



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

5090  
 Ser N45/2069  
 November 06, 2013

CERTIFIED MAIL NO. 7007 3020 0002 3047 9208

Mr. Richard Takaba  
 Hawaii State Department of Health  
 Environmental Management Division  
 Solid and Hazardous Waste Branch  
 Underground Storage Tank Section  
 919 Ala Moana Boulevard, Room 212  
 Honolulu, HI 96814


Dear Mr. Takaba:

SUBJECT: RED HILL TANK COMPLEX  
 OCTOBER 2013 OIL/WATER INTERFACE MEASUREMENTS  
 DOH FACILITY ID NO. 9-102271  
 DOH RELEASE ID NO. 99051, 010011 AND 020028

As recommended in the "Red Hill Bulk Fuel Storage Facility Groundwater Protection Plan" of January 2008 (revised December 2009), Environmental Science International took monthly oil/water interface measurements at groundwater monitoring wells RHMW01, RHMW02, RHMW03, and RHMW05 in October 2013. No free product was observed in the wells. A summary of the monthly oil/water interface measurements is being submitted in Enclosure (1).

If there are any questions regarding this matter, or if more information is needed, please contact Ms. Raelynn Kishaba at (808) 471-1171, extension 233.

Sincerely,

  
 AARON Y. POENTIS  
 Director  
 Regional Environmental Department  
 By direction of the  
 Commander

Enclosure: 1. Red Hill Oil/Water Interface Measurements

Copy to: Ms. Joanna Seto, DOH Safe Drinking Water Branch

**Attachment A**  
**Red Hill Oil/Water Interface Measurements September 2007 through October 2013**

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
Sep-07	NT	NT	NT	86.80	17.96	NP	103.44	17.62	NP	--	--	--
Jan-08	84.67	17.60	<0.01	86.23	18.53	<0.01	NT	NT	NT	--	--	--
Jul-08	83.37	18.90	0	86.10	18.66	0	102.45	18.61	0	--	--	--
Oct-08	83.80	18.47	0	86.45	18.31	0	102.49	18.57	0	--	--	--
Nov-08	83.91	18.36	0	86.56	18.20	0	102.80	18.26	0	--	--	--
Jan-09	83.13	19.14	0	85.79	18.97	0	102.04	19.02	0	--	--	--
Feb-09	NT	NT	NT	86.35	18.41	0	102.56	18.50	0	--	--	--
Mar-09	83.82	18.45	0	86.44	18.32	0	102.64	18.42	0	--	--	--
May-09	83.72	18.55	0	86.37	18.39	0	102.59	18.47	0	NT	NT	NT
May-09	83.50	18.77	0	86.15	18.61	0	102.41	18.65	0	NT	NT	NT
Jul-09	83.75	18.52	0	86.42	18.34	0	102.67	18.39	0	83.09	18.46	0
Aug-09	84.04	18.23	0	86.71	18.05	0	102.84	18.22	0	83.51	18.04	0
Sep-09	84.21	18.06	0	86.84	17.92	0	103.07	17.99	0	83.61	17.94	0
Oct-09	84.24	18.03	0	86.87	17.89	0	103.07	17.99	0	83.62	17.93	0
Nov-09	83.91	18.36	0	86.56	18.20	0	102.81	18.25	0	83.25	18.30	0
Dec-09	84.12	18.15	0	86.75	18.01	0	103.00	18.06	0	83.53	18.02	0
Jan-10	84.36	17.91	0	87.00	17.76	0	103.22	17.84	0	83.75	17.80	0
Feb-10	84.24	18.03	0	86.89	17.87	0	103.14	17.92	0	83.60	17.95	0
Mar-10	84.53	17.74	0	87.15	17.61	0	103.38	17.68	0	83.96	17.59	0
Apr-10	84.75	17.52	0	87.37	17.39	0	103.60	17.46	0	84.17	17.38	0
May-10	84.80	17.47	0	87.43	17.33	0	103.66	17.40	0	84.23	17.32	0
Jun-10	84.87	17.40	0	87.51	17.25	0	103.74	17.32	0	84.30	17.25	0
Jul-10	85.03	17.24	0	87.66	17.10	0	103.89	17.17	0	84.48	17.07	0
Sep-10	85.30	16.97	0	87.92	16.84	0	104.13	16.93	0	84.71	16.84	0
Oct-10	85.29	16.98	0	87.91	16.85	0	104.13	16.93	0	84.75	16.80	0
Nov-10	85.20	17.07	0	87.84	16.92	0	104.30	16.76	0	84.80	16.95	0
Dec-10	84.87	17.40	0	87.55	17.21	0	103.98	17.08	0	84.22	17.33	0
Jan-11	85.32	16.95	0	86.91	17.85	0	103.41	17.65	0	83.65	17.90	0
Feb-11	83.82	18.45	0	86.48	18.28	0	103.02	18.04	0	83.20	18.35	0
Mar-11	83.77	18.50	0	86.39	18.37	0	102.87	18.19	0	83.20	18.35	0
Apr-11	83.54	18.73	0	86.18	18.58	0	102.39	18.67	0	82.90	18.65	0
May-11	83.39	18.88	0	86.05	18.71	0	102.69	18.37	0	82.72	18.83	0
Jun-11	83.41	18.86	0	86.11	18.65	0	102.33	18.73	0	82.81	18.74	0
Jul-11	83.57	18.70	0	86.22	18.54	0	102.44	18.82	0	82.99	18.56	0
Aug-11	83.81	18.46	0	86.42	18.34	0	102.66	18.40	0	83.21	18.34	0
Sep-11	83.81	18.46	0	86.44	18.32	0	102.69	18.37	0	83.21	18.34	0
Oct-11	83.71	18.56	0	86.38	18.38	0	102.90	18.16	0	83.15	18.40	0
Nov-11	83.60	18.67	0	86.25	18.51	0	102.47	18.59	0	83.00	18.55	0
Dec-11	83.49	18.78	0	86.10	18.66	0	102.36	18.70	0	82.85	18.70	0
Jan-12	83.57	18.70	0	86.18	18.58	0	102.56	18.50	0	82.90	18.65	0
Feb-12	83.80	18.47	0	86.41	18.35	0	102.71	18.35	0	83.20	18.35	0
Mar-12	83.41	18.86	0	86.51	18.25	0	102.45	18.61	0	82.79	18.76	0
Apr-12	83.60	18.67	0	86.34	18.42	0	102.71	18.35	0	83.17	18.38	0
May-12	84.09	18.18	0	86.71	18.05	0	102.98	18.08	0	83.53	18.02	0
Jun-12	84.34	17.93	0	86.95	17.81	0	103.17	17.89	0	83.97	17.58	0
Jul-12	84.20	18.07	0	86.64	18.12	0	102.89	18.17	0	83.41	18.14	0
Aug-12	84.19	18.08	0	86.61	17.95	0	103.30	17.76	0	83.62	17.93	0
Oct-12	84.19	18.08	0	86.61	17.95	0	103.50	17.56	0	83.72	17.83	0
Nov-12	84.23	18.04	0	86.85	17.91	0	103.10	17.96	0	83.70	17.85	0
Dec-12	84.21	18.06	0	86.87	17.89	0	103.14	17.92	0	83.70	17.85	0
Jan-13	84.05	18.22	0	86.87	17.89	0	103.14	17.92	0	83.70	17.85	0
Feb-13	84.04	18.23	0	86.62	18.14	0	102.87	18.19	0	83.43	18.12	0
Mar-13	83.82	18.45	0	86.48	18.28	0	102.75	18.31	0	83.19	18.36	0
Apr-13	83.84	18.43	0	86.50	18.26	0	102.78	18.28	0	83.41	18.14	0
May-13	84.03	18.24	0	86.69	18.07	0	102.95	18.11	0	83.41	18.14	0
Jun-13	84.22	18.05	0	86.86	17.90	0	103.12	17.94	0	83.66	17.89	0
Jul-13	84.29	17.98	0	86.96	17.80	0	103.23	17.83	0	83.85	17.70	0
Aug-13	84.66	17.61	0	86.28	18.48	0	103.50	17.56	0	84.09	17.46	0
Sep-13	84.57	17.70	0	87.20	17.56	0	103.43	17.63	0	84.00	17.55	0
Oct-13	84.47	17.80	0	87.08	17.68	0	103.31	17.75	0	83.80	17.75	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 #H47408-04-D-8514, Task Order 54, dated April 15, 2010.

Measurements recorded prior to September 2010 were collected by TEC. Measurements recorded between September 2010 through August 2012 were collected by Environet Inc. Measurements recorded after October 2012 are collected by ESI.

All units in Feet (ft.)  
DTW (TOC) - depth to water from top of well casing  
LNAPL - light non-aqueous phase liquid attributed to the Red Hill Bulk Fuel Storage Facility  
NP - measurement not provided  
NT - measurement not taken  
SWL - static water level  
-- - period prior to the installation of RHMW05