



DEPARTMENT OF THE NAVY
COMMANDER
NAVY REGION HAWAII
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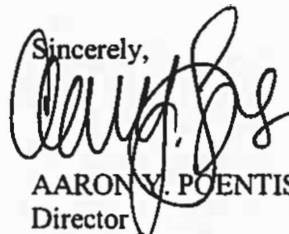
Mr. Richard Takaba
Hawaii State Department of Health
Environmental Management Division
Solid and Hazardous Waste Branch
Underground Storage Tank Section
2827 Waimano Home Road, Suite 100
Pearl City, Hawaii 96782

Dear Mr. Takaba:

SUBJECT: RED HILL TANK COMPLEX
JULY 2019 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 RHMW01, RHMW02, PHMW03 and RHMW05 on July 29, 2019. No free product was observed in the wells.

A summary of the oil/water interface measurements from January 2014 through July 2019 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 V. POENTIS
Director
Regional Environmental Department
By direction of the
Commander

Enclosure: 1. Red Hill Oil/Water Interface Measurements, January 2014 through July 2019

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. Ralph Wells, DLA Energy Pacific

Red Hill Oil/Water Interface Measurements January 2014 through July 2019

Date	RHMW01			RHMW02			RHMW03			RHMW05		
	Elevation = 102.27 ft ¹			Elevation = 104.76 ft ¹			Elevation = 121.06 ft ¹			Elevation = 101.55 ft ¹		
	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	0	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 ²	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	18.44	0	102.58	18.48	0	Transducer installed	NT	NT
30-Oct-18	82.64	19.63	0	85.34	19.42	0	101.58	19.48	0	81.99	19.56	0
24-Jan-19	82.30	19.97	0	84.96	19.80	0	101.22	19.84	0	81.66	19.89	0
26-Apr-19	82.45	19.82	0	85.18	19.58	0	104.41	19.65	0	81.88	19.67	0
29-Jul-19	82.67	19.6	0	18.34	19.42	0	101.57	19.49	0	82.06	19.49	0

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