

## Tank History for Tank 8, Red Hill

RED HILL TANK NO. 8 PRODUCT:  
DFM

<u>DATE</u>	<u>REMARKS</u>
3/2/52	Cleaned tank. Labor Cost: \$1986.60. Material: \$313.20
10/11/63	Calibrated gauge.
10/15/63	Repaired selsyn motor on automatic gauge.
5/5/64	Cleaned tank.
4/28/71	Emptied and cleaned for conversion.
5/7-18/71	Cleaned tank (140 hours). Labor Cost: \$560.
5/21/71	Converted from NSFO to Navy Distillate.
8/3/73	Topped off with Navy Distillate.
	Emptied and cleaned for conversion.
8/16/73	Installed 6" valve on drain line. Gravitated Navy Distillate from Tank 10 to Tank 8.
9/12/73	Telemeter system installed. Converted to DFM.
4/17/81 repairs	Tank was turned over to the contractor for initial and lining under MCON P-060.
12/16/81  accepted	Director and Deputy Director inspected tank upon completion of work under MILCON P-060. Tank was pending correction of minor deficiencies.
12/21/81	Tank returned to service for leak testing.
4/1/83 the  for a	Tank is still being tested for leaks. If necessary, contractor will return in August or September 1983 for final rework.

Date      Remarks

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Unless otherwise noted, all work in the following entries was done by AMAN Environmental Construction, Inc. and their subcontractors under DFSC M&R Project PRL93-17 (M1-93), Contract No. N62755-94-D-2802 entitled Clean Underground Fuel Storage Tanks, Red Hill Fuel Storage Facility. The project was administered by PWC Contracts Dept.

9/20/95      1. From 1330 to 1445 N. Kawamoto (FISC LAB) and C. Noyes (AMAN CQC) rode in the spider boom basket to inspect tank walls in quadrants A and B. Walls were judged to adequately clean.

2. From 1400 to 1515 E. Ling (FISC LAB) and J. Gammon (FISC SUPT) rode in spider boom basket to inspect tower structure in quadrants C and D. Noted loose materials (mostly concrete) that needs to be removed prior to the start of work on the tank bottom.

9/21/95      From 1315 to 1500 W. Choy (PWC CME) and J. Gammon (FISC SUPT) rode in spider boom basket to inspect tower in quadrants C and D. Marked/noted four locations where loose materials (mostly concrete) were present on the tower.

9/27/95      1. From 0810 to 0900 M. Gladson (FISC PM) and W. Choy (PWC CME) inspected tank bottom to determine IDQ work to be done.  
2. From 0900 to 1030 J. Gammon (FISC SUPT) and M. Wegmann

(Asteroid Corp.) to tank bottom to inspect bottom and get info for installing LEADS leak detection system temperature probe array. Took photos. Noted oil seepage from 4-inch pipe support on 18-inch pipeline.

3. From 1030 to 1105 J. Gammon and G. Warren (NFESC PORHUE) to tank bottom to get info on installing LEADS leak detection system 242-foot long standpipe.

9/28/95 1. From 0825 to 0930 M. Gladson (FISC PM) and R. Koyama (PWC CONREP) inspected deep pits in 0.25-inch wall plate in cylindrical portion of tank. Gladson hit pits with welders hammer and knocked five holes through plate. Pits discovered earlier in the week by C. Noyes (AMAN CQC). First noticed unbroken blisters in the coating surrounded by a wet spot of fuel. Opened blisters and found corrosion and pitting.

2. From 1520 to 1530 J. Gammon and G. Warren inspected tower from catwalk to check location for 242-foot long standpipe for LEADS leak detection system.

10/2/95 1. From 1025 to 1120 M. Gladson (FISC PM) and HT1 Hall (SUBASE IMF - NDT Shop) took ultrasonic readings in shell plate around five holes. See attached sheet for plate thickness readings.

2. 6-inch square coupon cut from shell at location of five

holes. Cutting done using the edge of a grinder. Minimum thickness along edge of coupon 1/16-inch.

10/3/95 From 0805 to 0845 J. Gammon (FISC SUPT) and R. Koyama (PWC CONREP) inspected hole in shell plate where 6-inch coupon removed. Found wood imbedded in the concrete behind steel shell plate. Wood surface coated with rust from back of shell plate. Took photos and wood samples.

10/6/95 Coupon enlarged from 6-inch square to 9-inch diameter using a plasma cutter. Minimum thickness along edge of enlarged coupon 1/8-inch.

10/10/95 From 1238 to 1340 W. Choy (PWC CME) and HT1 Shell (SUBASE IMF - NDT Shop) took ultrasonic thickness measurements in shell plate around 9-inch diameter hole to check for adequate shell plate for welding patch. See sketch for thickness readings.

10/26/95 From 0720 to 0830 J. Gammon (FISC SUPT) and R. Koyama (PWC CONREP) inspected 24-inch dia. patch over 9-inch dia. hole where coupon was removed. Took ultrasonic thickness measurements around edge of patch plate where welder burned through tank shell plate. Used Fuel Department's Krautkramer Branson Model DM2E to take thickness readings.

Took photos. Got several readings in the 0.050 - 0.070-inch range. See photos for locations of readings.

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Under DESC M&R Project PRL96-21, FISC PH Contract No. N00604-97-R-0013, FISC contracted with Mid Atlantic Environmental, Inc. to provide API-653 inspection services in support of the tank repair by Dames & Moore. Work was done by Thomas G. Kitchen, API-653 Certification No. 1891. Report submitted.

3/16-4/9/98 Inspect upper dome, cylinder, and lower dome.

6/23/98 UT test tank bottom.

6/30-7/1/98 Vacuum box test tank bottom.

7/20/98 Test tank bottom for chlorides and remaining flame sprayed aluminum.

7/23/98 From 1000 to 1115 M. Gladson (FISC PM), J. Fackrell (D&M CQC), and W. Hirouji (ROICC CME) inspected tank bottom.

8/17/98 I. From 0936 to 1048 J. Fackrell (DAMES & MOORE CQC), W. Hirouji (ROICC CME), M. Gladson (FISC PM), and J. Gammon (FISC SUPT) inspected the tank bottom. Original flat bottom

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plates were heavily pitted. Pits had been coated over. Found scratches in the existing coating on the first course ("A" plates) on plates 1, 8, 12, 13, 14, and 25. Found two holidays in the new coating on the flat bottom plate (under the tower stairway and on the repad for the old steam condensate return line now used as sample line conduit). Checked inside the 16" dia. product line and 8" dia. slop line from the Lower Access Tunnel. Found light debris in the bottom of the 18" dia. line and heavy debris in the slop line. The slop line was a third to half full at the end beneath the center of the tank.

2. M. Wegmann (Asteroide Corp. under contract to FISC) inspected the inside of the counterweight pipe and found something at the bottom.

## Tank History for Tank 10, Red Hill

RED HILL TANK NO. 10 PRODUCT: DFM

<u>DATE</u>	<u>REMARKS</u>
10/2/63	Put in floats and welding brackets to secure 3/4" pipe from telltale #4 to catwalk entrance. Telltales plugged following inspection after cleaning.
10/3/63	Completed piping on telltale #4 in tank. Ready for testing.
10/7/63	Made air test of 2-1/2 psi on telltale #4.
10/11/63	Calibrated gauge.
4/21/64	Repaired broken tape.
3/3/67	Replaced 6" standard 150 lbs. steel valve (new). Old valve frozen and valve stem bent. Labor Cost: \$22. Material: \$185
3/3-21/67	Fished float from tank bottom and installed new float. Labor Cost: \$174. Material: \$65
3/67	Installed turn buckles at top of guide wires for float.
3/3/67	Removed all gear from tank and took to maintenance shop for cleaning.
3/6/67	Machined new manhole cover for tank.
3/9/67	Checked and found counterweight required an additional 1-1/2 lbs. Machined additional weight to be installed.
3/10/67	While attempting to install additional weight to counterweight, upon removing cover, chain cable jumped, causing counterweight to drop to bottom of tank and breaking cable. Tank gear was set up immediately to start washing down catwalk and elevator shaft.
3/15/67	Tested elevator with 920 lbs. Washed side wall of tank using elevator.
3/17/67	Washed, checked and inspected tank bottom. No signs of any new dents or splits. Machined cracked 52 lbs. counterweight.

3/20/67 Cleared and tested plugged collector ring.

3/21/67 Wire brushed bad pits on tank bottom and painted same with tarset. Hung back counterweight and checked operation of float.

3/10/72 Emptied and cleaned for conversion.

3/22-4/10/72 Cleaned tank (252 hours). Labor Cost: \$1,174.32.  
Converted from NSFO to Navy Distillate.

6/29/72 Topped off with Navy Distillate.

1/73 Started to empty tank. Suspected leak. No sign of oil from telltale.

8/22/73 Emptied tank into mainline. Started cleaning.

9/1/73 Emptied and cleaned for conversion. Telemeter system installed. Converted to DFM.

9/4/73 Installed 6" valve on drain line.

11/14/73 Started receiving Navy Distillate from Tank 7 due to leak

4/20/76 Telltale #1 started to leak--60 drops per minute.

4/23/76 Started to drain pits into Tank 13.

5/5/76 Emptied and cleaned tank for repairs.

5/28/76 Leak found on collector ring.

5/4/76 Tank removed from service due to leakage.

9/21/76 PWC working in tank. Tank emptied and washed down for contractors.

12/15/77 PWC Pearl commenced repairs to tank.

10/25/78 Contractor began work. Removed motorized valves and installed blanks.

4/9/80 Contractor notified ROICC that tank ready to be returned to service.

4/11/80 Began refilling tank for leak test.



LEAK TEST DATA

(Note that leak rate is based on data from telemetering.)

<u>DATE</u>	<u>FILL LEVEL</u>	<u>LEAK RATE (GAL/DAY)</u>
4/11-7/22/80	Various 188-235	Bad data due to leaking skin valves
7/22-8/21/80	235.0	13.3
9/10-10/4/80	235.0	12.8
10/4-11/12/80	235.0	2.4
11/12/80-1/9/81	235.0	4.7
1/9-10/81	242.1	1206
1/10-12/81	195.4	NIL
1/12-15/81	235.1	NIL
1/15-19/81	236.1	NIL
1/19-22/81	237.1	NIL
1/22-26/81	238.0	NIL
1/26-29/81	238.0	NIL
1/29-30/81	240.0	693
1/30-2/10/81	239.0	15.0

1/9/81      Fill level raised from 235.0 ft. to 242.1 ft. to test upper dome. Severe leak somewhere between 235.0 ft. and 242.1 ft. Fuel ran out of concrete near first platform on stairway to top of dome.

1/29/81      Leak located between 239 ft. and 240 ft. level.

10/9/81      Completed draining DFM from tank.

10/14/81      Flushed with JP-5 and drained.

10/19/81      Started refilling tank with JP-5.

4/1/83      Tank is still being tested for leaks. If necessary, the contractor will return in August or September 1983 for a final rework.

<u>Date</u>	<u>Remarks</u>
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11/28/95	R. Krouse (FISC MAINT) removed the telemeter float, tape, and counterweight; and the high level alarm.
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1/19/96	From 0830 to 1000 M. Gladson (FISC PM) and J. Gammon (FISC SUPT) inspected suspect areas of the shell plate in the upper dome and near the expansion joint. R. Koyama (PWC CONREP) and C. Noyes (AMAN CQC) assisted from the catwalk.
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In the sampling of areas inspected the following was noted:

- a. several small holes through the shell plate due to corrosion from the back side of the plate
- b. several porous welds with fuel back seeping through the weld
- c. small areas of damaged polyurethane coating with uncoated shell plate exposed
- d. areas of patch coating where the patch coating had disbonded from the original polyurethane coating and no bare shell plate was exposed.

2/7/96	From 1305 to 1407 N. Kawamoto (FISC LAB) and M. Sakai (PWC CME) inspected the tank for cleanliness. Walls and tower
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were clean. Tank passed.

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2/16-3/12/98 Inspect upper dome, cylinder, and lower dome.

5/22/98 Inspect tank bottom.

5/27/98 UT test tank bottom and first course of ascending plates.

5/28/98 Vacuum box test tank bottom.

6/10/98 Vacuum box test tank bottom.

6/24/98 From 1145 to 1315 J. Gammon (FISC SUPT) accompanied J. Fackrell (D&M CQC) and T. Kitchen (M-A TANK API-653 INSP) to tank bottom. Kitchen tested sandblasted area for remaining flame sprayed aluminum and chlorides. One square foot test area showed 20 spots of aluminum remaining ranging from diameter of pencil eraser to diameter of a dime. Some on flat plate and some in dimples and pits. No chlorides found.

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- 6/26/98 Retest tank bottom for remaining flame sprayed aluminum.
- 6/29/98 Retest tank bottom for remaining flame sprayed aluminum.
- 7/28/98 From 0927 to 1057 J. Gammon (FISC SUPT) accompanied J. Fackrell (D&M CQC), M. Gladson (FISC PM), W. Hirouji (ROICC CME), and J. Frederick (ROICC CONREP) to inspect tank bottom. Located holidays in coating. Gaskets and bolting not changed on internal nozzles. Debris in slop line. In the Lower Access Tunnel the gaskets and bolting connecting the 12" and 20" skin valves to the tank flanges had not been changed.
- 8/14/98 From 1445 to 1545 J. Fackrell (D&M CQC), W. Hirouji (ROICC CME), G. Engle (FISC PM), and J. Gammon (FISC SUPT) inspected the tank bottom. Found one scratch to be repaired in the existing coating on the first course ("A" plates). Interior tank work accepted pending repair of the scratch.
- 8/17/98 M. Wegmann (Asteroid Corp. under contract to FISC) inspected the inside of the counterweight pipe and found it to be dry.
- 9/14/98 At 1200 J. Gammon (FISC SUPT) inspected the horizontal section of 6" dia. slop line (former casing pipe for steam condensate return line) from the Lower Access Tunnel. Five photos taken. Line contained loose debris. Polyurethane

coating applied to inside of slop line under MILCON Project  
P-060 in the early 1980's has failed.

12/2/98 P. Schubert (Thermal Engineering) inspected 6" dia. slop  
line (former casing pipe for steam condensate return line)  
and abandoned 8" dia. slop line with a video camera/crawler  
Found debris and thick coating in 6" dia. line. Found 8"  
dia. line packed with grout. M. Gladson (FISC PM) has the  
videotape.

12/23/98 P. Schubert (Thermal Engineering) re-inspected 6" dia. slop  
line with a video camera/crawler. M. Gladson (FISC PM) has  
videotape.