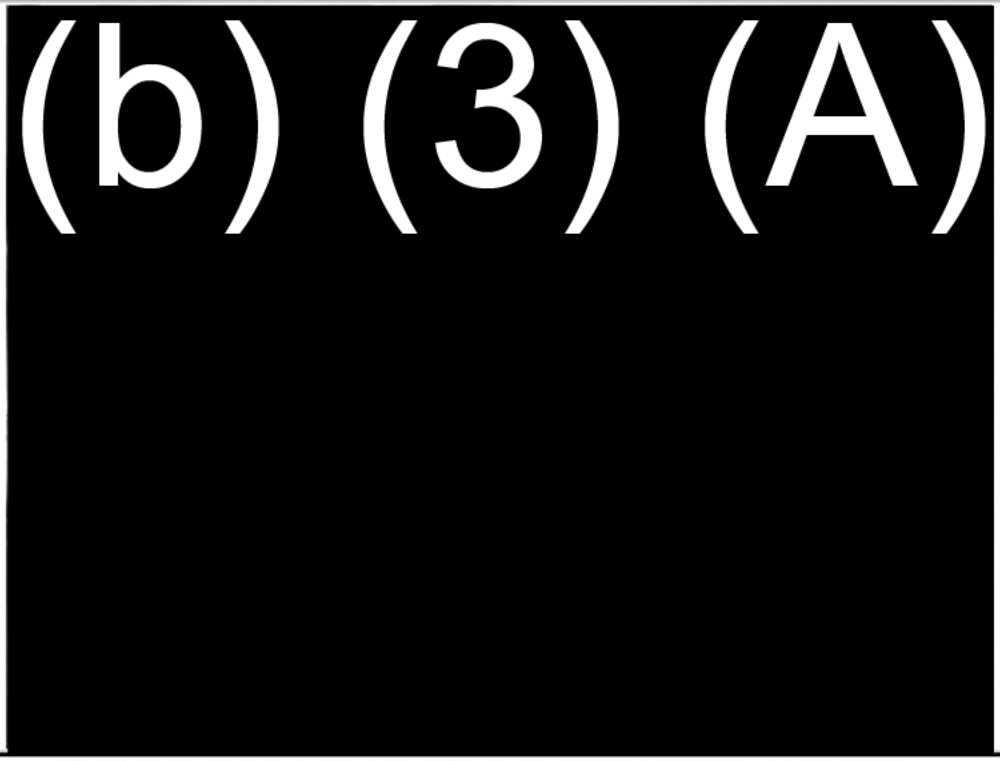
Studs and nuts replaced and cap lock cap installed. Repair was visually inspected by JTF-RH QV team and the repair will be monitored during repacking for weeps.

## CERTIFICATION

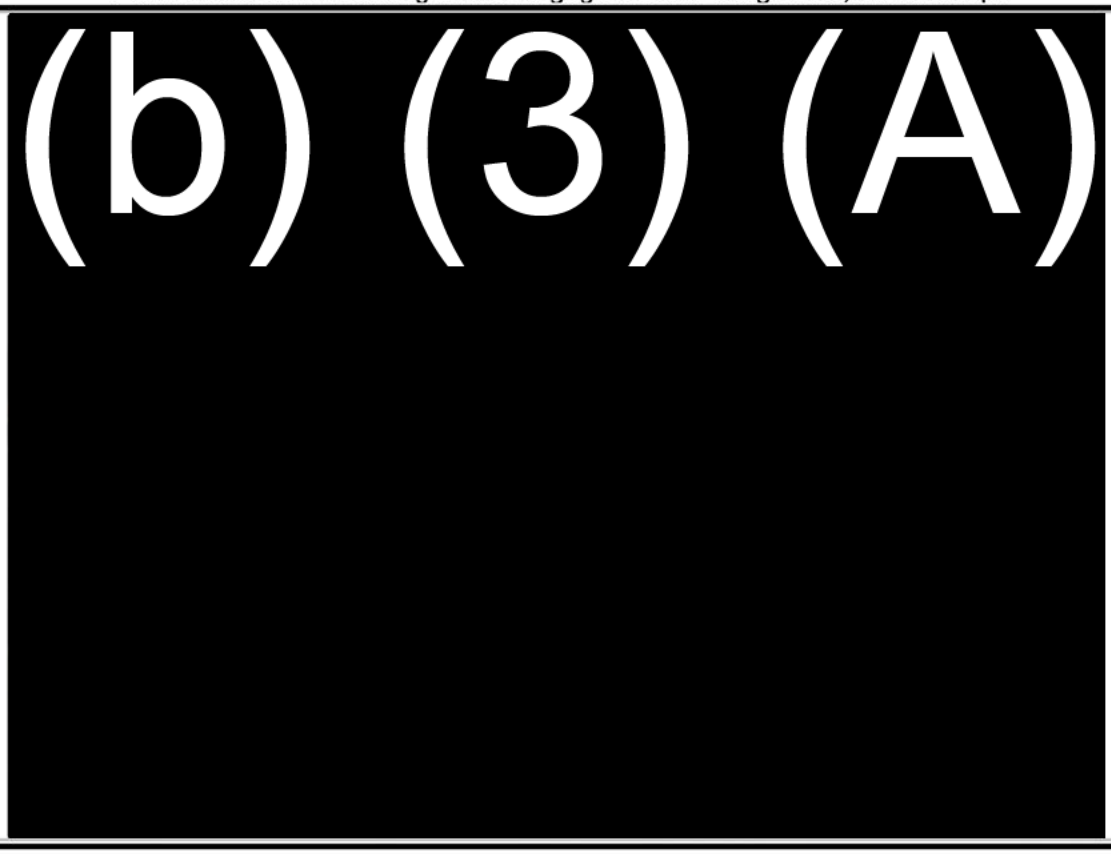
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 22 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




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




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

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | | | |
|---|---|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | | | Repair No. | 124 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | | | Repair ID | FOR-(b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | | | Report Date | 22 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (641) 740-7338 | Email | (b) (6) hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 69 | (b) (3) (A) | (b) (3) (A) |

| | | | |
|---|---|---|---|
| Repair Description | (b) (3) (A) Low Point Drain – No cap on cam-lock fitting. (b) (3) (A) fasteners are not fully engaged on the (b) (3) (A) low point drain flange. Replace camlock cap. Provide fasteners. | Source Contract Reference | |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports. |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 17 FEB 2023 | | |

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

Comments

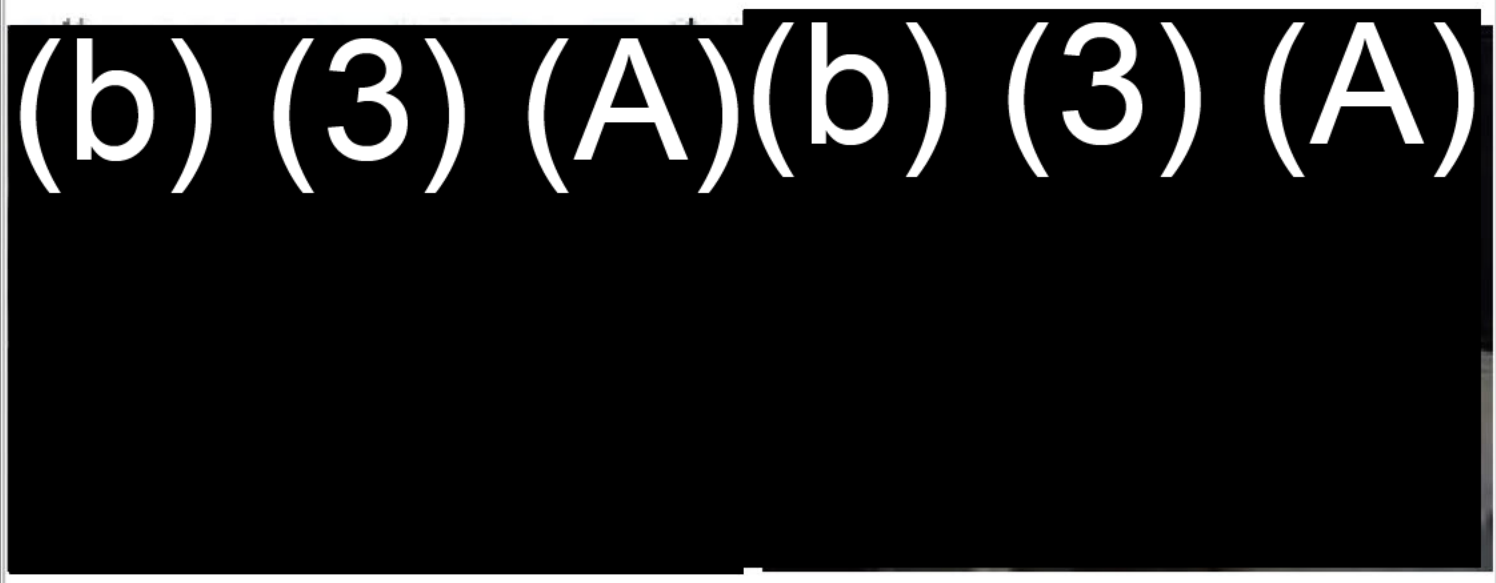
New studs and nuts installed and fully engaged. New cam lock cap installed. Repair was visually inspected by JTF-RH QV team and repair will be monitored during repacking for weeps.

## CERTIFICATION

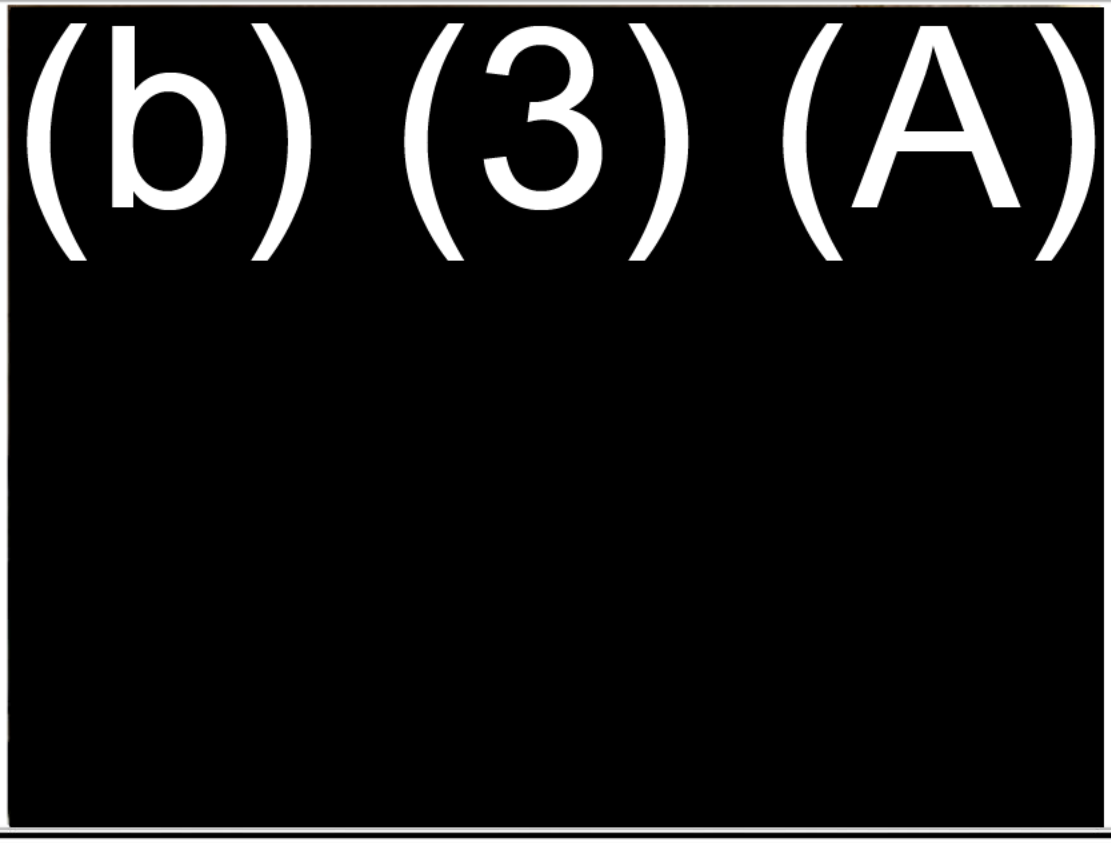
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 22 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




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




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

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 129 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | FOR-(b) (3) (A) |
| Co ntract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 22 MAY 2023 |

| | | | | | |
|---|---|---|---|---|---|
| QV Engineer | (b) (6) | Phone | (b) (6) | Email | (b) (6) hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 69 | (b) (3) (A) | Tank (b) (3) (A) |

| | | | |
|---|---|---|---|
| Repair Description | The body cavity relief valve on the (b) (3) (A) located on the (b) (3) (A) pipeline is discharging to isolated segment of piping downstream and should be discharging to the atmospheric, tank side of the valve. Replumb the body cavity relief to relieve towards Tank (b) (3) (A). | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 05 APR 2023 | | |

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

Comments

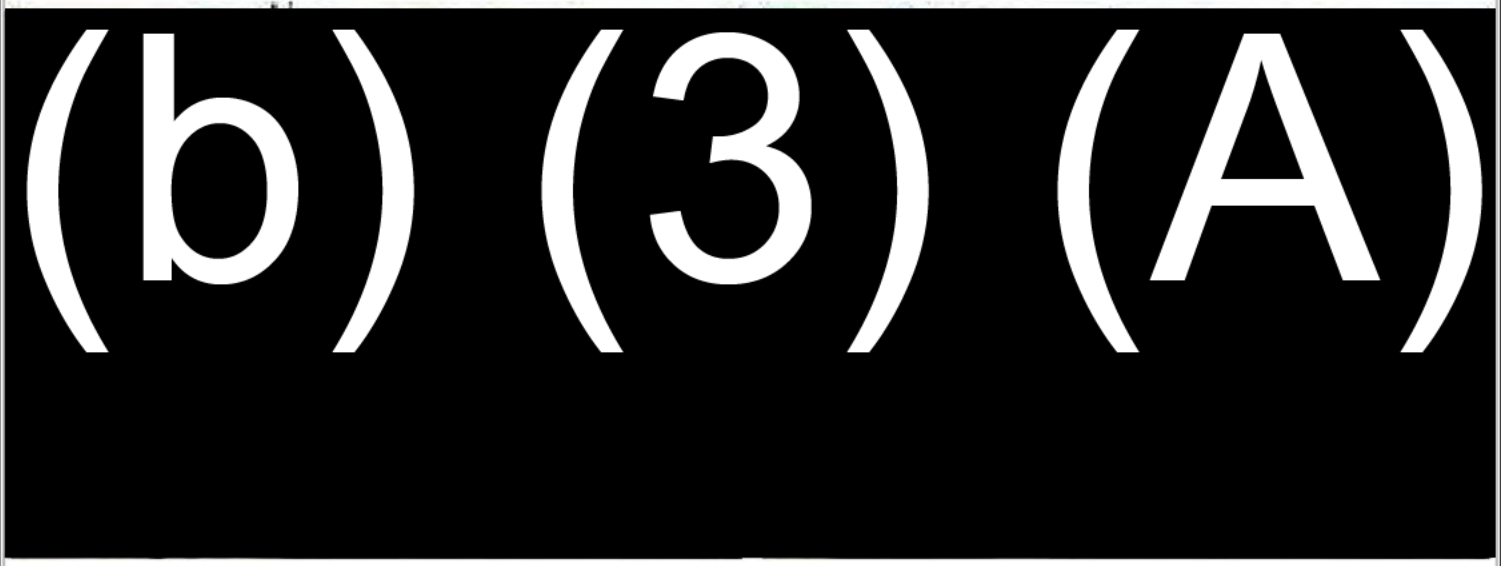
Body cavity relief valve on the (b) (3) (A) for (b) (3) (A) was replaced. Repair was visually inspected by JTF-RH QV team and repair will be monitored during defueling operations. Additionally, this repair is above an in place secondary containment area near tank (b) (3) (A).

## CERTIFICATION

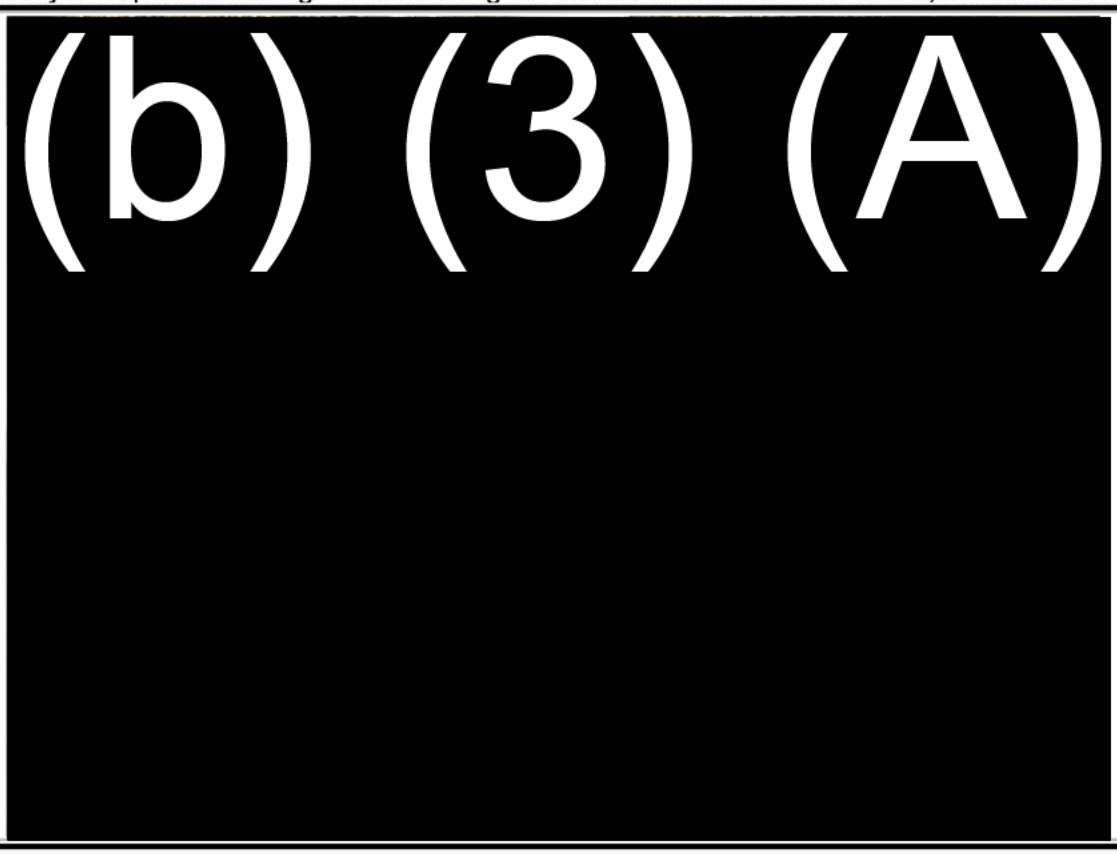
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 22 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




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




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

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 131 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | FOR(b) (3) (A) |
| Co ntract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 22 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) |
| Email | (b) (6) hdrinc.com | | |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 70 | (b) (3) (A) | Tank (b) (3) (A) |

| | | | |
|---|---|---|---|
| Repair Description | The (b) (3) (A) on the (b) (3) (A) located on the (b) (3) (A) is discharging to isolated segment of piping downstream and should be discharging to the atmospheric, tank side of the valve. Replumb the body cavity relief to relieve towards Tank (b) (3) (A) | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 05 APR 2023 | | |

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

Comments

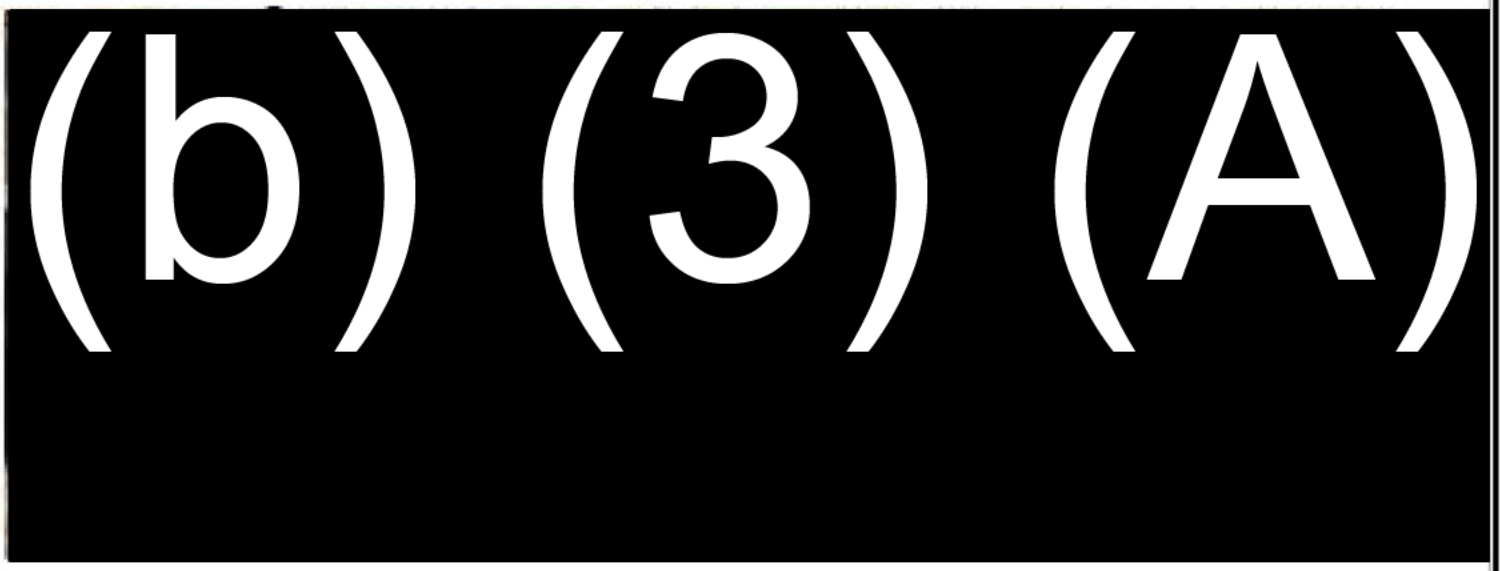
(b) (3) (A) on the (b) (3) (A) for (b) (3) (A) was replaced and properly plumbed. Repair was visually inspected by JTF-RH QV team and repair will be monitored during defueling operations. Additionally, this repair is above an in place secondary containment area near tank (b) (3) (A).

## CERTIFICATION

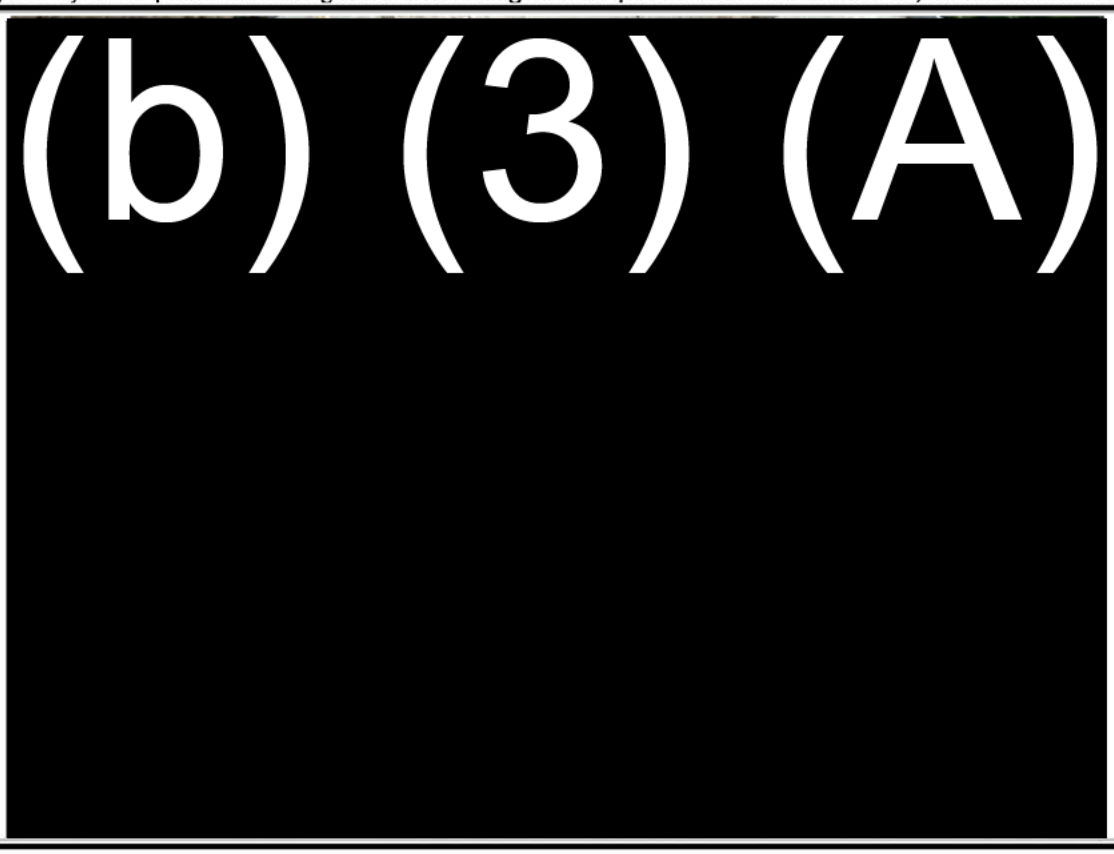
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 22 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




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




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

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | | | |
|---|---|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | | | Repair No. | 144 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | | | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | | | Report Date | 22 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) | Email | (b) (6) hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 72 | RHTF | Pipe Support (b) (3) (A) |

| | | | |
|---|---|---|---|
| Repair Description | Remove [redacted] threaded bronze gate valve. Provide 2" carbon [redacted] Review for mechanical integrity. Disassemble and reassemble only if warranted. | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in QCP. | Contractor QC Records Reviewed | QCP and Daily Reports. |
| Description of QA Validation and Observations | Methods outlined in QASP.<br><br>Final acceptance by government. Date: 20 MAR 2023 | | |

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

Comments

"Review for mechanical integrity. Disassemble and reassemble only if warranted" applies to the adapter downstream of the (b) (3) (A) It was disassembled and re-assembled with fuel-resistant thread sealant.

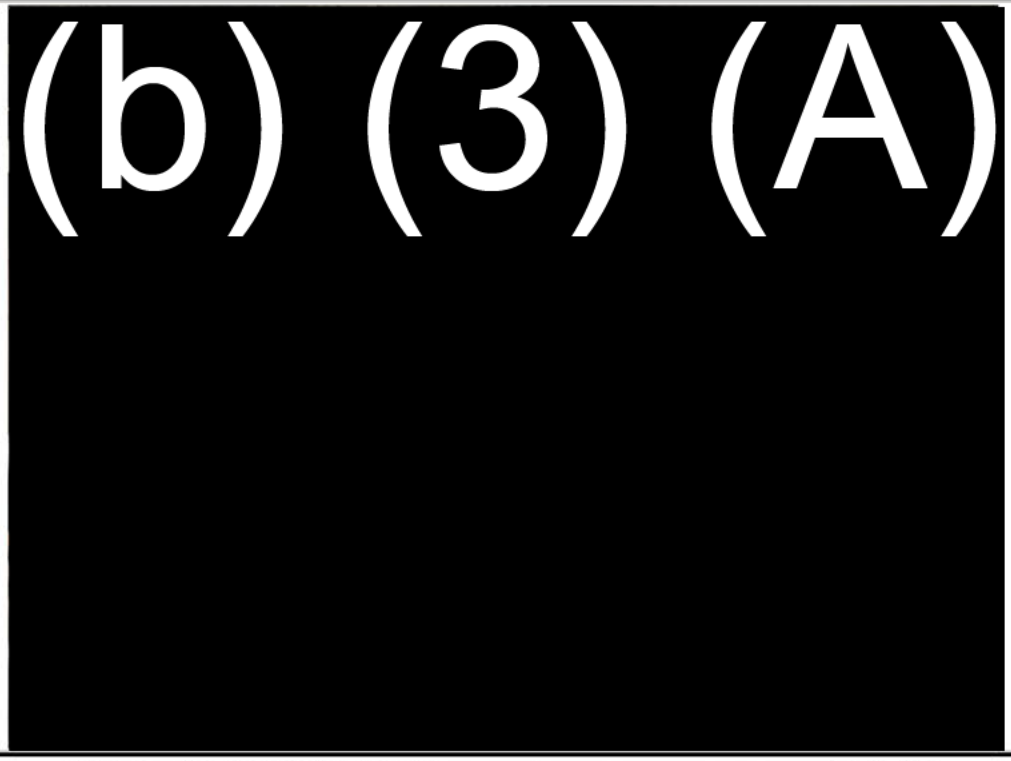
Installation of new valve and plug was visually inspected by JTF-RH QV team for tightness and the repair will be monitored during repacking for weeps.

## CERTIFICATION

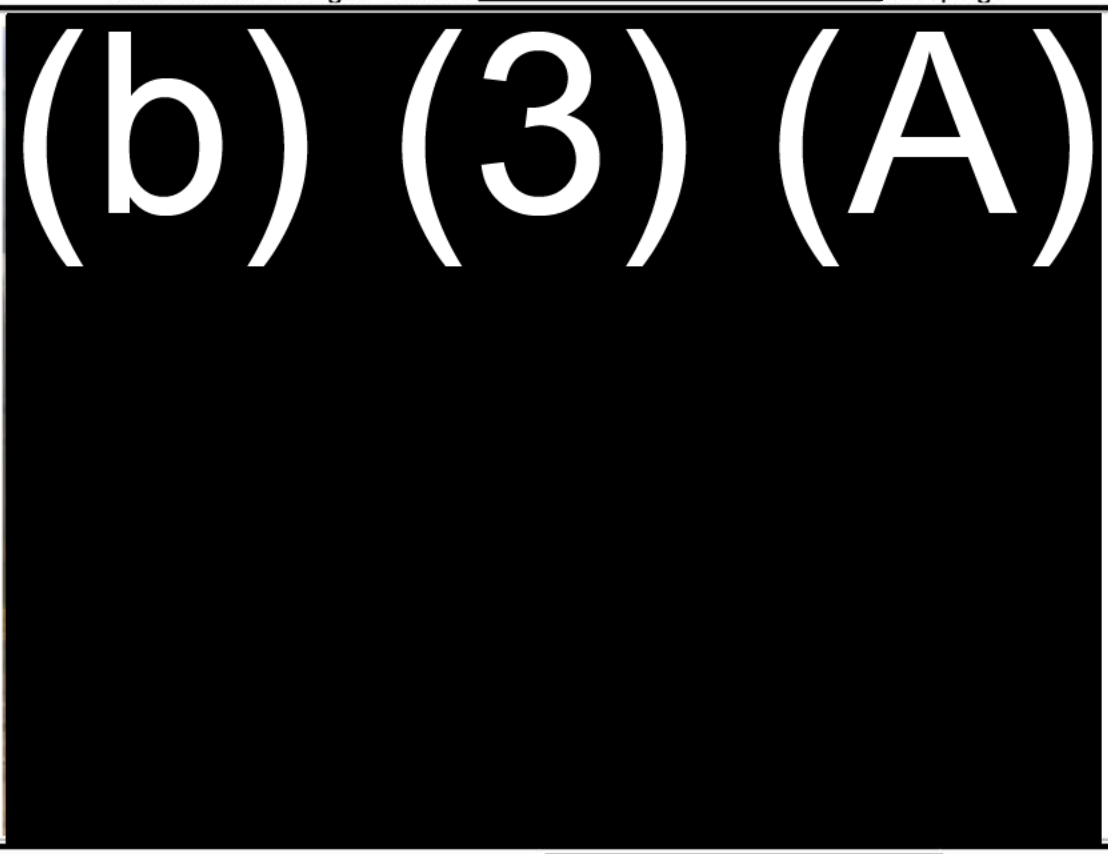
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 22 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**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

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 233 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | EPRC.K.y |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 25 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) |
| Email | (b) (6) hdrinc.com | | |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NAVFAC EXWC | EXWC Recommendation | Tank Gallery | Pipe Support (b) |

| | | | |
|---|---|---|---|
| Repair Description | Remove and replace broken grout at PS-(b) base plate. | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in CQCP. | Contractor QC Records Reviewed | CQCP and Daily Reports |
| Description of QA Validation and Observations | Government Quality Assurance is documented by the QSR's in the daily CQC reports using NAVFAC Form 4296/2.<br><br>Final acceptance by government. Date: 21 MAR 2023 | | |

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

Comments

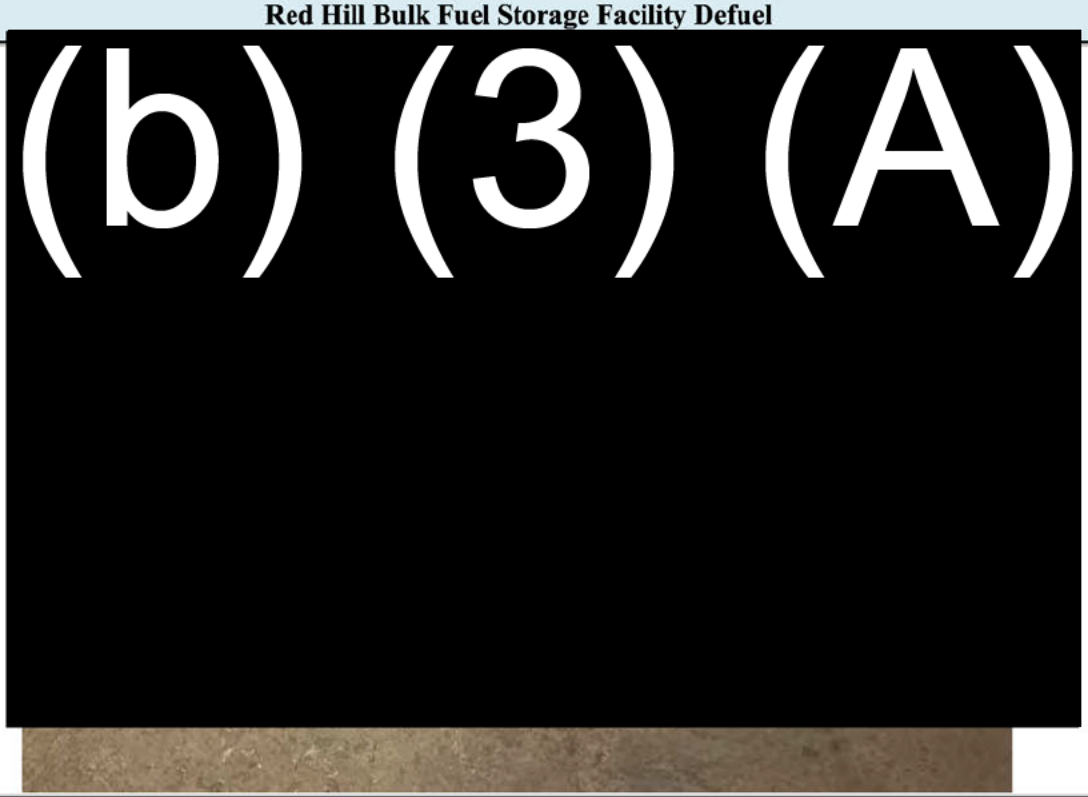
Based on EXWC recommendation, added to EPRC contract.

## 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 | 25 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




Removed and repaired broken grout at Pipe Support [b] Base Plate.

No Before Photograph.

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 234 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | EPRC.K.z |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 23 MAY 2023 |
| QV Engineer | (b) (6) | Phone [redacted] | Email (b) (6) hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NAVFAC EXWC | EXWC Recommendation | Tank Gallery | Pipe Support [redacted] |

| | | | |
|---|---|---|---|
| Repair Description | Remove and replace deformed anchor bolt at PS-[redacted] | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in CQCP. | Contractor QC Records Reviewed | CQCP and Daily Reports |
| Description of QA Validation and Observations | Government Quality Assurance is documented by the QSR's in the daily CQC reports using NAVFAC Form 4296/2.<br><br>Final acceptance by government. Date: 21 MAR 2023 | | |

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

Comments

Based on EXWC recommendation, added to EPRC contract.

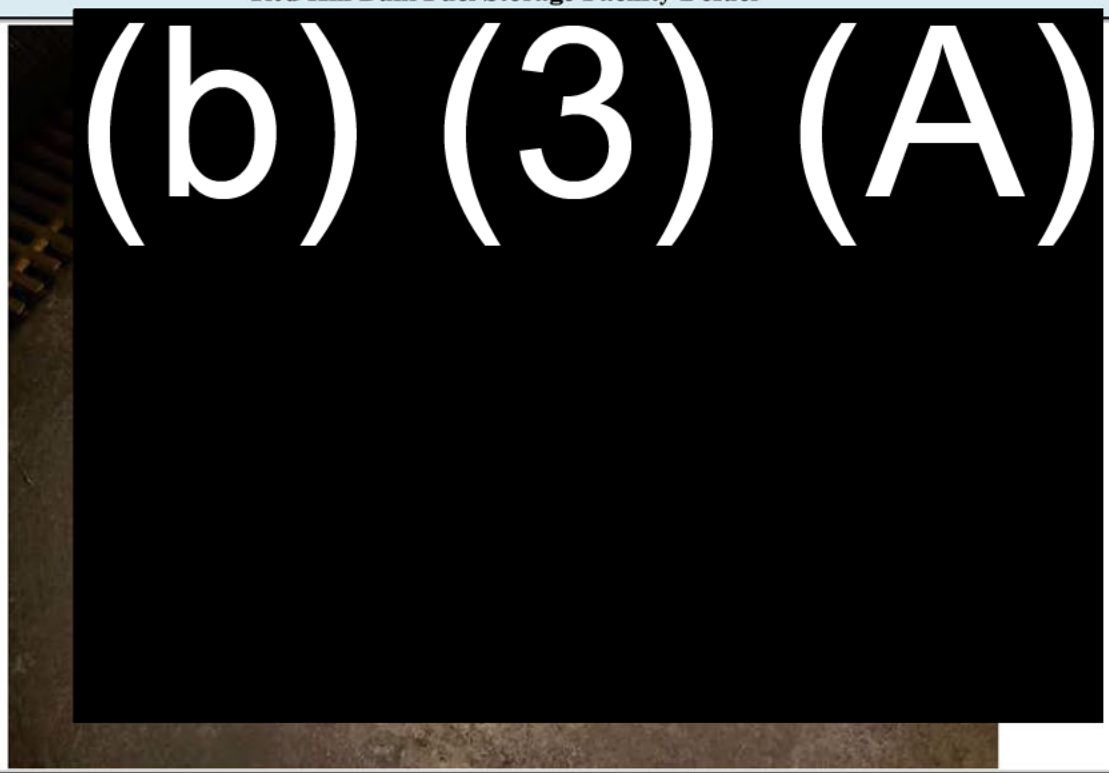
New anchor bolts installed and grout replaced. Repair was visually inspected by JTF-RH QV team.

## CERTIFICATION

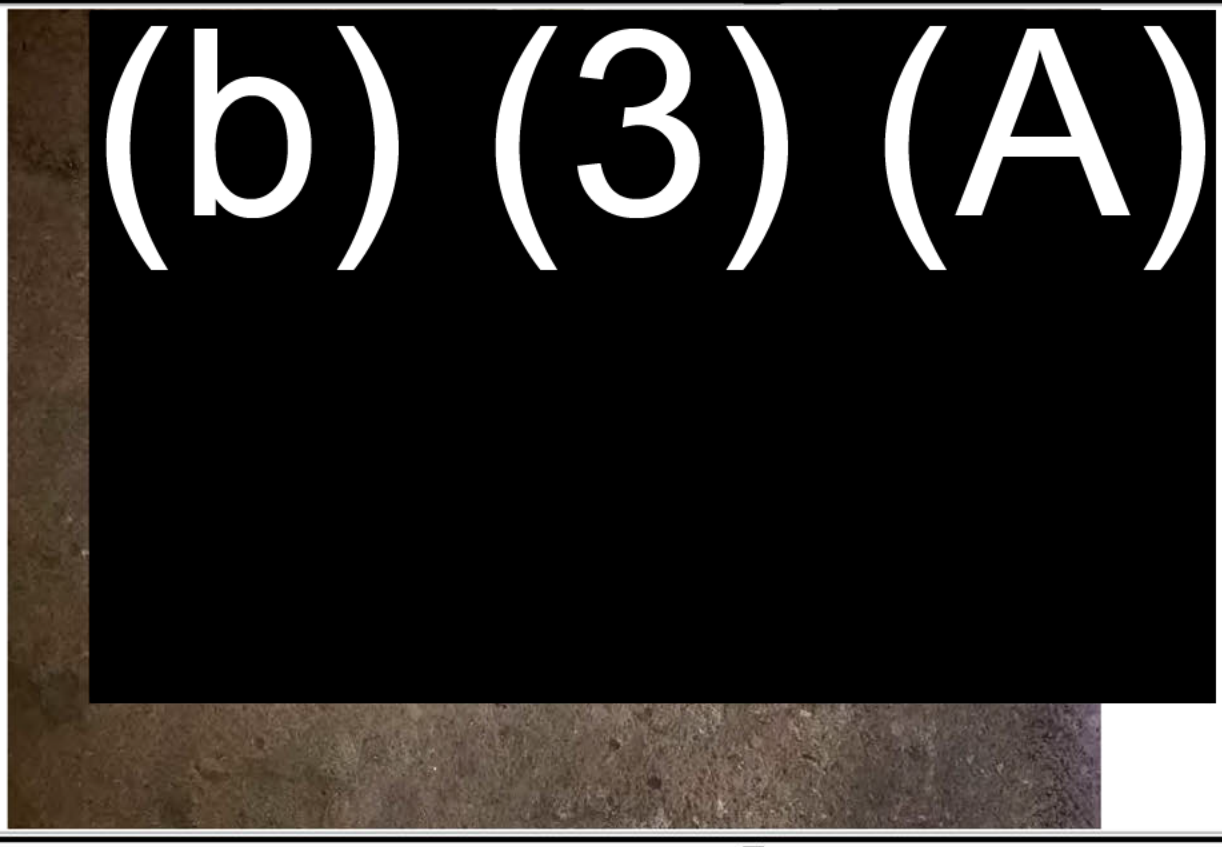
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 23 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




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




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

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 235 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | See Comments |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 25 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) |
| Email | (b) (6) hdrinc.com | | |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NAVFAC EXWC | NDAA Page 53 and 73 | Tank Gallery | Pipe Support (b) |

| | | | |
|---|---|---|---|
| Repair Description | Replace damaged segment of the mainline at (b) (3) (A) welded pup replacement. | Source Contract Reference | |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in CQCP. | Contractor QC Records Reviewed | CQCP and Daily Reports |
| Description of QA Validation and Observations | Government Quality Assurance is documented by the QSR's in the daily CQC reports using NAVFAC Form 4296/2.<br><br>Final acceptance by government. Date: 21 MAR 2023 | | |

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

Comments

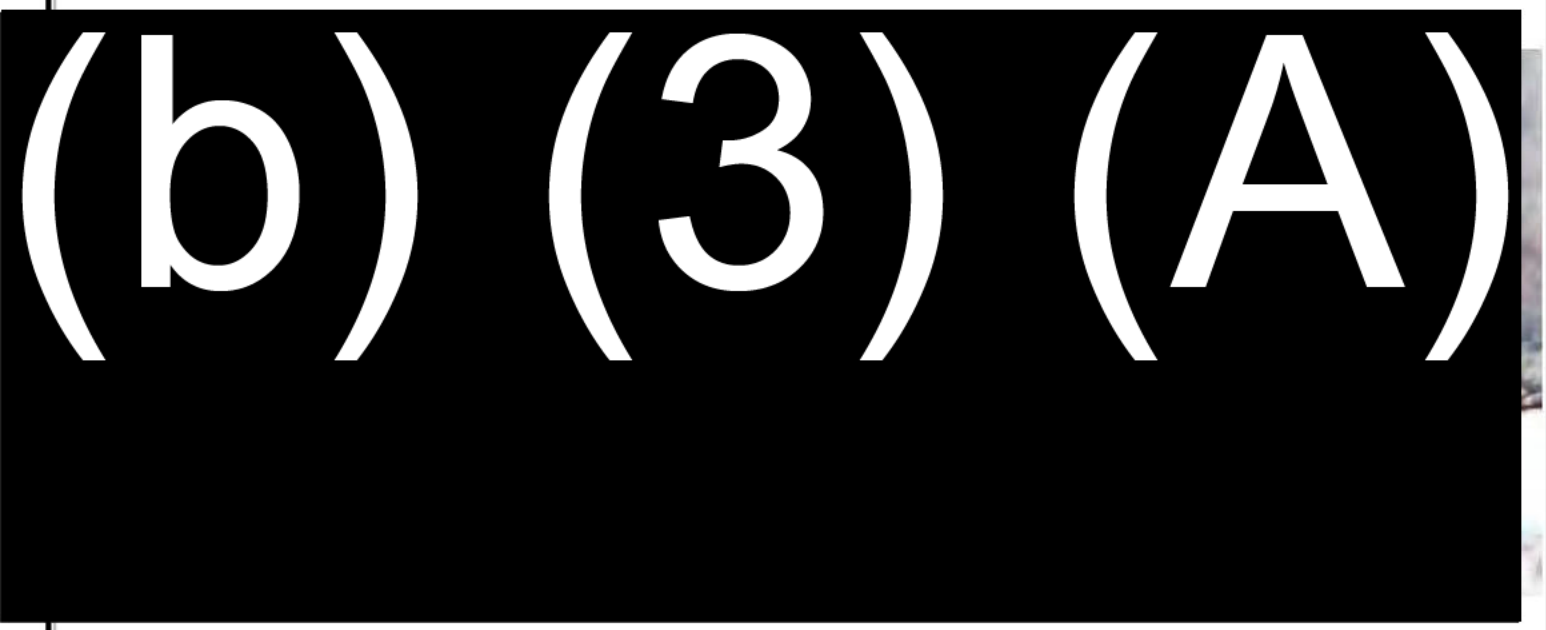
Repair ID cont.
EPRC K.k
NDAA (b) (3) (A)
NDAA J(b) (3) (A)
(b) (3) (A)
NDAA(b) (3) (A)
1(b) (3) (A)

Damaged pipe replaced with a new (b) (3) (A) Pipe welds were visually and radiographically inspected by the contractor as part of their QC program. Repair non destructive test results were inspected by NAVFAC QA team and JTF-RH QV team. Repair was visually inspected by the JTF-RH QV team and the repair will be monitored for weeps during repacking.

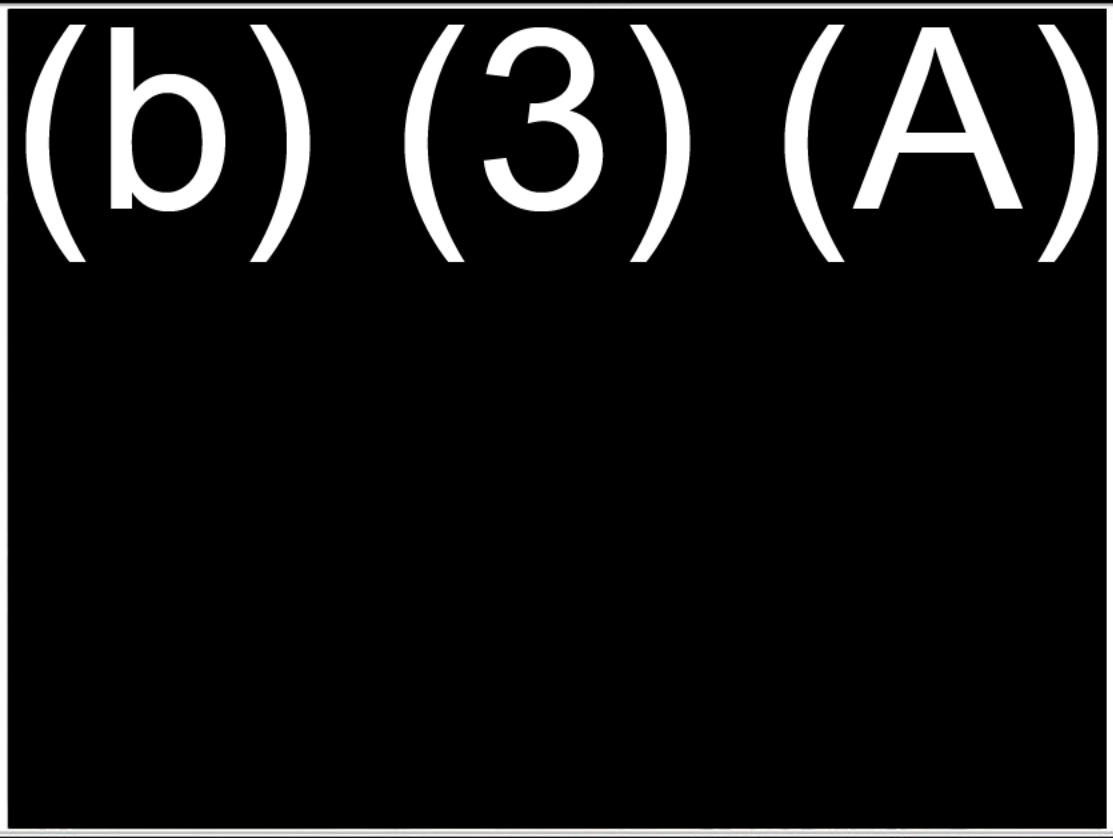
## CERTIFICATION

I hereby certify that repair work validated in this report was personally substantiated and this report is true.

| | |
|---|---|
| QV ENGINEER SIGNATURE | (b) (6) |
| DATE | 25 MAY 2023 |




Existing condition of pipe at Pipe Support (b) (3) Dent and gouge in existing pipe.




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

**EMERGENT PIPELINE REPAIRS**

Repair 235

| 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 | [D] (6 | 03 / 15 / 2022 | P | [D] | 03 / 16 / 2022 | [D] (6 | 03 / 16 / 2022 | P | 03 / 17 / 2022 | [D] (6 | [D] (6 | 03 / 17 / 2022 | [D] (6 | F | 03 / 29 / 2022 | [D] |
| REWORK 1 | | | | | | | | [D] | 05 / 03 / 2022 | P | 05 / 03 / 2022 | [D] ( | | | | P | 05 / 16 / 2022 | ■ |
| REWORK 2 | | | | | | | | | | | | | P | 02 / 28 / 2023 | [D] | 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 | P | 03 / 17 / 2022 | [D] (6 | 03 / 17 / 2022 | P | [D] | 03 / 17 / 2022 | [D] (6 | 03 / 17 / 2022 | P | 03 / 18 / 2022 | [D] (6 | [D] (6 | 03 / 18 / 2022 | [D] (6 | F | 03 / 29 / 2022 | [D] |
| REWORK 1 | | | | | | | | [D] | 05 / 03 / 2022 | P | 05 / 03 / 2022 | [D] ( | | | | P | 05 / 16 / 2022 | ■ |
| REWORK 2 | | | | | | | | | | | | | | | | | | |

| REPAIR ID | ROOT PASS | | | | | | | COVER PASS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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 | P | 03 / 15 / 2022 | [D] (6 | 03 / 15 / 2022 | P | [D] | 03 / 15 / 2022 | [D] (6 | 03 / 15 / 2022 | P | 03 / 15 / 2022 | [D] (6 | [D] (6 | 03 / 15 / 2022 | [D] (6 | P | 03 / 29 / 2022 | [D] |
| 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 | P | 03 / 17 / 2022 | [D] | 03 / 17 / 2022 | P | [D] | 03 / 17 / 2022 | [D] | 03 / 17 / 2022 | P | 03 / 18 / 2022 | [D] (6 | [D] (6 | 03 / 18 / 2022 | [D] (6 | F | 03 / 29 / 2022 | [D] |
| REWORK 1 | | | | | | | | | | | | | | | | P | 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 | P | 03 / 09 / 2022 | [D] (6 | 03 / 09 / 2022 | P | [D] | 03 / 09 / 2022 | [D] (6 | 03 / 10 / 2022 | p | 03 / 10 / 2022 | [D] (6 | [D] (6 | 03 / 10 / 2022 | [D] (6 | F | | [D] |
| REWORK 1 | | | | | | | | [D] | 05 / 03 / 2022 | P | 05 / 04 / 2022 | [D] ( | | | | P | 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 | P | 03 / 08 / 2022 | [D] (6 | 03 / 08 / 2022 | P | [D] | 03 / 08 / 2022 | [D] (6 | 03 / 08 / 2022 | P | 03 / 09 / 2022 | [D] (6 | [D] (6 | 03 / 09 / 2022 | [D] (6 | F | | [D] |
| REWORK 1 | | | | | | | | [D] | 05 / 03 / 2022 | P | 05 / 04 / 2022 | [D] ( | | | | P | 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 | | | | | | | [D] | 03 / 22 / 2022 | P | 03 / 25 / 2022 | [D] (6 | [D] (6 | 03 / 25 / 2022 | [D] (6 | P | 03 / 29 / 2022 | [D] |
| REWORK 1 | | | | | | | | | | | | | | | | | | |
| REWORK 2 | | | | | | | | | | | | | | | | | | |

(b) (4)

# RADIOGRAPHIC INSPECTION REPORT

(b) (4)

Date: 5/16/22

Page 1 of 3

FORM NDT-005.1

| | | | | | |
|---|---|---|---|---|---|
| CUSTOMER (b) (4) | CUST JOB# | SPECIFICATION ASME V | ACCEPTANCE ASME B31.3 | | |
| PROJECT Emergent Repairs | DWG. NO. | PROCEDURE REV | ACC. PROC. B31.3 REV 2015 | | |
| RT SOURCE Ir192 | FILM AGFA D5 | PB SCREENS | PENS: ASTM | SHIMS MAT'L/THKNS / | MATERIAL CS |
| SOURCE STRENGTH 30 | SIZE (b) (3) | FRONT (b) (3) | TYPE 1B | TECHNIQUE USED 3 | THICKNESS (b) (3) (A) |
| FOCAL SPOT SIZE (b) (3) | SINGLE LOAD [X] | MIDDLE / | MATERIAL SS | EXPOSURE TIME 5:00 | JOINT TYPE BUT |
| SFD (b) (3) (A) | DOUBLE LOAD [ ] | BACK (b) (3) (A) | LOCATION F | PROCESSING [X] MANUAL [ ] AUTOMATIC | PIPE DIA (b) (3) (A) |

| WELD # | VIEW # | GEOMETRIC UNSHARPNESS "UG" | ACCEPT | REJECT | Porosity | Slag Inclusions | Cracks | Lack of Fusion | Lack of Penet. | Undercut | Burn Thru | Suck Back | T.I. | Film Artifact | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KV2 R1 | 0-14 | .020 | X | | / | | | | | | | | | | (b) (3) (A) |
| | 42-0 | / | X | | / | | | | / | | | | | | |
| KK-1 R1 | 28-42 | .020 | X | | | | | | | | / | | | | |
| KK-2 R1 | 14-28 | .020 | X | | | | | | | | | | | | |
| | 28-42 | / | X | | | | | | | | / | | | | |
| W19-2 R1 | 24-34 | .020 | X | | | | | | / | | | | | | |
| W19-1 R1 | 12-24 | .020 | X | | / | | | | | | | | | | |

1. Single Wall — Panoramic
2. Single Wall — Offset
3. Double Wall
4. Double Wall 0/90 — Elliptical
5. Plate
6. Other

| (b) (6) | 5/16/22 | (b) (6) | II | 5/16/22 | |
|---|---|---|---|---|---|
| Radiographer | Date | Film Interpreter | SNT-TC-1A Level | Date of Inspection | Customer |

# (b) (4)

## RADIOGRAPHIC INSPECTION REPORT

(b) (4)



| WELD # | VIEW # | GEOMETRIC UNSHARPNESS *UG* | ACCEPT | REJECT | Porosity | Slag Inclusions | Cracks | Lack of Fusion | Lack of Penet. | Undercut | Burn Thru | Suck Back | T.I. | Film Artifact | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W20-3 | 0-13 | .020 | X | | | | | | / | | | | | | |
| | 13-26 | \| | X | | | | | | | | / | | | | |
| | 26-0 | \| | X | | / | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| W20-4 | 0-13 | .020 | X | | | | | | | | | | | | |
| | 13-26 | \| | X | | | | | | | | | | | | |
| | 26-0 | \| | X | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| WKF-2 | 0-13 | .020 | X | | | | | / | | | | | | | |
| | 13-26 | \| | X | | | | | | | | | | | | |
| | 26-0 | \| | X | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| WN-1 | 0-14 | .020 | X | | | | | | | | | | | | |
| | 14-28 | \| | X | | | | | | | | | | | | |
| | 28-42 | \| | X | | | | | | | | | | | | |
| | 42-0 | \| | X | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

(b) (6)

Film Interpreter

II

SNT-TC-1A Level

5-16-2022

Date of Inspection

(b) (4)

# RADIOGRAPHIC INSPECTION REPORT

(b) (4)



| WELD # | VIEW # | GEOMETRIC UNSHARPNESS *UG* | ACCEPT | REJECT | Porosity | Slag Inclusions | Cracks | Lack of Fusion | Lack of Penet. | Undercut | Burn Thru | Suck Back | T.I. | Film Artifact | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WN-2 | 0-14 | .020 | X | | | | | | | | | | | | |
| | 14-28 | \| | X | | | | | | | | | | | | |
| | 28-42 | \| | X | | | | | | ✓ | | | | | | |
| | 42-0 | \| | X | | | | | | | | | | | | |

(b) (6) II 5-16-2022

Film Interpreter SNT-TC-1A Level Date of Inspection

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.
2. RADIOGRAPHIC EXAMINATION MUST BE PERFORMED ON ALL BUTT WELDS FOR TEMPERORY AND PERMANENT COMPONENTS.
3. ALL SHOP PERFORMED WELDS, EXCEPT THOSE IDENTIFIED FOR TEMPORARY COMPONENTS, MUST BE HYDROSTATICALLY TESTED WITH WATER TO (b)(3)(A) FOR NOT LESS THEN 4 HOURS.
4. ALL WELDS, TOR TEMPORARY OR PERMANENT COMPONENTS, IDENTIFIED AS "HYDRO-EXEMPT TIE-IN WELDS" ARE SUBJECT TO TIE-IN WELD EXAMINATION.

TIE-IN WELD EXAMINATION

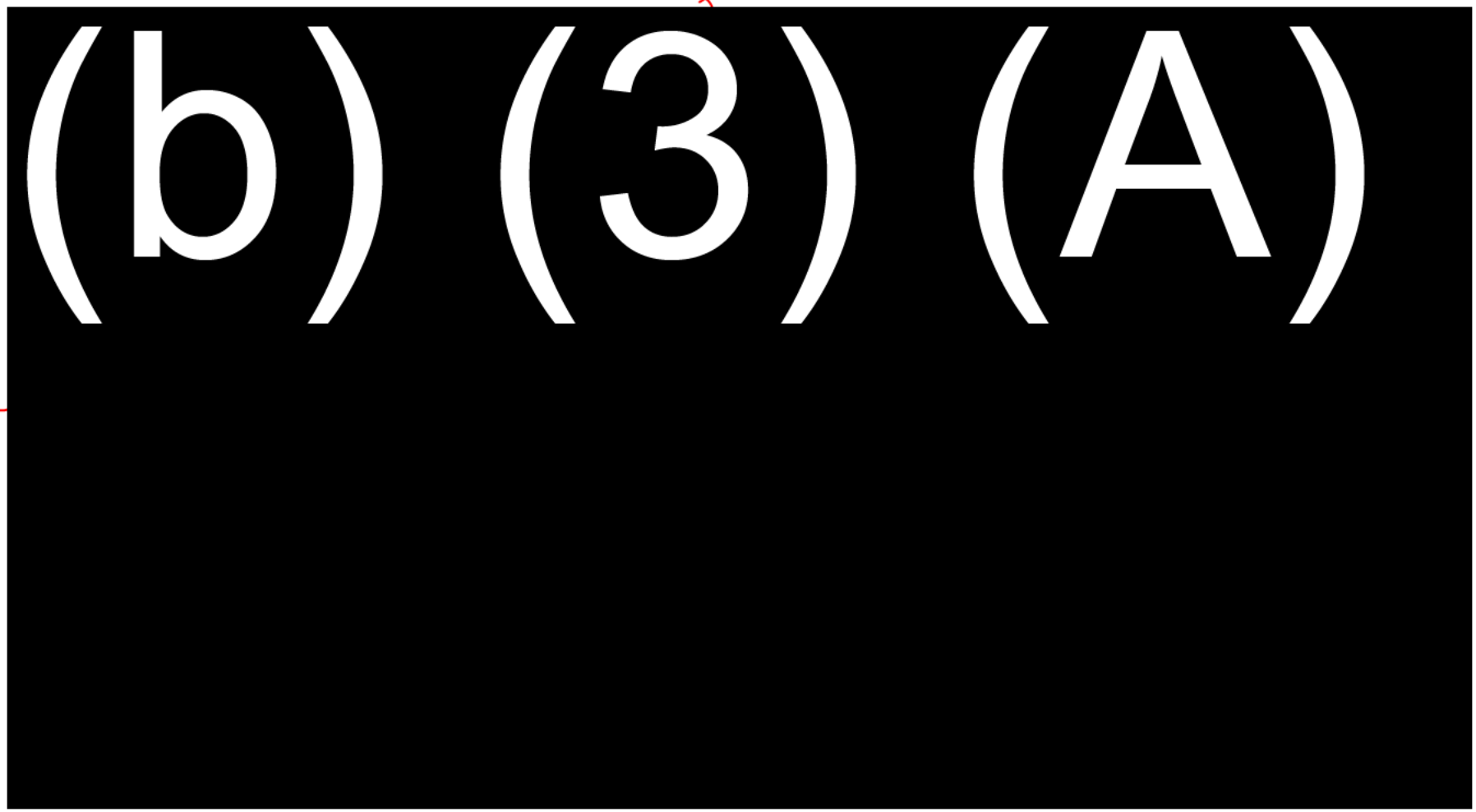
1. IN ADDITION TO FINAL RADIOGRAPHIC EXAMINATION, TIE-IN WELDS IDENTIFIED AS "HYDRO EXEMPT TIE-IN WELDS" MUST RECEIVE AN ENHANCED IN-PROCESS EXAMINATION IN ACCORDANCE WITH ASME B31.3 SECTION 344.7.
2. IN-PROCESS EXAMINATION MUST BE PERFORMED BY A CERTIFIED WELDING INSPECTOR AND INCLUDES VISUAL EXAMINATION OF:
   - 2.1. JOINT PREPARATION AND CLEANLINESS
   - 2.2. PREHEATING.
   - 2.3. FIT-UP, JOINT CLEARANCE, AND INTERNAL ALIGNMENT PRIOR TO JOINING.
   - 2.4. VARIABLES SPECIFIED BY JOINING PROCEDURE INCLUDING FILLER MATERIAL POSITION AND ELECTRODE.
   - 2.5. EXTERNAL CONDITION OF THE ROOT PASS AFTER CLEANING.
   - 2.6. SLAG REMOVAL AND WELD CONDITION.
   - 2.7. APPEARANCE OF THE FINISHED JOINT.
3. CLOSURE WELDS THAT RECEIVE IN-PROCESS EXAMINATION AND 100% RADIOGRAPHIC EXAMINATION ARE EXEMPT FROM HYDROSTATIC TESTING IN ACCORDANCE WITH ASME B31.3 SECTION 345.2.3.

(b) (3) (A)

| | | | |
|---|---|---|---|
| 9845 | CONTRACT N39430-15-D-2225 TO N3943021F4207 | | |
| (b) (4) | STANDARD DETAIL<br>RED HILL EMERGENT PIPELINE REPAIR<br>GENERAL VIEW - UPPER PIPING | | |
| | LE NO.<br>G-1 | REV.<br>REV. 1 | |
| | (b) (6) | DATE<br>03/18/2022 | PLATE: |

**CONSTRUCTION SUBMITTAL**

Plot Date: Mar 18, 2022 - 5:41pm Drawing File: M:\9845\Civil\General\Gen-1.dwg Last modified by:




Plot Date: Jan 20, 2022 - 9:08am Drawing File: M:\9845\Cad\Current\Mech\LAT-1.dwg

| | | | |
|---|---|---|---|
| 9845 | CONTRACT N39430-15-D-2225 TO N3943021F4207 | | |
| (b) (4) | STANDARD DETAIL<br>RED HILL EMERGENT PIPELINE REPAIR<br>PIPE REPAIR | | |
| | FILE NO.<br>LAT-1 | | REV.<br>REV. 0 |
| | (b) (6) | DATE<br>01/19/2022 | PLATE: |

LEGEND

INDICATES PIPE BEING REPLACED

**CONSTRUCTION SUBMITTAL**

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | | | |
|---|---|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | | | Repair No. | 237 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | | | Repair ID | See Comments |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | | | Report Date | 25 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) | Email | (b) (6) hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NAVFAC EXWC | NDAA Page 54 and 73 | Tank Gallery | Pipe Supports (b) (3) (A) |

| | | | |
|---|---|---|---|
| Repair Description | Remove approximately (b) (3) (A) welded pup replacement. (b) (3) (A) ] | Source Contract Reference | N3943021F4207 |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in CQCP. | Contractor QC Records Reviewed | CQCP and Daily Reports |
| Description of QA Validation and Observations | Government Quality Assurance is documented by the QSR's in the daily CQC reports using NAVFAC Form 4296/2.<br><br>Final acceptance by government. Date: 21 MAR 2023 | | |

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

Comments

Repair ID cont.
EPRC K.n
NDAA (b) (3) (A)
NDAA (b) (3) (A)

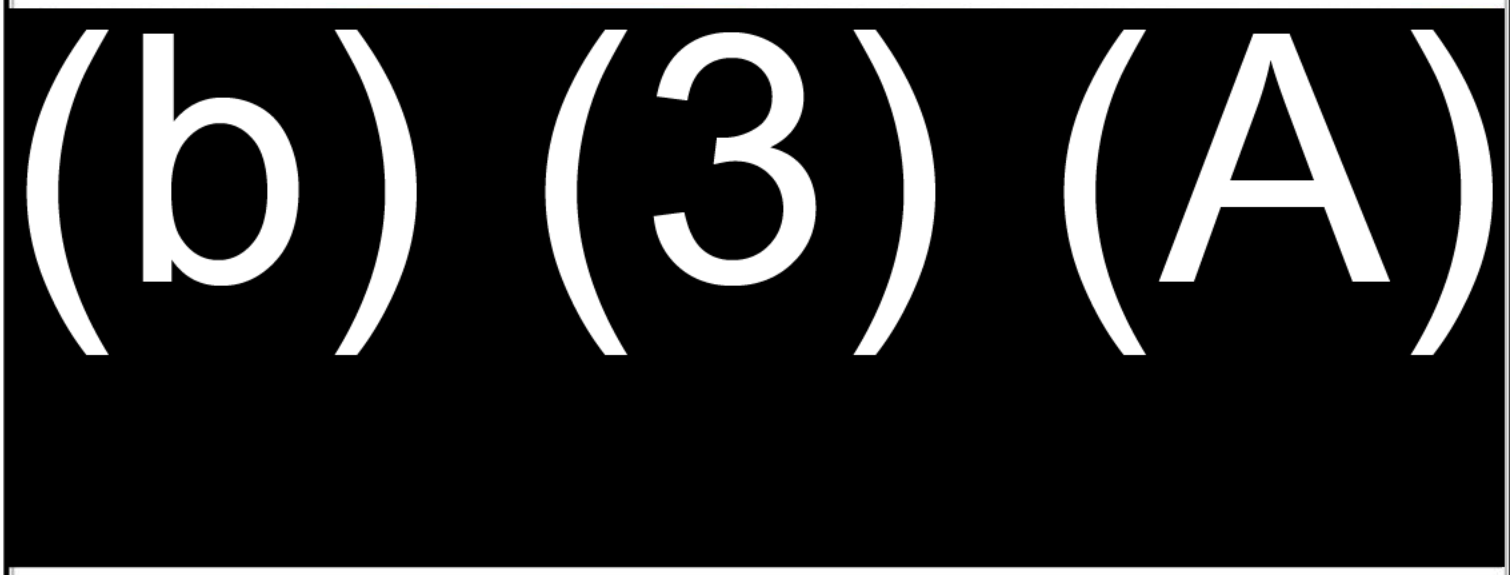
Damaged pipe replaced with a (b) (3) (A). Pipe welds were visually and radiographically inspected by the contractor as part of their QC program. Repair nondestructive test results were inspected by NAVFAC QA team and JTF-RH QV team. Repair was visually inspected by the JTF-RH QV team and the repair will be monitored for weeps during repacking.

## CERTIFICATION

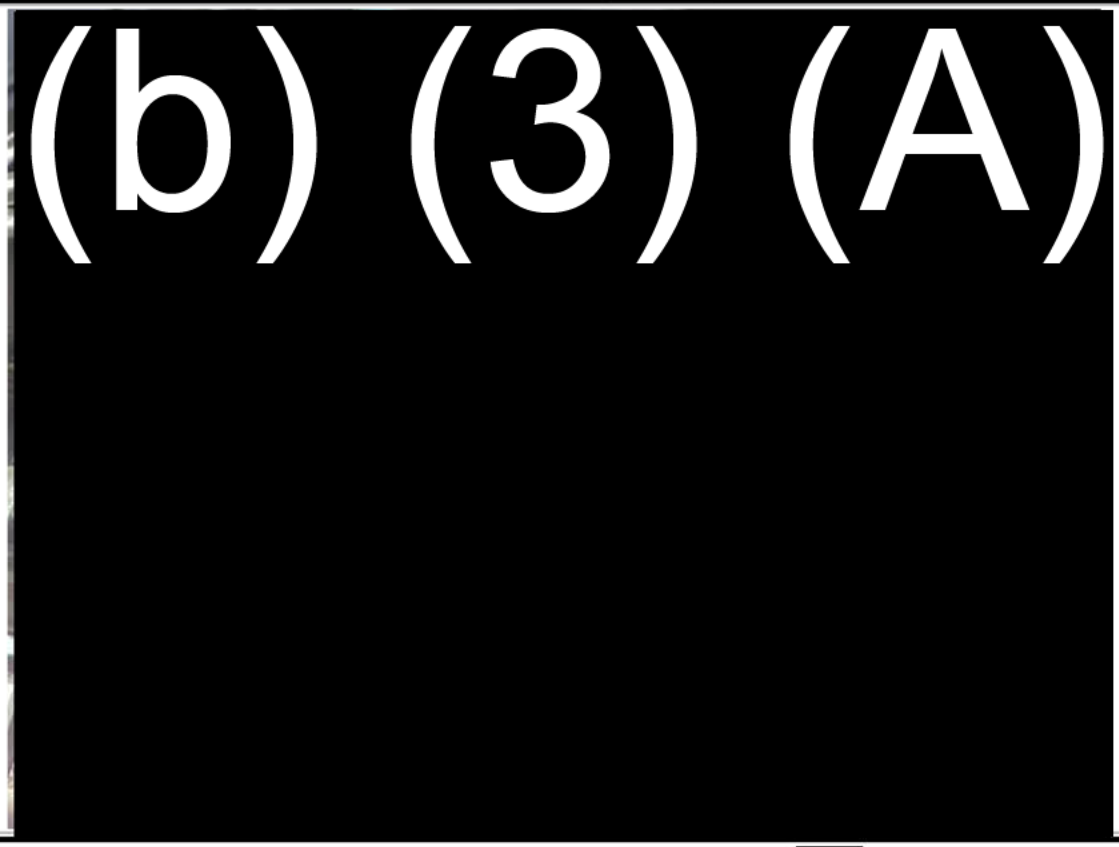
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 25 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




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




New pipe pup installed between Pipe Supports (b) (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 | P | 05 / 12 / 2022 | | 05 / 12 / 2023 | P | [redacted] | 05 / 12 / 2023 | [redacted] | 05 / 13 / 2023 | P | 05 / 13 / 2023 | [redacted] | | | | P | 05 / 16 / 2022 | [redacted] |
| 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 | | | | | | | [redacted] | 05 / 06 / 2022 | F | 05 / 09 / 2022 | [redacted] | | | | | | |
| REWORK 1 | | | | | | | | [redacted] | 05 / 10 / 2022 | P | 05 / 10 / 2022 | [redacted] | | | | | | |
| 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 | [redacted] | 05 / 05 / 2022 | P | [redacted] | 05 / 05 / 2022 | [redacted] | 05 / 05 / 2022 | P | 05 / 05 / 2022 | [redacted] | | | | P | 05 / 16 / 2022 | [redacted] |
| 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 | [redacted] | | | | | | |
| REWORK 1 | | | | | | | | [redacted] | 05 / 10 / 2022 | P | 05 / 10 / 2022 | [redacted] | | | | | | |
| REWORK 2 | | | | | | | | | | | | | | | | | | |

Repair 237

| REPAIR ID | ROOT PASS | | | | | | | 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 | P | 05 / 10 / 2022 | [redacted] | 05 / 10 / 2022 | P | [redacted] | 05 / 11 / 2022 | [redacted] | 05 / 11 / 2022 | P | 05 / 11 / 2022 | [redacted] | | | | P | 05 / 16 / 2022 | [redacted] |
| 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 | P | 05 / 10 / 2022 | [redacted] | 05 / 10 / 2022 | P | [redacted] | 05 / 11 / 2022 | [redacted] | 05 / 11 / 2022 | P | 05 / 11 / 2022 | [redacted] | | | | P | 05 / 16 / 2022 | [redacted] |
| REWORK 1 | | | | | | | | | | | | | | | | | | |
| REWORK 2 | | | | | | | | | | | | | | | | | | |

| REPAIR ID | ROOT PASS | | | | | | | COVER PASS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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 | P | 05 / 17 / 2022 | [redacted] | 05 / 17 / 2022 | P | [redacted] | 05 / 18 / 2022 | [redacted] | 05 / 18 / 2022 | P | 05 / 19 / 2022 | [redacted] | | | | P | 05 / 24 / 2022 | [redacted] |
| REWORK 1 | | | | | | | | | | | | | | | | | | |
| REWORK 2 | | | | | | | | | | | | | | | | | | |

(b) (4)

# RADIOGRAPHIC INSPECTION REPORT

(b) (4)

Date: 5/16/22

Page 1 of 3

FORM NDT-005.1

| | | | | | |
|---|---|---|---|---|---|
| CUSTOMER (b) (4) | CUST JOB# | SPECIFICATION ASME V | ACCEPTANCE ASME B31.3 | | |
| PROJECT Emergent Piping | DWG. NO. | PROCEDURE REV | ACC. PROC. B31.3 REV 2015 | | |
| RT SOURCE Ir192 | FILM AGFA D5 | PB SCREENS | PENS: ASTM | SHIMS MAT'L/THKNS / | MATERIAL CS |
| SOURCE STRENGTH 30 | SIZE (b) (3) | FRONT (b) (3) | TYPE 1B | TECHNIQUE USED 3 | THICKNESS (b) (3) (A) |
| FOCAL SPOT SIZE (b) (3) | SINGLE LOAD [X] | MIDDLE / | MATERIAL SS | EXPOSURE TIME 5:00 | JOINT TYPE BUT |
| SFD (b) (3) (A) | DOUBLE LOAD [ ] | BACK (b) (3) (A) | LOCATION F | PROCESSING [X] MANUAL [ ] AUTOMATIC | PIPE DIA. (b) (3) (A) |

| WELD # | VIEW # | GEOMETRIC UNSHARPNESS *UG* | ACCEPT | REJECT | Porosity | Slag Inclusions | Cracks | Lack of Fusion | Lack of Penet. | Undercut | Burn Thru | Suck Back | T.I. | Film Artifact | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KV2 R1 | 0-14 | .020 | X | | / | | | | | | | | | | (b) (3) (A) |
| | 42-0 | / | X | | / | | | | | / | | | | | |
| | | | | | | | | | | | | | | | |
| KK-1 R1 | 28-42 | .020 | X | | | | | | | | / | | | | (b) (3) (A) |
| | | | | | | | | | | | | | | | |
| KK-2 R1 | 14-28 | .020 | X | | | | | | | | | | | | (b) (3) (A) |
| | 28-42 | / | X | | | | | | | | / | | | | |
| | | | | | | | | | | | | | | | |
| W19-2 R1 | 24-34 | .020 | X | | | | | | | / | | | | | |
| | | | | | | | | | | | | | | | |
| W19-1 R1 | 12-24 | .020 | X | | / | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

1. Single Wall — Panoramic
2. Single Wall — Offset
3. Double Wall
4. Double Wall 0/90 — Elliptical
5. Plate
6. Other

| (b) (6) | 5/16/22 | (b) (6) | II | 5/16/22 | |
|---|---|---|---|---|---|
| Radiographer | Date | Film Interpreter | SNT-TC-1A Level | Date of Inspection | Customer |

(b) (4)

# RADIOGRAPHIC INSPECTION REPORT

(b) (4)



| WELD # | VIEW # | GEOMETRIC UNSHARPNESS *UG* | ACCEPT | REJECT | Porosity | Slag Inclusions | Cracks | Lack of Fusion | Lack of Penet. | Undercut | Burn Thru | Suck Back | T.I. | Film Artifact | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W20-3 | 0-13 | .020 | X | | | | | | / | | | | | | |
| | 13-26 | \| | X | | | | | | | | / | | | | |
| | 26-0 | \| | X | | / | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| W20-4 | 0-13 | .020 | X | | | | | | | | | | | | |
| | 13-26 | \| | X | | | | | | | | | | | | |
| | 26-0 | \| | X | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| WKF-2 | 0-13 | .020 | X | | | | | / | | | | | | | |
| | 13-26 | \| | X | | | | | | | | | | | | |
| | 26-0 | \| | X | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| WN-1 | 0-14 | .020 | X | | | | | | | | | | | | |
| | 14-28 | \| | X | | | | | | | | | | | | |
| | 28-42 | \| | X | | | | | | | | | | | | |
| | 42-0 | \| | X | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

(b) (6) — Film Interpreter

II — SNT-TC-1A Level

5-16-2022 — Date of Inspection

(b) (4)

# RADIOGRAPHIC INSPECTION REPORT

(b) (4)



| WELD # | VIEW # | GEOMETRIC UNSHARPNESS *UG* | ACCEPT | REJECT | Porosity | Slag Inclusions | Cracks | Lack of Fusion | Lack of Penet. | Undercut | Burn Thru | Suck Back | T.I. | Film Artifact | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WN-2 | 0-14 | .020 | X | | | | | | | | | | | | |
| | 14-28 | " | X | | | | | | | | | | | | |
| | 28-42 | " | X | | | | | | ✓ | | | | | | |
| | 42-0 | " | X | | | | | | | | | | | | |

(b) (6)

Film Interpreter

II

SNT-TC-1A Level

5-16-2022

Date of Inspection

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.
2. RADIOGRAPHIC EXAMINATION MUST BE PERFORMED ON ALL BUTT WELDS FOR TEMPERORY AND PERMANENT COMPONENTS.
3. ALL SHOP PERFORMED WELDS, EXCEPT THOSE IDENTIFIED FOR TEMPORARY COMPONENTS, MUST BE HYDROSTATICALLY TESTED WITH WATER TO (b)(3)(A) FOR NOT LESS THEN 4 HOURS.
4. ALL WELDS, TOR TEMPORARY OR PERMANENT COMPONENTS, IDENTIFIED AS "HYDRO-EXEMPT TIE-IN WELDS" ARE SUBJECT TO TIE-IN WELD EXAMINATION.

TIE-IN WELD EXAMINATION

1. IN ADDITION TO FINAL RADIOGRAPHIC EXAMINATION, TIE-IN WELDS IDENTIFIED AS "HYDRO EXEMPT TIE-IN WELDS" MUST RECEIVE AN ENHANCED IN-PROCESS EXAMINATION IN ACCORDANCE WITH ASME B31.3 SECTION 344.7.
2. IN-PROCESS EXAMINATION MUST BE PERFORMED BY A CERTIFIED WELDING INSPECTOR AND INCLUDES VISUAL EXAMINATION OF:
   - 2.1. JOINT PREPARATION AND CLEANLINESS
   - 2.2. PREHEATING.
   - 2.3. FIT-UP, JOINT CLEARANCE, AND INTERNAL ALIGNMENT PRIOR TO JOINING.
   - 2.4. VARIABLES SPECIFIED BY JOINING PROCEDURE INCLUDING FILLER MATERIAL POSITION AND ELECTRODE.
   - 2.5. EXTERNAL CONDITION OF THE ROOT PASS AFTER CLEANING.
   - 2.6. SLAG REMOVAL AND WELD CONDITION.
   - 2.7. APPEARANCE OF THE FINISHED JOINT.
3. CLOSURE WELDS THAT RECEIVE IN-PROCESS EXAMINATION AND 100% RADIOGRAPHIC EXAMINATION ARE EXEMPT FROM HYDROSTATIC TESTING IN ACCORDANCE WITH ASME B31.3 SECTION 345.2.3.

(b) (3) (A)

| | | | |
|---|---|---|---|
| 9845 | CONTRACT N39430-15-D-2225 TO N3943021F4207 | | |
| (b) (4) | STANDARD DETAIL<br>RED HILL EMERGENT PIPELINE REPAIR<br>GENERAL VIEW - UPPER PIPING | | |
| | FILE NO.<br>G-1 | | REV.<br>REV. 1 |
| | DRN<br>(b) (6) | DATE<br>03/18/2022 | PLATE: |

**CONSTRUCTION SUBMITTAL**

Plot Date: Mar 18, 2022 - 5:41pm Drawing File: M:\9845\Civil\Current\General\G-1.dwg Last modified by:

(b) (3) (A)

ITEM L

SCALE: NTS

ITEM V

SCALE: NTS

| | | | | |
|---|---|---|---|---|
| 9845 | CONTRACT N39430-15-D-2225 TO N3943021F4207 | | | |
| (b) (4) | STANDARD DETAIL<br>RED HILL EMERGENT PIPELINE REPAIR<br>PIPE REPAIR | | | |
| | FILE NO.<br>LAT-1 | | | REV.<br>REV. 0 |
| | DRN<br>(b) (6) | CHK<br>(b) (6) | DATE<br>01/19/2022 | PLATE: |

LEGEND

INDICATES PIPE BEING REPLACED

**CONSTRUCTION SUBMITTAL**

Plot Date: Jan 20, 2022 - 9:08am Drawing File: M:\9845\Cad\Current\Mech\LAT-1.dwg

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | | | |
|---|---|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | | | Repair No. | 245 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | | | Repair ID | See Comments |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | | | Report Date | 25 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) | Email | (b) (6) hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NAVFAC EXWC | NDAA Page 53 and 73 | Tank Gallery | Pipe Support [redacted] |

| | | | |
|---|---|---|---|
| Repair Description | Replace damaged segment of the mainline at PS [redacted] (b) (3) (A) | Source Contract Reference | [redacted] |
| Description of Contractor QC Method(s) Used | Methods outlined in detail in CQCP. | Contractor QC Records Reviewed | CQCP and Daily Reports |
| Description of QA Validation and Observations | Government Quality Assurance is documented by the QSR's in the daily CQC reports using NAVFAC Form 4296/2.<br><br>Final acceptance by government. Date: 21 MAR 2023 | | |

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

Comments

Repair ID cont.
EPRC K.v
NDAA (b) (3) (A)
NDAA (b) (3) (A) [redacted]
NDAA (b) (3) (A) [redacted]

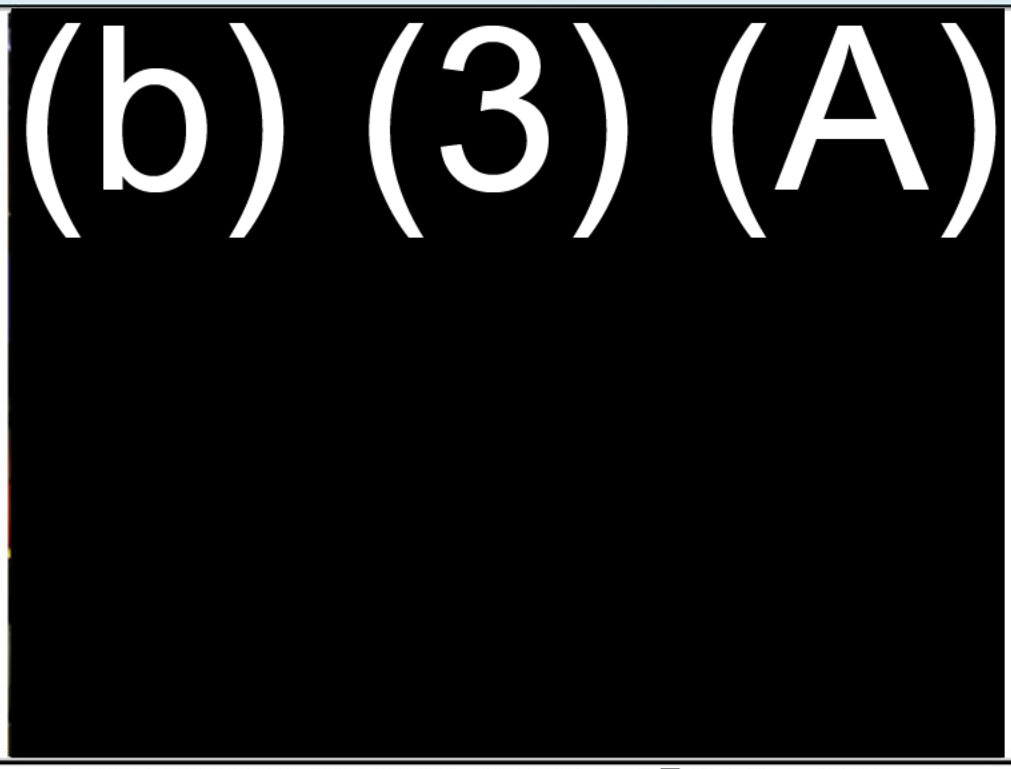
Damaged segment of pipe replaced with a new pipe segment at PS [redacted]. Pipe welds were visually and radiographically inspected by the contractor as part of their QC program. Repair nondestructive test results were inspected by NAVFAC QA team and JTF-RH QV team. Repair was visually inspected by the JTF-RH QV team and the repair will be monitored for weeps during repacking.

## 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 | 25 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




Replaced damaged pipe segment at Pipe Support [redacted] 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) (6) | 03 / 15 / 2022 | P | (b) | 03 / 16 / 2022 | (b) (6) | 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 | P | 05 / 03 / 2022 | (b) (6) | | | | P | 05 / 16 / 2022 | (b) |
| REWORK 2 | | | | | | | | | | | | | P | 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 | P | 03 / 17 / 2022 | (b) (6) | 03 / 17 / 2022 | P | (b) | 03 / 17 / 2022 | (b) (6) | 03 / 17 / 2022 | P | 03 / 18 / 2022 | (b) (6) | (b) (6) | 03 / 18 / 2022 | (b) (6) | F | 03 / 29 / 2022 | (b) |
| REWORK 1 | | | | | | | | (b) | 05 / 03 / 2022 | P | 05 / 03 / 2022 | (b) (6) | | | | P | 05 / 16 / 2022 | (b) |
| REWORK 2 | | | | | | | | | | | | | | | | | | |

| REPAIR ID | ROOT PASS | | | | | | | COVER PASS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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 | P | 03 / 15 / 2022 | (b) (6) | 03 / 15 / 2022 | P | (b) | 03 / 15 / 2022 | (b) (6) | 03 / 15 / 2022 | P | 03 / 15 / 2022 | (b) (6) | (b) (6) | 03 / 15 / 2022 | (b) (6) | P | 03 / 29 / 2022 | (b) |
| REWORK 1 | | | | | | | | | | | | | | | | | | |
| REWORK 2 | | | | | | | | | | | | | | | | | | |

Repair 245

| 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 | P | 03 / 17 / 2022 | (b) | 03 / 17 / 2022 | P | (b) | 03 / 17 / 2022 | (b) | 03 / 17 / 2022 | P | 03 / 18 / 2022 | (b) (6) | (b) (6) | 03 / 18 / 2022 | (b) (6) | F | 03 / 29 / 2022 | (b) |
| REWORK 1 | | | | | | | | | | | | | | | | P | 05 / 16 / 2022 | (b) |
| 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 | P | 03 / 09 / 2022 | (b) (6) | 03 / 09 / 2022 | P | (b) | 03 / 09 / 2022 | (b) (6) | 03 / 10 / 2022 | p | 03 / 10 / 2022 | (b) (6) | (b) (6) | 03 / 10 / 2022 | (b) (6) | F | | (b) |
| REWORK 1 | | | | | | | | (b) | 05 / 03 / 2022 | P | 05 / 04 / 2022 | (b) (6) | | | | P | 05 / 16 / 2022 | (b) |
| 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 | P | 03 / 08 / 2022 | (b) (6) | 03 / 08 / 2022 | P | (b) | 03 / 08 / 2022 | (b) (6) | 03 / 08 / 2022 | P | 03 / 09 / 2022 | (b) (6) | (b) (6) | 03 / 09 / 2022 | (b) (6) | F | | (b) |
| REWORK 1 | | | | | | | | (b) | 05 / 03 / 2022 | P | 05 / 04 / 2022 | (b) (6) | | | | P | 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 | P | 03 / 25 / 2022 | (b) (6) | (b) (6) | 03 / 25 / 2022 | (b) (6) | P | 03 / 29 / 2022 | (b) |
| REWORK 1 | | | | | | | | | | | | | | | | | | |
| REWORK 2 | | | | | | | | | | | | | | | | | | |

(b) (4)

# RADIOGRAPHIC INSPECTION REPORT

(b) (4)

Date: 3-29-22

Page 1 of 2

FORM NDT-005.1

| | | | | | |
|---|---|---|---|---|---|
| CUSTOMER (b) (4) | CUST JOB# | SPECIFICATION ASME V | ACCEPTANCE ASME B31.3 | | |
| PROJECT Emergent B.E. Hill Pipeline | DWG. NO. | PROCEDURE NDT006 REV C | ACC. PROC. B31.3 REV 2015 | | |
| RT SOURCE IR192 | FILM AGFA D5 | PB SCREENS | PENS: ASTM | SHIMS MAT'L/THKNS | MATERIAL CS |
| SOURCE STRENGTH 45 | SIZE (b) (3) (A) | FRONT (b) (3) (A) | TYPE 1B | TECHNIQUE USED 3 | THICKNESS (b) (3) (A) |
| FOCAL SPOT SIZE (b) (3) (A) | SINGLE LOAD [X] | MIDDLE | MATERIAL SS | EXPOSURE TIME 3:05 | JOINT TYPE Butt |
| SFD (b) (3) (A) | DOUBLE LOAD [ ] | BACK (b) (3) (A) | LOCATION F | PROCESSING [X] MANUAL [ ] AUTOMATIC | PIPE DIA (b) (3) (A) |

1. Single Wall — Panoramic
2. Single Wall — Offset
3. Double Wall
4. Double Wall 0/90 — Elliptical
5. Plate
6. Other

| WELD # | VIEW # | GEOMETRIC UNSHARPNESS *UG* | ACCEPT | REJECT | Porosity | Slag Inclusions | Cracks | Lack of Fusion | Lack of Penet. | Undercut | Burn Thru | Stuck Back | T.I. | Film Artifact | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KV 1 | 0-14 | 10 CU | X | | | | | | | | | | | | |
| | 14-28 | | X | | | | | | | | | | | | |
| | 28-42 | | X | | | | | | | | | | | | |
| | 42-0 | | X | | / | | | | | | | | | | |
| KV 2 | 0-14 | 10 CU | | X | / | | X | | | | | | | | |
| | 14-28 | | X | | / | | | | | | / | | | | |
| | 28-42 | | X | | / | / | | | / | | | | | | |
| | 42-0 | | | X | | / | | X | | | | | | | |

(b) (6) — 3/29/22 — (b) (6) — 3/29/22

Radiographer | Date | Film Interpreter | SNT-TC-1A Level | Date of Inspection | Customer

(b) (4)

# RADIOGRAPHIC INSPECTION REPORT

(b) (4)



| WELD # | VIEW # | GEOMETRIC UNSHARPNESS "UG" | ACCEPT | REJECT | Porosity | Slag Inclusions | Cracks | Lack of Fusion | Lack of Penet. | Undercut | Burn Thru | Suck Back | T.I. | Film Artifact | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KK-1 | 0-14 | .020 | X | | | | | | | | | | | | |
| | 14-28 | / | X | | | | | | | | | | | | |
| | 28-42 | / | | X | | | X | 2w | | | X | | | | |
| | 42-0 | / | X | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| KK-2 | 0-14 | .020 | X | | | | | | | | | | | | |
| | 14-28 | / | | X | | | | | | X | | | | | @ 28 |
| | 28-42 | / | | X | | | X | 1w | | X | X | | | | BURN THRU @ 28 |
| | 42-0 | / | X | | | | | | | | | | | | |

(b) (6) III

Film Interpreter

II

SNT-TC-1A Level

3-29-22

Date of Inspection

(b) (4)

# RADIOGRAPHIC INSPECTION REPORT

(b) (4)

Date: 5/16/22

Page 1 of 3

FORM NDT-005.1

| | | | | | |
|---|---|---|---|---|---|
| CUSTOMER (b) (4) | CUST JOB# | SPECIFICATION ASME V | ACCEPTANCE ASME B31.3 | | |
| PROJECT Emergent Hydro | DWG. NO. | PROCEDURE REV | ACC. PROC. B31.3 REV 2015 | | |
| RT SOURCE Ir192 | FILM AGFA D5 | PB SCREENS | PENS: ASTM | SHIMS MAT'L/THKNS | MATERIAL CS |
| SOURCE STRENGTH 30 | SIZE (b) (3) (A) | (b) (3) (A) | TYPE 1B | TECHNIQUE USED 3 | THICKNESS (b) (3) (A) |
| FOCAL SPOT SIZE (b) (3) (A) | SINGLE LOAD [X] | MIDDLE / | MATERIAL SS | EXPOSURE TIME 5:00 | JOINT TYPE BUT |
| SFD (b) (3) (A) | DOUBLE LOAD [ ] | BACK (b) (3) (A) | LOCATION F | PROCESSING [X] MANUAL [ ] AUTOMATIC | PIPE DIA. (b) (3) (A) |

| WELD # | VIEW # | GEOMETRIC UNSHARPNESS *UG* | ACCEPT | REJECT | Porosity | Slag Inclusions | Cracks | Lack of Fusion | Lack of Penet. | Undercut | Burn Thru | Suck Back | T.I. | Film Artifact | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KV2 R1 | 0-14 | .02w | X | | / | | | | | | | | | | (b) (3) (A) |
| | 42-0 | / | X | | / | | | | | / | | | | | |
| KK-1 R1 | 28-42 | .02w | X | | | | | | | | / | | | | |
| KK-2 R1 | 14-28 | .02w | X | | | | | | | | | | | | |
| | 28-42 | / | X | | | | | | | | / | | | | |
| W19-2 R1 | 24-34 | .02w | X | | | | | | | / | | | | | |
| W19-1 R1 | 12-24 | .02w | X | | / | | | | | | | | | | |

1. Single Wall — Panoramic
2. Single Wall — Offset
3. Double Wall
4. Double Wall 0/90 — Elliptical
5. Plate
6. Other

| Radiographer | Date | Film Interpreter | SNT-TC-1A Level | Date of Inspection | Customer |
|---|---|---|---|---|---|
| (b) (6) | 5/16/22 | (b) (6) | II | 5/16/22 | |

(b) (4)

# RADIOGRAPHIC INSPECTION REPORT

(b) (4)



| WELD # | VIEW # | GEOMETRIC UNSHARPNESS *UG* | ACCEPT | REJECT | Porosity | Slag Inclusions | Cracks | Lack of Fusion | Lack of Penet. | Undercut | Burn Thru | Suck Back | T.I. | Film Artifact | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W20-3 | 0-13 | .020 | X | | | | | | / | | | | | | |
| | 13-26 | \| | X | | | | | | | | / | | | | |
| | 26-0 | \| | X | | / | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| W20-4 | 0-13 | .020 | X | | | | | | | | | | | | |
| | 13-26 | \| | X | | | | | | | | | | | | |
| | 26-0 | \| | X | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| WKF-2 | 0-13 | .020 | X | | | | | / | | | | | | | |
| | 13-26 | \| | X | | | | | | | | | | | | |
| | 26-0 | \| | X | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| WN-1 | 0-14 | .020 | X | | | | | | | | | | | | |
| | 14-28 | \| | X | | | | | | | | | | | | |
| | 28-42 | \| | X | | | | | | | | | | | | |
| | 42-0 | \| | X | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

(b) (6) — II — 5-16-2022

Film Interpreter — SNT-TC-1A Level — Date of Inspection

(b) (4)

# RADIOGRAPHIC INSPECTION REPORT

(b) (4)



| WELD # | VIEW # | GEOMETRIC UNSHARPNESS "UG" | ACCEPT | REJECT | Porosity | Slag Inclusions | Cracks | Lack of Fusion | Lack of Penet. | Undercut | Burn Thru | Suck Back | T.I. | Film Artifact | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WN-2 | 0-14 | .020 | X | | | | | | | | | | | | |
| | 14-28 | " | X | | | | | | | | | | | | |
| | 28-42 | " | X | | | | | | / | | | | | | |
| | 42-0 | " | X | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

(b) (6) II 5-16-2022

Film Interpreter SNT-TC-1A Level Date of Inspection

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.
2. RADIOGRAPHIC EXAMINATION MUST BE PERFORMED ON ALL BUTT WELDS FOR TEMPERORY AND PERMANENT COMPONENTS.
3. ALL SHOP PERFORMED WELDS, EXCEPT THOSE IDENTIFIED FOR TEMPORARY COMPONENTS, MUST BE HYDROSTATICALLY TESTED WITH WATER TO (b)(3)(A) FOR NOT LESS THEN 4 HOURS.
4. ALL WELDS, TOR TEMPORARY OR PERMANENT COMPONENTS, IDENTIFIED AS "HYDRO-EXEMPT TIE-IN WELDS" ARE SUBJECT TO TIE-IN WELD EXAMINATION.

TIE-IN WELD EXAMINATION

1. IN ADDITION TO FINAL RADIOGRAPHIC EXAMINATION, TIE-IN WELDS IDENTIFIED AS "HYDRO EXEMPT TIE-IN WELDS" MUST RECEIVE AN ENHANCED IN-PROCESS EXAMINATION IN ACCORDANCE WITH ASME B31.3 SECTION 344.7.
2. IN-PROCESS EXAMINATION MUST BE PERFORMED BY A CERTIFIED WELDING INSPECTOR AND INCLUDES VISUAL EXAMINATION OF:
   - 2.1. JOINT PREPARATION AND CLEANLINESS
   - 2.2. PREHEATING.
   - 2.3. FIT-UP, JOINT CLEARANCE, AND INTERNAL ALIGNMENT PRIOR TO JOINING.
   - 2.4. VARIABLES SPECIFIED BY JOINING PROCEDURE INCLUDING FILLER MATERIAL POSITION AND ELECTRODE.
   - 2.5. EXTERNAL CONDITION OF THE ROOT PASS AFTER CLEANING.
   - 2.6. SLAG REMOVAL AND WELD CONDITION.
   - 2.7. APPEARANCE OF THE FINISHED JOINT.
3. CLOSURE WELDS THAT RECEIVE IN-PROCESS EXAMINATION AND 100% RADIOGRAPHIC EXAMINATION ARE EXEMPT FROM HYDROSTATIC TESTING IN ACCORDANCE WITH ASME B31.3 SECTION 345.2.3.

(b) (3) (A)

| | | | |
|---|---|---|---|
| 9845 | CONTRACT N39430-15-D-2225 TO N3943021F4207 | | |
| (b) (4) | STANDARD DETAIL<br>RED HILL EMERGENT PIPELINE REPAIR<br>GENERAL VIEW - UPPER PIPING | | |
| | FILE NO.<br>G-1 | | REV.<br>REV. 1 |
| | DRN<br>(b) (6) | DATE<br>03/18/2022 | PLATE: |

**CONSTRUCTION SUBMITTAL**

Plot Date: Mar 18, 2022 - 5:41pm Drawing File: N:\9845\Civil\General\G-1.dwg Last modified by:

(b) (3) (A)

SCALE: NTS

SCALE: NTS

LEGEND

INDICATES PIPE BEING REPLACED

CONSTRUCTION SUBMITTAL

| | | | | |
|---|---|---|---|---|
| 9845 | CONTRACT N39430-15-D-2225 TO N3943021F4207 | | | |
| (b) (4) | STANDARD DETAIL<br>RED HILL EMERGENT PIPELINE REPAIR<br>PIPE REPAIR | | | |
| | FILE NO.<br>LAT-1 | | | REV.<br>REV. 0 |
| | DRN<br>DLE | CHK:<br>(b) (6) | DATE<br>01/19/2022 | PLATE: |

Plot Date: Jan 20, 2022 - 9:08am Drawing File: M:\9845\Cad\Current\Mech\LAT-1.dwg

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | | | |
|---|---|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | | | Repair No. | 050 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | | | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903 19 F 0027 | | | Report Date | 25 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) 8 | Email | (b) (6) hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 43 | Underground Pumphouse | 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). | Source Contract Reference | N/A for in house labor. |
| 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.<br><br>Two party integrity verification by FLC personnel. | Contractor QC Records Reviewed | N/A |
| Description of QA Validation and Observations | FLCPH executed a work order to confirm all valves were serviced. Completed work order with two party verification was provided to JTF RH QV.<br><br>JTF RH QV team conducted a site visit on 24 May 2023 and confirmed valves had been serviced.<br><br>Final acceptance by government. Date: 15 MAY 2023 | | |

| Rework Needed | | | | Photo Record Attached | Repair Work Validated as Complete | | | |
|---|---|---|---|---|---|---|---|---|
| ○ | Yes | ◉ | No | See Pages 2 6. | ◉ | Yes | ○ | No |

Comments

Repair Description cont. "Disassemble threaded connections, retape, and reassemble to prevent future weeps. The following locations should addressed:(b) (3) (A)
(b) (3) (A)

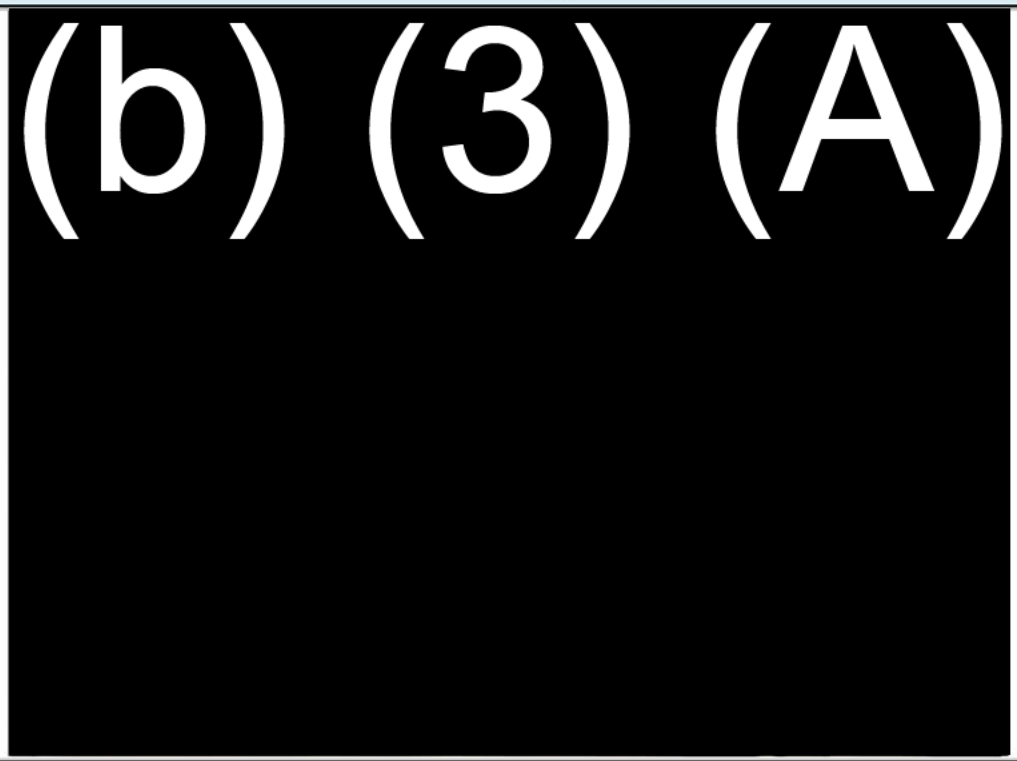
Reference 19 MAY 2023 Memo in which (b) (4) re assessed deficiency items for mechanical integrity. The recommended mitigation for these repairs are "FLC will tighten packing; monitor during de fueling operations; use drip pans and absorbents as a precautionary measure."

## CERTIFICATION

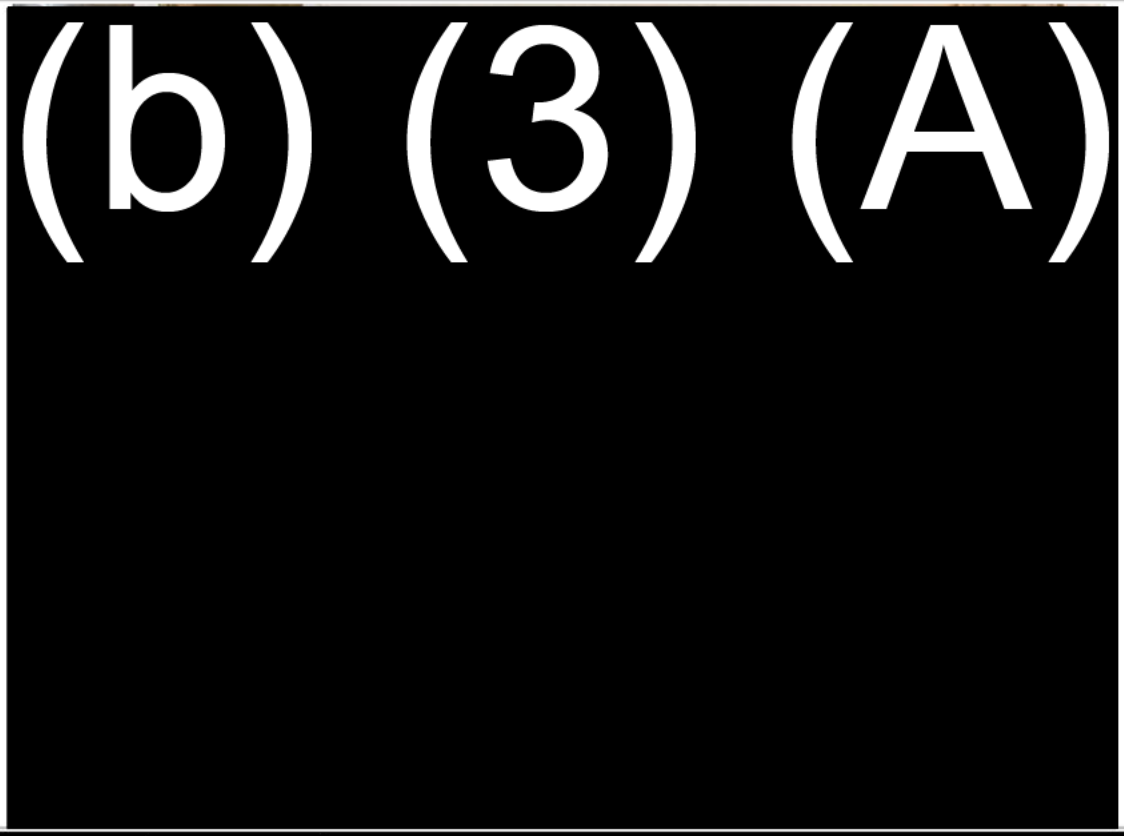
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 25 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**



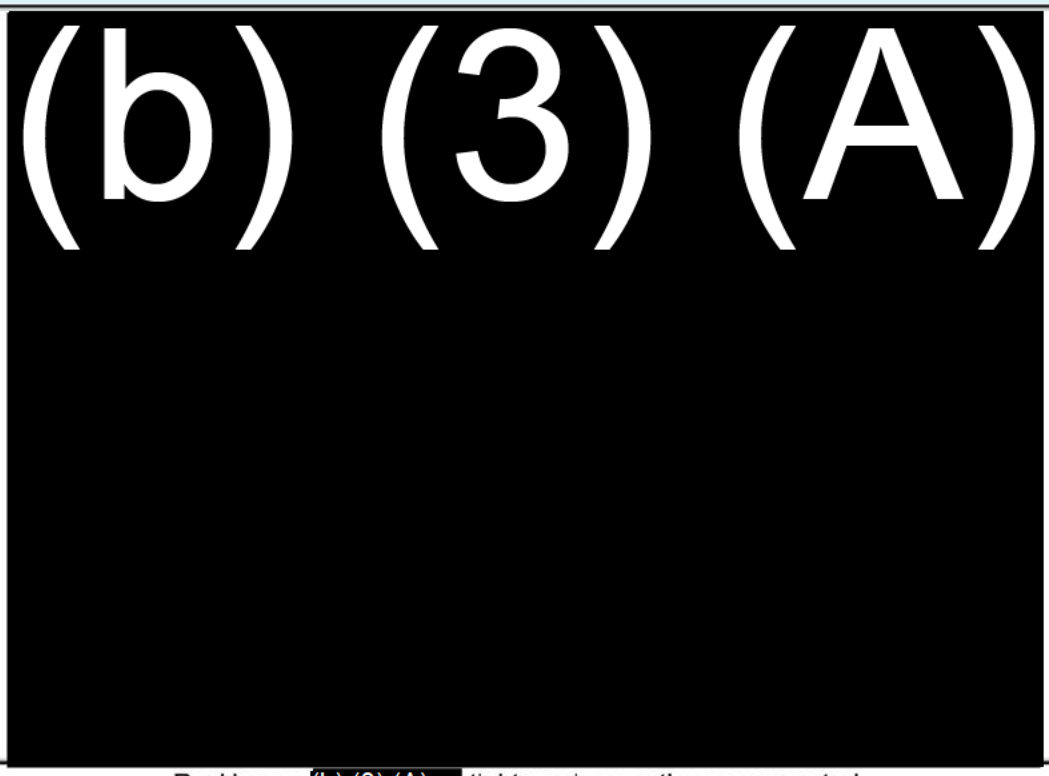

(b) (3) (A) inspected, no active weeps noted.



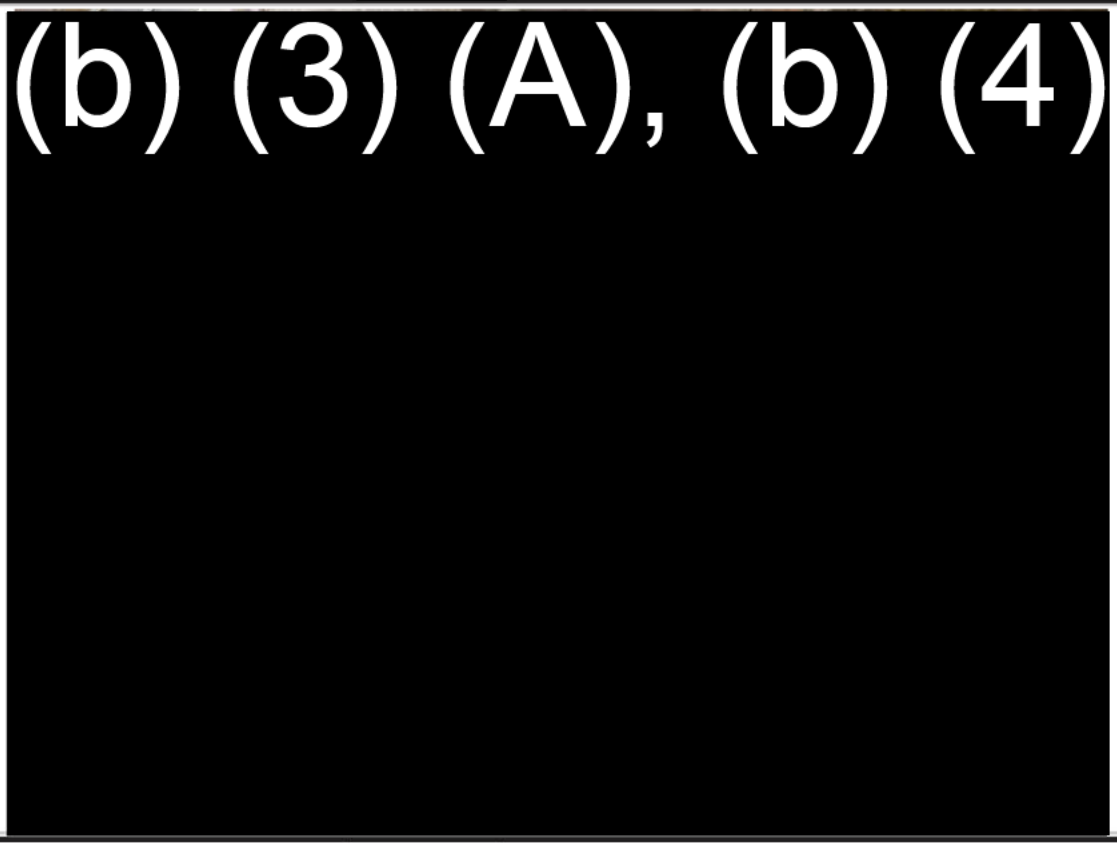

(b) (3) (A) nspected, staining visible but no active weeps noted.

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**



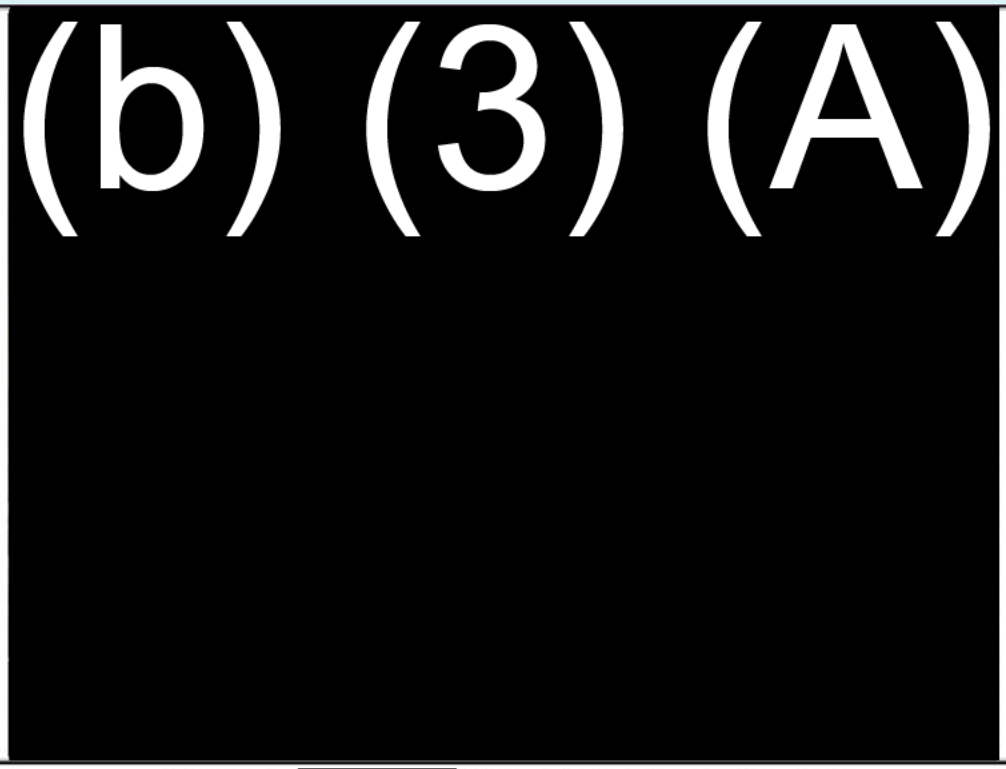

Packing on (b) (3) (A) tightened; no active weeps noted.



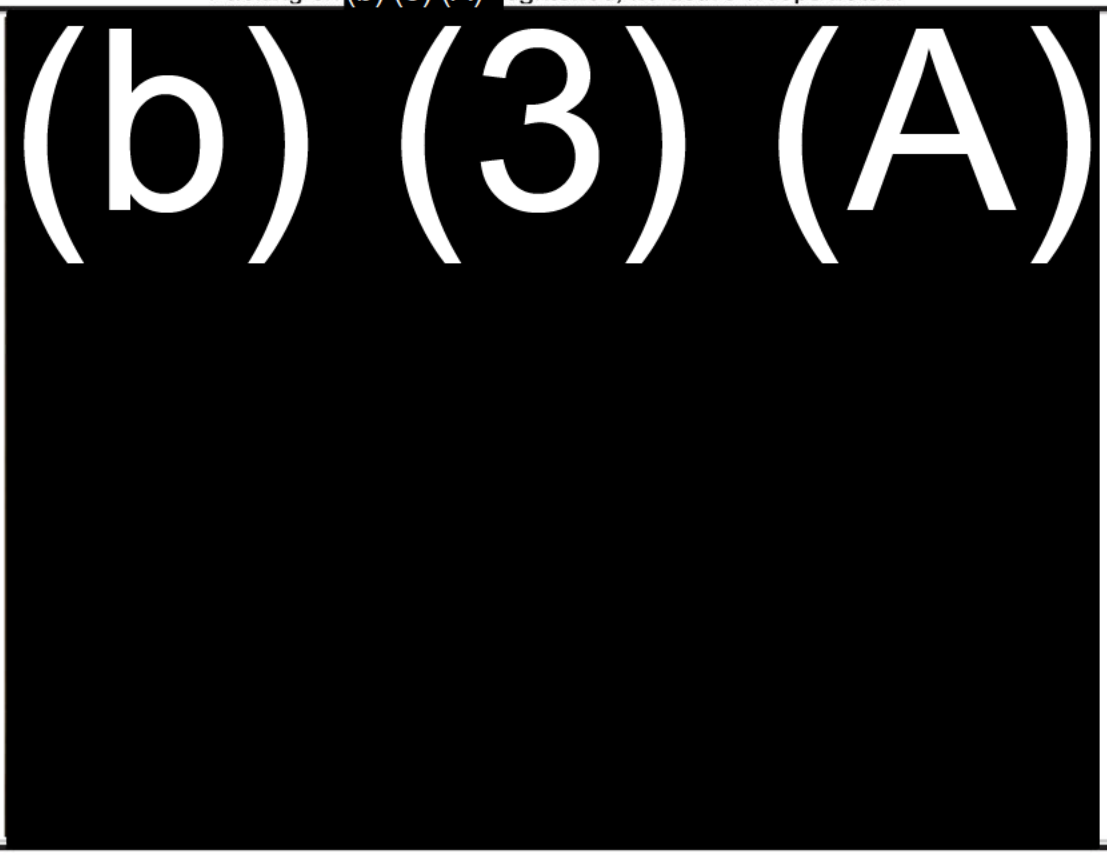

Packing on (b) (3) (A) tightened; no active weeps noted.

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




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




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

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**

(b) (3) (A)

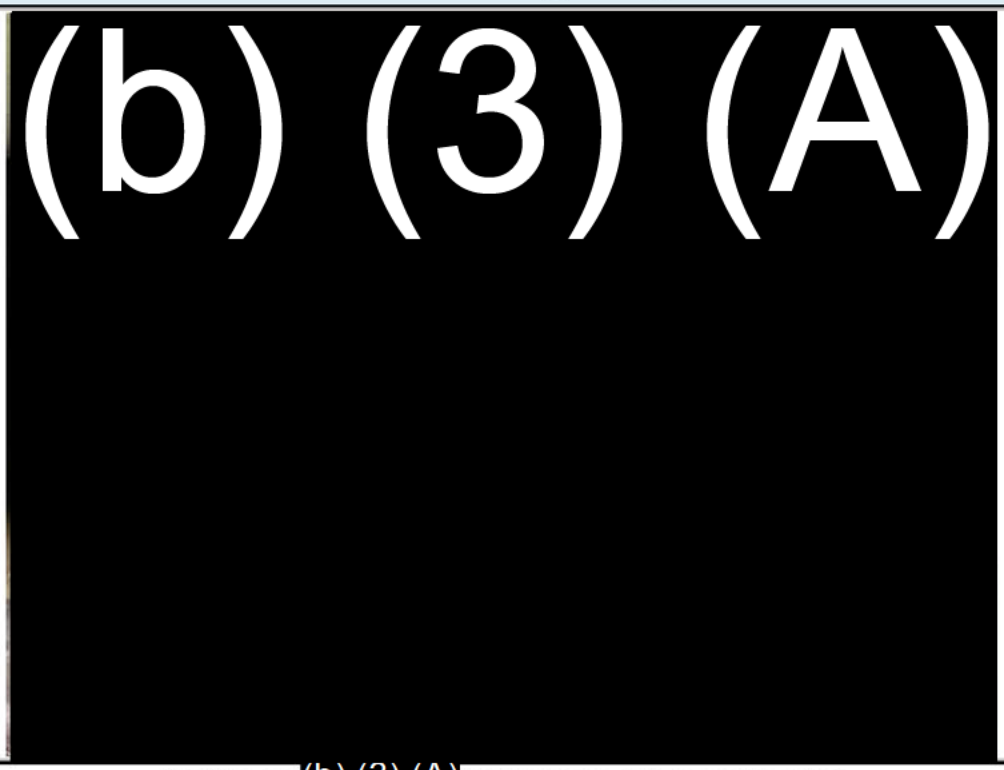
Packing on (b) (3) (A) tightened; no active weeps noted.

(b) (3) (A)

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

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




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

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 051 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 25 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) |
| Email | (b) (6) hdrinc.com | | |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 43 | Underground Pumphouse | Various |

| | | | |
|---|---|---|---|
| Repair Description | 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). | Source Contract Reference | N/A |
| 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. | Contractor QC Records Reviewed | N/A |
| Description of QA Validation and Observations | N/A - no repair provided based on integrity assessment. See comments below.<br><br>Final acceptance by government. Date: N/A | | |

| Rework Needed | | | | Photo Record Attached | Repair Work Validated as Complete | | | |
|---|---|---|---|---|---|---|---|---|
| ○ | Yes | ◉ | No | See Page 2. | ◉ | 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. The recommended mitigation for these repairs are "PITs have been in place for years with thermo wells attached to the pipeline. Leave in place as-is."

## 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 | 25 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**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 Environmental, Operations and Construction, Inc. | Repair No. | 053 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (3) (A) [redacted] |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 25 MAY 2023 |
| QV Engineer | (b) (6) [redacted] | Phone | (b) (6) [redacted] |
| Email | (b) (6) [redacted] hdrinc.com | | |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 43 | Underground Pumphouse | Ball Valves |

| | | | |
|---|---|---|---|
| Repair Description | There is staining and some minor drips noted on the (b) (3) (A) [redacted] throughout the UGPH. Drips appear to be coming from the stem injection port. Service valves. | Source Contract Reference | N/A for in-house labor. |
| 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.<br><br>Two-party integrity verification by FLC personnel. | Contractor QC Records Reviewed | N/A |
| Description of QA Validation and Observations | FLCPH executed a work order to confirm all valves were serviced. Completed work order with two-party verification was provided to JTF-RH QV.<br><br>JTF-RH QV team conducted a site visit on 24 May 2023 and confirmed (b) (3) (A) [redacted] (b) (3) (A) [redacted]<br><br>Final acceptance by government. Date: 15 MAY 2023 | | |

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

Comments

(b) (3) (A) [redacted]

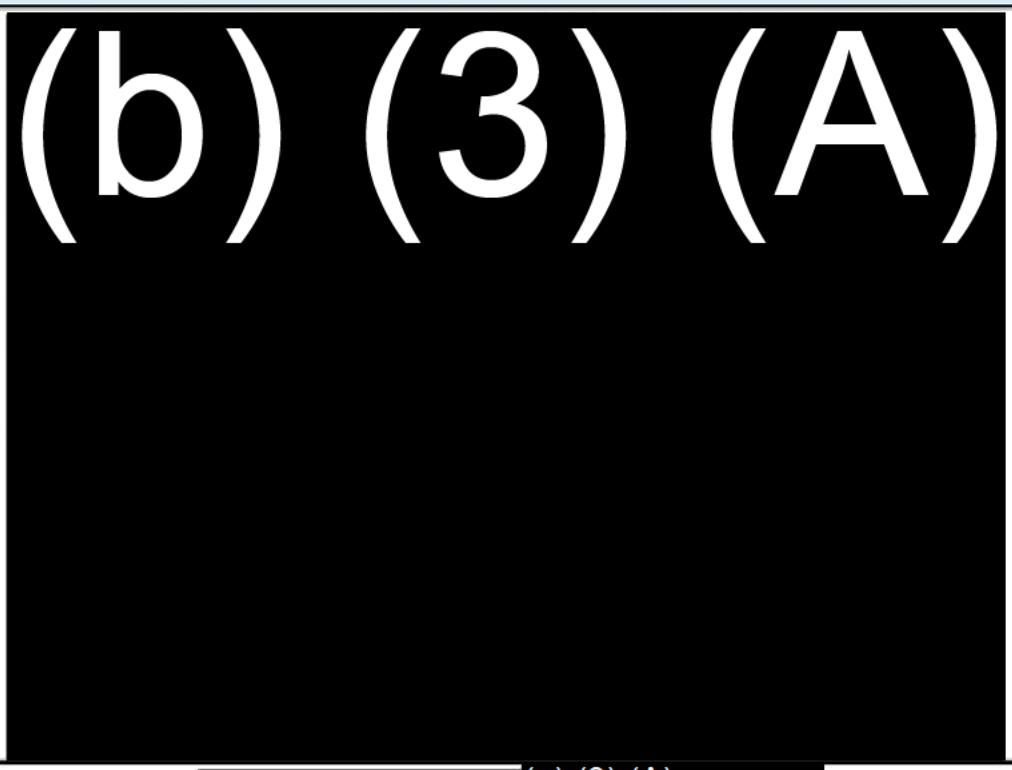
Reference 19 MAY 2023 Memo in which (b) (4) [redacted] re-assessed deficiency items for mechanical integrity. The recommended mitigation for these repairs are "No significant staining or drips. Servicing of valves is not necessary. Tightening of packing is sufficient. FLC will tighten packing; monitor during de-fueling operations; use drip pans and absorbents as a precautionary measure."

## CERTIFICATION

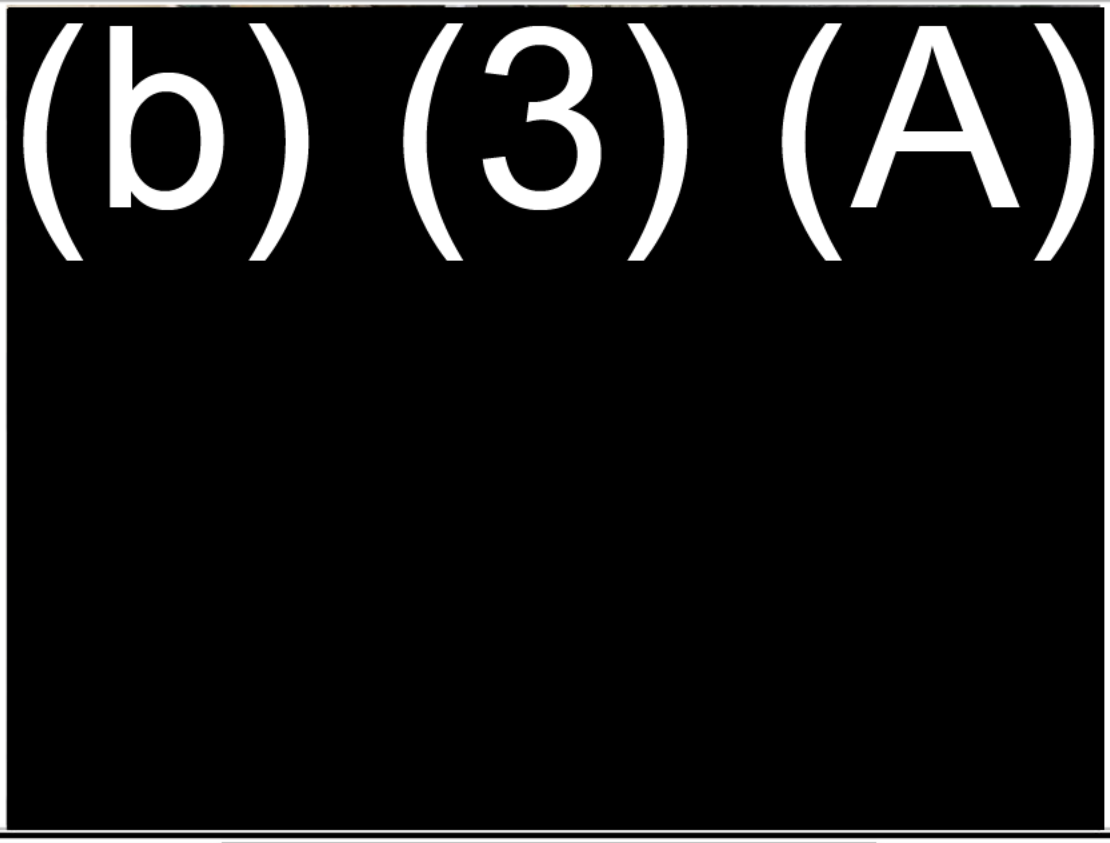
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) [redacted] |
| | DATE | 25 MAY 2023 |

# QUALITY ASSURANCE VALIDATION REPORT

## Red Hill Bulk Fuel Storage Facility Defuel



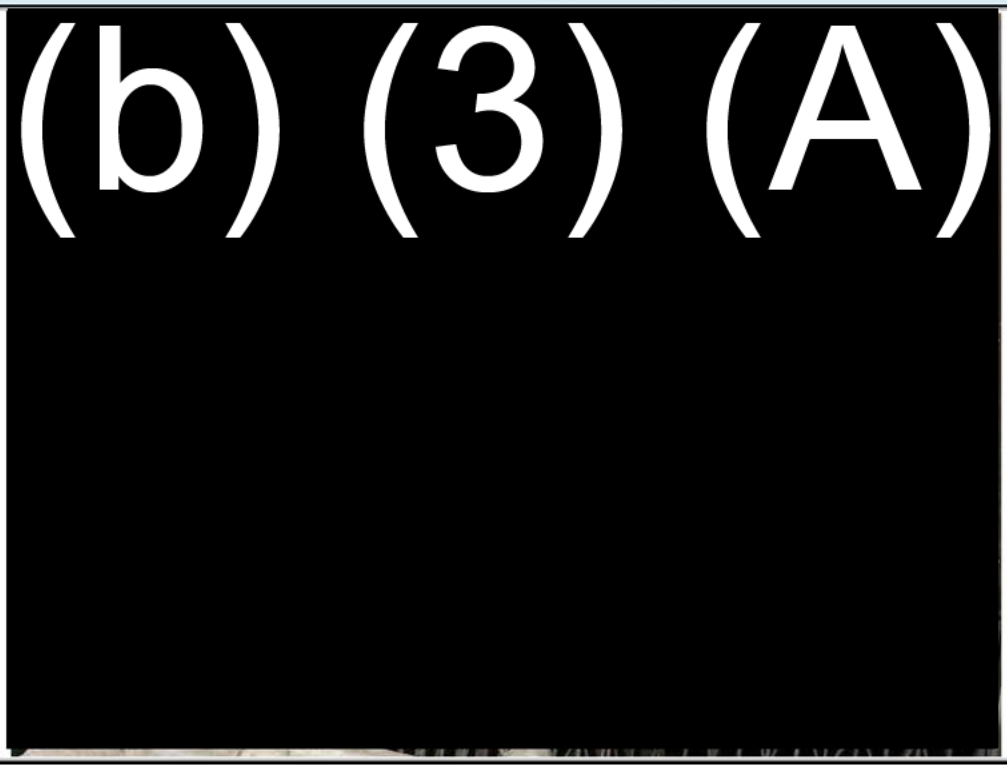

(b) (3) (A)



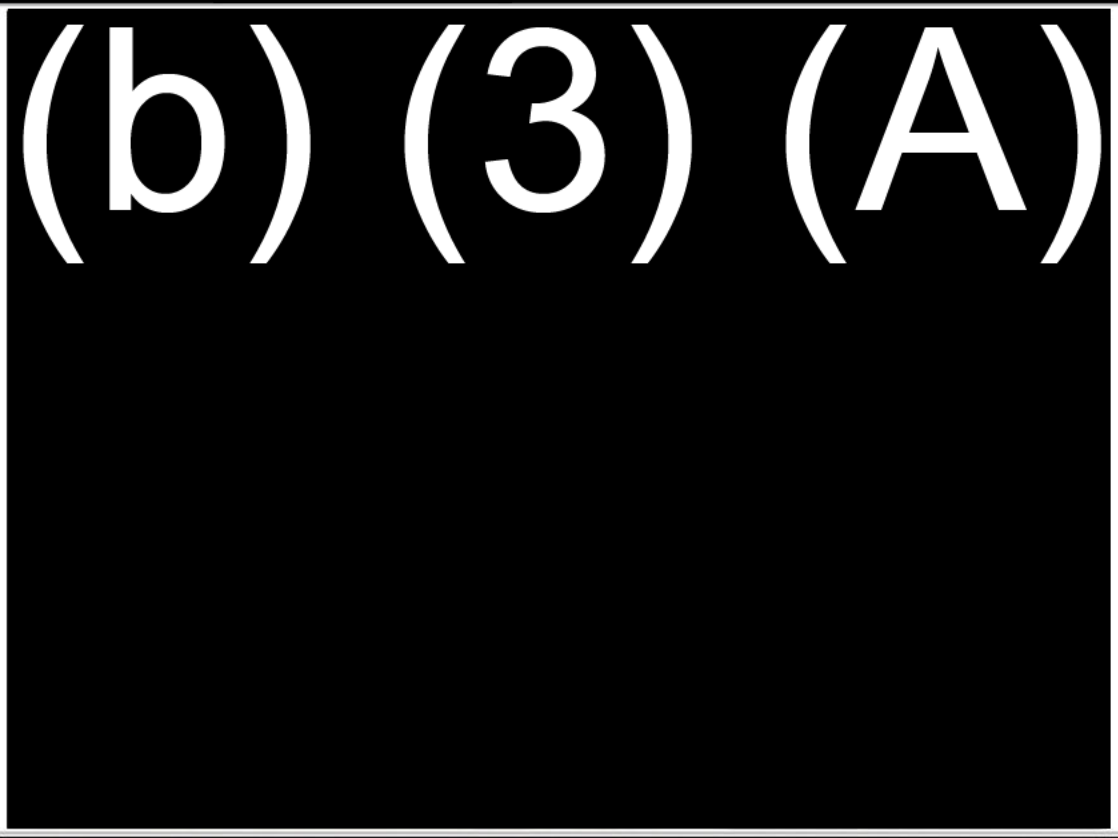

(b) (3) (A) .

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**



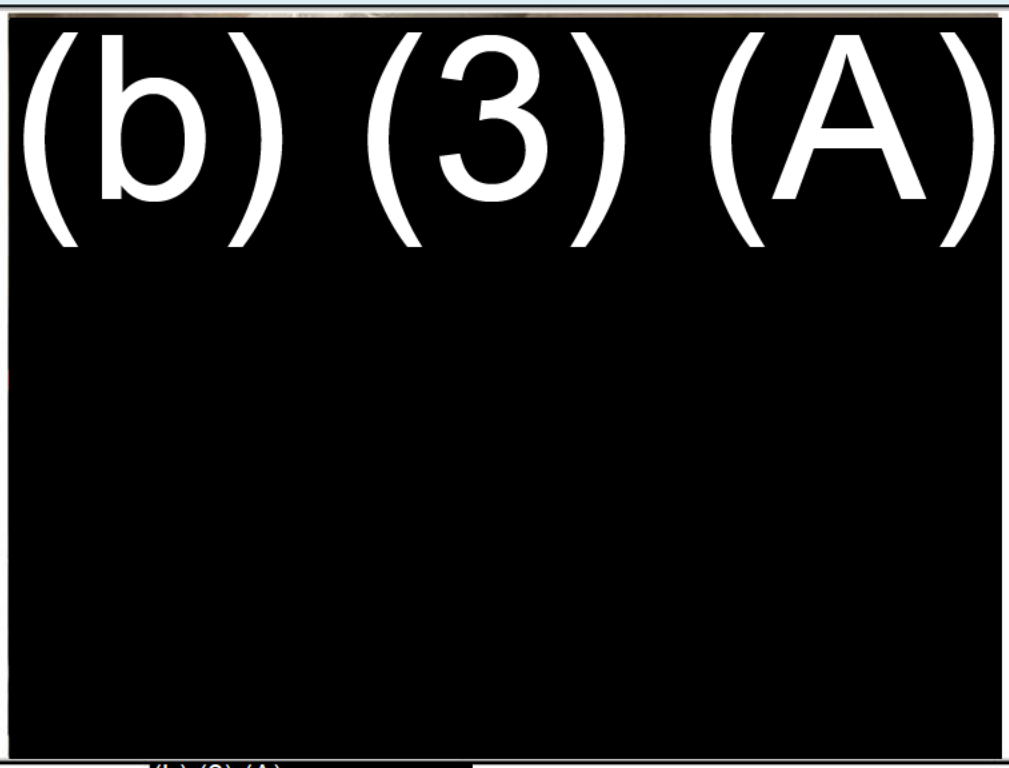

(b) (3) (A) tightened; no active weeps noted.



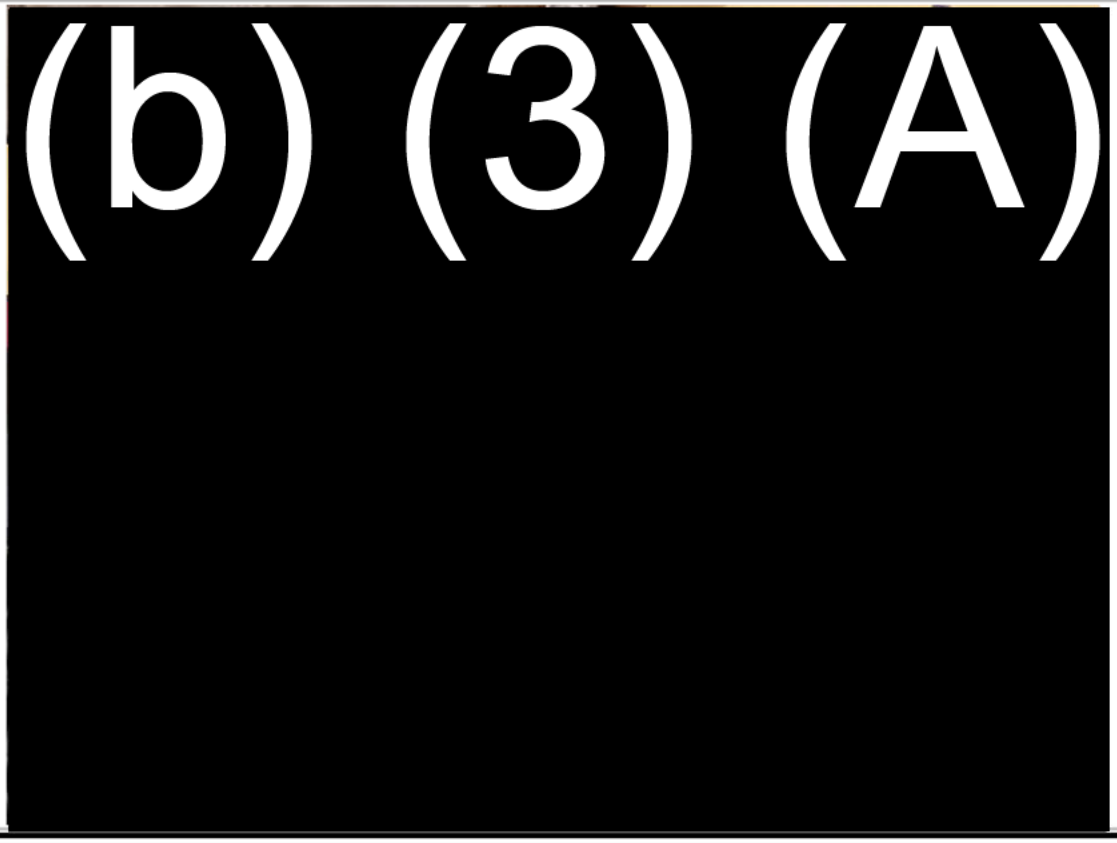

(b) (3) (A) tightened; no active weeps noted.

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**



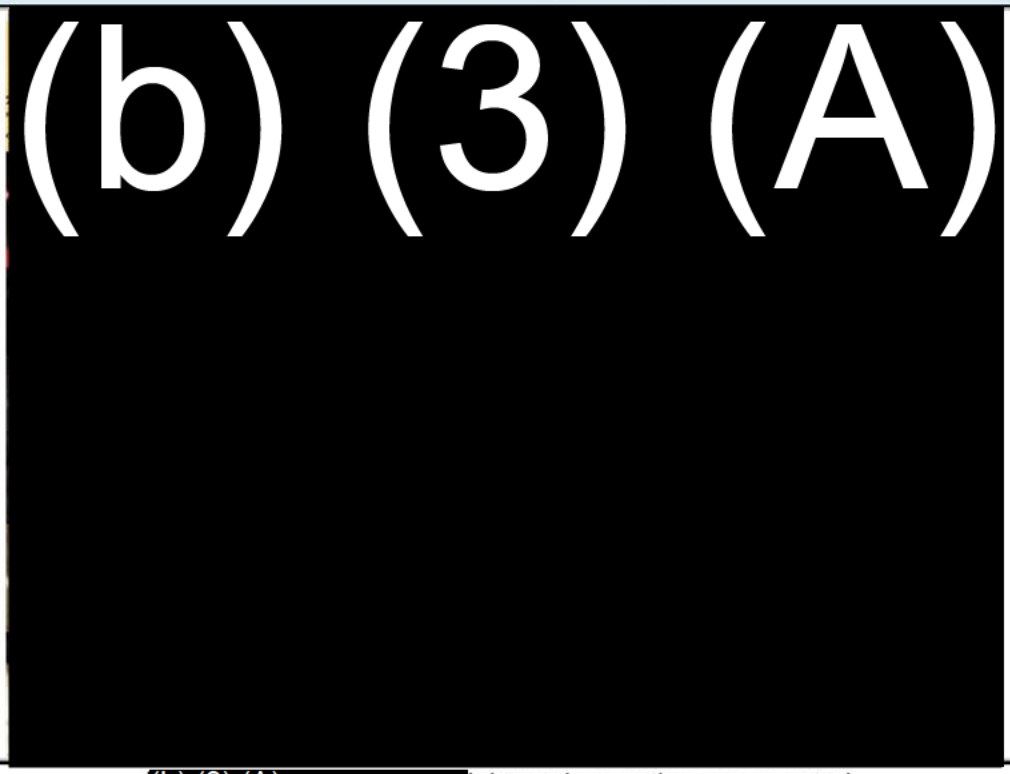

(b) (3) (A) ightened; no active weeps noted.



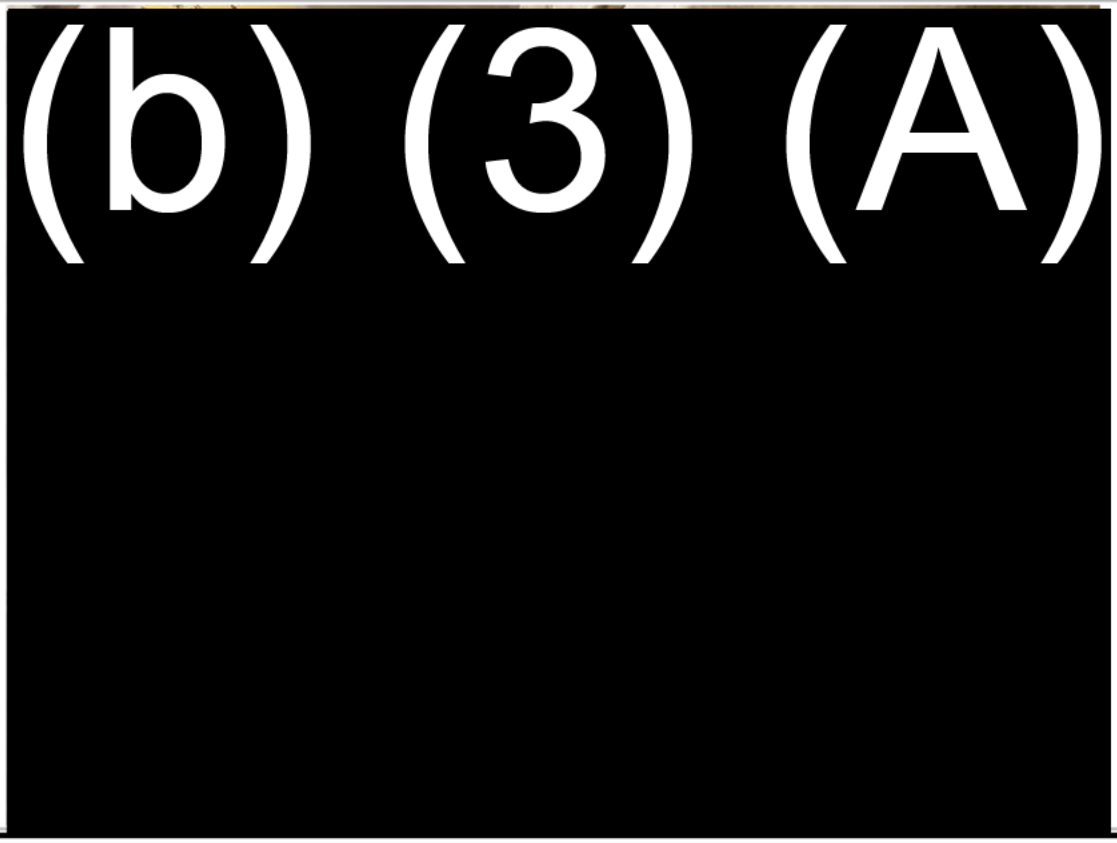

(b) (3) (A) ightened; no active weeps noted.

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




(b) (3) (A) ightened; no active weeps noted.




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

## QUALITY ASSURANCE VALIDATION REPORT

**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.

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**

(b) (3) (A)

Drip pans and absorbent pads for monitoring.

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 087 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903 19 F 0027 | Report Date | 25 MAY 2023 |
| QV Engineer | (b) (6) | Phone (b) (6) | Email (b) (6) hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 51 | Underground Pumphouse | [redacted] |

| | | | |
|---|---|---|---|
| Repair Description | [redacted] threaded connections associated with these fittings. (continued in comments below) | Source Contract Reference | N/A for in house labor. |
| 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.<br><br>Two party integrity verification by FLC personnel. | Contractor QC Records Reviewed | N/A |
| Description of QA Validation and Observations | FLCPH executed a work order to confirm all valves were serviced. Completed work order with two party verification was provided to JTF RH QV.<br><br>JTF RH QV team conducted a site visit on 24 May 2023 and confirmed (b) (3) (A) (b) (3) (A) ad been serviced.<br><br>Final acceptance by government. Date: 16 MAY 2023 | | |

| Rework Needed | | | | Photo Record Attached | Repair Work Validated as Complete | | | |
|---|---|---|---|---|---|---|---|---|
| ○ | Yes | ◉ | No | See Pages 2 3. | ◉ | Yes | ○ | No |

Comments

[redacted] tions, retape, and reassemble to prevent future weeps. Review for mechanical integrity. Disassemble and reassemble only if warranted." (b) (3) (A) [redacted] (b) (4) [redacted] not [redacted] ten packing; monitor during de fueling operations; use drip pans and absorbents as a precautionary measure."

## 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 | 25 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**

(b) (3) (A)

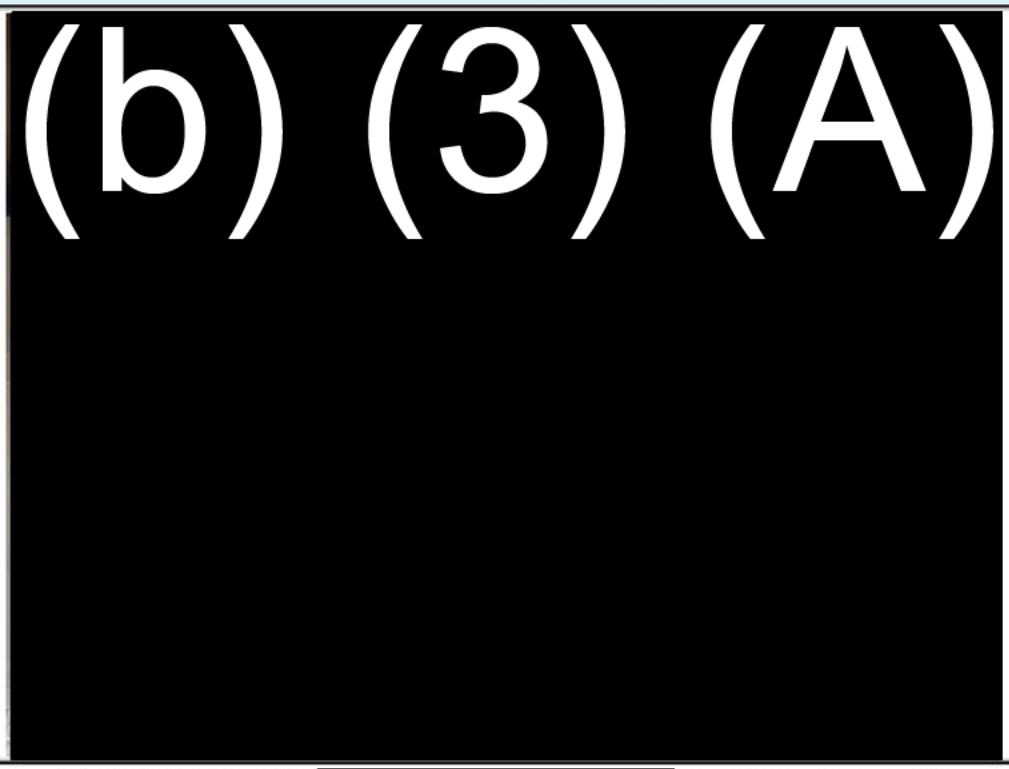
Packing tightened on (b) (3) (A) no active weeps noted.

(b) (3) (A)

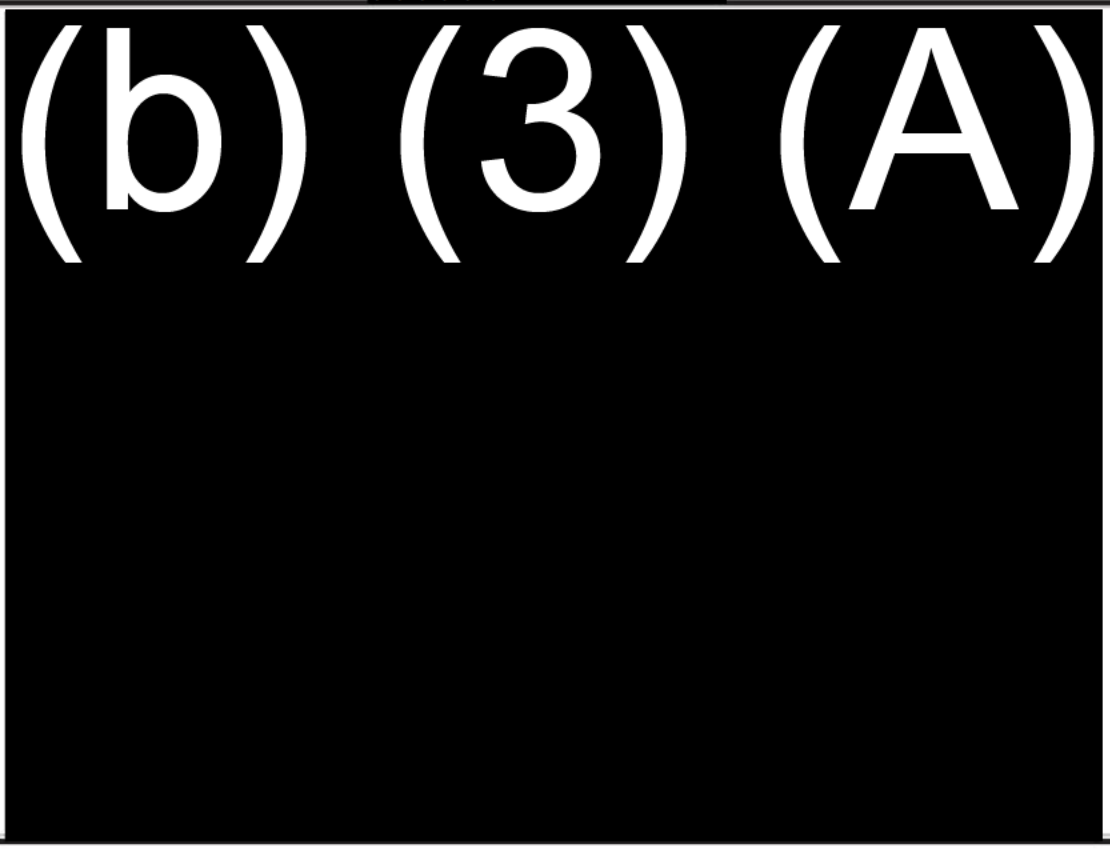
Packing tightened on (b) (3) (A) no active weeps noted.

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




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




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

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 088 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 25 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) |
| Email | (b) (6) hdrinc.com | | |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 52 | Underground Pumphouse | Various |

| | | | |
|---|---|---|---|
| Repair Description | 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). | Source Contract Reference | N/A |
| 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. | Contractor QC Records Reviewed | N/A |
| Description of QA Validation and Observations | N/A - no repair provided based on integrity assessment. See comments below.<br><br>Final acceptance by government. Date: N/A | | |

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

Comments

Repair Description cont. "Provide appropriate seal fittings and flexible conduit connections at transducers. Remove and cap (b) (3) (A) sensor."

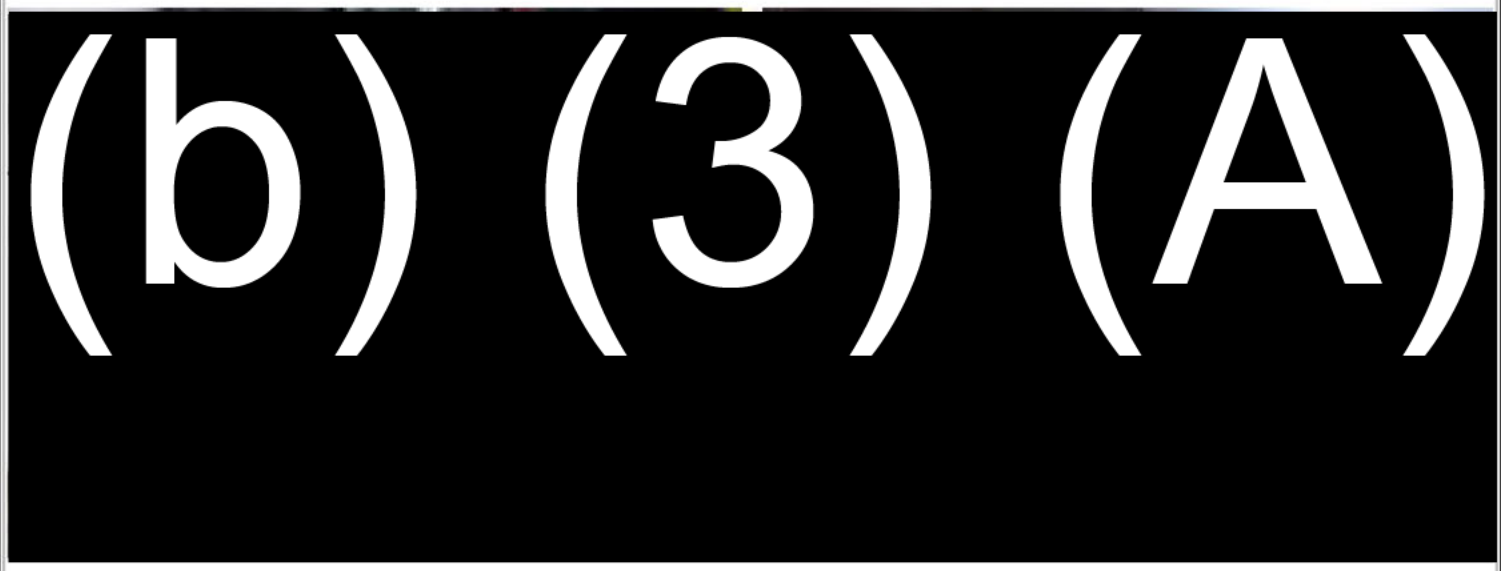
Reference 19 MAY 2023 Memo in which (b) (4) re-assessed deficiency items for mechanical integrity. The affected conduits were cross-referenced with NAVSUP FLC and DLA and confirmed to be inactive/de-energized. (b) (5)

## CERTIFICATION

| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 25 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




Representative photographs.

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 090 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903 19 F 0027 | Report Date | 25 MAY 2023 |
| QV Engineer | (b) (6) | Phone | Email (b) (6) hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 52 | Underground Pumphouse | (b) (3) (A) |

| | | | |
|---|---|---|---|
| Repair Description | (b) (3) (A) | Source Contract Reference | N/A for in house labor. |
| 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.<br><br>Two party integrity verification by FLC personnel. | Contractor QC Records Reviewed | N/A |
| Description of QA Validation and Observations | FLCPH executed a work order to confirm all valves were serviced. Completed work order with two party verification was provided to JTF RH QV.<br><br>JTF RH QV team conducted a site visit on 24 May 2023 and confirmed v [redacted]<br><br>Final acceptance by government. Date: 16 MAY 2023 | | |

| Rework Needed | | | | Photo Record Attached | Repair Work Validated as Complete | | | |
|---|---|---|---|---|---|---|---|---|
| ○ | Yes | ◉ | No | See Pages 2 4. | ◉ | Yes | ○ | No |

Comments

(b) (3) (A) [redacted]

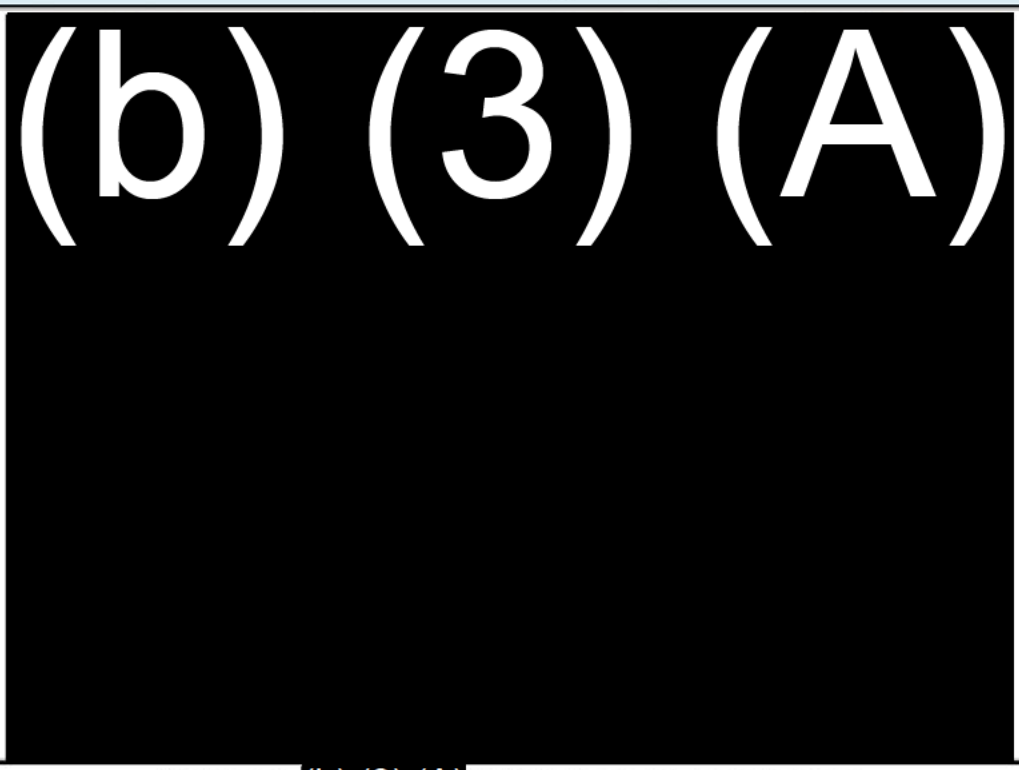
Reference 19 MAY 2023 Memo in which (b) (4) re assessed deficiency items for mechanical integrity. (b) (5) [redacted]

## CERTIFICATION

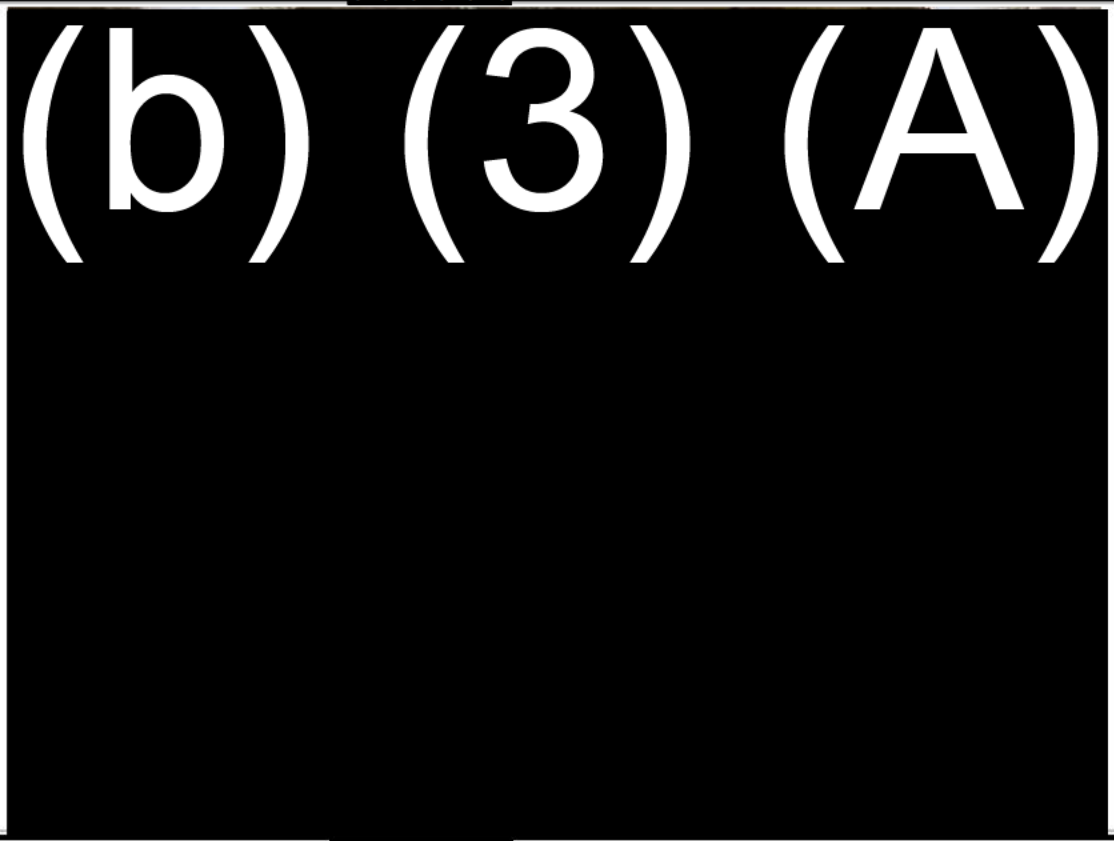
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 25 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**



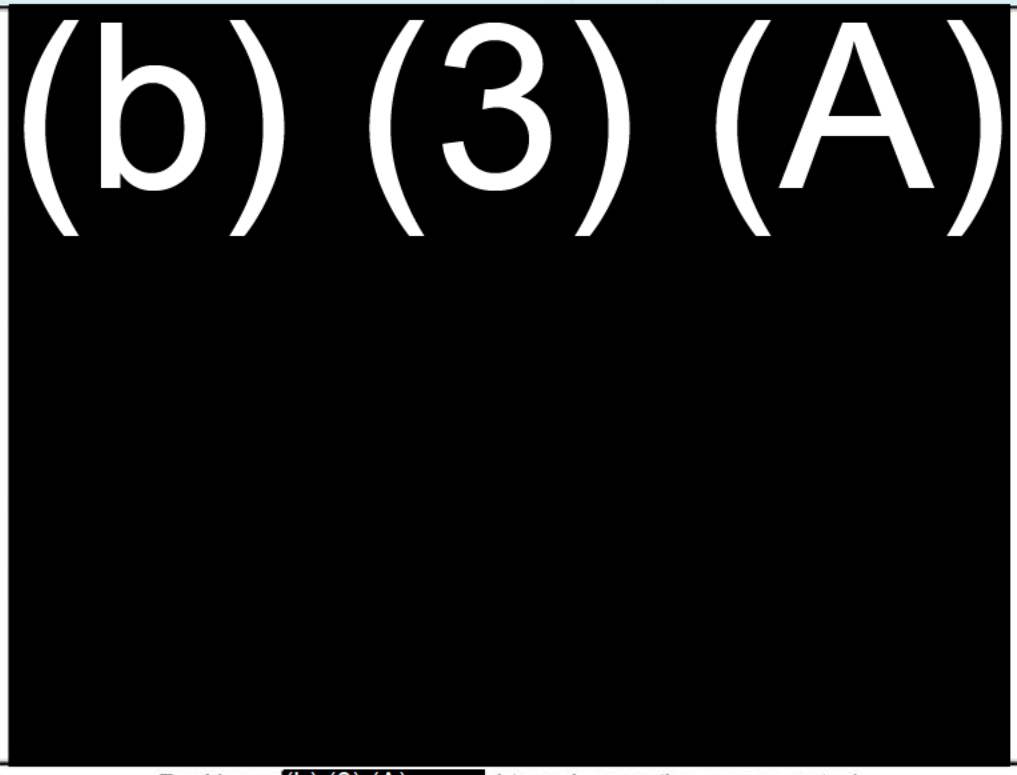

Packing on (b) (3) (A) tightened; no active weeps noted.



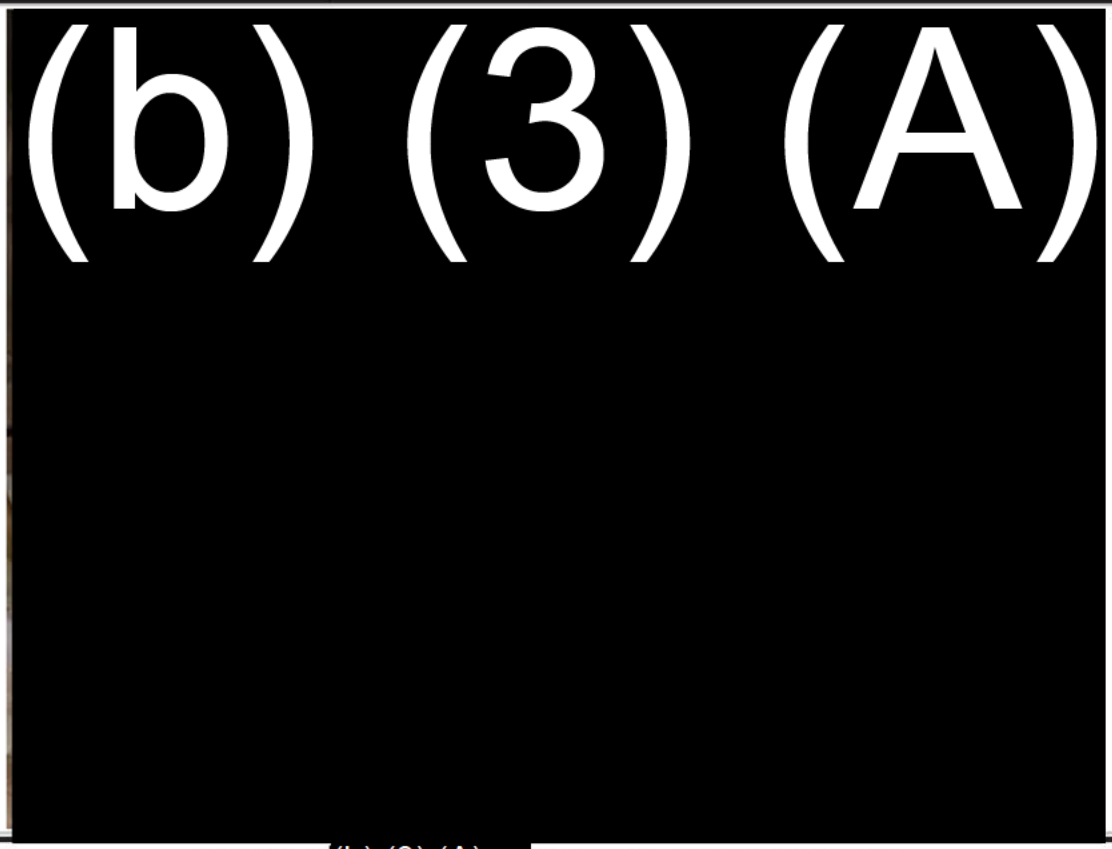

Packing on (b) (3) (A) tightened; no active weeps noted.

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**



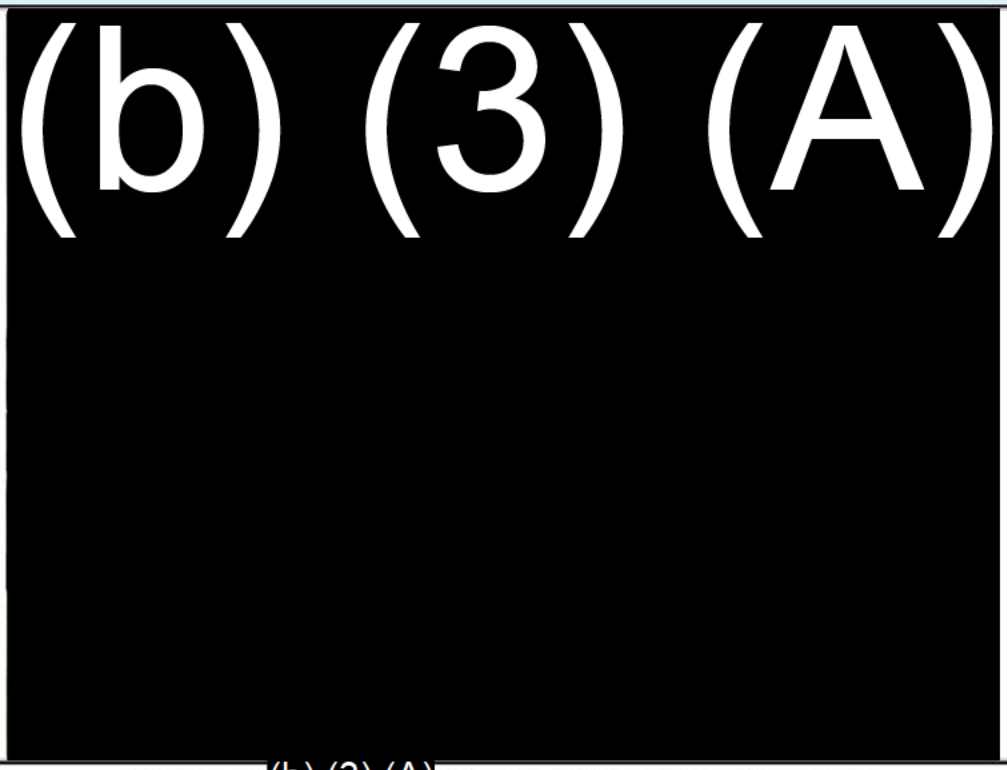

Packing on (b) (3) (A) ghtened; no active weeps noted.



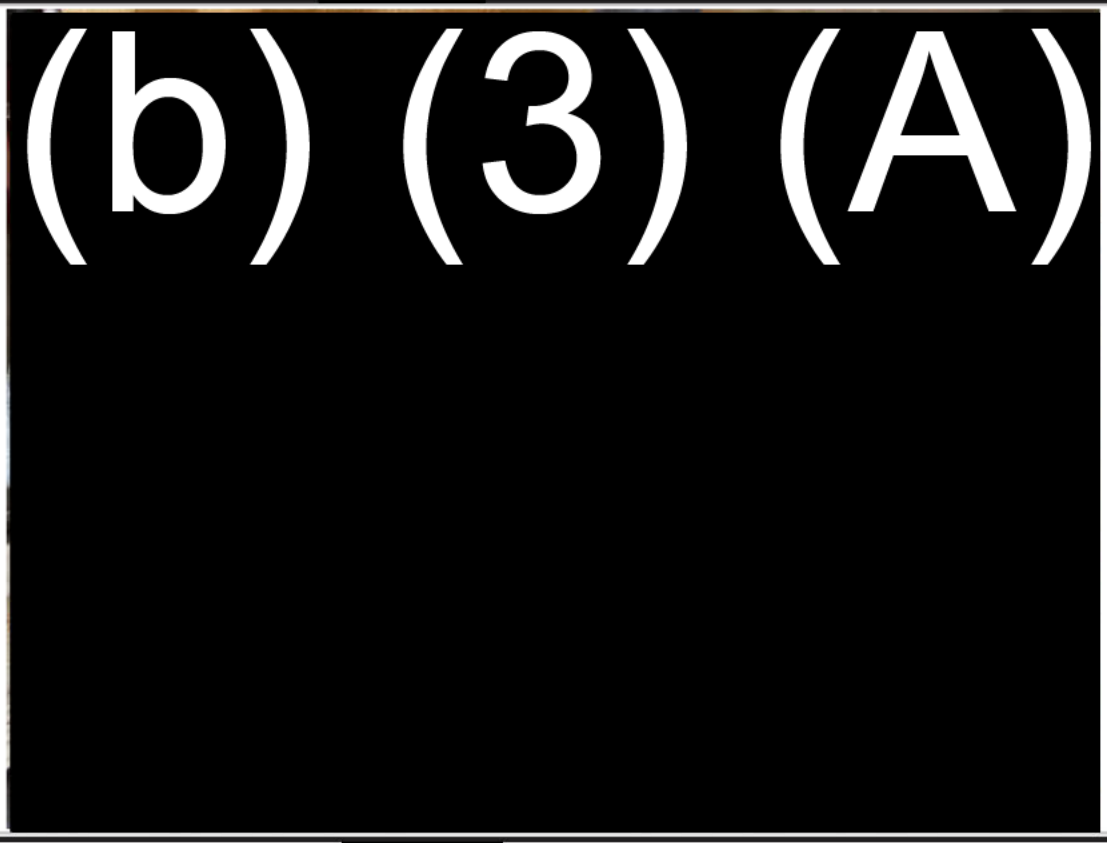

Packing on (b) (3) (A) ghtened; no active weeps noted.

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




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




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

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 093 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 25 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) |
| Email | (b) (6) hdrinc.com | | |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 52 | Underground Pumphouse | (b) (3) (A) |

| | | | |
|---|---|---|---|
| Repair Description | (b) (3) (A) s weeping at bonnet. Service valve. | Source Contract Reference | N/A for in-house labor. |
| 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.<br><br>Two-party integrity verification by FLC personnel. | Contractor QC Records Reviewed | N/A |
| Description of QA Validation and Observations | FLCPH executed a work order to confirm valve was serviced. Completed work order with two-party verification was provided to JTF-RH QV.<br><br>JTF-RH QV team conducted a site visit on 24 May 2023 and confirmed valve had been serviced.<br><br>Final acceptance by government. Date: 16 MAY 2023 | | |

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

Comments

(b) (3) (A)

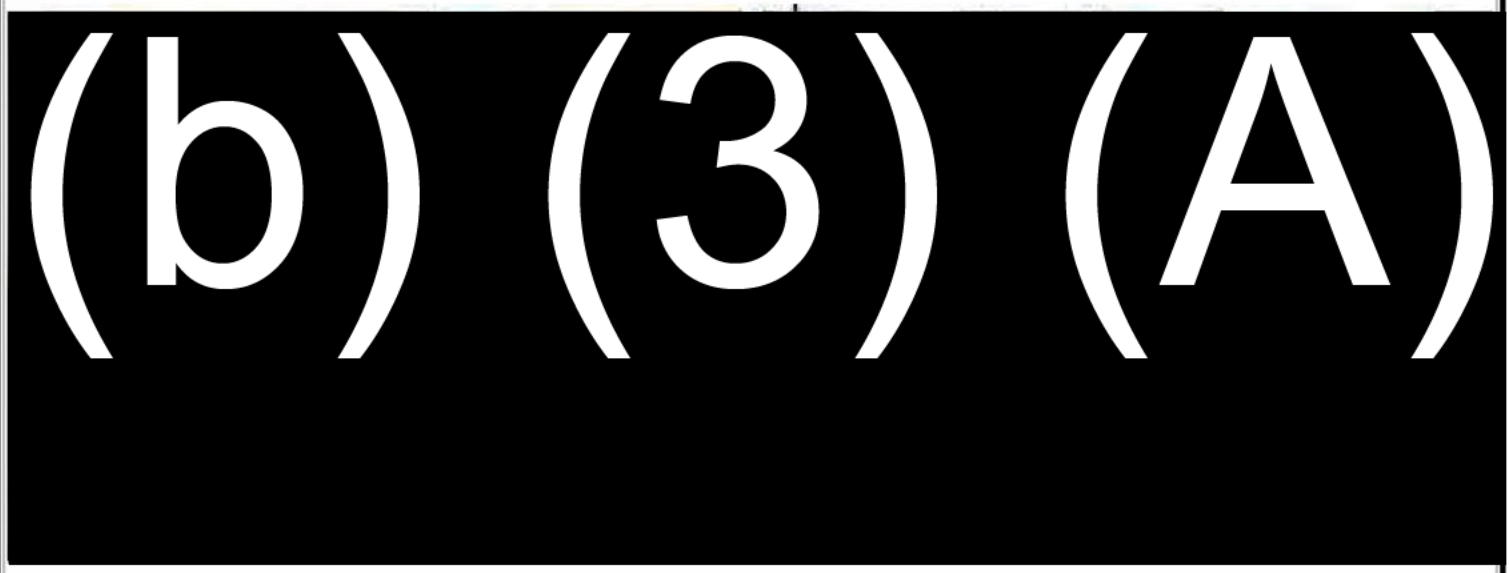
Reference 19 MAY 2023 Memo in which (b) (4) re-assessed deficiency items for mechanical integrity. (b) (5)

## CERTIFICATION

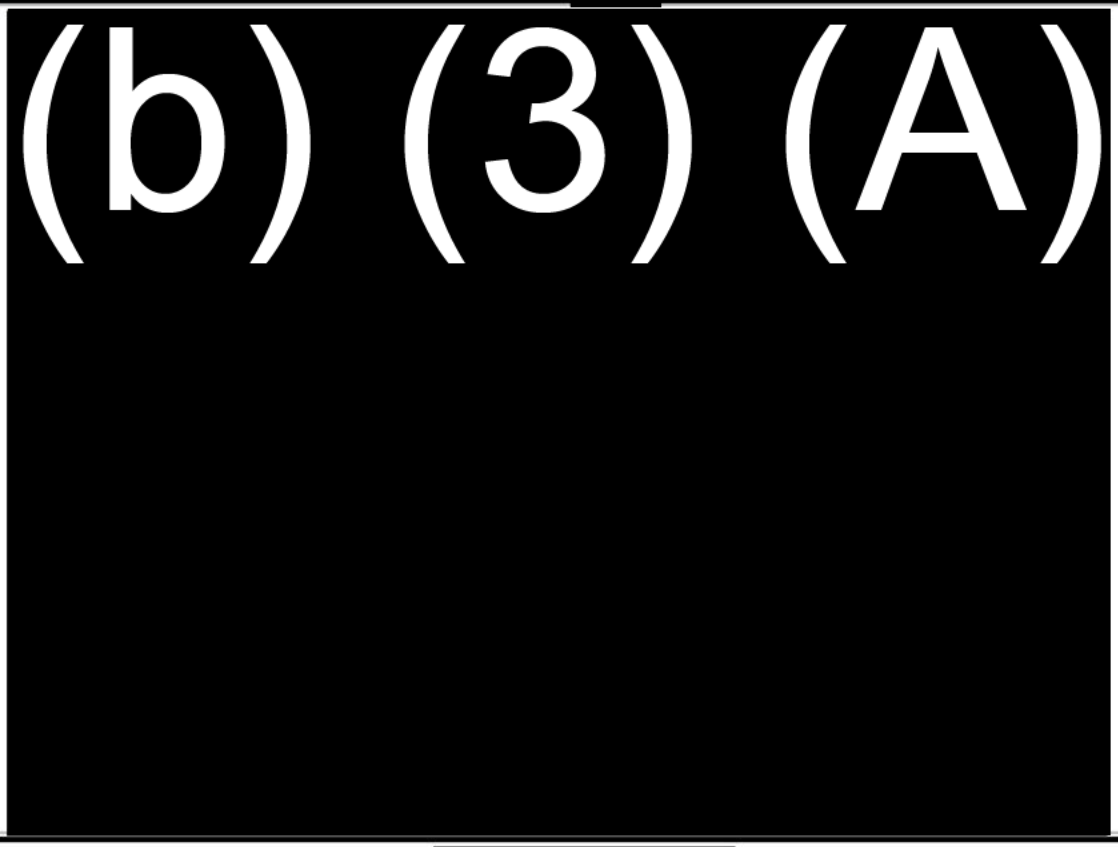
| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 25 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




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




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

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 100 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 25 MAY 2023 |

| | | | | | |
|---|---|---|---|---|---|
| QV Engineer | (b) (6) | Phone | (b) (6) | Email | (b) (6) hdrinc.com |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 62 | Underground Pumphouse | Various |

| | | | |
|---|---|---|---|
| Repair Description | (b) (3) (A) | Source Contract Reference | N/A for in-house labor. |
| 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.<br><br>Two-party integrity verification by FLC personnel. | Contractor QC Records Reviewed | N/A |
| Description of QA Validation and Observations | FLCPH executed a work order to confirm valves were serviced. Completed work order with two-party verification was provided to JTF-RH QV.<br><br>JTF-RH QV team conducted a site visit on 24 May 2023 and confirmed (b) (3) (A) had been serviced.<br><br>Final acceptance by government. Date: 18 MAY 2023 | | |

| Rework Needed | | | | Photo Record Attached | Repair Work Validated as Complete | | | |
|---|---|---|---|---|---|---|---|---|
| ○ | Yes | ◉ | No | See Page 2. | ◉ | Yes | ○ | 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 report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 25 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**

(b) (3) (A)

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

(b) (3) (A)

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

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 101 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 25 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) |
| Email | (b) (6) hdrinc.com | | |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 62 | Underground Pumphouse | 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). | Source Contract Reference | N/A for in-house labor. |
| 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.<br><br>Two-party integrity verification by FLC personnel. | Contractor QC Records Reviewed | N/A |
| Description of QA Validation and Observations | FLCPH executed a work order to confirm valves were serviced. Completed work order with two-party verification was provided to JTF-RH QV.<br><br>JTF-RH QV team conducted a site visit on 24 May 2023 and confirmed (b) (3) (A) had been serviced.<br><br>Final acceptance by government. Date: 15 MAY 2023 | | |

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

Comments

Repair Description cont. "Disassemble threaded connections, retape, and reassemble to prevent future weeps. (b) (3) (A) serviced.

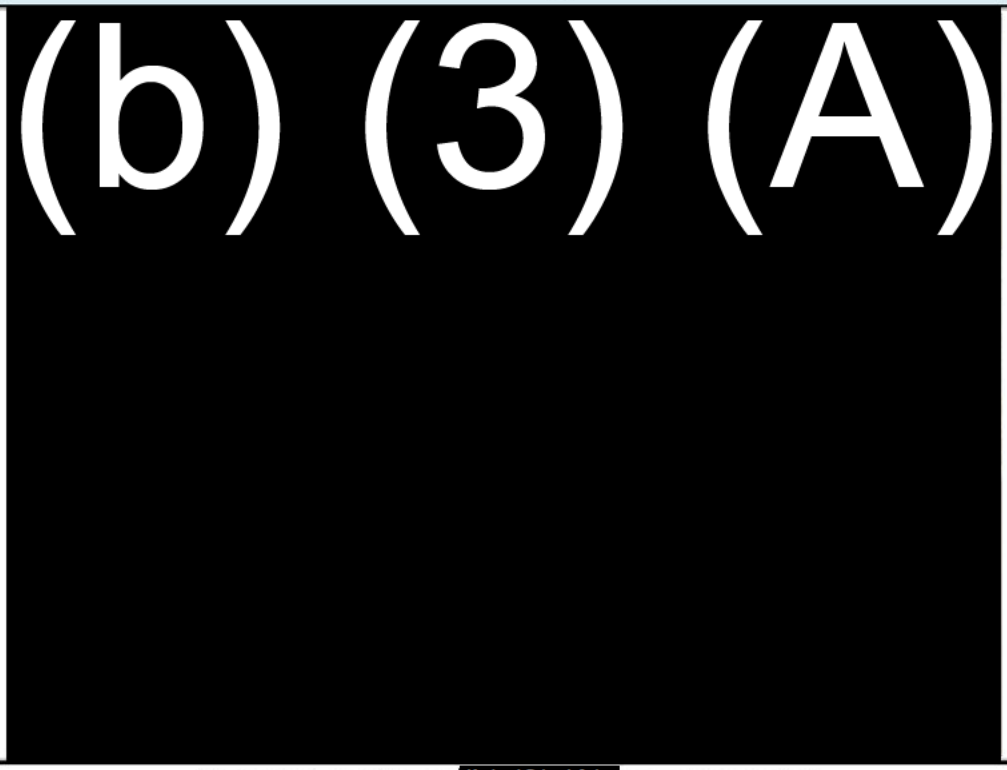
Reference 19 MAY 2023 Memo in which (b) (4) re-assessed deficiency items for mechanical integrity. (b) (5)

## CERTIFICATION

| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 25 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**




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

# QUALITY VALIDATION (QV) REPORT

## Red Hill Bulk Fuel Storage Facility Defuel

| | | | |
|---|---|---|---|
| Validation Firm | HDR Environmental, Operations and Construction, Inc. | Repair No. | 103 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 25 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) |
| Email | (b) (6) hdrinc.com | | |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 62 | Underground Pumphouse | Various |

| | | | |
|---|---|---|---|
| Repair Description | 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). | Source Contract Reference | N/A |
| 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. | Contractor QC Records Reviewed | N/A |
| Description of QA Validation and Observations | N/A - no repair provided based on integrity assessment. See comments below.<br><br>Final acceptance by government. Date: N/A | | |

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

| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 25 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**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 Environmental, Operations and Construction, Inc. | Repair No. | 105 |
| Address | 9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112 | Repair ID | (b) (3) (A) |
| Contract No. | FA890315D0007, D.O. FA8903-19-F-0027 | Report Date | 25 MAY 2023 |
| QV Engineer | (b) (6) | Phone | (b) (6) |
| Email | (b) (6) hdrinc.com | | |

## VALIDATION

| Source | PDF Page No. | Facility Geographic Area | Location Reference |
|---|---|---|---|
| NDAA | 62 | Underground Pumphouse | Ball Valves |

| | | | |
|---|---|---|---|
| Repair Description | There is staining and some minor drips noted on the [redacted] throughout the UGPH. Drips appear to be coming from the stem injection port. Service valves. | Source Contract Reference | N/A for in-house labor. |
| 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.<br><br>Two-party integrity verification by FLC personnel. | Contractor QC Records Reviewed | N/A |
| Description of QA Validation and Observations | FLCPH executed a work order to confirm all valves were serviced. Completed work order with two-party verification was provided to JTF-RH QV.<br><br>JTF-RH QV team conducted a site visit on 24 May 2023 and confirmed VValves (b) (3) (A) (b) (3) (A) ad been serviced.<br><br>Final acceptance by government. Date: 15 MAY 2023 | | |

| Rework Needed | | | | Photo Record Attached | Repair Work Validated as Complete | | | |
|---|---|---|---|---|---|---|---|---|
| ○ | Yes | ◉ | No | See Pages 2-3. | ◉ | Yes | ○ | No |

Comments
(b) (3) (A) [redacted]

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

| | | |
|---|---|---|
| I hereby certify that repair work validated in this report was personally substantiated and this report is true. | QV ENGINEER SIGNATURE | (b) (6) |
| | DATE | 25 MAY 2023 |

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**

(b) (3) (A)

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

(b) (3) (A)

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

## QUALITY ASSURANCE VALIDATION REPORT

**Red Hill Bulk Fuel Storage Facility Defuel**

(b) (3) (A)

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

(b) (3) (A)

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

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

IN REPLY REFER TO:
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).

(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 |
|---|---|---|---|---|---|
| | (b) (3) (A) | | | | (b) (5) |
| Repair #50 | | | | No corrosion observed, no signs of weeping, disassembly and reassembly not warranted | |
| 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. | |

| DEF 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 | |

Enclosure (1)

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