



AUG 31 2018

**DEPARTMENT OF THE NAVY**

COMMANDER  
NAVY REGION HAWAII  
850 TICONDEROGA ST STE 110  
JBPHH, HAWAII 96860-5101

5090  
Ser N45/0597  
August 28, 2018

**CERTIFIED NO: 7016 0910 0001 0891 9325**

Mr. Richard Takaba  
Hawaii State Department of Health  
Environmental Management Division  
Solid and Hazardous Waste Branch  
Underground Storage Tank Section  
2827 Waimano Home Road  
Pearl City, Hawaii 96872

Dear Mr. Takaba:

SUBJECT: RED HILL TANK COMPLEX  
AUGUST 2018 OIL/WATER INTERFACE MEASUREMENTS  
DOH FACILITY ID NO. 9-102271  
DOH RELEASE ID NO. 990051, 010011, 020028, AND 140010

In response to the January 2014 release from Red Hill Tank 5, oil/water interface measurements were taken at groundwater monitoring wells RHMW02 and RHMW03 on August 21, 2018. No free product was observed in the wells. Measurements were not taken at monitoring wells HMW01 and RHMW05 due to the obstruction of transducers.

A summary of the oil/water interface measurements from January 2014 through August 2018 is being submitted as Enclosure 1.

If there are any questions regarding this matter, or if more information is needed, please contact Mr. Melvin Muraoka at (808) 471-3869.

Sincerely,

AARON Y. POENTIS

Director  
Regional Environmental Department  
By direction of the  
Commander

Enclosure: 1. Red Hill Oil/Water Interface Measurements, January 2014 through August 2018

Copy to: Ms. Joanna Seto, DOH Safe Drinking Water Branch  
Mr. Omer Shalev, U.S. EPA Region 9, Underground Storage Tank Program Office  
Mr. John Floyd, NAVSUP FLC Pearl Harbor  
Mr. Ed Gunthrie, DLA Energy Pacific

Date	RHMW01 Elevation = 102.27 ft <sup>1</sup>			RHMW02 Elevation = 104.76 ft <sup>1</sup>			RHMW03 Elevation = 121.06 ft <sup>1</sup>			RHMW05 Elevation = 101.55 ft <sup>1</sup>		
	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL
15-Jan-14	83.94	18.33	0	86.62	18.14	0	NT	NT	NT	NT	NT	NT
16-Jan-14	NT	NT	NT	NT	NT	NT	NT	NT	NT	83.09	18.46	0
22-Jan-14	83.53	18.74	0	86.20	18.56	0	NT	NT	NT	82.87	18.68	0
23-Jan-14	83.58	18.69	0	86.24	18.52	0	NT	NT	NT	82.94	18.61	0
24-Jan-14	83.57	18.70	0	86.23	18.53	0	NT	NT	NT	82.93	18.62	0
27-Jan-14	83.55	18.72	0	86.23	18.53	0	NT	NT	NT	82.93	18.62	0
28-Jan-14	83.56	18.71	0	86.25	18.51	0	102.52	18.54	0	82.94	18.61	0
29-Jan-14	83.56	18.71	0	86.22	18.54	0	NT	NT	NT	82.94	18.61	0
30-Jan-14	83.53	18.74	0	86.21	18.55	0	NT	NT	NT	82.93	18.62	0
31-Jan-14	83.53	18.74	0	86.19	18.57	0	NT	NT	NT	82.88	18.67	0
3-Feb-14	83.54	18.73	0	86.20	18.56	0	NT	NT	NT	82.91	18.64	0
4-Feb-14	83.54	18.73	0	86.20	18.56	0	NT	NT	NT	82.89	18.66	0
10-Feb-14	84.49	17.78	0	86.16	18.60	0	102.47	18.59	0	82.83	18.72	0
24-Feb-14	83.54	18.73	0	86.24	18.52	0	102.47	18.59	0	82.97	18.58	0
4-Mar-14*	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
13-Mar-14*	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
28-Mar-14	83.76	18.51	0	86.42	18.34	0	102.65	18.41	0	83.18	18.37	0
7-Apr-14*	83.42	18.85	0	86.43	18.33	0	NT	NT	NT	83.21	18.34	0
21-Apr-14	83.93	18.34	0	86.58	18.18	0	102.80	18.26	0	83.27	18.28	0
8-May-14*	84.03	18.24	0	86.68	18.08	0	NT	NT	NT	83.46	18.09	0
22-May-14*	83.81	18.46	0	86.47	18.29	0	NT	NT	NT	83.15	18.40	0
27-May-14	83.91	18.36	0	86.60	18.16	0	102.85	18.21	0	83.31	18.24	0
10-Jun-14*	83.93	18.34	0	86.55	18.21	0	NT	NT	NT	83.34	18.21	0
23-Jun-14	84.06	18.21	0	86.72	18.04	0	103.99	17.07	0	83.54	18.01	0
21-Jul-14	84.13	18.14	0	86.80	17.96	0	102.98	18.08	0	83.49	18.06	0
27-Aug-14	84.01	18.26	0	86.65	18.11	0	102.87	18.19	0	83.04	18.51	0
25-Sep-14	84.64	17.63	0	87.27	17.49	0	103.51	17.55	0	84.10	17.45	0
28-Oct-14	83.79	18.48	0	86.51	18.25	0	102.78	18.28	0	83.21	18.34	0
20-Nov-14	83.87	18.40	0	86.56	18.20	0	102.78	18.28	0	83.35	18.20	0
23-Dec-14	83.67	18.60	0	86.37	18.39	0	102.64	18.42	0	83.05	18.50	0
28-Jan-15	83.63	18.64	0	86.35	18.41	0	102.63	18.43	0	83.03	18.52	0
27-Feb-15	83.68	18.59	0	86.28	18.48	0	102.52	18.54	0	83.06	18.49	0
26-Mar-15	83.83	18.44	0	86.04	18.72	0	102.79	18.27	0	83.24	18.31	0
21-Apr-15	84.33	17.94	0	86.97	17.79	0	103.18	17.88	0	83.72	17.83	0
28-May-15	84.29	17.98	0	86.97	17.79	0	103.24	17.82	0	83.95	17.60	0
25-Jun-15	84.58	17.69	0	87.28	17.48	0	103.57	17.49	0	83.75	17.80	0
21-Jul-15	84.58	17.69	0	87.24	17.52	0	103.44	17.62	0	83.76	17.79	0
27-Aug-15	84.44	17.83	0	87.13	17.63	0	103.41	17.65	0	83.69	17.86	0
23-Sep-15	84.26	18.01	0	86.91	17.85	0	103.21	17.85	0	83.63	17.92	0
20-Oct-15	84.00	18.27	0	86.38	18.38	0	103.38	17.68	0	Obstructed	NT	NT
18-Nov-15	84.25	18.02	0	86.93	17.83	0	103.24	17.82	0	84.62 <sup>2</sup>	16.93	0
17-Dec-15	83.76	18.51	0	86.36	18.40	0	102.56	18.50	0	83.18	18.37	0
20-Jan-16	83.31	18.96	0	85.97	18.79	0	102.21	18.85	0	Obstructed	NT	NT
17-Feb-16	83.17	19.10	0	85.81	18.95	0	102.10	18.96	0	Obstructed	NT	NT
15-Mar-16	82.89	19.38	0	85.60	19.16	0	101.82	19.24	0	82.26	19.29	0
20-Apr-16	82.97	19.30	0	85.63	19.13	0	101.91	19.15	0	82.31	19.24	0
23-May-16	83.14	19.13	0	85.81	18.95	0	102.03	19.03	0	82.50	19.05	0
21-Jun-16	83.16	19.11	0	85.77	18.99	0	10.03	111.03	0	82.54	19.01	0
20-Jul-16	83.32	18.95	0	85.99	18.77	0	102.31	18.75	0	82.63	18.92	0
23-Aug-16	83.27	19.00	0	85.96	18.80	0	102.20	18.86	0	82.63	18.92	0
21-Sep-16	83.13	19.14	0	85.74	19.02	0	102.06	19.00	0	82.44	19.11	0
19-Oct-16	83.01	19.26	0	85.69	19.07	0	101.95	19.11	0	82.39	19.16	0
17-Nov-16	82.92	19.35	0	85.56	19.20	0	101.82	19.24	0	82.24	19.31	0
20-Dec-16	82.67	19.60	0	85.36	19.40	0	101.61	19.45	0	82.01	19.54	0
31-Jan-17	82.45	19.82	0	85.13	19.63	0	101.46	19.60	0	82.04	19.51	0
22-Feb-17	82.37	19.90	0	85.01	19.75	0	101.31	19.75	0	81.72	19.83	0
24-Mar-17	82.49	19.78	0	85.19	19.57	0	101.45	19.61	0	81.84	19.71	0
20-Apr-17	82.59	19.68	0	85.25	19.51	0	101.5	19.56	0	81.94	19.61	0
26-May-17	82.45	19.82	0	85.13	19.63	0	101.39	19.67	0	81.80	19.75	0
22-Jun-17	82.94	19.33	0	85.59	19.17	0	101.89	16.17	0	82.30	19.25	0
21-Jul-17	83.43	18.84	0	86.5	18.26	0	Transducer Installed	NT	NT	82.81	18.74	0
20-Mar-18	83.56	18.71	0	86.24	18.52	0	102.55	18.51	0	82.89	18.66	0
25-Apr-18	83.47	18.80	0	86.14	18.62	0	102.38	15.68	0	82.86	18.69	0
22-May-18	83.61	18.66	0	86.28	18.47	0	102.56	15.68	0	82.86	18.69	0
20-Jun-18	83.63	18.64	0	86.28	18.47	0	102.57	18.49	0	82.99	18.56	0
25-Jul-18	83.55	18.72	0	86.33	18.43	0	102.58	18.48	0	82.90	18.56	0
21-Aug-18	Transducer Installed	NT	NT	86.32	18.42	0	102.58	18.48	0	Transducer Installed	NT	NT

Notes:

1 - Elevations were updated based on the Groundwater Flow Direction/Gradient and Tier 3 Risk Assessment Re-evaluation Letter Report, Red Hill Bulk Fuel Storage Facility, Pearl Harbor, Hawaii, Contract No. N47408-04-D-8514, Task Order 54, dated April 15, 2010.

2 - Dedicated groundwater pump was obstructing the path of the interface meter probe. Depth measured was based on the elevation of water when pump was removed from the monitoring well (RHMW05).

Measurements recorded by Environmental Science International from January 2014 to August 2015, unless otherwise noted.

Measurements recorded by Element Environmental, LLC from September 2015.

\* - Measurements recorded by NAVFAC HI.

All units in feet (ft).

DTW (TOC) - depth to water from top of well casing

LNAPL - light non-aqueous phase liquid

NT - measurement not taken

SWL - static water level